

FEDERAL COURT OF AUSTRALIA

Pabai v Commonwealth of Australia (No 2) [2025] FCA 796

File number: VID 622 of 2021

Judgment of: **WIGNEY J**

Date of judgment: 15 July 2025

Catchwords: **NEGLIGENCE** – representative proceeding on behalf of Torres Strait Islanders against the Commonwealth of Australia – whether the Commonwealth has a duty to take reasonable steps to protect Torres Strait Islanders from the impacts of climate change – whether impacts of marine inundation and erosion caused property damage, loss of fulfilment of *Ailan Kastom*, and injury, disease or death – whether the loss of fulfilment of *Ailan Kastom*, the body of customs, traditions and beliefs distinctive to Torres Strait Islanders which creates a unique spiritual connection with the Torres Strait Islands and surrounding waters, is a compensable loss under the law of negligence – imposition of novel duties of care considered – whether posited duties of care would require the Court to pass judgment on issues of high or core government policy and political judgment – factual findings of the severe impacts of human-induced climate change on the Torres Strait Islands – ecosystems damaged and destroyed – devastating impacts on the traditional way of life and the ability to practise *Ailan Kastom*

EMISSIONS REDUCTION TARGETS – whether Commonwealth owed the applicants and Torres Strait Islanders a duty of care to take reasonable steps to set greenhouse gas emissions reduction targets having regard to the “Best Available Science” which prevent or minimise impacts of climate change in the region – where Commonwealth set greenhouse gas emissions reduction targets and provided those targets to the UN Convention on Climate Change as Nationally Determined Contributions pursuant to Art 4.2 of the Paris Agreement in 2015, 2020, 2021 and 2022 – whether those emissions reduction targets were set having regard to the best available science – where best available science indicates global average temperature increase must be held to well below 2°C above pre-industrial levels to limit the worst effects of climate change – whether setting emissions reduction targets are a matter of high or core government policy – whether relationship between the applicants and the Commonwealth more than a

relationship between the governing and the governed – whether posited standard of care appropriate – whether any breach of the alleged duty of care in respect of setting emissions reduction targets caused applicants to suffer compensable damage – whether Commonwealth materially contributed to loss or damage suffered by the applicants as a result of climate change – duty of care not established – factual findings that the Commonwealth failed to give genuine consideration of the best available science – Australian emissions reduction targets inconsistent with international obligations and objectives

CLIMATE CHANGE ADAPTATION – alleged duty of care to take reasonable care to protect against marine inundation and erosion – standard of care said to require the provision of predictable, adequate funding for the construction of seawalls and the leading and coordinating of a plan for funding – whether delays in funding and consequent delays in construction of seawalls cause or contributed to loss and damaged suffered – evidence incapable of proving inundation events occurring in the relevant periods caused or contributed to loss – funding arrangements concerned allocation of responsibilities between three tiers of government – all requested funding provided – delays in finalisation of funding neither solely attributable to the Commonwealth nor unreasonable – salient features do not support the alleged duty of care – duty of care not appropriate or practical to impose where the Court would need to pass judgment on the reasonableness of government policy, intergovernmental relations and budgetary priorities

DECLARATIONS, INJUNCTION – declarations sought regarding the existence and breach of duty / duties of care – declaration has no utility where expressed in abstract terms divorced from the nature of any duty – inappropriate where no finding that breach has caused loss or damage – impermissible interlocutory declaration where claims of group members not finally determined – injunctive relief sought to compel the Commonwealth to implement measures to protect the environment, cultural and customary rights and reduce emissions – subjective and imprecise terms

Legislation:

Aboriginal and Torres Strait Islander Act 2005 (Cth)
Aboriginal and Torres Strait Islanders Act 2005 (Cth)
Australian Capital Territory (Self-Government) Act 1988 (Cth)
Climate Change Act 2022 (Cth)

Climate Change Authority Act 2011 (Cth)
Copyright Act 1968 (Cth)
Federal Court of Australia Act 1976 (Cth)
Financial Management Act 1997 (Cth)
Judiciary Act 1903 (Cth)
Native Title Act 1993 (Cth)
Australian Capital Territory (Self-Government) Regulations 1989 (Cth)
Australian Capital Territory (Self-Government) Regulations 2021 (Cth)
Financial Management and Accountability Regulations 1997 (Cth)
Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth)

Civil Law (Wrongs) Act 2002 (ACT)
Civil Liability Act 2003 (Qld)
Community Services (Torres Strait) Act 1984 (Qld)
Constitution Act 1867 (Qld)
Crown Proceedings Act 1988 (NSW)
Limitation Act 1985 (ACT)
Limitation of Actions Act 1974 (Qld)
Local Government Act 1993 (Qld)
Local Government Act 2009 (Qld)
Local Government and Other Legislation (Indigenous Regional Councils) Amendment Act 2007 (Qld)
Queensland Coast Islands Act 1879 (Qld)

Belgian Civil Code
Dutch Civil Code

Cases cited:

Agar v Hyde (2000) 201 CLR 552
Ainsworth v Criminal Justice Commission (1992) 175 CLR 564
Akiba and Another v Queensland and Others (No 2) (2010) 204 FCR 1
Amica Pty Ltd v Ellis (2010) 240 CLR 111
Anns v Merton London Borough Council [1978] AC 728
Barrett v Enfield London Borough Council [2001] 2 AC 550
Bonnington Castings v Wardlaw [1956] AC 613
Brodie v Singleton Shire Council (2001) 206 CLR 512
Brookfield Multiplex Ltd v Owners Corporation Strata Plan

61288 (2014) 254 CLR 185
Caltex Refineries (Qld) Pty Ltd v Stavar (2009) 75 NSWLR 649
Cattanach v Melchior (2003) 215 CLR 1
Chapman v Hearse (1961) 106 CLR 112
Chappel v Hart (1998) 195 CLR 232
Cole v South Tweed Heads Rugby league Football Club Ltd (2004) 217 CLR 469
CPCF v Minister for Immigration and Border Protection (2015) 255 CLR 514
Crimmins v Stevedoring Industry Finance Committee (1999) 200 CLR 1
Cubillo v Commonwealth of Australia (No 2) (2000) 103 FCR 1
Dixon v Davies (1982) 17 NTR 31
Donoghue v Stevenson [1932] AC 562
Dovuro Pty Ltd v Wilkins (2003) 215 CLR 317
Dow Jones & Co Inc v Gutnick (2002) 210 CLR 575
East Suffolk Rivers Catchment Board v Kent [1941] AC 74
Electro Optic Systems Pty Ltd v State of New South Wales; West v State of New South Wales (2012) 273 FLR 304
Evans v Queanbeyan City Council [2011] NSWCA 230
Fairchild v Glenhaven Funeral Services Ltd [2003] 1 AC 32
Farah Constructions Pty Ltd v Say-Dee Pty Ltd (2007) 230 CLR 89
Fejo v Northern Territory (1998) 195 CLR 96
Gibuma on behalf of Boigu People v State of Queensland [2004] FCA 1575
Graham Barclay Oysters Pty Ltd v Ryan (2002) 211 CLR 540
Haber v Walker [1963] VR 339
Harriton v Stephens (2006) 226 CLR 52
High Country Outfitters Inc v Pitt Meadows (City) [2012] BCJ No 1859; 2012 BCPC 308
Hunt & Hunt Lawyers (a firm) v Mitchell Morgan Nominees Pty Ltd (2013) 247 CLR 613
Jackson v Spittall (1870) LR 5 CP 542
John Pfeiffer Pty Ltd v Canny (1981) 148 CLR 218
John Pfeiffer Pty Ltd v Rogerson (2000) 203 CLR 503
Kent v East Suffolk Rivers Catchment Board [1940] 1 KB 319
La Sucrierie Casselman Inc v Cambridge (Township) [2000] OJ No 4650

Lewis v Australian Capital Territory (2020) 271 CLR 192
Love v The Commonwealth (2020) 270 CLR 152
Mabo v Queensland (No 2) (1992) 175 CLR 1
Mahoney v J. Kruschich (Demolitions) Pty Ltd (1985) 156 CLR 522
March v E & MH Stramare Pty Ltd (1991) 171 CLR 506
Milieudefensie v Royal Dutch Shell [2021] ECLI:NL:RBDHA:2021:5339
Milpururru v Indofurn Pty Ltd (1994) 54 FCR 240
Minister for the Environment v Sharma (2022) 291 FCR 311
Minister for the Environment v Sharma [2022] FCAFC 35
Modbury Triangle Shopping Centre Pty Ltd v Anzil (2000) 205 CLR 254
Mutual Life & Citizens' Assurance Company Ltd v Evatt (1968) 122 CLR 556
Namala v Northern Territory (1996) 131 FLR 468
Naoumi v Dannawi (2009) 75 NSWLR 216
Napaluma v Baker (1982) 29 SASR 192
Neilson v Overseas Projects Corp (Vic) Ltd (2005) 223 CLR 331
Northern Territory of Australia v Griffiths (2019) 269 CLR 1
Notre Affaire à Tous v France [2021] No 1904967, 1904968, 1904972, 1904976/4-1
Optus Networks Pty Ltd v City of Boroondara [1997] 2 VR 318
Overseas Tankship (UK) Ltd v Miller Steamship Company Pty Ltd (the Wagon Mound No 2) [1967] 1 AC 617
Overseas Tankship (UK) Ltd v Morts Dock & Engineering Company Ltd (The Wagon Mound) [1961] AC 388
Perre v Apand Pty Ltd (1999) 198 CLR 180
Perrre v Apand Pty Ltd (1999) 198 CLR 180
Pyrenees Shire Council v Day (1998) 192 CLR 330
Roberts v Devereaux (unreported, Supreme Court of the Northern Territory 22 April 1982)
Rodriguez & Sons Pty Ltd v Queensland Bulk Water Supply Authority trading as Seqwater (No 22) [2019] NSWSC 1657
Rowling v Takaro Properties Ltd [1988] AC 473
Santos N A Barossa Pty Ltd v Tipakalippa (2022) 296 FCR 124
Sharma by her litigation representative Sister Marie Brigid Arthur v Minister for the Environment [2021] FCA 560

Smaill v Buller District Council [1998] 1 NZLR 190
Smith v Fonterra Cooperative Group Limited & Ors (2024) NZSC 5
Stovin v Wise [1996] AC 923
Strong v Woolworths Ltd (2012) 246 CLR 182
Sullivan v Moody (2001) 207 CLR 562
Sutherland Shire Council v Heyman (1985) 157 CLR 424
Tame v State of New South Wales; Annetts v Australian Stations Pty Ltd (2002) 211 CLR 317
Trevorrow v South Australia (No 5) (2007) 98 SASR 136
Urgenda Foundation v the State of the Netherlands (2015) ECLI:NL:RBDHA:20155555:7196
Vernon Knights Associates v Cornwall Council [2014] Env. L.R. 6
Voth v Manildra Flour Mills Pty Ltd (1990) 171 CLR 538
VZW Klimaatzaak v Kingdom of Belgium & Others [2021] 2015/4585/A
VZW Klimaatzaak v Kingdom of Belgium & Others [2023] 2021/AR/15gs 2022/AR/737 2022/AR/891
Wallace v Kam (2013) 250 CLR 375
Western Australia v Ward (2002) 213 CLR 1
Weston v Woodroffe (1985) 36 NTR 34
Wik Peoples v Queensland (1996) 187 CLR 1
Woolcock Street Investments Pty Ltd v CDG Pty Ltd (2004) 216 CLR 515
Wyong Shire Council v Shirt (1980) 146 CLR 40
Yorta Yorta Aboriginal Community v State of Victoria (2002) 214 CLR 422

Australian Academy of Science, *The Risks to Australia of a 3°C Warmer World* (Report, March 2021)

Australian Academy of Science, *The Science of Climate Change: Questions and Answers* (Report, February 2015)

Climate Change Authority, *Reducing Australia's Greenhouse Gas Emissions – Targets and Progress Review* (Final Report, February 2014)

DI Armstrong McKay et al, 'Exceeding 1.5C global warming could trigger multiple climate tipping points' (2022) 377(6611) *Science* 1171

H Burmester, 'The Torres Strait Treaty: Ocean Boundary Delimitation by Agreement', (1982) 76 *American Journal of International Law* 321, 322

International Covenant on Civil and Political Rights, opened for signature 19 December 1966, 999 UNTS 171

(entered into force 23 March 1976)

IPCC, 2007: *Climate Change 2007: Impacts Adaptation, and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P.

Palutikof, P.J. van der Linden, and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK

IPCC, 2013: *Climate Change 2013: The Physical Science Basis. Contribution of Working I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*

[Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA

IPCC, 2014: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*

[Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA

IPCC, 2014: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*

[Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA

IPCC, 2018: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*

[Mason-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3-24

IPCC, 2019: *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* [H.-O. Pörtner, D.C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E.

Poloczanska, K. Mintenbeck, A. Alegría, M. Nicolai, A. Okem, J. Petzold, B. Rama, N.M. Weyer (eds.)].

Cambridge University Press, Cambridge, UK and New York, NY, USA

IPCC, 2021: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. A. Pirani, S.L. Connors, P. Pean, S Berger, N. CAud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R Mathews, T.K. Maycock, T. Wakefiled, O. Yelecki, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA

IPCC, 2022: *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA

IPCC, 2022: *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA

J Stapleton, “Law, Causation and Common Sense”, *Oxford Journal of Legal Studies* vol 8 (1988) 111 at 125

Kyoto Protocol to the United Nations Framework Convention on Climate Change, opened for signature 16 March 1998, 2303 UNTS 162 (entered into force 16 February 2005)

Treaty between Australia and the Independent State of Papua New Guinea Concerning Sovereignty and Maritime Boundaries in the Area Between Two Countries, Including the Area Known as Torres Strait, and Related Matters entered on 18 December 1978, in force from 15 February 1985 (Australian Treaty Series 1985 No 4)

United Nations Declaration on the Rights of Indigenous Peoples, GA Res 61/295, UN Doc A/RES/61/295 (2 October 2007, adopted 13 September 2007)

United Nations Framework Convention on Climate Change, opened for signature 4 June 1992, 1771 UNTS 107 (entered into force 21 March 1994)

United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement 2015

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Registry:	Victoria
National Practice Area:	Other Federal Jurisdiction
Number of paragraphs:	1,275
Date of hearing:	5-6, 8-9, 12-13, 15-16 June 2023; 8-27 November 2023; 20 December 2023; and 29 April-3 May 2024.
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Solicitor for the Applicants:	Phi Finney McDonald
Counsel for the Respondent:	Mr S Lloyd SCand Ms Z Maud SC with Ms A Lyons, Mr M Sherman and Ms M Salinger
Solicitor for the Respondent:	Australian Government Solicitor

ORDERS

VID 622 of 2021

BETWEEN: **PABAI PABAI**
First Applicant

GUY PAUL KABAI
Second Applicant

AND: **COMMONWEALTH OF AUSTRALIA**
Respondent

ORDER MADE BY: **WIGNEY J**

DATE OF ORDER: **15 JULY 2025**

THE COURT ORDERS THAT:

1. The parties are to confer, through their legal advisers, and by no later than six weeks after the delivery of this judgment, provide the Court with either:
 - (a) agreed draft orders which give effect to this judgment and dispose of the proceeding, including in relation to costs; or
 - (b) if no agreement can be reached concerning the orders, competing draft orders, together with an outline of submissions (not exceeding ten pages in length) in respect of the competing orders, together with a note as to whether an oral hearing is requested to resolve the outstanding issues in respect of the orders.

Note: Entry of orders is dealt with in Rule 39.32 of the *Federal Court Rules 2011*.

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WIGNEY J:

- 1 The central issue in this difficult and novel case is whether the common law tort of negligence can and does provide Torres Strait Islanders with a remedy for what they claim has been the **Commonwealth** of Australia's unreasonable and inadequate response to the existential risks posed by climate change and the impacts that it is having on the Torres Strait Islands.

- 2 The Torres Strait Islands, or the *Zenadth Kes*, are a cluster of islands located in the Arafura and Coral Seas between Cape York in far northern Australia and Papua New Guinea. Many of the islands, including those that are inhabited, are coral cays or very low-lying sand or mud islands.
- 3 The Torres Strait Islands have in recent years been ravaged by the impacts of human-induced climate change. Rising sea levels, storm surges and other extreme water level events have resulted in flooding and seawater inundation on many of the islands. Trees are dying and previously fertile areas have been adversely affected by salination and are no longer suitable for growing traditional crops. Rising sea levels and storms have led to the erosion and the depletion of beaches and the salination of wetlands. Warmer ocean temperatures and ocean acidification have caused coral bleaching and the loss of seagrass beds. Totemic sea creatures like dugong and turtles, once abundant in the region, have become scarce. Seasonal patterns have changed, as have the migratory patterns of birdlife.
- 4 The impacts of climate change on the land and marine environment of the Torres Strait Islands have had a profound impact on the customary way of life of the inhabitants and traditional owners of the Torres Strait Islands. They are finding it increasingly difficult to practise and observe the body of customs, traditions and beliefs, known generally as *Ailan Kastom*, which has sustained them for generations. Sacred sites, including burial and ceremonial sites, have been damaged and are constantly at risk of further inundation. The traditional owners who reside on the islands are increasingly unable to source traditional foods or engage in certain cultural ceremonies, particularly those involving hunting and gathering. Changing seasonal, migratory and stellar patterns make it increasingly difficult for elders to pass-on traditional knowledge to the next generations.
- 5 Climate change poses an existential threat to the whole of humanity. The wellbeing and way of life of many, if not most, communities in Australia are vulnerable to the impacts of climate change. The Torres Strait Islands and their inhabitants are, however, undoubtably far more vulnerable to the impacts of climate change than other communities in Australia. The many low-lying islands in the Torres Strait are particularly prone to damage and destruction caused by rising sea waters and extreme weather events. The region's ecosystems are also far more prone to damage and destruction caused by increasing ocean temperatures and ocean acidification. To make matters worse, most Torres Strait Islanders and their communities are socially and economically disadvantaged, at least compared to other Australians and their

communities, and often lack access to appropriate resources, infrastructure and services which would enable them to protect themselves from, or adequately adapt to, the impacts of climate change. They understandably feel powerless when it comes to protecting themselves against climate change and its impact on their islands and traditional way of life.

6 There could be little, if any, doubt that the Torres Strait Islands and their traditional inhabitants face a bleak future if urgent action is not taken to address climate change and its impacts.

7 Mr **Pabai Pabai**, the first applicant in this proceeding, is from the *Guda Mahuyligal* nation. He is 53 years old and has lived almost his entire life on Boigu, a small low-lying island that is closer to Papua New Guinea than it is to mainland Australia. He is a leader in his community. He has witnessed firsthand the impacts of climate change on Boigu in recent times and has experienced the resulting community sadness and loss of Ailan Kastom. He fears that, if something is not done about climate change and its impacts in the Torres Strait Islands, Boigu will lose its ancestral, sacred, and ceremonial sites and he will lose his connection to country and culture.

8 Mr Guy Paul **Kabai**, the second applicant, is also from the *Guda Mahuyligal* nation and has lived most of the 55 years of his life on **Saibai**. Saibai, like Boigu, is a tiny low-lying island very close to the coast of Papua New Guinea. Like Mr Pabai Pabai, he is an elder who has observed the damage wrought by climate change on his island and the traditional way of life of its peoples. He too is worried that, if nothing is done in respect of climate change, his community will lose its sacred places, culture and traditions, and he will lose his country and his identity.

9 The Torres Strait Islands are, both literally and figuratively, a world away from Canberra, the home of the Commonwealth Parliament. That is where many of the most important decisions are made about the nation's response to climate change and its impacts. While there may have been, and perhaps still are, some climate change doubters and deniers among the politicians and bureaucrats who are responsible for making those decisions, it is tolerably clear that the Commonwealth Government has for some time known about the perils of, and ongoing risks posed by, climate change. It has also recognised that it must play a part in the global response to climate change. The Commonwealth has also known and appreciated that the Torres Strait Islands and Torres Strait Islanders are particularly vulnerable to the impacts of climate change. But has the Commonwealth's response to climate change been reasonable

and adequate to protect Torres Strait Islanders and their traditional way of life from the ravages of climate change?

- 10 Mr Pabai Pabai and Mr Kabai contend that the Commonwealth's response to climate change has been inadequate and that it has not done enough to protect them and other Torres Strait Islanders from the impacts of climate change. In this representative proceeding, they claim that the Commonwealth has breached the duty or duties of care that they say the Commonwealth owes them and other Torres Strait Islanders to take reasonable steps to protect them from the impacts of climate change. They allege, among other things, that in setting its greenhouse gas emission reduction targets, the Commonwealth has failed, and continues to fail, to have regard to, and act in accordance with, the best available science in respect of climate change, and thereby failed to prevent or minimise its impacts on Torres Strait Islanders in particular. They also claim that the Commonwealth has breached the duty of care it owes them and other Torres Strait Islanders to take reasonable steps to implement adaptation measures to prevent or minimise the impacts of climate change in the Torres Strait Islands. They contend, among other things, that the Commonwealth has failed to provide predictable and adequate funding for infrastructure, in particular seawalls, to protect the islands from inundation and flooding.
- 11 As will be discussed in detail in this judgment, there is merit in many of the factual claims that underly the causes of action in negligence brought by the applicants, both on their own behalf and on behalf of the Torres Strait Islanders who comprise the group members in this proceeding. There could be little doubt that the Torres Strait and Torres Strait Islanders have in recent times been severely impacted by climate change. There is also much to be said for the proposition that many of the decisions that have been made by the Commonwealth Government to address climate change by limiting or reducing Australia's greenhouse gas emissions have not paid sufficient regard to, or heeded the warnings of, the best available science. There is also something to be said for the proposition that those steps that the Commonwealth have taken to provide appropriate funding for infrastructure to protect some of the Torres Strait Islands from the impacts of rising sea levels and extreme weather events have been too little and too late.
- 12 The critical question, however, is whether Mr Pabai Pabai and Mr Kabai have established that they, and the group members on whose behalf they have brought this proceeding, have an actionable case in negligence against the Commonwealth. As will be discussed in detail in

these reasons for judgment, the applicants face effectively insurmountable legal hurdles and roadblocks in establishing the elements of their cause or causes of action against the Commonwealth in negligence, even if many, if not most, of the factual issues may be resolved in their favour.

- 13 In short summary, while it may perhaps be accepted that there are certain special and unique features of the relationship between the Commonwealth and Torres Strait Islanders, the duties of care that the applicants contend that the Commonwealth owes Torres Strait Islanders are novel and there are many factors that weigh heavily against the recognition of those novel duties of care. There are also various factors which make it difficult to accept that, despite what might be said to be some failings on the part of the Commonwealth in respect of its responses to climate change and its protection of Torres Strait Islanders from the impacts of climate change, those failings constituted a breach of the alleged duties of care. It is equally difficult to accept that those failings materially contributed to the loss or damage suffered by Torres Strait Islanders as a result of the impacts of climate change during the period relevant to the cause of action. Finally, the applicants face a significant hurdle in establishing that the loss of fulfillment of Ailan Kastom that they and other Torres Strait Islanders have collectively experienced as a result of the impacts of climate change is recognised compensable loss or damage under the Australian common law of negligence.

A SHORT NOTE IN RELATION TO TERMINOLOGY

- 14 During the evidence and submissions, most if not all the Torres Strait Island witnesses were addressed or referred to as either “Uncle” or “Auntie”, depending on their gender, along with their first or given names. The applicants, for example, were referred to or addressed as Uncle Pabai and Uncle Paul, or sometimes just Uncle. Elders in indigenous communities, including Torres Strait Island communities, are frequently referred to as Uncle or Auntie as a mark of respect and in recognition of their wisdom, cultural knowledge and the esteem within which they are held in the community. It is, however, not always appropriate for a non-indigenous person to refer to an indigenous person as Uncle or Auntie. Much depends on the context and circumstances.
- 15 I have decided that in these reasons I will not refer to or address the applicants and other Torres Strait Island witnesses as Uncle and Auntie. I do not intend any disrespect in not referring to them as such. I understand and accept that they are all elders who are held in esteem in their communities and are recognised as being custodians of deep cultural

knowledge and lore. The Commonwealth did not suggest otherwise. In a formal document like the reasons for judgment in this Court, however, I consider it appropriate to refer to them by name and a common and neutral prefix such as Mr or Ms.

16 I have also decided to refer to each of the Torres Strait Island witnesses' totem and tribe. The evidence indicated that, when they introduce themselves, Torres Strait Islanders would generally state their totem. Their association with particular totems and tribes also indicates their close connection to their island. Finally, where I have used a traditional word or expression which is unique to the Torres Strait Islands, I have generally italicised that word or expression.

OVERVIEW OF THE CASE

17 It is useful to begin by providing a short summary of the applicants' case and the Commonwealth's defence to it.

The applicants' case

18 As has already been noted, this is a representative proceeding which was commenced by the applicants both on their own behalf and on behalf of group members. The group members are defined as being "all persons who at any time during the period from 1985 to the date [the] pleading [was] filed, [who] are Torres Strait Islander (whether by descent or by customary adoption) and suffered loss and damage as a result of the conduct of the [Commonwealth] described in [the pleading]": Third Further Amended Statement of Claim (**3FASOC**) at [1].

19 The expression "Torres Strait Islanders" is defined in the 3FASOC (at [54]) as follows:

Torres Strait Islanders include persons:

- (a) Indigenous to the Torres Strait Islands within the meaning of the definition in s 4(1) of the *Aboriginal and Torres Strait Islander Act 2005* (Cth) and/or who are Torres Strait Islander by way of customary adoption;
- (b) from the *Gudang, Kaiwalagal, Maluiligal, Guda Maluyligal, Kulkalgal*, and *Kemerkemer Meriam Nations*;
- (c) who may hold native title and/or native title rights and interests (as defined in s 223 of the *Native Title Act 1993* (Cth)) in relation to various parts of the Torres Strait Islands;
- (d) who have a distinctive customary culture, known as *Ailan Kastom*, which creates a unique spiritual and physical connection with the Torres Strait Islands and surrounding waters (*Ailan Kastom*);
- (e) including the Applicants and the Group Members.

(mark-up as a result of amendments not replicated)

20 References in these reasons to **Torres Strait Islanders** should be taken to be references to the group members as defined in the pleading unless indicated otherwise.

21 The key factual allegations in the applicants' case are, broadly speaking, relatively straightforward. The complexities arise when it comes to framing those factual allegations in terms of the elements of the tort of negligence. As will be seen in due course, many complex factual and legal issues arise.

22 The starting point of the applicants' case is climate change and its impacts generally and specifically on the Torres Strait Islands.

Climate change and its impacts on the Torres Strait Islands

23 Climate change is a shorthand expression which is used to describe the increase in the Earth's temperature and other changes to the Earth's climate which have and continue to be caused by human activities, in particular the burning of fossil fuels, since the industrial revolution which commenced roughly 150 years ago. The increased emission of greenhouse gases (or **GHGs**), primarily carbon dioxide (**CO₂**), but also methane and nitrous oxide, has resulted in the accumulation of those gases in the Earth's atmosphere. That has, through a series of processes, resulted in the rapid heating of the Earth's lower atmosphere and, in turn, an increase in the temperature of the Earth's surface and lower atmosphere. It has also led to other significant changes to the Earth's climate.

24 It will, of course, be necessary to refer to the science in respect of climate change in more detail later in these reasons. It suffices at this point to note that it is scientifically clear and unequivocal that there is a near linear relationship between cumulative anthropogenic (human caused) CO₂ emissions and the increase in global surface temperature. It is also scientifically clear and unequivocal that every tonne (and every fraction of a tonne) of CO₂ emissions adds to global warming.

25 The science is equally clear and unequivocal about the climate and environmental impacts of global temperature increases caused by CO₂ emissions. Those impacts include: the increase in global ocean surface temperature; ocean acidification; melting ice on land and sea; melting permafrost; changing precipitation patterns; sea level rise and the inundation of coastal lands; the increase in the frequency, size and intensity of extreme weather events, such as heatwaves, droughts, bushfires, tropical cyclones, severe storms and flooding; harm and destruction of

ecosystems, including coral reefs, and the harm and destruction of non-human species; the greater likelihood of undernutrition resulting from diminished food production; and the increased risk of food, water-borne and vector-borne diseases.

- 26 The deleterious impacts of climate change are experienced, to a greater or lesser extent, by the whole world and the whole of humanity. It is, however, well recognised that small and low-lying islands and their communities, including the Torres Strait Islands, are particularly vulnerable to many of the impacts of climate change, especially sea level rises, storm surges, tropical cyclones, increasing temperatures and changing rainfall patterns. It is also well recognised that indigenous peoples in Australia, including those in the Torres Strait, are more vulnerable to the impacts of climate change by reason of, among other things, their unique and close connection to the land and environment and their relative social and economic disadvantage.
- 27 To put it bluntly, the applicants contend that it is an incontrovertible truth, and a truth that is not only well known to, but has been acknowledged by the Commonwealth, that Torres Strait Islanders have been, and continue to be, severely and disproportionately impacted by climate change. Their traditional homelands in the islands have been eroded, inundated by seawater, and rendered inarable by salination. The resting places of their ancestors have been desecrated. They have suffered the effects of changing weather patterns and increased temperatures. Animal species that they have traditionally relied on as a source of food, including dugong and turtles, have become scarce. Ecosystems, including coral reefs and seagrasses, have been damaged. The ability of Torres Strait Islanders to practise their sacred traditions and customs – Ailan Kastom – has been severely impacted by the damage to their lands and the island ecosystems.
- 28 The damage and destruction that has been wrought by climate change, including in the Torres Strait Islands, is not really in dispute. What is in dispute is, in essence, whether the Commonwealth was required to, and has failed to, take reasonable steps to protect Torres Strait Islanders from the ravages of climate change, and whether any failures on the part of the Commonwealth in that regard have materially contributed to any loss or damage that has been suffered by Torres Strait Islanders due to the impacts of climate change. More specifically, and more prosaically, the central issue is whether, by reason of any failings in its responses to climate change, the Commonwealth is liable in the tort of negligence for any loss or damage suffered by Torres Strait Islanders from the impacts of climate change.

The Commonwealth's failure to protect Torres Strait Islanders from the impacts of climate change

29 The general thrust of the applicants' case against the Commonwealth is that, by virtue of the unique and special relationship between the Commonwealth and Torres Strait Islanders, the Commonwealth has a duty to take reasonable steps to protect Torres Strait Islanders from the impacts of climate change and has failed to fulfil or discharge that duty. The unique and special protective relationship between the Commonwealth and Torres Strait Islanders was said to essentially flow from the relationship between the coloniser and the colonised. The very purpose of the colonisation of the Torres Strait Islands was, so it was said, to protect the native inhabitants of the islands.

30 As has already been made clear, the applicants' cause or causes of action against the Commonwealth were in the tort of negligence. In terms of the elements of the tort of negligence, the applicants claimed that the Commonwealth owed them, and Torres Strait Islanders more generally, a duty (or duties) of care to protect them from the impacts of climate change and that the Commonwealth breached that duty (or those duties) and thereby caused them to suffer loss and damage. This is where the applicants' case becomes complex.

31 The applicants framed their case in negligence in two alternative ways. The central allegation in the applicants' primary case was that the Commonwealth was required to, but failed to, set appropriate greenhouse gas emissions targets having regard to the best available science (the applicants' **primary** or **targets case**). The central allegation in the applicants' alternative case was that the Commonwealth was required to, but failed to, provide predictable and adequate funding for infrastructure, in particular seawalls, which would assist Torres Strait Islanders to adapt to the impacts of climate change (the applicants' **alternative** or **adaptation case**).

The applicants' primary or targets case

32 The applicants' primary case was, it would be fair to say, pleaded in somewhat broad, elaborate and, at times, convoluted terms. It will be necessary to examine the applicants' pleaded case in more detail later in these reasons. Expressed in very simple terms, however, the applicants' case was that the Commonwealth owed Torres Strait Islanders a duty to take reasonable steps to set greenhouse gas emissions targets which, having regard to the best available science in respect of climate change, would prevent or minimise the impacts of climate change in the Torres Strait Islands. That duty of care required the Commonwealth to

take reasonable steps to: identify, by reference to the best available science, the global temperature limit necessary to prevent or minimise many of the most dangerous impacts of climate change in the Torres Strait Islands; and identify a best available science target reflecting that temperature limit. The duty of care was also said to require the Commonwealth to implement measures which were necessary to reduce Australia's greenhouse gas emissions consistent with that best available science target.

33 The applicants contended that the Commonwealth breached that duty of care essentially because the emissions targets that were set by the Commonwealth in 2015, 2020, 2021 and 2022 were not based on, or were not in accordance with, the best available science and therefore did not, or would not, prevent or minimise the impacts of climate change on the Torres Strait. The applicants alleged, in that regard, that from at least 2014, the best available science indicated that, to avoid the worst impacts of climate change on small and low-lying islands, it would be necessary for the global community to limit or hold the long-term average global temperature increase to 1.5°C above pre-industrial levels. The applicants contended that there was broad scientific consensus that it was possible for nations such as Australia to calculate, by one of three different methodologies, their share or allocation of remaining cumulative greenhouse gas emissions which would be consistent with an emissions budget that would limit global warming to 1.5°C. The applicants' case was that, whichever of the three methodologies was adopted in Australia, the greenhouse gas emissions targets that were set by the Commonwealth in 2015, 2020, 2021 and 2022 were inconsistent with Australia's budget or allocation of remaining greenhouse gas emissions consistent with limiting global warming to 1.5°C above pre-industrial levels.

34 In short, the applicants claimed that the emissions targets set by the Commonwealth were not in keeping with the best available science concerning climate change and its impacts. That is because they were inconsistent with, and would not contribute to the achievement of, the goal of keeping the global temperature increase to 1.5°C above pre-industrial levels, which the best available science indicated was necessary to avoid the worst impacts of climate change, including for Torres Strait Islanders. Indeed, the applicants went so far as to contend that the Commonwealth failed to have any regard at all to the best available science when setting its emissions targets.

35 The applicants' case was that the Commonwealth's breach of its duty of care in respect of the setting of appropriate emissions targets caused the Torres Strait Islanders to suffer loss and

damage. That loss and damage included physical damage arising from inundation events, and damage relating to the inability to effectively practise their Ailan Kastom. The applicants advanced the following seven-point chain of causation in that regard.

36 First, there is a near-linear relationship between increased global emissions of greenhouse gases and global temperature increases.

37 Second, at relevant timescales, a tonne of CO₂ or CO₂ equivalent greenhouse gas contributes to global temperature increases irrespective of when, where and by whom it was emitted.

38 Third, it is therefore the cumulative effect of global greenhouse gas emissions that is the cause of global temperature increases.

39 Fourth, the impacts of climate change in the Torres Strait Islands are caused by global temperature increases.

40 Fifth, emissions from Australia are a contributing cause of the impacts of climate change on the Torres Strait Islands, in the sense that emissions from Australia have contributed to the cumulative effect of global greenhouse gas emissions, and therefore contributed to global temperature increases.

41 Sixth, if the Commonwealth had not failed to take reasonable steps in respect of the setting of appropriate emissions targets based on the best available science, Australia's greenhouse gas emissions would have decreased, which in turn would have lessened its causal contribution to the impacts of climate change on the Torres Strait Islands.

42 Seventh, the Commonwealth's breach of its duty of care in respect of the setting of greenhouse gas targets therefore materially contributed to the harm suffered in the Torres Strait Islands as a result of the impacts of climate change.

43 In short, the applicants' case was that the Commonwealth's failure to set appropriate emissions targets in accordance with the best available science meant that more greenhouse gases were emitted by Australia than would otherwise have been the case and that those additional emissions contributed to global warming and its impacts on the Torres Strait Islands. According to the applicants, it matters not that it may not be possible to measure or quantify the effect that the additional emissions may have had on global temperature increases, or the specific impact that the increase in global temperature referable to the increased emissions may have had on climate change in the Torres Strait. That is because

climate science establishes that the increased emissions by any nation have some effect on global temperature increases and therefore some climate change impact.

44 As for the loss and damage suffered by the applicants and other Torres Strait Islanders, the applicants' case ultimately focussed primarily on what was said to be the collective loss of fulfilment of Ailan Kastom suffered by all Torres Strait Islanders arising from the damage to or degradation of the land and marine environment of the Torres Strait Islands. There was very limited evidence in respect of damage to the applicants' personal or real property.

The applicants' alternative or adaptation case

45 The applicants' alternative case in negligence against the Commonwealth was also initially expressed in very broad and general terms. The applicants alleged that the Commonwealth had failed to take reasonable steps to implement "adaptation measures" to prevent or minimise the current and projected impacts of climate change on the Torres Strait Islands. The adaptation measures were initially said to include: adequate infrastructure to protect the Torres Strait Islands from the impacts of sea level rise, storm surges and flooding; adequate infrastructure to protect Torres Strait Islanders from the impacts of heatwaves; and "such other measures as are reasonably necessary to protect" the land and marine environment of the Torres Strait Islands, the cultural and customary rights of Torres Strait Islanders, and the health and safety of Torres Strait Islanders.

46 Ultimately, however, the applicants were effectively compelled to fall back on a far more limited case which essentially focussed on what were said to be inadequacies or deficiencies in the Commonwealth's provision of funding for the construction of seawalls on some of the low-lying islands in the Torres Strait.

47 The applicants alleged that the Commonwealth owed a duty of care to Torres Strait Islanders to take reasonable care to protect them against marine inundation and erosion causing property damage, loss of fulfilment of Ailan Kastom, and injury, disease or death. That duty of care was said to require the Commonwealth to take reasonable steps to provide predictable and adequate funding for the construction of seawalls on Torres Strait Islands, and to lead, coordinate and establish a coherent plan for the provision of funding for the protection of Torres Strait Islanders from the adverse effects of sea level rise, inundation and erosion through the construction of seawalls.

48 The applicants' case was that the Commonwealth breached that duty of care because it failed to take any, or any reasonable, steps, to provide predictable and adequate funding to complete planned seawall projects, or to lead and coordinate a coherent plan in respect of the construction of seawalls, on Saibai, Boigu, Poruma, Iama, Masig and Warraber islands.

49 As for causation and damage, the applicants contended that the Commonwealth's breach of its duty of care in respect of the funding of seawalls caused Torres Strait Islanders to collectively suffer a loss of fulfilment of Ailan Kastom arising from damage to, or degradation of, the land and marine environment on the islands in question.

The relief sought by the applicants

50 The applicants sought damages from the Commonwealth. They also sought declaratory and injunctive relief.

51 The applicants asked the Court to make two declarations. The first declaration was to the effect that the Commonwealth owes Torres Strait Islanders a duty of care to take reasonable steps to protect them, their traditional way of life and the marine environment in and around the Torres Strait Islands, from the current and projected impacts of climate change. The second declaration was that the Commonwealth had breached that duty of care.

52 The injunction sought by the applicants would, if made, compel the Commonwealth to:

... implement such measures as are necessary to:

- a. protect the land and marine environment of the Torres Strait Islands and the cultural and customary rights of the Torres Strait Islanders, including the Applicants and Group Members, from GHG [greenhouse gas] emissions into the Earth's atmosphere;
- b. reduce Australia's GHG emissions consistent with the Best Available Science Target; and
- c. otherwise avoid injury and harm to Torres Strait Islanders, including the Applicants and the Group Members, from GHG emissions into the Earth's atmosphere.

53 The basis upon which that injunction was sought was that the Commonwealth's breach of duty was ongoing and that, unless restrained, that ongoing breach of duty would continue to cause Torres Strait Islanders to suffer further loss and damage.

The Commonwealth's defence

54 The Commonwealth did not dispute or question much of the climate science that lay at the heart of the applicants' case. It also did not dispute that climate change presents serious

threats and challenges to the environment, the Australian community, and the world at large. Nor did it dispute that the Torres Strait Islands were and are particularly vulnerable to the impacts of climate change, or that some of those impacts have already been felt in that region. As discussed in more detail later, the Commonwealth was correct to make those concessions. The science of climate change is now broadly accepted and doubted by only those on the very fringes of political and scientific debate. The impacts of climate change are undeniable, as is the particular vulnerability of coastal and island communities and their inhabitants.

55 The central tenet of the Commonwealth’s defence to the applicants’ case was that the tort of negligence is an inappropriate and unsuitable vehicle by which to challenge decisions and actions which involve matters of high or core government policy. The Commonwealth contended that its actions in response to climate change, including the setting of emissions reductions targets and the funding of infrastructure to meet the challenges posed by climate change, were matters of high or core government policy and therefore should not be made the subject of a duty of care. The Commonwealth also contended that it did not in any event owe any such duty or duties of care to Torres Strait Islanders as alleged by the applicants. It also denied that its decisions and actions in response to climate change and its impacts breached any such duty or duties of care and denied that any deficiencies in its decisions or actions in that regard caused Torres Strait Islanders to suffer any compensable loss or damage.

The defence to the primary or targets case

56 The Commonwealth’s defence to the applicants’ case based on the alleged failure by it to set appropriate greenhouse gas emissions targets by reference to the best available science included, in summary, the following propositions.

57 First, the Commonwealth did not owe Torres Strait Islanders any duty of care concerning the setting of appropriate emissions targets, or the implementation of any such targets, essentially because Australia’s response to the global threat posed by climate change, including the setting and implementation of greenhouse gas emissions targets, involved “matters of high government policy, which are unsuited to curial assessment according to the standards of reasonableness”. The Commonwealth also contended that it owed no such duty of care to Torres Strait Islanders because the risk of harm from its conduct was not reasonably foreseeable, and it lacked the necessary control over the relevant risk of harm to Torres Strait Islanders from the impacts of climate change.

- 58 Second, even if the Commonwealth owed Torres Strait Islanders such a duty of care, it did not breach that duty of care because the setting of a greenhouse gas emissions reduction target is “a question of policy or a value judgement for each country, and there is no consensus approach”. It submitted, in that regard, that there was no consensus that emissions reduction targets must only be set by reference to the best available science. Rather, countries, including Australia, could reasonably set their emissions reductions targets having regard to numerous factors including “economic, social, political and practical factors”. The Commonwealth contended that the targets it set were “reasonable in light of those factors”.
- 59 Third, even if the Commonwealth breached the alleged duty of care relating to the setting and implementation of emissions reduction targets, the applicants had not shown that the targets that were set by the Commonwealth resulted in more greenhouse gas emissions than would have been the case if targets had been set having regard to the best available science. That was said to be because the applicants had adduced no evidence concerning the measures that the Commonwealth could and should have taken to meet those best available science targets. The Commonwealth also contended that the release of additional greenhouse gas emissions into the atmosphere that may have resulted from the allegedly inadequate emissions targets “at most cause[d] an increase in risk, and not a contribution to harm” and that, in any event, any increase in risk was not material because it could not be “measured by scientific instruments, let alone discerned by humans”. In short, the Commonwealth contended that the applicants had not established that any breach of the alleged duty of care had caused them or the group members to suffer any harm or damage.
- 60 Fourth, even if the Court found that the Commonwealth had breached the alleged duty of care, the applicants had not adduced any evidence of any damage to their personal property, or any personal injury, disease or death suffered by them. As for the allegation that Torres Strait Islanders had suffered a loss of fulfilment of Ailan Kastom, the Commonwealth contended that any such loss was not compensable under the common law of negligence and that any finding of liability for such loss would be contrary to principle.
- 61 Fifth, even if the Court found that the applicants had a claim against the Commonwealth in negligence, the declaratory and injunctive relief sought by the applicants should not be granted. The declaratory relief should not be granted because, in the absence of any finding that individual group members had suffered loss or damage, the proposed declarations would be in the nature of impermissible interlocutory declarations. The injunctive relief sought by

the applicants should not be granted because of its subjective and imprecise terms and the “array of practical difficulties that would arise in seeking to identify the steps required for compliance and supervising adherence to the terms of the order”.

The defence to the alternative or adaptation case

62 The Commonwealth’s defence to the applicants’ case based on the alleged failure by it to implement appropriate adaptation measures involving the funding of seawalls included, in summary, the following propositions.

63 First, the Commonwealth did not owe Torres Strait Islanders any duty of care which required it to take reasonable steps to provide predictable or adequate funding for the construction of seawalls on the Torres Strait Islands, or to lead, coordinate and establish a coherent plan for the provision of funding for the protection of the Torres Strait Islanders through the construction of seawalls. That was said to be because the imposition of any such duty would require the Court to assess the reasonableness of the arrangements between the three tiers of government concerning the allocation of responsibilities in respect of climate change adaptation measures, including the funding of infrastructure, and Commonwealth decision-making regarding the allocation of its budget. The Commonwealth contended that those were matters of “high policy” which would be unsuitable for determination by the Court.

64 Second, if any such duty of care was owed, the Commonwealth did not breach that duty of care. The Commonwealth contended, in that regard, that it considered whether to provide funding for the seawalls project on certain islands in the Torres Strait Islands in accordance with the legal and policy framework applicable to the provision of such funding. It ultimately provided all the funds that were sought from it for the project. It therefore could not be said that it failed to provide predictable or adequate funding for the project.

65 Third, the applicants had not demonstrated that they, or Torres Strait Islanders generally, had suffered any loss or damage which was caused by any breach of the alleged duty of care in respect of the funding of adaptation measures. The Commonwealth contended that there was no evidence that the applicants had suffered any damage to their property, or had suffered any personal injury, as a result of any breach of the adaptation or alternative duty of care. As for the alleged loss of fulfilment of Ailan Kastom, the Commonwealth contended that there was no authority which supported the proposition that harm of that sort was compensable under the common law of negligence.

66 Fourth, the declaratory and injunctive relief sought by the applicants was not available in respect of the alleged adaptation or alternative duty of care, and its breach, for the same reasons as those given in respect of the alleged targets duty of care and breach.

The common questions

67 After some considerable discussion and debate, the parties eventually agreed on the questions common to all group members that the Court could and should answer at this stage of the representative proceeding. The agreed common questions obviously did not, and did not endeavour to, include every factual question that would need to be determined for the purposes of answering any of the questions. The capitalised terms in the questions are terms that are defined in the final iteration of the applicants' pleading (the Third Further Amended Statement of Claim or 3FASOC). Those defined terms will be explained shortly.

68 The agreed common questions are as follows.

Duty of care

1. Has climate change had and does it continue to have any or all of the impacts described in paragraph [57] of the 3FASOC and the particulars thereto (the Current Impacts of Climate Change in the Torres Strait)?
2. Will climate change in the future have any of the impacts described in paragraph [59] of the 3FASOC and the particulars thereto (the Projected Impacts of Climate Change in the Torres Strait) if Global Temperature Increase exceeds the Global Temperature Limit?
3. At any relevant time, did or does the Commonwealth owe a duty of care to Torres Strait Islanders to take reasonable steps to:
 - (a) protect Torres Strait Islanders; and/or
 - (b) protect Torres Strait Islanders' traditional way of life, including taking steps to preserve *Ailan Kastom*; and/or
 - (c) protect the marine environment;
 - (d) from the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands?(See paragraph [81] of the 3FASOC)
4. If the answer to question 3 is 'yes', did or does any such duty of care require the Commonwealth to take reasonable steps to ensure that, having regard to the Best Available Science, it:
 - (a) identifies the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands;
 - (b) identifies the risk, scope and severity of the Current Impacts of

Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands;

- (c) identifies the Global Temperature Limit necessary to prevent or minimise many of the most dangerous Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands;
- (d) identifies a Best Available Science Target reflecting the Global Temperature Limit identified at subparagraph (c) above to prevent or minimise the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands; and
- (e) implements such measures as are necessary to reduce Australia's GHG emissions consistent with a Best Available Science Target identified at subparagraph (d) above?

(See paragraph [82] of the 3FASOC)

Alternative duty of care

5. At any relevant time, did or does the Commonwealth owe a duty of care to Torres Strait Islanders to take reasonable care to protect against marine inundation and erosion causing:

- (a) property damage;
- (b) loss of fulfilment of *Ailan Kastom*; and/or
- (c) injury, disease or death?

(See paragraph [81A] of the 3FASOC)

6. If the answer to question 5 is 'yes', did or does such duty of care require the Commonwealth to take reasonable steps to:

- (a) provide access to predictable funding, including additional funding as required, that was sufficient to construct seawalls on the Torres Strait Islands;
- (b) lead and coordinate and establish a coherent plan for the provision of funding for the protection of the Torres Strait Islanders from the adverse effects of sea level rise, inundation and erosion through the construction of seawalls?

as part of the Seawalls Project Stage 1 and Stage 2 on Saibai, Boigu, Poruma, Iama, Masig and Warraber (the Seawalls Projects).

(See paragraph [82A] of the 3FASOC, the particulars set out in the applicants' letters dated 12 November 2023 and 20 November 2023 and his Honour's rulings on 14 and 23 November 2023)

(Note: seawalls includes bunds, wave return walls, geotextile bags and associated coastal protection infrastructure)

Breach of duty of care

7. If the answer to questions 3 and 4 is 'yes', did the Commonwealth breach the duty of care by failing to take any, or any reasonable steps to ensure that,

having regard to the Best Available Science, it:

- (a) identified the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands;
- (b) identified the risk, scope and severity of the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands;
- (c) identified the Global Temperature Limit necessary to prevent or minimise many of the most dangerous Current Impacts of Climate Change in the Torres Strait Islands and Projected Impacts of Climate Change in the Torres Strait Islands;
- (d) identified a Best Available Science Target reflecting the Global Temperature Limit identified at subparagraph (c) above to prevent or minimise the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands; and
- (e) implemented such measures as are necessary to reduce Australia's GHG emissions consistent with a Best Available Science Target identified at subparagraph (d) above;

when:

- (f) setting and maintaining Australia's 2030 Target;
- (g) setting and maintaining Australia's Re-affirmed 2030 Target;
- (h) setting and maintaining Australia's 2050 Target;
- (i) setting and maintaining Australia's Updated 2030 Target?

(See Paragraphs [82] and [83] of the 3FASOC and the particulars thereto)

8. If the answer to question 7 is 'yes', is there an ongoing breach of the duty of care?

(See paragraph [89] of the 3FASOC)

Breach of alternative duty of care

9. If the answer to questions 5 and 6 is 'yes', did the Commonwealth breach the alternative duty of care by failing to take any, or any reasonable steps to:

- (a) provide predictable funding necessary to complete all planned seawalls projects;
- (b) lead and coordinate and establish a coherent plan for the provision of funding for the protection of the Torres Strait Islanders from the adverse effects of sea level rise, inundation and erosion through the construction of seawalls;

as part of the Seawalls Project Stage 1 and Stage 2 on Saibai, Boigu, Poruma, Iama, Masig and Warraber (the Seawalls Projects).

(See paragraphs [82A] and [83A] of the 3FASOC, the particulars set out in the applicants' letters dated 12 November 2023 and 20 November 2023 and

his Honour’s rulings on 14 and 23 November 2023)

10. If the answer to question 9 is ‘yes’, is there an ongoing breach of the alternative duty of care?

(See paragraph [89] of the 3FASOC)

Causation, loss, and damage

11. If the answer to question 7 is ‘yes’, was the breach of the duty of care a cause of Torres Strait Islanders collectively suffering loss of fulfilment of *Ailan Kastom* arising from damage to or degradation of the land and marine environment of the Torres Strait Islands?

(See paragraph [86] of the 3FASOC)

(Note: this question does not address any specific claims of loss or damage that the applicants or any specific group member may have)

12. If the answer to 8 is ‘yes’, will the ongoing breach of the duty of care, if not restrained, continue to be a cause of Torres Strait Islanders collectively suffering loss of fulfilment of *Ailan Kastom* arising from damage to or degradation of the land and marine environment of the Torres Strait Islands?

(See paragraph [86], [87] and [89] of the 3FASOC and the particulars thereto)

(Note: this question does not address any specific claims of any ongoing loss or damage that the applicants or any specific group member may have)

13. If the answer to question 9 is ‘yes’, was the breach of the alternative duty of care a cause of Torres Strait Islanders collectively suffering loss of fulfilment of *Ailan Kastom* arising from damage to or degradation of the land and marine environment of the Torres Strait Islands?

(See paragraph [86] of the 3FASOC and the particulars thereto)

(Note: this question does not address any specific claims of loss or damage that the applicants or any specific group member may have)

14. If the answer to question 10 is ‘yes’, will the ongoing breach of the alternative duty of care, if not restrained, continue to be a cause of Torres Strait Islanders collectively suffering loss of fulfilment of *Ailan Kastom* arising from damage to or degradation of the land and marine environment of the Torres Strait Islands?

(See paragraph [86] and [89] of the 3FASOC and the particulars thereto)

Relief

15. What statutory law applies to the claims of the applicants and group members?

(See paragraphs [1b], [1c] and [86e] of the Further Amended Defence)

16. Is the loss of fulfilment of *Ailan Kastom*, arising from damage to or degradation of the land and marine environment of the Torres Strait Islands compensable under the law of negligence?

17. Can the declaratory and injunctive relief sought by the applicants be granted and, if so, should it be granted?

(See prayers 1, 2 and 3 in the Amended Originating Application)

69 It will be readily apparent that, to make any real sense of the common questions, it is necessary to have regard to some of the defined terms in the pleading. Regrettably, the applicants' pleading is dizzyingly and bafflingly replete with defined terms. Many of the defined terms which are included in the common questions in turn include further defined terms, which in turn include further defined terms. It is unnecessary to reproduce or explain the complete labyrinth of defined terms. That would in any event be productive of confusion. What follows is an attempt to unpack and describe the main defined terms so that some sense may be made of the common questions.

70 The term "Current Impacts of Climate Change in the Torres Strait Islands" is defined in [57] of the pleading as including the following "Impacts of Climate Change" (which term is defined in 3FASOC [10(c) and (d)] as comprising increasing ocean acidity and the impacts of "Global Temperature Increase", which term is in turn defined in 3FASOC [9] as "the increase in global average surface temperature above pre-industrial levels") at the "Current Warming Level" (which is defined in 3FASOC [24(b)] as being approximately 1.2°C above pre-industrial levels): higher average surface temperature than the "Current Warming Level" (which is defined as being "approximately 1.2°C above pre-industrial levels" and as being "unprecedented in at least 125,000 years": 3FASOC [24(b) and (c)]); ocean acidification and increase in "Ocean Temperature" (defined as meaning "the increase in the global average ocean surface temperature": 3FASOC [10(d)(i)]); sea level rise, with consequential impacts including flooding and coastal erosion; increase in the frequency, size and/or intensity of extreme weather events such as terrestrial and marine heatwaves, severe storms, and flooding; harm and destruction of ecosystems and non-human species; and harm to human health. The pleading contains more detailed particulars of those impacts. It is, however, unnecessary for present purposes to reproduce those further particulars.

71 The term "Projected Impacts of Climate Change in the Torres Strait Islands" is defined in [59] of the pleading as meaning (or including) the following Impacts of Climate Change (defined earlier) that are projected to occur in the Torres Strait Islands if Global Temperature Increase (defined earlier) exceeds the Global Temperature Limit (defined in 3FASOC [31] as, in effect, holding the long-term Global Temperature Increase to below 1.5°C): further increase in average surface temperature, above the projected Global Temperature Increase[s] (defined earlier); further ocean acidification and increases in Ocean Temperature (defined earlier); further sea level rise and associated impacts, including inundation, erosion, and

contamination of freshwater sources; further increase in the number of intense tropical cyclones, and incidence, intensity and duration of other extreme weather events, such as heatwaves, severe storms and flooding, and associated impacts such as personal injury, property damage, erosion, and impacts to infrastructure, emergency services facilities and roads; further harm and destruction of ecosystems and non-human species, including coral reefs, marine ecosystems and species and mangroves and coastal wetlands; and the greater likelihood of injury, disease, and death due to extreme weather events, increased likelihood of undernutrition resulting from diminished food production, and increased risks from food and water borne diseases and vector-borne diseases.

- 72 The term Ailan Kastom is defined in [54] and [55] of the 3FASOC as meaning the “distinctive customary culture”, or “body of customs, traditions, observances and beliefs of Torres Strait Islanders generally, or of a particular community or group of Torres Strait Islanders”, including: “connection to the marine and terrestrial environment, including as part of cultural ceremony”; “participating in cultural ceremony”; “use of plants and animals for food, medicine and cultural ceremony”; “burying Torres Strait Islanders in local cemeteries and performing mourning rituals”; “visiting sacred sites, including on uninhabited islands”; and “dugong and marine turtle hunting, and other marine hunting and fishing”.
- 73 The term “Best Available Science” is defined in [22] of the 3FASOC as meaning reports of the Intergovernmental Panel on Climate Change (**IPCC**), World Meteorological Organisation (**WMO**), United Nations Environment Programme (**UNEP**), the Commonwealth Scientific and Industrial Research Organisation (**CSIRO**), the (Australian) Bureau of Meteorology (**BOM**) and the (Australian) Climate Change Authority (**CCA**) [that] “represent the best available science on the causes and Impacts of Climate Change and the necessary actions to avoid the most dangerous Impacts of Climate Change”.
- 74 The term “Best Available Science Target” is defined in [45] of the 3FASOC as meaning the “necessary GHG [greenhouse gas] or CO₂ emissions reductions for each country to do its part consistent with staying within a Global GHG Budget” (defined as “the total global GHG emissions that can be released into the atmosphere within a particular time period to give a specified probability of limiting Global Temperature Increase to a specified level”: 3FASOC [43A]) “[that] can be determined on the basis of Best Available Science”.
- 75 The term “Australia’s 2030 Target” is defined in the particulars to [50] of the 3FASOC as being a GHG emissions reduction target, adopted by the Commonwealth in 2015, of 26 to

28% below 2005 levels by 2030. The term “Australia’s Re-affirmed 2030 Target” is effectively defined as the Commonwealth’s re-affirmation, in 2020, of Australia’s 2030 Target. The term “Australia’s 2050 Target” is defined as meaning a commitment given by the Commonwealth in 2021, to achieve “Net Zero Emissions” (defined as the point where “a balance is reached between the GHGs emitted and removed from the atmosphere”: 3FSOC [11(b)(ii)]) by 2050. The term “Australia’s Updated 2030 Target” is defined as meaning the Commonwealth’s adoption, in 2022, of a GHG emissions reduction target of 43% below 2005 levels by 2030.

76 While that may all appear to be somewhat confusing at this stage, a further attempt is made later in these reasons to unravel or unpack the applicants’ pleaded case, both in respect of the primary or targets duty case and the alternative duty or adaptation case. The precise nature of the common question will then hopefully be a bit easier to comprehend.

THE TORT OF NEGLIGENCE – RELEVANT PRINCIPLES

77 This is perhaps not the occasion to publish a lengthy dissertation on the law of negligence. The elements of the tort of negligence and the applicable legal principles in relation to those elements were not really in dispute in this case. It was the application of those principles to the unique and complex facts and circumstances of this case that was the main point of contention. It is nevertheless necessary to briefly identify the elements of the cause of action and the legal principles that apply in determining whether those elements have been made out. Before turning to those principles, it is necessary to briefly address common question 15, which is what, if any, statutory law applies to the claims of the applicants and group members?

The applicable law

78 The applicants contended that the law, including the relevant statutory law, of Queensland applied to this proceeding. In particular, they contended that the *Civil Liability Act 2003* (Qld) and the *Limitation of Actions Act 1974* (Qld) applied in respect of their claims in tort against the Commonwealth. The Commonwealth, however, contended that the law of the Australian Capital Territory (ACT) applied to this proceeding, including (potentially) the *Civil Law (Wrongs) Act 2002* (ACT) and the *Limitation Act 1985* (ACT). The parties ultimately agreed, however, that no substantive issue in the case turned upon the applicable law. The choice of law issue can accordingly be addressed in very brief terms.

79 The law governing questions of substance in tort claims is the *lex loci delicti* – the law of the place where the tort was committed. In *Dow Jones & Co Inc v Gutnick* (2002) 210 CLR 575, it was said (at [43]) that “locating the place of commission of a tort is not always easy” and that:

Attempts to apply a single rule of location (such as a rule that intentional torts are committed where the tortfeasor acts, or that torts are committed in the place where the last event necessary to make the actor liable has taken place) have proved unsatisfactory if only because the rules pay insufficient regard to the different kinds of tortious claims that may be made. Especially is that so in cases of omission. In the end the question is “where in substance did this cause of action arise”? **In cases, like trespass or negligence, where some quality of the defendant's conduct is critical, it will usually be very important to look to where the defendant acted, not to where the consequences of the conduct were felt.**

(Emphasis added; footnotes omitted.)

80 Where the conduct of the defendant which gives the plaintiff cause for complaint is said to involve an omission, the place of the cause for complaint may be “the place of the act or acts of the defendant in the context of which the omission assumes significance”: *Voth v Manildra Flour Mills Pty Ltd* (1990) 171 CLR 538 at 567 (Mason CJ, Deane, Dawson and Gaudron JJ) referring to *Jackson v Spittall* (1870) LR 5 CP 542 at 552. As the decision in *Voth* illustrates, the place where the defendant’s omission assumes significance is not necessarily the place where the plaintiff’s loss or damage occurred.

81 Each case turns on its own facts and it is generally not appropriate to reason on the basis of factual analogies.

82 In relation to the applicants’ primary or targets case, the conduct of the Commonwealth which gave the applicants cause for complaint was, in essence, the setting and communication of Australia’s greenhouse gas emissions reduction targets. The applicants’ central complaint is that in setting those targets, the Commonwealth failed to take certain steps that the applicants claimed the Commonwealth was required to take to meet the standard of care required of it. Ultimately, however, the Commonwealth’s conduct which was the cause of complaint was the making of decisions concerning the targets. That conduct essentially occurred in Canberra in the ACT. That is where the Commonwealth relevantly acted and is also the place where the Commonwealth’s alleged omissions assumed significance. It follows that the applicants’ cause of action in respect of the primary or targets duty of care in substance arose in the ACT.

- 83 Similarly, in relation to the applicants' alternative or adaptation case, the conduct of the Commonwealth which gave the applicants cause for complaint was the Commonwealth's decisions concerning the funding of seawalls in the Torres Strait Islands, or the manner or circumstances in which those decisions were made. The essence of the applicants' complaint, as ultimately articulated, was that the Commonwealth's decisions concerning the funding of the construction of the seawalls did not result in predictable or adequate funding. While the applicants also contended that the Commonwealth failed to take reasonable steps to lead, coordinate and establish a coherent plan for the provision of funding for the seawalls, the focus of the complaint was on the nature and content of the Commonwealth's funding decisions. Those decisions were made in Canberra in the ACT. That is where the Commonwealth relevantly acted. The applicants' cause of action in respect of the alternative or adaptation duty of care therefore in substance arose in the ACT.
- 84 It follows that in my view, the place where the Commonwealth's allegedly negligent conduct occurred was the ACT, not Queensland. It follows that the *lex loci delicti* is the ACT and that the applicable law is the law of the ACT.
- 85 It does not necessarily follow that the Civil Law (Wrongs) Act necessarily applies to this case. While that enactment generally applies to torts committed in the ACT, it does not apply in the case of torts allegedly committed by the Commonwealth. That is because s 27 of the *Australian Capital Territory (Self-Government) Act 1988* (Cth) provides that an enactment does not bind the Crown in the right of the Commonwealth unless the relevant regulations so provide. The Civil Law (Wrongs) Act is not prescribed in the relevant regulations and therefore does not apply in respect of the applicants' claims against the Commonwealth.
- 86 The Limitation Act, however, has been included in the *Australian Capital Territory (Self-Government) Regulations 1989* (Cth) (now repealed) and the *Australian Capital Territory (Self-Government) Regulations 2021* (Cth). The Limitation Act therefore binds the Crown in the right of the Commonwealth. The time limitations in the Limitation Act, which operate as substantive, not procedural, laws (see ss 55-57 of the Limitation Act and *John Pfeiffer Pty Ltd v Rogerson* (2000) 203 CLR 503 at [102]) therefore apply to the applicants' claims.
- 87 It follows that the common law applies to the applicants' tort claims against the Commonwealth, subject to the limitation periods which apply pursuant to ss 11 and 16B of the Limitation Act.

88 The following discussion of the applicable principles in respect of the applicants’ claims in negligence focus on the common law unless indicated otherwise.

Duty of care

89 The first element of the cause of action in negligence is that the respondent owes the applicant a duty of care not to cause the applicant to suffer loss or damage. A duty of care is a “duty of a specified person, or a person within a specified class, to exercise reasonable care within a specified area of responsibility to avoid specified loss to another specified person, or to a person within another specified class”: *Brookfield Multiplex Ltd v Owners Corporation Strata Plan 61288* (2014) 254 CLR 185 at [169] (Gageler J). A postulated duty of care must be framed as a duty to avoid causing the applicant to suffer loss or damage of a particular, legally recognised, kind: *Overseas Tankship (UK) Ltd v Morts Dock & Engineering Company Ltd (The Wagon Mound)* [1961] AC 388 at 425 (Viscount Simonds), cited in *Minister for the Environment v Sharma* (2022) 291 FCR 311 at [536] (Beach J); *Sutherland Shire Council v Heyman* (1985) 157 CLR 424 at 487.

90 There is no “particular formula or methodology or test the application of which will yield an answer to the question whether there exists in any given circumstance a duty of care, and if so, its scope or content”: *Caltex Refineries (Qld) Pty Ltd v Stavara* (2009) 75 NSWLR 649 at [102] (Allsop P, with whom Simpson J agreed). Where the posited duty of care is a novel one, in the sense that it does not fall within an accepted category of duty, the “proper approach is to undertake a close analysis of the facts bearing on the relationship between the plaintiff and the putative tortfeasor by references to the ‘salient features’ or factors affecting the appropriateness of imputing a legal duty to take reasonable care to avoid harm or injury”: *Caltex Refineries* at [102]; see also *Sharma* at [121] (Allsop CJ).

91 It was common ground that the duties of care that the applicants claim the Commonwealth owed Torres Strait Islanders are novel duties of care.

92 The so-called “salient features” that should generally be considered when determining whether it is appropriate to impute a duty of care include: the foreseeability of harm; the nature of the harm alleged; the degree and nature of control able to be exercised by the defendant to avoid harm; the degree of vulnerability of the plaintiff to harm from the defendant’s conduct, including the capacity and reasonable expectation of a plaintiff to take steps to protect itself; the degree of reliance by the plaintiff upon the defendant; any assumption of responsibility by the defendant; the proximity or nearness in a physical,

temporal or relational sense of the plaintiff to the defendant; the existence or otherwise of a category of relationship between the defendant and the plaintiff or a person closely connected with the plaintiff; the nature of the activity undertaken by the defendant; the nature or the degree of the hazard or danger liable to be caused by the defendant's conduct or the activity or substance controlled by the defendant; knowledge (either actual or constructive) by the defendant that the conduct will cause harm to the plaintiff; any potential indeterminacy of liability; the nature and consequences of any action that can be taken to avoid the harm to the plaintiff; the extent of imposition on the autonomy or freedom of individuals, including the right to pursue one's own interests; the existence of conflicting duties arising from other principles of law or statute; consistency with the terms, scope and purpose of any statute relevant to the existence of a duty; and the desirability of, and in some circumstances, need for conformance and coherence in the structure and fabric of the common law: *Caltex Refineries* at [103].

93 The list of potentially relevant salient features is not exhaustive and “should not, therefore, be treated as a shopping list, all the items of which must have application in a particular case”; rather, it should be approached as a “list of considerations which should be considered, as potentially relevant, depending on the kind of case before the Court”: *Caltex Refineries* at [172] (Basten JA, with whom Simpson J agreed). Nor should the features listed in *Caltex Refineries* be treated as a “catalogue to be used in the manufacture of a relationship of neighbourhood piece by piece” because it would “invite confusion and error to begin, at the granular level, augmenting and elaborating upon those features in order to fabricate a relationship warranting the imposition of the duty of care”: *Sharma* at [211] (Allsop CJ). Rather, the salient features should be used as an “analytical tool” or “frame of reference through which *existing relationships*, situated within their broader *social and legal context*, are to be examined”: *Sharma* at [211] (Allsop CJ).

94 What ultimately is required is a consideration of the totality of the relationship between the parties “to determine whether there exist[s] in the relationship the requisite closeness, control and vulnerability for that relationship to warrant the imposition of a duty of care by reference to the legal conception of neighbourhood and whether the relationship was suitable for the imposition of a duty capable of founding liability judged by reference to judicial or curial determination”: *Sharma* at [211] (Allsop CJ). The reference to the legal conception of neighbourhood, in this context, is of course a reference to the notion of neighbourhood or

proximity encapsulated by Lord Atkin’s seminal articulation of principle in *Donoghue v Stevenson* [1932] AC 562 (at 580):

The liability for negligence, whether you style it such or treat it as in other systems as a species of “culpa”, is no doubt based upon a general public sentiment of moral wrongdoing for which the offender must pay. But acts or omissions which any moral code would censure cannot in a practical world be treated so as to give a right to every person injured by them to demand relief. In this way rules of law arise which limit the range of complainants and the extent of their remedy. The rule that you are to love your neighbour becomes in law, you must not injure your neighbour; and the lawyer’s question, Who is my neighbour? receives a restricted reply. You must take reasonable care to avoid acts or omissions which you can reasonably foresee would be likely to injure your neighbour. Who, then, in law is my neighbour? The answer seems to be – persons who are so closely and directly affected by my act that I ought reasonably to have them in contemplation as being so affected when I am directing my mind to the acts or omissions which are called in question.

- 95 The notion of neighbourhood is “built on the human and societal relationship between the parties”: *Sharma* at [206] (Allsop CJ), citing *Mutual Life & Citizens’ Assurance Company Ltd v Evatt* (1968) 122 CLR 556 at 566.
- 96 The proper approach to determining whether it is “reasonable and in accordance with standards of the day to impose a duty that may lead to personal responsibility for compensation harmed by the (misconduct)” is to closely examine not only “all the facts attending the relationship between the parties, but also the legal relationship in which they are situated, together with legal policy and principle drawn from analogous or cognate cases”: *Sharma* at [206] and [207] (Allsop CJ).
- 97 The analysis of the relationship between the parties, through the lens of the salient features, should not overlook “[c]onsiderations of policy and of coherence”, which “are normative, and go to whether an individual ought to meet the description (in a legal sense) of neighbour, even if the individual’s actions may otherwise, seen through the analysis of individual salient features, seem sufficient”: *Sharma* at [211] (Allsop CJ). The importance of coherence, in this context, is that a court will not recognise a duty of care where to do so would “cut across other legal principles as to impair their proper application”, or where the duty “would not be compatible with other duties which the respondents owed”: *Sullivan v Moody* (2001) 207 CLR 562 at [53] and [55].
- 98 The recognition of novel duties of care should proceed incrementally and by analogy with existing categories of duty: *Heyman* at 481 (Brennan J); *Crimmins v Stevedoring Industry Finance Committee* (1999) 200 CLR 1 at [73], [77] (McHugh J) and [272] (Hayne J).

99 Following is a short discussion of the applicable principles in respect of the salient features that would appear to be of some relevance to the circumstances of this case.

Foreseeability

100 The question posed by the consideration of foreseeability at the stage of considering whether a duty of care exists is whether “it is reasonably foreseeable as a possibility that careless conduct of any kind on the part of the defendant may result in damage of some kind to the person or property of the plaintiff”: *Sharma* at [417] (Beach J). A “risk of injury flowing from a defendant’s action need only be real to be reasonably foreseeable, and it is no barrier to the existence of a duty of care that the probability of injury occurring is remote ... provided it is not far-fetched or fanciful”: *Sharma* at [425] (Beach J) citing *Overseas Tankship (UK) Ltd v Miller Steamship Company Pty Ltd (the Wagon Mound No 2)* [1967] 1 AC 617 at 642; and *Wyong Shire Council v Shirt* (1980) 146 CLR 40 at 46; see also *Sharma* at [329] (Allsop CJ).

Vulnerability

101 Vulnerability, in the context of the salient feature analysis, “is to be understood as a reference to the plaintiff’s inability to protect itself from the consequences of a defendant’s want of reasonable care, either entirely or at least in a way which would cast the consequences of loss on the defendant”: *Woolcock Street Investments Pty Ltd v CDG Pty Ltd* (2004) 216 CLR 515 at [23] (Gleeson CJ, Gummow, Hayne and Heydon JJ). The plaintiff’s vulnerability in that regard may arise from, among other things, “social, political or economic constraints”: *Woolcock* at [80] (McHugh J). The question is not whether the plaintiff is vulnerable in a “generalised sense”, but rather whether the defendant is vulnerable to the “relevant harm”, for example, personal injury: *Sharma* at [671] (Beach J).

Control

102 The consideration of control, in the context of the salient feature analysis, directs attention to “the degree and nature of control exercised by the [defendant] over the risk of harm that eventuated”: *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540 at [149] (Gummow and Hayne JJ). Control, in this context, may include legal control and control in a “practical sense”: *Agar v Hyde* (2000) 201 CLR 552 at [81] (Gaudron, McHugh, Gummow and Hayne JJ). The “factor of control is of fundamental importance in discerning a common law duty of care on the part of a public authority”: *Graham Barclay Oysters* at [150] (Gaudron, McHugh, Gummow, and Hayne JJ). The fact that the defendant has “[c]ontrol

over some aspect of a relevant physical environment is unlikely to found a duty of care where the relevant harm results from the conduct of a third party beyond the defendant's control": *Graham Barclay Oysters* at [152] (Gaudron, McHugh, Gummow and Hayne JJ). Moreover, an authority is less likely to be considered to have a "significant and special measure of control" over the risk of harm, such as to warrant the imposition of a duty of care, where control over the risk of harm that eventuated was fragmented, or where there were several intervening levels of decision-making between the conduct of that authority and the harm suffered by the plaintiff: *Graham Barclay Oysters* at [154] (Gaudron, McHugh, Gummow and Hayne JJ); *Agar v Hyde* at [81]. That said, control need not be exclusive, and in some circumstances a duty may be imposed on public authority even if a private entity has more control than that authority: *Sharma* at [660] (Beach J).

Reliance and assumption of responsibility

103 The fact that a public authority "knows or ought to know that a member of the public relies on it to exercise its power to protect his or her interests" will militate in favour of imputing a duty of care: *Graham Barclay Oysters* at [81] (McHugh J) citing *Heyman* at 461. A public authority may, in some circumstances, "place itself in such a position that others rely on it to take care for their safety so that the authority comes under a duty of care calling for positive action": *Heyman* at 461 (Mason J). Reliance, in this context, however, means actual reliance, not general reliance: see *Pyrenees Shire Council v Day* (1998) 192 CLR 330 at [157] (Gummow J); see also *Sharma* at [340] (Allsop CJ). Reliance is not, however, always an essential requirement and its primary significance is in cases of alleged negligent provision of advice: *Pyrenees Shire Council* at [158] (Gummow J).

Determinacy

104 A duty of care is unlikely to be imputed if the potential liability of the putative tortfeasor would be indeterminate, for example because: the nature of the harm cannot be ascertained; or the number of persons who may be harmed cannot be ascertained; or the nature of the likely claims cannot be ascertained; or the time over which a person may suffer relevant loss, and therefore become a claimant, is uncertain: *Sharma* at [342] (Allsop J) and [706]-[712] (Beach J). It is, however, "not the size or number of claims that is decisive in determining whether potential liability is so indeterminate that no duty of care is owed" – rather "[l]iability is indeterminate only when it cannot be realistically calculated": *Perre v Apand Pty Ltd* (1999) 198 CLR 180 at [107].

Coherence

105 The role and significance of coherence in determining whether it is appropriate to impose a postulated duty of care was referred to earlier. Coherence may be a particularly important consideration when the alleged duty of care is said to be owed by a government or public authority and involves matters of policy. That issue is the next topic for consideration. It suffices at this point to note that in *Sharma*, Allsop CJ observed (at [244]) that coherence in this context “pertains to the consistency and harmony (logically and normatively) of the legal system as a whole” and (at [245]) that the posited duty of care (in Australia at least) “must be coherent with the underlying constitutional system of federally structured democratic responsible government and the domain of the Judicature therein in the quelling of controversies between subjects and subjects, and subjects and the state in matters properly justiciable and amenable to resolution by reference to legal standards and proof brought forward by the parties”.

Duties of care allegedly owed by governments which involve politics or policy

106 Significant and difficult issues can arise where the alleged duty of care owed by a government involves questions of core or high-level policy. Those issues may arise at various stages of analysis, including at the stage of considering whether the relevant governmental action should be subject to a duty of care, the stage of considering the standard of care and whether it has been breached, and at the causation stage. The issues thrown up by such cases have also on occasion been said to involve questions of justiciability. While the issues in this area may arise at different levels of inquiry, it is convenient and appropriate to first consider them in the context of the principles applicable to the existence or imposition of a duty of care. The question whether it is appropriate to defer the consideration of these issues to a later or different stage of inquiry, either generally, or specifically in the circumstances of this case, will be considered later.

107 The question at the duty stage, put simply, is whether it is appropriate to impose a duty of care on the government in circumstances where the imposition of the duty would involve the judicial resolution of the reasonableness of government conduct involving matters of politics or high or core government policy. Those issues are squarely raised by the facts and circumstances of this case.

108 The nature and significance of the issues that may arise in those circumstances were explained in the following terms by Gleeson CJ in *Graham Barclay Oysters* (at [6]):

Citizens blame governments for many kinds of misfortune. When they do so, the kind of responsibility they attribute, expressly or by implication, may be different in quality from the kind of responsibility attributed to a citizen who is said to be under a legal liability to pay damages in compensation for injury. Subject to any insurance arrangements that may apply, people who sue governments are seeking compensation from public funds. They are claiming against a body politic or other entity whose primary responsibilities are to the public. And, in the case of an action in negligence against a government of the Commonwealth or a State or Territory, they are inviting the judicial arm of government to pass judgment upon the reasonableness of the conduct of the legislative or executive arms of government; conduct that may involve action or inaction on political grounds. Decisions as to raising revenue, and setting priorities in the allocation of public funds between competing claims on scarce resources, are essentially political. So are decisions about the extent of government regulation of private and commercial behaviour that is proper. At the centre of the law of negligence is the concept of reasonableness. **When courts are invited to pass judgment on the reasonableness of governmental action or inaction, they may be confronted by issues that are inappropriate for judicial resolution, and that, in a representative democracy, are ordinarily decided through the political process.** Especially is this so when criticism is addressed to legislative action or inaction. Many citizens may believe that, in various matters, there should be more extensive government regulation. Others may be of a different view, for any one of a number of reasons, perhaps including cost. **Courts have long recognised the inappropriateness of judicial resolution of complaints about the reasonableness of governmental conduct where such complaints are political in nature.**

(Emphasis added.)

109 It will be necessary to return to the way Gleeson CJ addressed those issues in *Graham Barclay Oysters*. Before doing so, however, it is useful to address some earlier cases where courts endeavoured to grapple with the issues by drawing a distinction between government conduct which was said to involve matters of “policy”, in respect of which it was generally considered to be inappropriate to impose a duty of care, and government conduct which was said to involve “operational matters”, in respect of which it was generally considered to be appropriate (or at least not inappropriate) to impose a duty of care.

The “policy” versus “operational” distinction

110 The distinction between government conduct involving matters of policy and government conduct involving operational matters may be traced back to the judgment of Lord Romer in *East Suffolk Rivers Catchment Board v Kent* [1941] AC 74. The plaintiff in that case claimed that a local authority was liable to him for damage to his land caused by flooding. The flooding of the plaintiff’s land occurred because it had taken the public authority such a long time to repair a seawall which was supposed to protect the property from flooding. The House of Lords held (Lord Atkin dissenting) that the local authority did not owe the plaintiff a duty of care, mainly because the authority had only been conferred with a power, not a duty, to repair the seawall. In the course of so finding, Lord Romer (at 102-103) approved the

following statement by du Parcq LJ, who was in dissent in the Court of Appeal (*Kent v East Suffolk Rivers Catchment Board* [1940] 1 KB 319 at 338):

... when Parliament has left it to a public authority to decide which of its powers it shall exercise, and when and to what extent it shall exercise them, there would be some inconvenience in submitting to the subsequent decision of a jury, or a judge of fact, the question whether the authority had acted reasonably, a question involving the consideration of matters of policy and sometimes the striking of a just balance between the rival claims of efficiency and thrift.

- 111 In *Anns v Merton London Borough Council* [1978] AC 728, the House of Lords held that a local council, upon whom had been conferred a power to inspect the foundations of a building, owed the lessees of the building a duty of care to exercise reasonable care in making the inspection. Lord Wilberforce (with whom Lord Diplock, Lord Simon of Glaisdale and Lord Russell of Killowen agreed) referred, with apparent approval, to the statement of du Parcq LJ in *Kent* (Court of Appeal) and stated (at 754) that “public authorities have to strike a balance between the claims of efficiency and thrift ...whether they get the balance right can only be decided through the ballot box”. His Lordship did, however, distinguish *Kent* and held (at 755) that there was no “absolute rule” that a statutory duty may give rise to a duty of care, but a statutory power may not. In relation to the appropriateness of imposing a duty of care in respect of matters of policy, Lord Wilberforce said (at 754):

Most, indeed probably all, statutes relating to public authorities ... contain in them a large area of policy. The courts call this “discretion” meaning that the decision is one for the authority ... to make, and not for the courts. Many statutes also prescribe or at least presuppose the practical execution of policy decisions: a convenient description of this is to say that in addition to the area of policy or discretion, there is an operational area. Although this distinction between the policy area and the operational area is convenient, and illuminating, it is probably a distinction of degree; many “operational” powers or duties have in them some element of “discretion”. It can safely be said that the more “operational” a power or duty may be, the easier it is to superimpose upon it a common law duty of care.

- 112 The utility and validity of the distinction between policy and operational powers and duties has been questioned in numerous cases in both the United Kingdom and Australia. It would, however, go too far to say it has been completely jettisoned. Courts continue to recognise that it is or may be inappropriate to recognise or impose a duty of care on the government or public authorities in respect of some categories of government conduct which involves policy or politics. The vexing question is how to delineate or identify those categories of conduct.
- 113 In the United Kingdom, in *Rowling v Takaro Properties Ltd* [1988] AC 473, Lord Keith of Kinkel (at 501B-D) indicated that the presiding Lords in the Privy Council were inclined to the opinion that the distinction “does not provide a touchstone of liability, but rather is

expressive of the need to exclude altogether those cases in which the decision under attack is of such a kind that a question whether it has been made negligently is unsuitable for judicial resolution, of which notable examples are discretionary decisions on the allocation of scarce resources or the distribution of risks”. In *Stovin v Wise* [1996] AC 923, Lord Hoffman (at 951) stated that the “distinction between policy and operations is an inadequate tool with which to discover whether it is appropriate to impose a duty of care or not”. After quoting, with apparent approval, the statement of Lord Keith of Kinkel in *Rowling*, his Lordship noted that the distinction was often elusive because, in the case of public powers that provide public benefits which involve the expenditure of money, “[p]ractically every decision about the provision of such benefits, no matter how trivial it may seem, affects the budget of the public authority in either timing or amount”.

114 In *Barrett v Enfield London Borough Council* [2001] 2 AC 550, however, Lord Slynn of Hadley stated (at 571) that, while the distinction between policy and operational acts was not an “absolute test”, it nonetheless was a guide in determining the “ultimate question”, which was “whether the particular issues is justiciable or whether the court should accept that it has no role to play”. His Lordship observed, in that context, that the “greater the element of policy involved ... the more likely it is that the matter is not justiciable so that no action in negligence can be brought”.

115 In Australia, the distinction between policy and operational matters in this context was recognised as having some utility in *Heyman*, a case concerning an allegation that a council was liable to a landowner for either negligently inspecting, or failing to inspect, a building that was under construction. The question whether the council’s power to inspect involved policy which was not susceptible to the imposition of a duty of care arose for consideration. Chief Justice Gibbs, after referring to the decision in *Anns v Merton*, said (at 442) that the “distinction between the area of policy and the operational area is a logical and convenient one”. Justice Mason, after referring to *Anns v Merton* and several other authorities, said (at 468-469):

The standard of negligence applied by the courts in determining whether a duty of care has been breached cannot be applied to a policy decision, but it can be applied to operational decisions. Accordingly, it is possible that a duty of care may exist in relation to discretionary considerations which stand outside the policy category in the division between policy factors on the one hand and operational factors on the other....

The distinction between policy and operational factors is not easy to formulate, but the dividing line between them will be observed if we recognize that a public

authority is under no duty of care in relation to decisions which involve or are dictated by financial, economic, social or political factors or constraints. Thus budgetary allocations and the constraints which they entail in terms of allocation of resources cannot be made the subject of a duty of care. But it may be otherwise when the courts are called upon to apply a standard of care to action or inaction that is merely the product of administrative direction, expert or professional opinion, technical standards or general standards of reasonableness.

(Emphasis added.)

116 Justice Deane also appeared to accept the distinction, reasoning (at 500) that liability on the part of a public government body will commonly be precluded “in cases where what is involved are actions taken in the exercise of policy-making powers and functions of a quasi-legislative character”, but not precluded where “the relevant powers and functions are of a routine administrative or ‘operational’ nature”.

117 The issue was also considered by the High Court in *Pyrenees Shire Council*, a case involving a claim that a council was liable in negligence to tenants of premises destroyed by fire because the council was aware of a latent defect in the premises but had not exercised its statutory power to direct the owner or occupier to make it safe. Justice Toohey observed that there was a “fine line” between a council’s decision not to exercise a power having regard to policy considerations, and a decision made as a matter of day-to-day operations. His Honour also observed that the “policy/operational distinction” was not particularly appropriate or helpful in determining the appeal, though he went on to conclude that the case involved “operational decisions”. Justice Gummow held that the council was not exercising a “core area” of policymaking of the type referred to by Mason J in *Heyman*, or “policy-making powers and functions of a ‘quasi legislative character’ which Deane J identified in the same case”. And, while Gummow J opined that the “policy/operational classification” was “not useful”, he went on to observe that the class of case to which Deane J referred in *Heyman* (policy-making powers and functions of a quasi-legislative character) were “not cognisable by the tort of negligence”. Justice Kirby expressed the view that the “distinction between ‘policy’ decisions, which [courts] will leave to the public authority itself, and ‘operational’ decisions, which they will have competence to evaluate” was a distinction which was “far from perfect”, but nevertheless had “some validity”.

Beyond taxonomy and nomenclature

118 While the validity and utility of the distinction between “policy” and “operational” matters has been questioned, as can be seen from the authorities discussed thus far, it is nevertheless accepted that there are some aspects of governmental conduct or activity that are not

amenable or appropriate to subject to duties of care in negligence. The issue in respect of the distinction between policy and operational matters has largely been an issue of taxonomy or nomenclature. The task, then, is to identify the particular features or qualities that make some categories of governmental conduct not properly amenable to the imposition of a duty of care without being overly distracted by imprecise labels like “policy” and “operational”.

119 Reference was made earlier to the observations of Gleeson CJ in *Graham Barclay Oysters* about the issues that arise where governments are accused of negligence in respect of conduct which involves policy or political considerations. The reasoning in *Graham Barclay Oysters* assists in determining the types of governmental conduct that should not be subject to a duty of care.

120 The facts of *Graham Barclay Oysters*, shortly stated, were that a group of consumers who contracted hepatitis A after consuming oysters that had been harvested from a lake. Those oysters had been contaminated by pollutants in the lake. The consumers commenced proceedings in negligence against the oyster grower and distributor, as well as the local government authority in the locality of the lake and the State government. It suffices, for present purposes, to focus on the position of the State government. The High Court unanimously held that the State did not owe a duty of care to the consumers of the contaminated oysters.

121 Chief Justice Gleeson referred (at [12]) to the principle, flowing from s 5 of the *Crown Proceedings Act 1988* (NSW) and cognate statutory provisions, that “tortious liability of governments is, as completely as possible, assimilated to that of citizens” (footnote omitted), but that “there are limits to the extent to which that is possible” having regard to the “differences between the concerns and obligations of governments, and those of citizens”. The Chief Justice referred, in that context, to the attempt to distinguish between “matters of policy and operational matters” and the observations of Mason J in that regard in *Heyman* which were referred to earlier. His Honour then continued (at [13]-[15]):

One of the reasons why matters of the first kind are inappropriate as subjects of curial judgment about reasonableness is that they involve competing public interests in circumstances where, as Lord Diplock put it, “there is no criterion by which a court can assess where the balance lies between the weight to be given to one interest and that to be given to another”.

There are forms of governmental activity, which courts in the past endeavoured to describe by the term “operational”, where there is no reason for hesitating to assimilate the position of governments to that of citizens in imposing duties and standards of care. Such activity might involve budgetary considerations, but that does

not prevent such assimilation. Individuals and corporations also have to watch their budgets, and decisions about what is reasonable may have to take account of that. As the other extreme, the reasonableness of legislative or quasi-legislative activity is generally non-justiciable.

Here we are concerned with the problem of deciding, in a case where the government had certain powers, whether it is accountable, through the law of negligence, for not exercising its powers, or for not exercising them sufficiently. To apply that form of legal accountability requires the identification, not merely of a power, but also a duty; a duty of care owed to a citizen or a class of citizens. **A conclusion that such a duty of care exists necessarily implies that the reasonableness or unreasonableness of the inaction of which complaint is made is a legitimate subject for curial decision. Such legitimacy involves questions of practicality and of appropriateness. There will be no duty of care to which a government is subject if, in a given case, there is no criterion by reference to which a court can determine the reasonableness of its conduct.** That negative proposition leaves open other questions as to the circumstances in which the law will treat failure on the part of a public authority to exercise a power as a breach of a private law duty of care; but it is sufficient to resolve a substantial part of the case against the State in these proceedings.

(Emphasis added, footnote omitted.)

122 It can be noted from those observations of Gleeson CJ that one of the touchstones is whether the relevant government conduct or activity can readily be assimilated, or seen as relevantly analogous to, conduct that may be engaged in by a citizen or class of citizens. If it can, it may more readily be seen as amenable to the imposition of a duty of care. If not, the imposition of a duty of care may not be appropriate. Perhaps more fundamentally, the issue comes down to whether the reasonableness of the government conduct in issue can properly be gauged by the court. In other words, is there a criterion by which it is possible for the court to determine the reasonableness of conduct which, for example, involves the balancing of competing public interests?

123 The case against the State government in *Graham Barclay Oysters* hinged on the proposition that the government exercised substantial “managerial control” over the oyster industry in the lake in question. If it did, the position of the government could be equated to the position of the oyster grower and distributor, who were found to have owed a duty of care to the oyster consumers. Chief Justice Gleeson, however, concluded that the State government had adopted a policy which included a large measure of industry self-regulation with limited government involvement. Having referred to the evidence in that regard, Gleeson CJ reasoned as follows (at [26]-[27]):

... It [the evidence] demonstrates that the nature and extent of State government involvement in oyster quality control was a matter of policy, that it received attention at the highest levels, that it had substantial budgetary implications, and that it

involved government concern to encourage an important primary industry.

This demonstrates two things. First, the proposition that the State government had substantial managerial control over the oyster industry is, at best, an oversimplification. Secondly, the proposition that the State had a legal duty of care, owed to oyster consumers, obliging it to exercise greater control (and, presumably, to permit less industry self-regulation) takes the debate into the area of political judgment. By what criterion can a court determine the reasonableness of a government's decision to allow an industry a substantial measure of self-regulation?

124 The Chief Justice concluded (at [33]) that the duty of care upon which the case against the State was based was not made out.

125 Like the Chief Justice, McHugh J reasoned (at [90]) that the position of the “[e]xecutive government of a polity is different from the position of individuals and other public authorities” when considering whether a duty of care is owed. That is because the “powers and functions of the government of a polity are generally invested for the benefit of the general public” and “[i]n the absence of a statutory direction, the mere existence of such a power in that government imposes no duty to exercise it for the protection of others” (at [91]). His Honour continued (at [91]):

Unless a particular exercise of power has increased the risk of harm to an individual, the Executive government of a polity does not ordinarily owe any common law duty to take reasonable care as to when and how it exercises its powers. No doubt circumstances may arise where conduct of the government, short of increasing a risk of harm, creates a duty of care. But such cases are less likely to arise than in the case of other public authorities. In particular, knowledge of specific risks of harm or the exercise of powers in particular situations is less likely to be a factor in creating a duty than in the case of an ordinary public authority. This is because the powers and functions of the Executive government are conferred for the benefit of the public generally and not for the benefit of individuals.

126 The reasoning of Gummow and Hayne JJ (with whom Gaudron J agreed) is also instructive. Their Honours noted (at [175]) that the State government had made a “political decision” involving “self-regulation or co-regulation” of the relevant industry; a decision which was said to involve a “fundamental governmental choice” which was based in part on “budgetary concerns”. Once the nature of that decision was understood, “its observance by agents of the State in respect of any particular region falls outside the scope of any common law duty of care that may otherwise arise” (at [176]). Their Honours concluded (at [176]):

The scope of any common law duty that may arise in those circumstances necessarily accommodates itself to, and is controlled by, **the insusceptibility of that decision by the State to curial review under the rubric of the tort of negligence.**

(Emphasis added, footnote omitted.)

127 As can be seen, the touchstone was again the insusceptibility to review by a court of “political decisions” made by an executive government which involves a “fundamental governmental choice”.

The decision in Sharma

128 The next decision which it is necessary to closely analyse in considering this issue is the decision of the Full Court of this Court in *Sharma*. That decision warrants particularly close consideration because, while distinguishable in certain respects from this case, the circumstances are somewhat analogous. The facts and circumstances of *Sharma*, shortly stated, were that the Minister for the Environment was empowered by legislation to approve the extension of coal mines. In representative proceedings brought on behalf of all persons who were less than 18 years of age and ordinarily resident in Australia, it was alleged that the Minister owed the group members a common law duty of care in negligence to exercise reasonable care so as not to cause them physical harm arising from the emission of CO₂ into the Earth’s atmosphere. The nub of the applicants’ case was that such emissions caused global warming and climate change.

129 The primary judge found that the Minister owed such a duty of care. The Full Court (Allsop CJ, Beach and Wheelahan JJ) unanimously found that the imposition of the duty of care should be rejected, primarily because, at least insofar as Allsop CJ and Wheelahan J were concerned, the posited duty of care would throw up for consideration “core policy questions unsuitable in their nature and character for judicial determination” (Allsop CJ at [7]) or issues involving “political considerations” and “the making of value judgments” the resolution of which was “uniquely suited to elected representatives and executive government responsible for law-making and policy-making” and “inappropriate for judicial resolution” (Wheelahan J at [868]).

130 After referring to the distinction between policy and operational decisions and the fact that the distinction had been questioned in several cases, including by Mason J in *Heyman*, Allsop CJ noted (at [236]) that the difficulties with the distinction identified in those cases did not “undermine or deny the legitimacy and acceptance, of the central idea to which Mason J was referring in *Heyman*: that there will be in some decisions of a public authority factors that make the law of negligence an inapposite or unsuitable vehicle for examining the choices and judgments involved”. His Honour noted that those circumstances had been described by Mason J in *Heyman* and Gummow J and Deane J in *Pyrenees Shire Council* as the “core area

of policy-making” or as being “quasi-legislative or regulatory in nature”. The Chief Justice continued (at [237]-[238]):

It must be recognised that the field of matters not amenable to the imposition of the duty of care at common law for such reasons is narrow: *Crimmins* 200 CLR 1 at [87] (McHugh J, Gleeson CJ agreeing). Further, it is not a question of labels. It would be a false syllogism to say or incant: there can be no duty of care as to policy (as distinct from operations), this is policy, therefore there is no duty. The proper approach is not taxonomy or definition or labels, but to recognise that some questions of decision-making are not a legitimate or apposite or appropriate subject of curial judgement, such as where there is no criterion by reference to which a court can determine the reasonableness of the conduct. This may involve policy-making, or quasi-legislative or regulatory power. The question is the suitability of the task for judicial determination by reference to a legal standard. The question is not definitional; it is a question of institutional inappropriateness or unsuitability.

This is not an abrogation of judicial responsibility or the adoption of some governmental immunity. It is to recognise that decisions that involve certain types of policy and which may have important physical consequences upon the lives, health, well-being, property and economic interests of people may be made by government in its decision-making role in the interests of the polity which cannot be judged by a legal standard or the consideration of which cannot be reliably made in a curial environment of private litigation. There are choices to be made by government which may affect lives, health and property which are made by reference to expertise unavailable or less than satisfactorily available to courts, by reference to political and democratic choices involving relationships of interests incommensurable by reference to any legal standard and which are appropriate for democratic (that is political) accountability, not by reference to monetary compensation where a legal standard to judge the choice is absent or faint.

131 Chief Justice Allsop also dealt with this issue in the context of the consideration of the salient feature concerning coherence. His Honour observed in that context (at [246]):

... Here, if the duty is to be imposed, the considerations and judgements attending the decision will involve an evaluation of the adequacy of national and State policies taken within the framework of international agreement and whether such policy or policies was or were adequate and whether it or they should be persisted with or remade. Such policy or policies and such agreement draw out and are based on multi-disciplinary considerations including environmental, climatic, economic, social and political considerations. These are not only the natural province of the Executive and Parliament, but also, by their nature and character as attending the safety and wellbeing of all Australians, and (on the uncontested evidence) the wellbeing of the world and humanity, comprise the foundation of the (public or political) duty of consideration and policy formulation by at least the Executive on this subject.

132 Those were, Allsop CJ concluded (at [247]), “matters of so-called ‘core’ policy” or “public policy of the highest importance” and (at [248]) it was “not the function of the Judicial branch to rule upon any lack of adequacy or any lack of wisdom of government policy by reference to the law of torts”.

133 As has already been noted, Wheelahan J also concluded (at [868]) that the posited duty of care owed by the Minister raised issues that were inappropriate for judicial resolution. His Honour primarily considered the issue under the rubric of coherence. His Honour considered and analysed (at [856]-[866]) many of the cases to which reference has already been made in these reasons, including *Heyman*, *Pyrenees Shire Council* and *Graham Barclay Oysters*, and (at [868]) outlined the issues that the Minister would be required to address in making a decision under the relevant legislation in respect of the approval of an extension to a coal mine. Justice Wheelahan relevantly concluded as follows (at [868]):

... These are issues which in the context of the present case bear upon the social compact and the welfare of the Commonwealth, and which over the centuries have engaged the minds of philosophers and economists. Their resolution is uniquely suited to elected representatives and executive government responsible for law-making and policy-making. The issues inevitably slide into political considerations, and require the making of value judgments ... [about which] reasonable minds will likely differ ... How is a court to evaluate the reasonableness of one view over another in this political and policy context? These questions point to the conclusion to which Gleeson CJ referred in *Graham Barclay Oysters* at [6], namely that they raise issues that are inappropriate for judicial resolution. The nature of the issues raised by this particular case are not such that the matter can be left to the breach stage of the analysis, as with some cases involving the allocation of resources and expenditure in relation to roads and infrastructure. If there is any doubt about that conclusion, then I am of the further view that, in any event, in the absence of a completed cause of action involving an alleged breach of duty, then for all the above reasons there is not a sufficient basis to be satisfied that a duty of care can sit coherently with the political and policy issues that arise.

134 Like Allsop CJ and Wheelahan J, Beach J concluded that the Minister did not owe a duty of care to the group members, though that was primarily because the applicants had not established the “requisite sufficient closeness and directness” (at [748]). However, in relation to the questions of “policy and coherence” that might arise in the context of considering whether a duty of care to take reasonable care to avoid injury is owed with respect to the exercise of a statutory power, his Honour took a different approach to the approach taken by Allsop CJ and Wheelahan J. Justice Beach considered (at [352]) that three “general scenarios” may arise in that context. Those three scenarios are: first, where there has been a failure to exercise a statutory power, in which case the question that arises is whether there was a duty of care to exercise that power; second, where there has been an exercise of statutory power, but the repository of power has not gone far enough, in which case the question that arises is whether there was a duty of care to exercise that or other analogous powers more than was done; and third, where there has been an exercise of a statutory power which has created or exacerbated a risk of harm, in which case the question that arises is

whether there was a duty of care in the exercise of such a power to take into account that risk (see [353], [354] and [356]).

135 According to Beach J, under the first two scenarios, “questions of policy, incoherency with the statutory regime and whether there was a special relationship between the plaintiff(s) and the repository of the statutory power may be highly significant matters in determining whether a duty of care is owed” (at [355]). In the case of the third scenario, however, “questions such as policy and incoherency although relevant may have lesser significance” (at [356]). His Honour appears to have considered that the posited duty of care, or its alleged breach by the Minister, was an example of the third scenario and that accordingly, while there was a “modicum of incoherency” that was not a “strong feature against recognising a duty of care” (at [609]). His Honour was also of the view that the relevant statutory power exercised by the Minister could not be characterised as being “quasi-legislative” (at [613]) and was “not in the realm of... ‘core’ policy”, assuming that the concept of core policy was useful, which his Honour appeared to doubt (at [615]). While Beach J ultimately accepted that policy questions were involved, they were more appropriately dealt with at the “breach stage” (at [633], see also [622]).

136 Perhaps not surprisingly, the applicants in this matter urged the Court to adopt or follow the approach of Beach J, rather than the approach taken by Allsop CJ and Wheelahan J in *Sharma*. That submission is addressed in detail later in these reasons.

The standard of care and breach of duty

137 In simple terms, the breach element of the cause of action in negligence requires the Court to consider what precautions were required of the respondent – the standard of care – and whether the conduct of the respondent fell below that standard.

138 The applicable standard of care is determined by reference to two questions. The first question, which concerns foreseeability, is whether a reasonable person in the respondent’s position would have foreseen that the respondent’s conduct involved a risk of injury to the applicant or a class of persons including the applicant: *Shirt* at 47. The second question is what a reasonable person would have done in response to the risk. That question is ordinarily addressed by considering and weighing various factors which would be likely to have a bearing on that question, including, for example, the nature and extent of the risk of harm, the difficulty, expense and inconvenience of any action that might be taken to reduce that risk and, in some cases, whether the respondent has any competing or countervailing

responsibilities. The consideration and weighing of those relevant factors is often referred to as the “negligence calculus”.

Foreseeability

139 The consideration or salient feature of foreseeability at the duty stage was considered earlier. The test for foreseeability at the breach stage is narrower, or more demanding, than at the duty stage: *Sharma* at [417], [419] (Beach J). The test of foreseeability at the breach stage requires that the risk is “not far-fetched or fanciful”: *Shirt* at 47-48. The question, in essence, is whether it is “reasonably foreseeable as a possibility that the kind of carelessness that the defendant [respondent] is charged with may result in damage of some kind to the person or property of the plaintiff [applicant]”: *Sharma* at [417] (Beach J).

The standard of care and the negligence calculus

140 In *Shirt*, Mason J identified the factors that should generally be considered in addressing what a reasonable person would have done by way of response to the foreseeable risk of harm (at 47):

The perception of the reasonable man’s response calls for a consideration of the **magnitude of the risk** and the **degree of the probability of its occurrence**, along with the **expense, difficulty and inconvenience of taking alleviating action** and any other **conflicting responsibilities** which the defendant may have. It is only when these matters are balanced out that the tribunal of fact can confidently assert what is the standard of response to be ascribed to the reasonable man placed in the defendant’s position.

(Emphasis added.)

141 It is doubtful that Mason J was intending this list of relevant considerations to be exhaustive or was suggesting a mechanistic approach to determining the standard of care. And, while Mason J did not prescribe the respective weight to be given to those considerations, or the impact they would have in determining the reasonable response, common sense would suggest that ordinarily the standard of care called for would be higher where: there was a high probability of the risk of harm eventuating; the potential harm was serious, or the magnitude of the risk was great; the burden of taking precautions against the risk of harm was relatively low; and the defendant had few or no responsibilities that might conflict with any action that might be taken to reduce or eliminate the risk of harm.

142 The common law test for determining the standard of care is largely replicated or reflected in State and Territory legislation, including (in Queensland) in s 9(2) of the Civil Liability Act and (in the ACT) s 43 of the Civil Law (Wrongs) Act. As discussed earlier, the parties

essentially agreed that no substantive issue in this case turned on whether the applicants' claim is governed by the common law or the applicable legislation in either Queensland or the ACT.

Causation and remoteness

143 If it is established that the respondent (defendant) breached a duty of care it owed to the applicant, the next essential element in the cause of action in negligence is that any loss or damage suffered by the applicant was caused by the respondent's breach of duty. In simple terms, the element of causation is concerned with the question whether, as a matter of common sense, the respondent's breach of duty was a cause of the applicant's harm: *March v E & M H Stramare Pty Ltd* (1991) 171 CLR 506 at 515 (Mason CJ), 522 (Deane J), 524 (Toohey J).

144 The causal inquiry raises two questions: first, a question of historical fact as to how particular harm occurred (**factual causation**); and second, a normative question as to whether legal responsibility for that particular harm occurring in that way should be attributed to a particular person (**scope of liability**): *Wallace v Kam* (2013) 250 CLR 375 at [11] (French CJ, Crennan, Kiefel, Gageler and Keane JJ). This is also reflected in the (potentially) relevant statutory provisions: s 11 of the Civil Liability Act and s 45 of the Civil Law (Wrongs) Act.

Factual causation

145 Two issues need to be considered in the context of factual causation in the circumstances of this case. The first concerns the relevance and significance of the "but for" test. The second question, which mainly arises where it would appear that there are multiple factors which cumulatively caused the harm suffered by the applicant, concerns the extent to which the respondent's breach must have contributed to the harm before it can be concluded that the breach relevantly caused the harm. As will be seen, the question in that context is whether the respondent's breach *materially* contributed to the applicant's harm.

The relevance and significance of the "but for" test

146 The necessary causal connection will usually be made out if it is established that the applicant would not have been harmed had the respondent not breached the duty of care – in other words, the applicant would not have been harmed "but for" the respondent's negligence: *March v Stramare* at 515-516. Factual causation will ordinarily not be made out if the "but for" test cannot be satisfied, such as where it is apparent that the harm suffered by the applicant was inevitable and would probably have occurred even without the breach, or

where the breach was ineffective as a cause of the harm because the event which caused the harm would have occurred even if there had been no breach: *Chappel v Hart* (1998) 195 CLR 232 at [93] (Kirby J), [117] (Hayne J). The “but for” test is, in that respect, a “negative criterion” that has an important role to play in the resolution of the question: *March v Stramare* at 515 (Mason CJ). The “but for” test is also effectively encapsulated or reflected in the statutory test for factual causation in s 11(1)(a) of the Civil Liability Act, which is that “the breach of duty was a necessary condition of the occurrence of the harm”: see *Wallace v Kam* at [16] (French CJ, Crennan, Kiefel, Gageler and Keane JJ).

147 The “but for” test is, however, not “definitive”: *March v Stramare* at 524 (Toohey J); *Sharma* at [305] (Allsop CJ). In some circumstances, a court may accept that a respondent’s breach of duty can be considered to be a cause of the applicant’s harm even if it cannot be shown that the harm would not have eventuated but for the respondent’s breach: *March v Stramare* at 515-6 (Mason CJ), 522 (Deane J), 524 (Toohey J), 525 (Gaudron J). The “but for” test gives rise to particular difficulties where there are two or more acts or events which would each be sufficient to bring about the applicant’s injury: *March v Stramare* at 516 (Mason CJ). That is a convenient segue to the next topic, which essentially concerns the test for causation that applies in that scenario.

Material contribution to harm

148 Negligent conduct that materially contributes to the applicant’s harm, but which cannot be shown to have been a necessary condition of its occurrence may establish factual causation, subject to certain normative considerations: *Strong v Woolworths Ltd* (2012) 246 CLR 182 at [26] (French CJ, Gummow, Crennan and Bell JJ). In particular, factual causation may be made out in certain circumstances where there are multiple factors that cumulatively cause the applicant’s harm and the respondent’s breach can be said to have materially contributed to that harm: *Strong v Woolworths* at [25]-[26]; *Sharma* at [305] (Allsop CJ).

149 The seminal case in respect of material contribution to harm is the decision of the House of Lords in *Bonnington Castings v Wardlaw* [1956] AC 613. In that case, the plaintiff, an employee of the defendant, developed a lung disease that was caused by the gradual accumulation of silica particles in the lungs. The plaintiff had been exposed to silica particles through his use of two tools, though the defendant was only under a duty to install a dust extractor in respect of one of those tools. There was no evidence concerning the relevant proportions of dust emanating from the two sources, though it was accepted that the dust to

which the plaintiff was exposed by his use of that tool was probably less than the dust to which he was exposed by his use of the other tool. The House of Lords held that the defendant's breach of duty materially contributed to the plaintiff's disease and that causation had been established. Lord Reid (with whom Viscount Simonds agreed) said (at 621):

... It appears to me that the source of his disease was the dust from both sources, and the real question is whether the dust from the swing grinders materially contributed to the disease. What is a material contribution must be a question of degree. A contribution which comes within the exception *de minimis non curat lex* is not material, but I think that any contribution which does not fall within that exception must be material. I do not see how there can be something too large to come within the *de minimis* principle but yet too small to be material.

150 The reasoning of Lord Reid in *Bonnington Castings* was approved by Mason CJ in *March v Stramare* at 514. The principle has also been applied in other Australian cases. The principle also applies where there are several wrongdoers whose concurrent or successive acts cause the same damage. In *Hunt & Hunt Lawyers (a firm) v Mitchell Morgan Nominees Pty Ltd* (2013) 247 CLR 613, French CJ, Hayne and Kiefel JJ summarised the relevant principle in those circumstances in the following terms (at [45]):

The law's recognition that concurrent and successive tortious acts may each be a cause of a plaintiff's loss or damage is reflected in the proposition that a plaintiff must establish that his or her loss or damage is "caused or materially contributed to" by a defendant's wrongful conduct. It is enough for liability that a wrongdoer's conduct be one cause. The relevant inquiry is whether the particular contravention was a cause, in the sense that it materially contributed to the loss. Material contribution has been said to require only that the act or omission of a wrongdoer play some part in contributing to the loss.

(Footnotes omitted.)

151 The critical point is that the respondent's negligent act must play "some part" in contributing to the applicant's loss. As Lord Reid put it in *Bonnington Castings*, a material contribution to harm is any contribution that cannot be said to be within the exception *de minimis non curat lex* – which essentially translates to "the law does not concern itself with trifles" or "the law does not care about minimal things". There must be a point where it can be said that the part played by the respondent's negligent act in contributing to the applicant's loss is so small or insignificant that it cannot be said to be a material contribution.

152 It should also be noted in this context that cases that fall within the principle derived from *Bonnington Castings* may be taken to fall within statutory provisions such as s 11(2) of the Civil Liability Act, which make provision for factual causation to be made out in circumstances where the "but for" test is not made out: see *Strong v Woolworths* at [24]-[26].

153 It is also important to emphasise that the principle derived from *Bonnington Castings* can only apply where the evidence is capable of establishing a connection between the respondent's breach and the harm suffered by the applicant. In *Amica Pty Ltd v Ellis* (2010) 240 CLR 111, a man, Mr Paul Steven Cotton, died of lung cancer. He was a smoker. He had also worked with asbestos cement pipes and, as a result, had been exposed to asbestos. He (or the executor of his estate) sued his former employer and the manufacturer of the asbestos pipes in negligence. There was evidence that both tobacco smoke and asbestos can cause lung cancer, however the medical and expert evidence did not establish how Mr Cotton had contracted cancer. Epidemiological evidence established no more than that there was a probability no greater than 23% that the man's cancer was caused by exposure to asbestos, with or without his also being exposed to smoking, and that there was a probability of no less than 67% that his cancer was caused by smoking alone. The High Court distinguished *Bonnington Castings* and held that causation had not been established. The Court said (at [68]):

... The issue in *Bonnington Castings* was whether one source of an injurious substance contributed to a gradual accumulation of dust that resulted in disease. The issue here is whether one substance that *can* cause injury *did* cause injury. Or, to adopt and adapt what Starke J said in *Adelaide Stevedoring Co Ltd v Forst*, was Mr Cotton's cancer "intimately connected with and contributed to" by his exposure to asbestos? Questions of material contribution arise only if a connection between Mr Cotton's inhaling asbestos and his developing cancer was established. Knowing that inhaling asbestos *can* cause cancer does not entail that in this case it probably *did*. For the reasons given earlier, that inference was not to be drawn in this case. Questions of what is a material contribution do not arise.

(Footnote omitted, emphasis by italics in original.)

154 It is equally important to distinguish the situation where a respondent's negligence is found to have materially contributed to the applicant's harm, from the situation where a respondent's negligence is found to have materially contributed to the *risk* of harm to the applicant. The latter circumstance is addressed in the next topic.

Material contribution to risk

155 In *Fairchild v Glenhaven Funeral Services Ltd* [2003] 1 AC 32, the House of Lords considered a scenario where a worker (C) had contracted mesothelioma. C had been employed by two employers (A and B), each of whom was subject to a duty to take reasonable care, or a duty to take all practical measures to prevent C from inhaling asbestos dust because of the known risk that asbestos dust might cause mesothelioma. Both A and B breached that duty in relation to C during the periods of C's employment with each of them.

As a result, during both periods, C inhaled excessive quantities of asbestos dust. As already noted, C was found to be suffering from mesothelioma. Any cause of C's mesothelioma other than the inhalation of asbestos dust during his work with either A or B could effectively be discounted. Given the limits of medical science at the time, however, C could not prove, on the balance of probabilities, that his mesothelioma was the result of inhaling asbestos dust during his employment by A, or during his employment by B, or during his employment by A and B taken together.

156 The House of Lords held that the negligence of both A and B had a sufficient causal connection to C's mesothelioma. In short, as Allsop CJ put it in *Sharma* (at [322]), the "House of Lords ...decided that in limited circumstances, the negligent increasing of risk of harm was a sufficient proxy for material contribution". Lord Bingham reasoned as follows in *Fairchild* (at [42]):

So long as it was not insignificant, each employer's wrongful exposure of its employee to asbestos dust, and, hence, to the risk of contracting mesothelioma, should be regarded by the law as a sufficient degree of causal connection. This is sufficient to justify requiring the employer to assume responsibility for causing or materially contributing to the onset of the mesothelioma when, in the present state of medical knowledge, no more exact causal connection is ever capable of being established. Given the present state of medical science, this outcome may cast responsibility on a defendant whose exposure of a claimant to the risk of contracting the disease had in fact no causative effect. But the unattractiveness of casting the net of responsibility as widely as this is far outweighed by the unattractiveness of the alternative outcome.

157 The principle enunciated in *Fairchild* does not currently form part of the common law of Australia. It has not yet been directly considered by the High Court: see *Strong v Woolworths* at [26], [28]. And, because, as the House of Lords in *Fairchild* made tolerably clear, adoption of the principle involves policy choices or questions, "any conclusion that increasing risk is sufficient for a conclusion of causation or causal responsibility or legal responsibility" is a matter for the High Court: *Evans v Queanbeyan City Council* [2011] NSWCA 230 at [31] (Allsop P); see also *Sharma* at [320] (Allsop CJ), [436] (Beach J) and [875] (Wheelahan J). It is certainly not open to a single judge of this Court to expand the Australian common law of negligence to include the *Fairchild* principle.

158 As will be seen, the applicants contended that the causal connection between the Commonwealth's breach of duty and the harm suffered by them is made out having regard to the *Bonnington Castings* principle. In short, they contended that the Commonwealth's negligence materially contributed to the harm suffered by them. They also submitted, in the

alternative, that their case fell within the *Fairchild* principle, though that submission may be taken to be an informal submission given that the applicants accept that *Fairchild* does not currently form part of the common law of Australia.

Scope of liability

159 As noted earlier, the scope of liability element of causation is concerned with whether it is appropriate for legal responsibility for the harm suffered by the applicant to be attributed to the respondent. That determination is entirely normative and turns on a “consideration by a court of (amongst other relevant things) whether or not, and if so why, responsibility for the harm should be imposed on the negligent party”: *Wallace v Kam* at [14].

160 The “policy-based rules” (cf *March v Stamare* at 535 per McHugh J) that arise for consideration in this context include those relating to reasonable foreseeability and novus actus interveniens. In *Mahoney v J. Kruschich (Demolitions) Pty Ltd* (1985) 156 CLR 522, the High Court said (at 528):

... A line marking the boundary of the damage for which a tortfeasor is liable in negligence may be drawn either because the relevant injury is not reasonably foreseeable or because the chain of causation is broken by a novus actus interveniens: *M’Kew v. Holland & Hannen & Cubitts*. But it must be possible to draw such a line clearly before a liability for damage that would not have occurred but for the wrongful act or omission of a tortfeasor and that is reasonably foreseeable by him is treated as the result of a second tortfeasor’s negligence alone: see *Chapman v. Hearse*. Whether such a line can and should be drawn is very much a matter of fact and degree.
(Footnotes omitted.)

161 Reasonable foreseeability, in this context, is not a test of causation, but rather “marks the limits beyond which a wrongdoer will not be held responsible for damage resulting from his wrongful act”: *Chapman v Hearse* (1961) 106 CLR 112 at 122. At the causation stage, the issue is, in essence, whether “the kind of damage suffered was foreseeable as a possible outcome of the kind of carelessness charged against the defendant”: *Sharma* at [421] (Beach J); see also *March v Stramare* at 535 (McHugh J).

162 As for novus actus interveniens, the rule is, in effect, that the respondent will not be liable for damage if the chain of causation is broken by either a “human action that is properly to be regarded as voluntary”, or a “casually independent event the conjunction of which with the wrongful act or omission is by ordinary standards so extremely unlikely as to be termed a coincidence”: *Haber v Walker* [1963] VR 339 at 358 (Smith J). As McHugh J pointed out in *March v Stramare* (at 535), however, “questions of novus actus interveniens involve value

judgments”. His Honour embraced an observation in an article (J. Stapleton, “Law, Causation and Common Sense”, *Oxford Journal of Legal Studies* vol 8 (1988) 111 at 125) that “the division between those acts which negative causal connection and those that do not appears ... to be value-based, that is, to depend on the evaluation of the interest served by the intervening act”.

Damage

163 Damage is the gist of the cause of action in negligence, which means that the cause of action is only complete when it is established that the applicant suffered some damage caused by the respondent’s negligence. As Crennan J (with whom Gleeson CJ and Gummow and Heydon JJ agreed) observed in *Harriton v Stephens* (2006) 226 CLR 52 (at [251]):

Because damage constitutes the gist of an action in negligence, a plaintiff needs to prove actual damage or loss and a court must be able to apprehend and evaluate the damage, that is the loss, deprivation or detriment caused by the alleged breach of duty. Inherent in that principle is the requirement that a plaintiff is left worse off as a result of the negligence complained about, which can be established by the comparison of a plaintiff’s damage or loss caused by the negligent conduct, with the plaintiff’s circumstances absent the negligent conduct. ...

164 The damage suffered by an applicant must be compensable damage. That requirement directs attention to whether the loss or injury suffered by the applicant is of a kind in respect of which the applicant can and should receive monetary compensation. As Gordon J noted in *Lewis v Australian Capital Territory* (2020) 271 CLR 192 (at [70]):

If a loss is identified, the law then has to answer a question: “is that loss the loss of ‘something for which the claimant should and reasonably can be compensated’”? Should it be recognised by an award of compensatory damages which will put the injured party in the same position they would have been in had they not sustained the wrong, so far as is possible? And as has been stated, that question forms part of a larger question about the nature of the relief, as a whole, that a plaintiff should be granted.

(Footnote omitted.)

165 There is no doubt that the categories of compensable damage include personal injury and damage to tangible property. As has already been adverted to, the applicants contend that the damage suffered by them includes loss of fulfilment of Ailan Kastom. The Commonwealth contended that loss of fulfilment of Ailan Kastom is not, at least on the present state of the common law of Australia, compensable damage – that is, damage for which the applicants and group members can and should be compensated. That issue is discussed in detail later. It suffices at this point to note that the applicants contended, in effect, that if even there has been no previous cases where damages have been awarded for loss of cultural fulfilment, the

law of negligence can and should develop or expand to recognise that such loss constitutes compensable damage. The Commonwealth, however, contended that loss of fulfilment of Ailan Kastom is not a “recognised head of damage under the law of negligence” and that the applicants had not demonstrated a principled basis upon which the common law should be expanded to provide for such a head of loss.

KEY ISSUES

166 The key issues are essentially apparent from the agreed common questions which were set out earlier in these reasons. It is nevertheless useful to provide a short summary of the issues.

Key issues in the applicants’ primary or targets case

167 The key issues or questions in respect of the applicants’ primary or targets case may be summarised as follows.

168 *First*, does (or did) the Commonwealth owe Torres Strait Islanders a duty of care to protect them and their way of life and environment from the impacts of climate change, which duty relevantly required it to take reasonable steps to set greenhouse gas emissions targets which, having regard to the best available science in respect of climate change, would prevent or minimise the impacts of climate change on the Torres Strait Islands (**the targets duty**)? That question has been framed in such a way as to encompass both the existence of the duty of care and the standard of care. The answer to that question essentially hinges on two subsidiary questions. The first question is whether the imposition of the alleged targets duty of care would be inappropriate or impractical because the setting by the Commonwealth of emissions reduction targets involves matters of high or core government policy the reasonableness of which the Court is in no real position to judge. The second question is whether the salient features of the relationship between the Commonwealth and Torres Strait Islanders was such as to warrant the imposition of the alleged targets duty.

169 *Second*, if it is found that the Commonwealth did owe Torres Strait Islanders the targets duty of care, did the Commonwealth breach that duty when, in 2015, 2020, 2021 and 2022, it set greenhouse gas emissions targets? That question raises a number of subsidiary questions or issues. The first question or issue, which overlaps to a certain extent with the first question because it concerns the standard of care, is essentially whether, when it set emissions reduction targets, the Commonwealth was required to have regard to the best available science and could or should not have regard to social or economic considerations. That

question is linked to the question whether the basis upon which emissions reduction targets involves high or core government policy. The second question, which is essentially a factual question, is whether the targets that were set in 2015, 2020, 2021 and 2022 were set without regard to, or were not based on, or were inconsistent with, the best available science and therefore did not, or would not, prevent or minimise the most dangerous impacts of climate change on the Torres Strait Islands.

170 *Third*, if it is found that the Commonwealth did breach the targets duty of care as alleged, did that breach of duty cause the Torres Strait Islanders to suffer any loss and damage? The applicants did not contend that they satisfied the “but for” test. The key question in respect of causation is therefore whether, by failing to set emissions reduction targets which, having regard to the best available science would prevent or minimise the most dangerous impacts of climate change on the Torres Strait Islands, the Commonwealth materially contributed to any harm suffered by Torres Strait Islanders from the impacts of climate change. In essence, the issue is whether the applicants had proved the following chain of causation: first, more greenhouse gas was emitted than would have been the case if the Commonwealth had set targets by reference to the best available science; second, those additional emissions resulted in additional warming of the atmosphere, including in the Torres Strait Islands; third, the additional warming materially contributed to the impacts of climate change in the Torres Strait Islands; fourth, Torres Strait Islanders suffered harm from the impacts of climate change as exacerbated by the Commonwealth’s actions in respect of its emissions reduction targets.

171 *Fourth*, (assuming that all previous questions are answered in the applicants’ favour) did the Torres Strait Islanders suffer (and are they continuing to suffer) harm in the form or nature of loss of fulfilment of (or inability to practice) Ailan Kastom and, if so, is such harm compensable under the Australian common law of negligence?

172 *Fifth*, (again assuming that all previous questions are answered in the applicants’ favour), is the declaratory relief sought by the applicants in respect of the targets duty available and appropriate? That question largely turns on whether the terms of the proposed declarations are appropriate and, more significantly, whether there is any utility in making the proposed declarations, particularly if the applicants fail to prove that either they or the group members suffered any compensable loss.

173 *Sixth*, (again assuming that all previous questions are answered in the applicants' favour), is the Commonwealth's breach of the targets duty ongoing and, if so, is the proposed injunctive relief available and appropriate. The main issue in respect of the proposed injunctive relief is whether the terms of the proposed injunction are imprecise and subjective such that the Commonwealth would be unable to determine precisely what was or was not required of it to comply with the injunction.

Key issues in the applicants' alternative or adaptation case

174 The key issues or questions in respect of the applicants' alternative or adaptation case may be summarised as follows.

175 *First*, did the Commonwealth owe Torres Strait Islanders a duty to take reasonable care to protect them against marine inundation and erosion causing property damage, loss of fulfilment of Ailan Kastom, which duty relevantly required it to provide predictable and adequate funding for the construction of seawalls on Torres Strait Islands, and to lead, coordinate and establish a coherent plan for the provision of funding for the protection of Torres Strait Islanders from the adverse effects of sea level rise, inundation and erosion through the construction of seawalls (**the alternative duty**). That question has again been framed in such a way as to involve both the existence of the duty of care and the standard of care. The answer to the question again hinges on two subsidiary questions. The first question is whether the imposition of the alleged alternative duty of care would be inappropriate or impractical because it would require the Court to assess the reasonableness of Commonwealth decision making regarding budgetary issues which were matters of policy which would be unsuitable for determination by the Court. The second question is whether the salient features of the relationship between the Commonwealth and Torres Strait Islanders is such as to warrant the imposition of the alternative duty.

176 *Second*, if it is found that the Commonwealth did owe Torres Strait Islanders the alternative duty of care, did the Commonwealth breach that duty because it either failed to take reasonable steps to provide predictable funding which was adequate to complete the construction of seawalls on Saibai, Boigu, Poruma, Iama, Masig and Warraber islands as planned, or failed to lead, coordinate and establish a coherent plan for the provision of funding for the construction of those seawalls? Or were the steps taken by the Commonwealth in respect of the funding of those projects reasonable because they were in accordance with the legal and policy framework applicable to the provision of such funding

and ultimately the Commonwealth provided all the funding that it was requested to provide in respect of the Seawalls Project?

177 *Third*, if it is found that the Commonwealth did breach the alternative duty of care as alleged, did that breach of duty cause the applicants and Torres Strait Islanders to suffer any loss and damage? The applicants did not contend that they satisfied the “but for” test in respect of loss or damage caused by the breach of the alternative duty. The key question in respect of causation is therefore again whether, by failing to provide predictable or adequate funding, or by failing to lead, coordinate and establish a coherent plan for the funding of seawall construction, the Commonwealth materially contributed to any harm suffered by Torres Strait Islanders from flooding on any of the six islands in question. The issue is whether the applicants had proved the following chain of causation: first, as a result of the breach, seawalls were not constructed in a timely fashion, or were not constructed at all on some islands; second, flooding occurred on the islands at a time when, but for the breach, there would have been seawalls; third, the seawalls that would otherwise have been constructed would have prevented or reduced the flooding; fourth, the flooding caused the applicants to suffer loss or damage, or caused other residents harm in the form of loss of fulfilment of Ailan Kastom.

178 *Fourth*, as with the targets duty case, there is an issue about whether loss of fulfilment of Ailan Kastom is compensable harm under the common law of negligence in Australia.

179 *Fifth*, to the extent that the declaratory and injunctive relief sought by the applicants was intended to encompass the breach of the alternative duty, the issues noted earlier in respect of that relief in the context of the targets duty case also arise in respect of the adaptation duty case.

180 Having outlined the key issues, it is now necessary to give detailed consideration to the facts and evidence.

THE TORRES STRAIT ISLANDS AND THEIR TRADITIONAL INHABITANTS

181 The Torres Strait Islands are, broadly speaking, an archipelago of about 300 islands located in the Torres Strait, the body of water between the northernmost tip of the Cape York Peninsula and Papua New Guinea where the Pacific and Indian Oceans meet. About 17 of the islands in the Torres Strait are inhabited by about 9,500 people. The other islands are mostly coral or sand cays or rocky outcrops. To give some idea of the size of the region, the distance

between the tip of Cape York and the southern coastline of Papua New Guinea is about 165 kilometres and the distance between the easternmost and westernmost Torres Strait Islands is about 215 kilometres. The region encompasses an area of about 48,000 square kilometres.

182 There are four main categories of islands in the Torres Strait. The western group of islands are mostly larger granite and volcanic rock islands. That group of islands includes the larger inhabited island Badu. The northern group of islands, adjacent to the Papua New Guinea coastline, are mostly low-lying muddy alluvial islands formed by the accumulated sediments brought down by the nearby rivers in Papua New Guinea. Those islands include the inhabited islands of Boigu and Saibai. The eastern islands are mostly coral cays that lie just to the north of the Great Barrier Reef. They include the islands of Mer and Erub. The central islands contain some rocky islets, but are mostly sandy islands. They include Iama, Masig, Poruma and Warraber. The four types of islands each support distinctive ecosystems and species.

183 The evidence in this case mainly relates to the impacts of climate change on the islands of Boigu, Badu and Saibai and the people who live on those islands, though there was some evidence concerning the impacts of climate change on the islands of Poruma and Warraber and, to a lesser extent, Iama and Masig.

184 It is generally accepted that people have occupied the Torres Strait Islands for thousands of years, certainly long before European contact with the region. Most of the present occupants are descended from those original inhabitants. The original inhabitants were of mainly Melanesian ethnicity, which is perhaps not surprising given the proximity of the Torres Strait Islands to Papua New Guinea. They are ethnically and culturally distinct from mainland indigenous or Aboriginal Australians. They have their own distinctive body of customs, traditions, observances and beliefs known as Ailan Kastom. Those customs, traditions, observances and beliefs uniquely and spiritually connect Torres Strait Islanders to the lands of Torres Strait Islands and the surrounding waters and marine environment.

185 Torres Strait Islanders have native title rights under the *Native Title Act 1993* (Cth) over or in respect of much of the Torres Strait Islands, including all, or almost all, of the inhabited islands. The applicants' claims, including those made on behalf of the group members, do not directly concern any native title rights under the Native Title Act.

Ailan Kastom

- 186 The evidence of individual Torres Strait Islanders concerning Ailan Kastom and the fundamental importance of it and its practice to their lives is discussed in more detail later. In general terms, Ailan Kastom includes, among other things: the connection of Torres Strait Islanders to the marine and terrestrial environment of the Torres Strait, including as part of cultural ceremony; participation in cultural ceremonies; the use of the plants and animals of the Torres Strait for food, medicine and cultural ceremony; burying Torres Strait Islanders in local cemeteries and performing unique mourning rituals; visiting sacred sites, including on uninhabited islands; and dugong and marine turtle hunting, and other marine hunting and fishing. Connection to sea, country and marine hunting is not only a particularly integral aspect of Ailan Kastom, it is also a traditional and important source of food for Torres Strait Islanders.
- 187 Cultural education is a particularly important aspect of the practise of Ailan Kastom. Torres Strait Islander culture and the connection of Torres Strait Islanders to their land and seas is passed on, mainly orally, from generation to generation. Many of their traditional and cultural practices are linked or tied to seasonal events and occurrences, such as the timing of the breeding or hatching of marine animals like turtles, or the migratory patterns of birds. The use of traditional foods and hunting and gardening are also important aspects of Ailan Kastom. As discussed in more detail later, individual Torres Strait Islanders gave evidence about the changes they had observed in relation to the seasons, seasonal weather patterns and seasonal events in recent times. Those changes were, so it was said, making it harder for Torres Strait Islanders to pass on cultural and traditional knowledge, including hunting and gardening practices.
- 188 The evidence of individual Torres Strait Islanders, in general terms, indicated that Ailan Kastom is a central and unifying aspect of their daily lives that connects them to their traditional lands and waters. It also spiritually connects them to their ancestors. It is the very essence of being a Torres Strait Islander. Torres Strait Islanders are particularly fearful that climate change and its impacts may break those connections and take away their very identity. Torres Strait Islanders also have a particularly strong connection to their ancestors, who are mostly buried on their islands, and to sacred sites located on their islands, as well as on other often uninhabited islands, reefs or sand cays in the Torres Strait. Torres Strait Islanders particularly fear that the damage that inundation and extreme weather events in recent years have wrought on their cemeteries and sacred sites is resulting in them losing their spiritual

connection with their ancestors and is preventing them from engaging in their important spiritual practices.

Governance of the Torres Strait Islands

189 Contact between Torres Strait Islanders and Europeans was initially fairly sporadic until the arrival of European missionaries in the region in the 1870s. The Torres Strait Islands were not originally considered to be part of the United Kingdom's dominions or colonies, however, Imperial and Colonial authorities endeavoured to impose some order and control. In 1879, however, the Governor of Queensland was authorised to declare that the Torres Strait Islands had been annexed as part of the colony of Queensland and the Queensland Legislature passed the *Queensland Coast Islands Act 1879* (Qld).

The Queensland Government

190 The Torres Strait Islands form part of the territory of the State of Queensland. Queensland has plenary power to make laws for that state, subject to the Australian Constitution: *Constitution Act 1867* (Qld), s 2; Australian Constitution, s 107.

Local Government – the TSIRC

191 Prior to 2008, each community in the Torres Strait Islands had its own island council established under the *Community Services (Torres Strait) Act 1984* (Qld). In 2008, the Torres Strait Island Regional Council (**TSIRC**) was established by the *Local Government and Other Legislation (Indigenous Regional Councils) Amendment Act 2007* (Qld), which amended the (now repealed) *Local Government Act 1993* (Qld). The TSIRC is the local government body for 15 island communities: Mer, Erub, Ugar, Iama, Masig, Warraber, Poruma, Badu, Arkai, Wug, Mabuyag, Kirriri, Saibai, Boigu and Dauan.

192 The TSIRC is now governed by the ***Local Government Act 2009*** (Qld). That Act provides (in ss 8 and 9) that a local government is an elected body that is responsible for the good rule and local government of a part of Queensland and has the power to do anything that is necessary or convenient for the good rule and local government of its local area, subject to the qualification that it can only do something that the State of Queensland can validly do.

193 As discussed in more detail later, particularly in the context of the applicants' alternative or adaptation case, the TSIRC has played a role in implementing some measures in respect of climate change adaptation. It participated in a Coastal Hazards Adaptation Program which was created by the Queensland Government to support local governments in Queensland with

the development of a Coastal Hazard Adaptation Strategy in order to plan for short and long term coastal hazard impacts. A document prepared by the TSIRC for the purposes of that program made it clear that the TSIRC considered that “[n]umerous TSIRC island communities are likely at high risk of being impacted by present and future coastal hazards” as a result of climate change. From as early as 2010, the TSIRC had identified the islands of Boigu, Iama, Poruma, Saibai, Masig and Warraber as being priority areas where adaptation strategies were recommended. As discussed in considerably more detail later, the TSIRC played a role in implementing the Seawalls Project, which was a project funded by both the Commonwealth and Queensland Governments, in relation to the construction of seawalls on some islands.

194 There is a separate local government body, the Torres Strait Council, which is responsible for the islands closest to the Australian mainland, including Thursday Island and Horn Island. Those islands do not feature prominently, or at all, in the applicants’ case.

The Commonwealth and the TSRA

195 The Torres Strait Regional Authority (TSRA) was established as a statutory body corporate by the *Aboriginal and Torres Strait Islander Act 2005* (Cth). The objects of that Act included: “in recognition of the past dispossession and dispersal of the Aboriginal and Torres Strait Islander peoples and their present disadvantaged position in Australian society ... to ensure co-ordination in the formulation and implementation of policies affecting Aboriginal persons and Torres Strait Islanders by the Commonwealth, State, Territory and local governments, without detracting from the responsibilities of State, Territory and local governments to provide services to their Aboriginal and Torres Strait Islander residents”.

196 The TSRA is the leading Commonwealth representative body for Torres Strait Islander and Aboriginal people living in the Torres Strait. It is made up of elected members. Only Torres Strait Islander or Aboriginal persons may vote in the election for members, and only Torres Strait Islander or Aboriginal persons are qualified to be elected as members.

197 The functions of the TSRA include: to recognise and maintain the special and unique Ailan Kastom of Torres Strait Islanders living in the Torres Strait area; to formulate and implement programs for Torres Strait Islanders, and Aboriginal persons, living in the Torres Strait area; to monitor the effectiveness of programs for Torres Strait Islanders, and Aboriginal persons, living in the Torres Strait area, including programs conducted by other bodies; to develop policy proposals to meet national, State, Territory and regional needs and priorities of Torres

Strait Islanders, and Aboriginal persons, living in the Torres Strait area; and to assist, advise and co-operate with Torres Strait Islander and Aboriginal communities, organisations and individuals at national, State, Territory and regional levels: s 142A(1) of the Aboriginal and Torres Strait Islander Act.

198 The TSRA is required to formulate and revise from time to time a plan, known as the Torres Strait Development Plan, the aim of which is “to improve the economic, social and cultural status of Torres Strait Islanders, and Aboriginal persons, living in the Torres Strait area”. That plan must outline the strategies and policies that the TSRA intends to adopt in order to implement the plan: s 142D of the Aboriginal and Torres Strait Islander Act.

199 The TSRA’s Torres Strait Development Plan for 2019-2022 refers, among other things, to the TSRA’s environment management program, the aims of which were said to be to work in partnership with Torres Strait traditional owners, communities, researchers and all levels of government to “help address and manage environmental issues, challenges and opportunities facing the region and individual communities” in circumstances where “[i]mproved community sustainability, resilience and ability to adapt to climate change are critical to the future viability of our communities”. The program was said to have a mandate from the TSRA board to undertake a number of projects and initiatives, including “[c]limate change adaptation and resilience”.

200 The TSRA also developed a climate change strategy, the **Torres Strait Climate Change Strategy** 2014-2018, and an adaptation and resilience plan, the **Torres Strait Regional Adaptation and Resilience Plan** 2016-2021. Both strategies were prepared in conjunction with the TSIRC and broadly address climate change projections, likely impacts and actions to reduce climate risks in the Torres Strait. As will be seen, both of those publications addressed the division of governmental responsibility in respect of climate change adaptation.

Division of governmental responsibility in respect of climate change adaptation

201 In 2012, the Council of Australian Government’s Select Council on Climate Change published a document entitled “Roles and Responsibilities for Climate Change Adaptation in Australia”. That publication, which for the sake of brevity I will call the **COAG Principles**, set out the “principles for the management of climate-change risks, and roles and responsibilities for adapting to climate change within the three tiers of government: Commonwealth, State and Territory and Local”. The COAG Principles stated that the role of governments generally included “providing flood and coastal protection, emergency

management, public health and safety measures, and natural resources protection, as well as managing public assets such as public lands, national parks and reserve systems and government-owned infrastructure”.

202 As for the division of responsibilities between the tiers of government, the COAG Principles stated:

The three levels of governments in Australia have different responsibilities and therefore have differentiated, yet complementary, roles in helping Australia adapt to the impacts of climate change. In many cases climate change adaptation will be most effectively managed by a single State, Territory or Local Government. In other cases, a combined response by several governments or tiers of governments will be required.

Identifying the roles of government in adapting to climate change is the first step in building a coordinated approach. Once the roles of government are broadly agreed, responsibility for specific tasks can be attributed to the most appropriate tier (or tiers) of government. Division of government’s adaptation task across Australia’s three levels of government should balance local capacity, knowledge and expertise against national interest considerations, taking particular account of the benefits of national coordination, existing responsibilities and accountabilities, and the diversity of impacts likely to be felt across the nation.

Addressing risks, and managing and adapting to climate change impacts, will be a long-term obligation for all tiers of government. Working collaboratively and, from time to time, evaluating adaptation tasks across governments, will assist to most efficiently and effectively deal with climate change risks.

203 In relation to the role and responsibility of the Commonwealth in respect of adaptation to climate change, the COAG Principles stated that “[a]s climate change will impact on virtually every sector of the economy and society, the Commonwealth will need to take **a leadership role** in positioning Australia to adapt to climate change impacts that may affect national prosperity or security” (emphasis added). The document stated that the Commonwealth would provide national science and information, manage Commonwealth assets and programs, provide leadership on national adaptation reform, and maintain a strong, flexible economy and a well-targeted social safety net. The Commonwealth’s role in “leading the national adaptation reform” was said to include: “working with States, Territories and Local Governments to establish national adaptation priorities to protect ... natural systems of national significance”; “working with State, Territory and Local Governments to develop a consistent approach in adaptation responses where there is a need”; and “consider[ing] the needs of vulnerable communities”.

204 The COAG Principles stated that the responsibilities of State and Territory Governments included managing “a substantial number of assets and infrastructure, including assets and infrastructure of national significance” and that State and Territory Governments would:

provide local and regional science and information; manage State and Territory assets and programs; work with the Commonwealth to implement national adaptation reform; and encourage climate resilience and adaptive capacity. The responsibility of State and Territory Governments to encourage climate resilience and adaptive capacity included “working with the Commonwealth government to identify and implement priorities to improve adaptive capacity and strengthen climate resilience in vulnerable communities.”

205 As for the role and responsibilities of Local Governments, the COAG Principles stated that:

Local governments are on the frontline in dealing with the impacts of climate change. They have a critical role to play in ensuring that particular local circumstances are adequately considered in the overall adaptation response and in involving the local community directly in efforts to facilitate effective change. They are strongly positioned to inform State and Commonwealth Governments about the on-the-ground needs of local and regional communities, to communicate directly with communities, and to respond appropriately and in a timely manner to local changes.

206 The COAG Principles stated that Local Governments would, among other things: “[m]anage risks and impacts to public assets owned and managed by local governments”; “[c]ollaborate across councils and with State and Territory Governments to manage risks of regional climate change impacts”; “[w]ork in partnership with the community, locally-based and relevant NGOs, business and other key stakeholders to manage the risks and impacts associated with climate change”; and “[c]ontribute appropriate resources to prepare, prevent, respond and recover from detrimental climatic impacts”.

207 While the COAG Principles considered the respective roles and responsibilities of the three tiers of government at a high level of generality, it is tolerably clear that each level of government had certain roles and responsibilities. While the Commonwealth was to take a “leadership role” in respect of some aspects of the adaptation to climate change impacts, that leadership role tended to be in respect of interests and assets of national significance. While the Commonwealth’s role was no doubt important, both State and Territory and local governments also had important roles to play in respect of the adaption to climate change.

208 As noted earlier, the TSRA (in conjunction with the TSIRC) published two documents which set out its climate change strategy and adaptation and resilience plan. The Torres Strait Climate Change Strategy noted that the “jurisdictional and administrative arrangements over the Torres Strait environment are extremely complex, involving two countries, Local, Queensland and Commonwealth governments and multiple agencies”. It stated that the TSRA, “in partnership with relevant local Councils, Queensland and Australian Government

departments and several research organisations” had already undertaken activities in respect of adaptation to sea level rise and other climate change impacts, but noted that much of that effort would be lost if funding did not support the continued implementation of the strategy. The strategy was said to be “intended to guide whole-of-government efforts to manage the impacts of climate change”.

209 The impression gleaned from the Torres Strait Climate Change Strategy is that, while all levels of government were to be involved in formulating and implementing strategies in respect of climate change adaptation, the TSRA was generally the lead, coordinating or guiding authority in respect of adaptation measures. The TSIRC, on the other hand, was more involved in more grassroots and community-based decision making and planning.

210 Much the same impression is conveyed by the Torres Strait Regional Adaptation and Resilience Plan. That detailed document identifies various adaptation outcomes and the individual tasks associated with them. It then identifies the lead agency in respect of each of those tasks. The lead agency in respect of those tasks which involve policy and planning tends to be the TSRA, while the TSIRC tends to be the lead agency in respect of those tasks involving information, education and awareness, and monitoring.

GLOBAL WARMING AND CLIMATE CHANGE

211 The science concerning global warming and climate change is clear and unequivocal. The Commonwealth did not challenge or dispute the evidence of the leading and well-respected scientists called by or on behalf of the applicants in this case, other than in the very minor respects discussed in detail later in these reasons. The evidence of the equally leading and well-respected scientists called by or on behalf of the Commonwealth for the most part did not contradict or contest the evidence of the scientists called by the applicants, again other than in the very minor respects detailed later. It may readily be inferred that the Commonwealth’s decision not to challenge or contradict most of the evidence in respect of climate science that lay behind the applicants’ case was a conscious decision informed by the fact that the basic science of climate change is now effectively uncontroversial and indisputable. It is only disputed by those on the very fringes of the scientific community, or those driven by nakedly political, commercial or personal agendas.

212 It would be well beyond the scope of this judgment or these reasons to provide a detailed account of the science of global warming and climate change. In addition to adducing oral and affidavit evidence from leading scientists, the parties tendered a vast array of scientific

literature concerning global warming and climate change. Time and resource limitations would simply not permit a detailed account to be given of that material. Such a detailed account would in any event be unnecessary given the findings and conclusions concerning the reach of the law of negligence in the common law of Australia in its present state. It is, however, nevertheless necessary to make some basic findings in respect of global warming and climate change, as well as the impacts of climate change, both generally and on the Torres Strait Islands, in case or in the event that this case finds its way to a higher court.

213 What follows in this section of the judgment is an attempt to summarise and distil the key scientific findings in respect of global warming, its causes and its impacts, both current and projected, on the Earth's climate. A good deal of the evidence that was adduced by the parties in respect of global warming and climate change, including the evidence of the expert witnesses and the documentary evidence, was expressed in technical terms. That is perfectly understandable and should not be taken to be a criticism of the expert witnesses. It is, however, largely unnecessary to delve into all the technical aspects of the science to resolve most of the issues in this matter. That is particularly so given that most of the evidence was uncontroversial. Every endeavour will therefore be made to express the key findings, based on the science, in simple lay terms so they can be readily understood by all and, in particular, those who have a direct interest in the outcome of this case.

The evidence concerning global warming and climate change

214 Before delving into the science, something more should be said about the nature of the evidence adduced and relied on by the parties in respect of the science of global warming, climate change and its impacts.

215 As has already been noted, both the applicants and the Commonwealth adduced expert opinion evidence from eminent scientists in various fields. The applicants adduced evidence from Professor David **Karoly**, Professor Malte **Meinshausen**, Professor Terry **Hughes** and Professor John **Church**. The applicants adduced evidence from two other expert witnesses, Associate Professor Linda **Selvey** and Mr Stuart **Bettington**, though their evidence did not directly relate to the science of climate change. That evidence will be referred to later in the context of the applicants' case concerning loss and damage and their alternative or adaptation case. The Commonwealth adduced evidence from Dr Pep **Canadell**, Professor Andrew **Pitman** and other expert witnesses whose evidence, considered later, is again more relevant

to issues relating to loss and damage and the Commonwealth's defence to the applicants' alternative adaptation case.

216 There were no issues concerning the qualifications, training, experience or expertise of any of the witnesses who gave evidence concerning the causes and effects of global warming and climate change. They are all eminent, highly regarded and indeed world-renowned experts in their respective fields. They were all very impressive witnesses. For the most part, there was no disagreement between them, save perhaps in respect of matters of emphasis and degree. Those very narrow areas of disagreement are considered later in these reasons. Following is a very short summary of the respective expert witnesses' particular areas of expertise. Given that no issues were, or could be, taken in relation to their expertise, it is unnecessary to fully detail their qualifications, training and experience. To do so would take many pages.

217 Professor Karoly is a Professor Emeritus (honorary) in the School of Geography, Earth and Atmospheric Sciences at the University of Melbourne. He has more than forty years' experience studying climate variability and climate change, with a particular expertise in identifying the causes of recent observed climate change and its impacts. Among other things, he has been the lead author of several IPCC reports. He is unquestionably an eminent, highly qualified and experienced, and well-regarded climate scientist. His evidence covered various topics relating to the sources of the best available science concerning climate change and the causes and impacts of climate change.

218 Professor Meinshausen is a Professor at the University of Melbourne where he founded the Climate and Energy College and teaches Masters subjects including Climate Modelling and Climate Change and Climate Science for Decision Making. He holds a PhD in climate science and policy. Like Professor Karoly, he has been a lead or contributing author of several IPCC reports. His main field and research activity relates to climate science, climate scenarios and carbon budgets. Professor Meinshausen's evidence is of particular relevance to one of the key issues in this matter, having regard to the way the applicants' case is framed, which concerns the calculation of carbon budgets and cumulative greenhouse gas allocations referable to Australia. Critically, he also expressed opinions as to whether the greenhouse gas emissions reduction targets set by the Commonwealth were consistent with Australia remaining within its cumulative greenhouse gas allocation limits, which he had calculated. He also expressed opinions concerning the emissions reductions that Australia would have had to achieve to remain within those allocation limits.

- 219 Professor Hughes is an Emeritus Distinguished Professor at James Cook University. He has had several previous professional appointments and fellowships. He received a PhD and three honorary DScs for his research on the ecology and evolution of marine ecosystems. His area of expertise is the impacts of climate change on marine life. He has conducted extensive marine fieldwork in many areas, including in the Torres Strait. His evidence is mainly addressed later in the context of the impacts of climate change.
- 220 Professor Church is an Emeritus Professor in the Climate Change Research Centre at the University of New South Wales. His particular area of expertise is the role of the ocean in climate, particularly anthropogenic climate change and the oceanic storage of increased heat in the world's oceans. He is recognised as a world leader in understanding historical and projected global and regional sea level rise. He has authored hundreds of publications and reports and was the co-convening lead author of the Chapter on Sea Level in the IPCC's third and fifth assessment reports, which are discussed later.
- 221 Doctor Canadell is a Chief Research Scientist in CSIRO Environment, Chief Led Investigator in the Climate Systems Hub of the National Environmental Science Program and Executive Director of the Global Carbon Project, a global consortium of scientists under the umbrella of Future Earth, and a scientific partner of the World Climate Research Programme. The Global Carbon Project is a project which involves the development of global greenhouse budgets, including global carbon, methane and nitrous oxide budgets. He has a PhD in Terrestrial Ecology. His particular area of expertise is the impacts of climate change on terrestrial ecosystems and regional and global biochemical cycles, particularly the carbon cycle and the impacts of rising atmospheric CO₂. Dr Canadell's evidence is of particular significance to the question of what, if any, impact higher emissions reductions, in line with those calculated by Professor Meinshausen, would have had on temperature changes in the Torres Strait Islands.
- 222 Professor Pitman is a climate scientist with over 35 years' experience in areas of global and regional climate modelling, climate projections, understanding of extremes, model evaluation and terrestrial processes. He has, among many other things, been a lead author on chapters in two reports by the IPCC and was a Review Editor of a chapter in the IPCC's 6th Assessment Report. He shared the Nobel Peace Prize in 2007 for work by the IPCC. He is a Fellow of the Australian Academy of Science, a Fellow of the American Meteorological Society and a Fellow of the Australian Meteorological and Oceanographic Society. He was formerly a

Director of the Australian Research Council (ARC) Centre of Excellence for Climate System Science and is a Director of the ARC Centre of Excellence for Climate Extremes. Professor Pitman's evidence primarily concerned the effect, if any, that the reduced temperatures calculated by Dr Canadell would have had on the impacts of climate change in the Torres Strait Islands.

223 The parties, mostly the applicants, also tendered a vast trove of documents. Many of those documents were scholarly articles, papers and other publications concerning climate change, global warming and the impacts thereof. Some of the reports were footnoted or referred to in the various expert reports, or by the experts themselves in their oral evidence. Some were referenced in the parties' submissions. I should emphasise that I made it clear to the parties, both before and during the hearing, that the only documents I was likely to read or consider in any detail were those that formed a material part of a witness' evidence, or were referred to in a material way in one of the parties' written submissions (not just included in a footnote), or were addressed in one of the parties' oral submissions, or were otherwise necessary to consider in order to resolve a material factual issue. As events transpired, I was required to, and did, have regard to several publications, particularly those that could fairly be considered to fall within the notion or concept of the best available science, a notion or concept that is discussed in more detail later.

Overview – some basic uncontentious or ineluctable scientific facts

224 It is useful to commence by stating some basic uncontentious or ineluctable facts which form part of the current scientific understanding of global warming and climate change. The scientific basis of those facts will be explained in more detail later. The following summary is largely taken from a paper authored by a working group of the IPCC: IPCC, 2021: Summary for Policymakers. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. A. Pirani, S.L. Connors, P. Pean, S Berger, N. CAud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R Mathews, T.K. Maycock, T. Wakefiled, O. Yelecki, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp 3-32 (**IPCC Summary for Policymakers**). As discussed later, however one cares to define the body of "best available science", it could scarcely be denied that reports of the IPCC fall

within the body of peer-reviewed scientific literature that constitutes the best available science.

- 225 It is an unequivocal scientific fact that human activity has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere (the frozen part of the Earth) and biosphere (the Earth's ecosystems) have occurred. The human activity that has caused that warming is activity that has resulted in the emission of greenhouse gases, including CO₂. It is the accumulation of those gases in the atmosphere that has resulted in the warming of the atmosphere.
- 226 The scale of recent changes across the Earth's climate system are unprecedented. Each of the last four decades has been successively warmer than any decade that preceded it since 1850. It can be said, with a high degree of confidence, that global surface temperature has increased faster since 1970 than in any other 50-year period over the last 2,000 years.
- 227 Human induced climate change is already affecting many weather and climate extremes in every region of the Earth. Evidence of observed changes in extremes, such as heatwaves, heavy precipitation, droughts and tropical cyclones, and their attribution to human influence, has strengthened in recent years. Human influence has likely increased the chance of such extreme events since 1950.
- 228 Global warming will continue to increase until at least 2050 under virtually any future greenhouse gas emissions scenario that has been considered by scientists. Global warming of 1.5°C and 2°C above pre-industrial levels will be exceeded during the 21st century unless deep reductions in CO₂ and other greenhouse gas emissions occur in the coming decades.
- 229 Many changes in the climate system become larger in direct relation to increasing global warming. These changes include: increases in the frequency and intensity of hot extremes; marine heatwaves; heavy precipitation in some regions; agricultural and ecological droughts in other regions; an increase in the proportion of intense tropical cyclones; and reductions in Arctic sea ice, snow cover and permafrost. Many of the changes are irreversible for centuries to millennia, especially changes in the ocean, ice sheets and global sea levels.
- 230 Continued global warming is projected to further intensify the global water cycle (the continuous movement of water, in all its forms, on Earth), including its variability, global monsoon precipitation and the severity of wet and dry events.

- 231 It can be said, with a high degree of confidence, that there is a near linear relationship
between cumulative anthropogenic CO₂ emissions and the global warming that they cause.
- 232 Every tonne (or part thereof) of CO₂ that is emitted into the atmosphere will add to global
warming.
- 233 Limiting human-induced global warming to a specific level requires limiting cumulative CO₂
emissions, reaching at least net zero CO₂ emissions, along with strong reductions in other
greenhouse gas emissions.
- 234 Greenhouse gas emissions scenarios that have been postulated by scientists which have very
low or low greenhouse gas emissions will lead within years to discernible effects on
greenhouse gas concentrations in the atmosphere, relative to those emissions scenarios that
have high or very high greenhouse gas emissions. Under those contrasting scenarios,
discernible differences in trends in global surface temperature would begin to emerge from
natural variability within around 20 years.
- 235 The emissions scenarios with very low or low greenhouse gas emissions would have rapid
and sustained effects to limit human-caused climate change, compared with the scenarios
with high or very high greenhouse gas emissions, but some responses of the climate system
could be masked by natural variability.
- 236 In short, lower global greenhouse gas emissions going forward will, in the near future, result
in discernible lower global surface temperature increases, as compared to the global surface
temperature increases that will result if there are higher greenhouse gas emissions. Lower
global surface temperature increases will in turn limit the effects of human-caused climate
change, as compared to effects that will result from the higher global surface temperature
increases resulting from higher greenhouse gas emissions. That will be so even if some of
those effects are masked by natural variability.
- 237 To put it even more concisely, human-caused climate change will be discernibly lower in the
near future if there are lower greenhouse gas emissions. Limiting climate change in the
future will require substantial and sustained reductions in greenhouse gas emissions.

The best available science

- 238 As has already been adverted to, the applicants' case relies to some extent on the notion that
there is a body of science, or scientific literature, that is said to constitute the "best available

science”. That is because the applicants’ case is that the duty of care that the Commonwealth owed Torres Strait Islanders included, in summary, a duty to take reasonable steps to ensure that it identified certain information “having regard to the Best Available Science”. That information included: the current and projected impacts of climate change on the Torres Strait Islands; the risk, scope and severity of those impacts; the global temperature limit necessary to prevent or minimise many of the current and projected impacts of climate change to small and low-lying islands in the Torres Strait Islands; and, critically, the target (“the Best Available Science Target”) that reflected the global temperature limit that was necessary to prevent or minimise the current and projected impacts of climate change on the Torres Strait Islands.

239 Given the way the applicants framed their case, it is necessary, as a first step, to determine if there is a body of science or scientific literature which is considered by the scientific community to constitute the “best available science” and, if so, to identify what body of science or scientific literature meets or falls within that description. If it is possible to identify what constitutes the best available science, the next step is to determine what that body of science says, in general terms, about climate change, its impacts, and greenhouse gas emissions targets.

240 The applicants alleged that the “[r]eports of the IPCC, WMO, UNEP, CSIRO, BOM and CCA represent the best available science on the causes and Impacts of Climate Change and the necessary actions to avoid the most dangerous Impacts of Climate Change”: 3FASOC [22]. The applicants did not identify any specific reports of those specified bodies that were said to represent the best available science. Rather, they alleged that the best available science “is not static and is ascertainable by reference to the reports” of the specified bodies.

241 For its part, the Commonwealth maintained in its defence that it did not know and therefore could not admit the applicants’ allegations about what was said to constitute the best available science. It did, however, admit that the IPCC, WMO and CSIRO are “leading sources of science on climate change”. Moreover, while the Commonwealth suggested that “peer-reviewed scientific literature in relation to the causes and impacts of climate change describes a body of information that evolves with time, in relation to which there is not necessarily consistency in the opinions and findings contained in different articles”, it nevertheless conceded that “the IPCC determines the state of knowledge on climate change, including identifying where there is agreement in the scientific community on topics related

to climate change, and where further research is needed”. That would appear to be a fair and reasonable concession. It would suggest, at the very least, that IPCC reports are likely to be a reliable source of information and findings related to climate change in respect of which there is agreement in the scientific community.

242 There was evidence about what constituted the best available science in relation to the causes and impacts of climate change. In his report, Professor Karoly expressed the following opinion in respect of the best available science:

There is no formal dictionary definition of ‘best available science’ that I am aware of. It refers to the best information currently available that is derived from scientific sources, such as reputable high-impact peer-reviewed scientific journals, that has been accepted by a majority of the scientific community. The very best of the ‘best available science’ in the context of climate change is provided by the comprehensive and lengthy Assessment Reports of the IPCC from its First Assessment Report released in 1990 to its Sixth Assessment Report released in four volumes between 2021 and 2023. The four volumes of the IPCC Assessment Reports comprise its synthesis report and the reports of its three Working Groups, each of which have different emphases: (1) the Physical Science Basis of Climate Change, (2) Climate Change Impacts, Adaptation and Vulnerability and (3) Mitigation of Climate Change.

In addition to the global and regional assessments provided by the IPCC, specific Australian assessments of climate change, its impacts and actions needed to avoid the most dangerous impacts of climate change have been undertaken by the Australian Academy of Science and by government agencies, including the Bureau of Meteorology and the Commonwealth Scientific and Industrial Research Organisation (CSIRO), as well as the five-yearly Australian State of the Environment reports. Each of these assessment reports is prepared by multiple scientists as authors, is based on recent relevant peer-reviewed scientific publications, and is subject to independent peer-review, so they all form part of the ‘best available science’.

243 Professor Karoly also identified a number of specific reports that in his opinion were sources of, or fell within, his description of the best available science. Those reports included, in summary: the IPCC **Fifth Assessment Report**; the IPCC Special Report 2018: Global Warming of 1.5°C; IPCC **Sixth Assessment Report**; the WMO’s annual State of the Global Climate reports; the UNEP’s annual Emissions Gap reports; two reports of the Australian Academy of Science (AAS) (*The Science of Climate Change: Questions and Answers*, 2015 and *The Risks to Australia of a 3°C Warmer World*, 2021); CSIRO and BOM biennial State of the Climate reports 2020 and 2022; and a report entitled ‘Australia State of the Environment 2021’ which was coordinated in a group within the then Commonwealth Department of Environment. Professor Karoly also referred to, but did not specifically identify, “several recent scientific review papers published in high-impact journals”.

244 Professor Karoly’s opinion about what could be said to constitute the best available science about the causes and impacts of climate change was not the subject of any, or any serious, challenge.

245 While the Commonwealth quibbled with the way the applicants had defined the best available science in their pleading, the Commonwealth ultimately accepted that the expression or term “Best Available Science” could appropriately be considered to be a short-hand expression for the leading sources of climate change science accepted by the majority of the scientific community. The Commonwealth also ultimately conceded or accepted that the following reports comprised, summarised, or contained the best available science: reports of the IPCC (presumably including those specifically identified by Professor Karoly); the Australia State of the Environment Report 2021 identified by Professor Karoly; the joint CSIRO and BOM reports identified by Professor Karoly; the UNEP’s Emissions Gap reports, at least insofar as it contained the UNEP’s calculations of the emissions gap; reports of the CCA, at least insofar as they summarise the best available science; and the reports of the AAS identified by Professor Karoly, other than parts of those reports (which it did not specifically identify) that were said to cover topics other than climate science. Finally, while it noted that Professor Karoly did not specifically identify it, the Commonwealth accepted that the following paper, which was tendered by the applicants was “leading climate science” when published: DI Armstrong McKay et al, ‘Exceeding 1.5C global warming could trigger multiple climate tipping points’ (2022) 377(6611) *Science* 1171.

246 As the preceding discussion indicates, there was eventually a broad measure of agreement between the parties as to what comprised, summarised or contained the best available science in respect of climate change and its impacts. While the notion or concept of the best available science is somewhat elusive, particularly given that it obviously evolves over time, the main sources or records of the best available science were for the most part not in dispute. In any event, and to the extent that it matters, I would accept Professor Karoly’s evidence about what constituted, or recorded, the best available science.

Climate Change

247 The fundamental concepts underpinning the current scientific understanding of climate change are essentially uncontroversial and were not in any real dispute in this proceeding. Nor could they be. The following short summary of those concepts is largely derived from the applicants’ closing submissions. The Commonwealth effectively embraced those

submissions. That is perhaps not surprising given that they were derived from the mostly undisputed evidence of Professor Karoly. Professor Karoly's evidence was, of course, far more detailed, comprehensive and technical than the following summary. It is, however, unnecessary, at least for present purposes, to descend to that level of technicality or detail.

The "greenhouse effect"

248 The temperature of the Earth's system is determined by the balance between incoming solar radiation and the loss of radiation from the Earth's surface and atmosphere into space. The loss of radiation into space is dependent upon the concentration of greenhouse gases in the atmosphere. Greenhouse gases absorb infrared radiation emitted from the Earth's surface and lower atmospheric levels and have the net effect of reducing the outgoing radiation emitted into space. That process is known as the greenhouse effect. The greenhouse effect results in hotter temperatures, both at the Earth's surface and in the lower atmosphere, than would otherwise occur if the greenhouse gases did not exist in the atmosphere.

249 If the concentration of greenhouse gases in the atmosphere increases, the magnitude of the greenhouse effect increases. Increased atmospheric concentrations of greenhouse gases create an imbalance between incoming solar radiation energy and outgoing radiation. That imbalance is referred to as "radiative forcing". An increase in atmospheric greenhouse gas concentrations contributes to an instantaneous radiative forcing that causes an increase in global temperature.

Major greenhouse gases and their global warming potential

250 The major greenhouse gases in the atmosphere are water vapour, CO₂, nitrous oxide and methane. The potential of those gases to contribute to global warming is dependent on their capacity to induce radiative forcing during their atmospheric lifetimes. Global warming potential (**GWP**) is the most common index used to measure radiative forcing. It represents the radiative forcing induced by the emission of a unit mass of any greenhouse gases, accumulated over 100 years, relative to CO₂ (**GWP-100**).

251 Any unit of water vapour is removed from the atmosphere within about one week by precipitation. Its GWP-100 is zero. It therefore does not contribute to global warming.

252 In contrast, CO₂ remains in the atmosphere for a long time. There are a range of natural processes which influence the amount of CO₂ in the atmosphere, including, for example, the recycling of CO₂ between the atmosphere, land surface vegetation and the upper layers of the

ocean. That recycling, however, does not remove CO₂ from the active carbon cycle aspects of the Earth's system. Once CO₂ is released into the atmosphere, the increased concentration of CO₂ in the atmosphere remains for 1000 years or more. It is therefore referred to as a "long-lived" greenhouse gas.

253 The GWP-100 of CO₂ is 1 because it is the reference gas in the definition of GWP.

254 Nitrous oxide is also a long-lived greenhouse gas. It has an atmospheric lifetime of about 109 years and has a GWP-100 of 273. Methane has a shorter atmospheric lifetime of about 12 years and has a GWP-100 of 30. It is nonetheless regarded as a long-lived greenhouse gas.

255 Carbon dioxide, nitrous oxide and methane have been and are the three most important contributors to global warming over the last 100 years. They all have substantial emissions from human activities, and all have GWP-100 of 1 or more.

The observed consequences of greenhouse gas emissions since the industrial revolution

256 Carbon dioxide, nitrous oxide and methane are not only emitted into the atmosphere as a result of human activity. They each also have natural sources of emissions. The decomposition of vegetation on land and the loss of dissolved CO₂ from oceans are the largest natural causes of emission of CO₂ into the atmosphere. Carbon dioxide, nitrous oxide and methane also have natural "sinks" or processes that remove them from the atmosphere. Carbon dioxide, for example, is removed from the atmosphere during photosynthesis, which is the process by which plants and some other organisms use sunlight to synthesise foods from CO₂ and water.

257 Global atmospheric greenhouse gas concentrations are determined by the balance between the combined natural and anthropogenic, or human-caused, greenhouse gas emissions and their natural sinks. Prior to the industrial revolution, which occurred between about 1850 and 1900, the variations of the global greenhouse gas concentrations in the atmosphere were quite small due to the long-term balance between natural emissions and natural sinks for each of the major greenhouse gases.

258 Since the industrial revolution, however, there have been large and exponential increases in the global atmospheric concentrations of the major greenhouse gases. That increase is unquestionably a product of the additional anthropogenic greenhouse gas emissions resulting from industrial activity. Those increases have continued until the present day. In 2019, atmospheric CO₂ concentrations were higher than at any time in at least 2 million years, and

concentrations of nitrous oxide and methane were higher than at any time in at least 800,000 years.

259 The large increases in global atmospheric concentrations of the major greenhouse gases since the industrial revolution have, in turn, resulted in large and unprecedented increases in global surface temperatures. That is undoubtedly a product of the greenhouse effect. Anthropogenic greenhouse gas emissions have increased dramatically since the commencement of the industrial revolution, contributing to increased concentrations of those gases in the atmosphere. Those increased concentrations have caused instantaneous radiative forcing, leading to an accumulation of excess energy that has warmed the Earth's oceans, land surface and lower atmosphere.

The near linear relationship between greenhouse gas emissions and global temperature increase

260 There is a near linear relationship between cumulative emissions of CO₂ from human activities and increases in global temperature. That proposition was and is uncontroversial. That was the effect of the evidence of each of Professor Karoly, Professor Pitman and Dr Canadell. The chain of reasoning that supports that proposition may be simply stated.

261 First, the increase in the global average concentration of CO₂ in the atmosphere since the industrial revolution is directly linearly related to the cumulative emissions of CO₂ from human activities since that time. That is because it takes a very long time for CO₂ to be removed from the atmosphere.

262 Second, the increase in the global average concentration of CO₂ equivalent gases since the industrial revolution is also linearly related to the cumulative anthropogenic emissions of all long-lived greenhouse gases, including nitrous oxide and methane.

263 Third, the increase of global temperature since about 1850 is near-linearly related to cumulative anthropogenic emissions of CO₂ since that time. That is supported by observations in respect of the period since about 1850 to the present day. It is also supported by climate model simulations for the period up to 2050.

264 Fourth, there is a near-linear relationship between cumulative emissions of CO₂ from human activities and an increase in global temperature. That proposition or conclusion follows if one combines the two scientific facts to which reference has already been made: first, the fact that the increase in greenhouse gas concentrations due to anthropogenic emissions contributes

to an instantaneous radiative forcing that in turn causes an increase in global temperature; and second, the fact that the increase in global CO₂ concentration since the industrial revolution is linearly related to the cumulative anthropogenic emissions of CO₂.

265 There is also a similar near-linear relationship, albeit with a different scaling factor (or slope on a graph), between the increase in global temperature since the industrial revolution and cumulative emissions of CO₂ equivalent gases. The different scaling factor or slope is a product of the fact that, as noted earlier, different greenhouse gases have different GWPs.

266 The simple but fundamental proposition that flows from these essentially indisputable scientific facts is every tonne of greenhouse gas from human activities causes an amount of radiative forcing that leads to an increase in global average temperature.

267 Analysis of climate data reveals that each of the last four decades has been warmer than any previous decade since 1850 and that the world is warming faster than at any time in at least the last two thousand years. As stated in the 2023 UNEP Emissions Gap Report, the “world is witnessing a disturbing acceleration in the number, speed and scale of broken climate records”. Those broken records include that September 2023 was the hottest month ever, exceeding the previous record by an “unprecedented” 0.5°C, and that global average temperatures were 1.8°C above pre-industrial levels.

THE IMPACTS OF CLIMATE CHANGE

268 There was very little dispute about the current and projected global impacts of global warming and climate change. Most of the applicants’ evidence concerning the global impacts of climate change was uncontested and essentially uncontroversial. The few areas of disagreement are addressed below. The impacts of climate change in the Torres Strait and on the Torres Strait Islands and their inhabitants are also addressed in more detail later in these reasons.

269 There was no dispute that the impacts of global warming and climate change include: global temperature increase; ocean acidification; increase in ocean temperature; increased humidity and changing precipitation patterns; sea level rise and inundation of coastal lands; increase in the frequency, size and intensity of extreme weather events; and harm and destruction of ecosystems and non-human species.

270 There was also no dispute that those impacts have been caused by the accumulation of anthropogenic greenhouse gases from around 1850 to date.

271 The following is a short summary of some of the impacts of climate change. Some specific findings made or reported by the IPCC in respect of the impacts of climate are discussed in more detail later.

Temperature increase

272 The evidence indicated that global average near-surface air temperature had increased by approximately 1.09°C from about 1850-1900 to 2011-2020. Over the same period, global average temperature over land increased by approximately 1.59°C. The global mean temperature over land increased by about 0.74°C from the 1986-1995 average to 2011-2020.

Ocean temperature increase

273 Global ocean temperatures have increased by approximately 0.88°C from about 1850-1900 to 2011-2020. The increase in global surface temperatures has essentially been driven by the increase in global atmospheric greenhouse gas concentrations from human activity due to the greenhouse effect. Professor Karoly's evidence was that the relationship between global temperature increases and increases in global ocean surface temperatures was nearly linear, though there are some geographic variations due to ocean current systems and variations in the mixing of surface waters into the deeper ocean waters.

Ocean acidification

274 Climate change has caused the acidification of the Earth's oceans. The acidity of ocean waters is determined by the dissolution of CO₂ from the atmosphere in the upper layers of the ocean. Increased atmospheric concentrations of CO₂ caused by anthropogenic emissions therefore causes the acidification of ocean waters. That relationship, although nearly linear, again often varies geographically because of ocean current systems and the mixing of surface waters with deeper ocean waters. In 2015, the IPCC found with high confidence in its Fifth Assessment Report that the pH (the figure or scale in respect of the acidity or alkalinity of water and other aqueous solutions) of ocean surface water had decreased by 0.1, which corresponded to a 26% increase in acidity.

Changes in humidity and precipitation patterns

275 Climate change has caused changes to precipitation patterns since 1850-1900. Increases in global temperature have led to near-linear increases in global average humidity in the lower atmosphere. The increase in specific humidity (the mass of water vapor in the air) and the increase in the total water content in the global atmosphere affects precipitation patterns.

Increases in global temperatures do not lead to globally uniform increases in precipitation but generally lead to increased precipitation in the tropics and high latitudes and decreased precipitation in the sub-tropics. In simple terms, on average wet regions get wetter and dry regions get drier. Increases in global temperature and associated increases in specific humidity have also led to increases in extreme hourly and daily rainfall in many regions around the world.

Sea level rises and inundation of coastal lands

- 276 Climate change has resulted in rising sea levels and the inundation of many coastal areas.
- 277 The evidence indicated that global mean sea level has increased by approximately 0.21 meters (0.16 to 0.26 meters) in the period from 1900 to 2020. The evidence of Professor Church was that observed sea level change is a result of increases in global temperatures. The two largest contributors to sea level rise since 1900 are ocean thermal expansion and the loss of mass from glaciers, both of which are caused by higher temperatures.
- 278 Professor Church's evidence also indicated that the frequency of extreme sea level events, such as one in one-hundred-year events, in particular locations can increase rapidly with a rise in mean sea level. Although the increase in frequency of such events varies globally and is to some extent dependent on local conditions, in some locations around Australia, a 0.1 meter rise in sea level can result in an increase in frequency of extreme events by a range of 1.8 to 5.8. Increases in global temperature also cause more intense climate variability, changes in windspeed and direction, and changes in sea level extremes.

Extreme weather events

- 279 Climate change has caused an increase in the frequency, size and intensity of extreme weather events including heatwaves, droughts, bushfires, tropical cyclones, severe storms and flooding. Professor Karoly's evidence was to the effect that there is an approximately linear relationship between increases in global temperature and the frequency and intensity of extreme temperatures, heatwaves, weather conditions conducive to bushfires, extreme daily rainfall, drought and coastal storm surges.
- 280 Professor Karoly did, however, acknowledge that the relationship between some extreme weather events and global temperature varied between different regions and between different types of extreme weather events. The relationship between global temperature and some extreme weather events, such as cyclones, hurricanes and typhoons, was also more

complex and unclear. Those weather systems are generally more affected by local and regional weather and environmental conditions.

Harm and destruction to ecosystems and non-human species

281 Climate change has caused harm to and the destruction of ecosystems and non-human species. The evidence indicated that human-induced climate change associated with increases in global temperature since 1850-1900 had caused widespread adverse impacts to marine, terrestrial and fresh-water ecosystems. Those impacts were the result of increases in the frequency and intensity of climate and weather extremes. The adverse impacts on ecosystems in turn caused losses and harm to local non-human species, including increases in disease and mass mortality events of various plants and animals.

282 Professor Karoly's evidence was that projected adverse impacts on ecosystems and related losses increase with every statistically significant increase in global temperature. There was therefore an approximately linear relationship between global temperature change and adverse impacts on ecosystems. Professor Karoly acknowledged, however, that the strength of this relationship varied substantially between different regions, depending on the complex relationships with other regional impacts of climate change.

283 There has been mass coral bleaching due to anthropogenic heating and associated longer and more extreme marine heatwaves. The evidence of Professor Hughes was that coral reefs had already experienced three pan-tropical episodes of intense coral bleaching in the past three decades at the current level of global warming.

Is there a near linear relationship between global temperature increases and adverse climate impacts?

284 The Commonwealth took issue with Professor Karoly's evidence to the effect that there was an approximate or near linear relationship between global temperature increases and some adverse climate impacts. The main basis for the Commonwealth's challenge to that evidence appeared to be that in one passage in one publication that Professor Karoly was taken to in cross-examination, the IPCC did not explicitly state that the relationship was linear, or approximately linear. The passage relied on by the Commonwealth in the IPCC Summary for Policymakers (at [B.2]):

Many changes in the climate system become larger in direct relation to increasing global warming. They include increases in the frequency and intensity of hot extremes, marine heatwaves, heavy precipitation and, in some regions,

agricultural and ecological droughts, an increase in the proportion of intense tropical cyclones; and reductions in Arctic sea ice, snow cover and permafrost.

(Emphasis added.)

285 When questioned, Professor Karoly made it clear that when he said near linear, or approximately linear, he meant “almost proportionately”. He obviously was not suggesting that there was a precise mathematical linear relationship. It is in my view doubtful that there is any meaningful distinction between the IPCC’s statement that “[m]any changes in the climate system become larger in direct relation to increasing global warming” and Professor Karoly’s evidence that the relationship between global warming and many of the changes in the climate system were approximately, or nearly, linear. While this dispute may be little more than a matter of semantics, I accept Professor Karoly’s evidence that there is a near linear relationship between global warming and many of the climate impacts to which he referred.

286 The Commonwealth also submitted that, even if it was correct for Professor Karoly to describe the relationship between global temperature increases and some of the impacts or changes in the climate system as nearly linear by reference to global average figures, that does not mean that such a linear relationship exists at the regional or local scale. The basis for that submission was the fact that, as Professor Karoly made clear in his evidence, there were variations in respect of the extent of some of the impacts flowing from increased temperatures at the regional level. The relationship between temperature increases and some of the climate impacts at the regional level may also be more complex. The difficulty with the Commonwealth’s submission, however, is that it does not follow from the fact that there may be regional variations that the relationship between temperature increases and climate impacts at a regional level cannot be said to be nearly or approximately linear. Rather, the fact that there are regional variations may just mean that the scale and extent of the linearity at a regional level may differ.

287 While not much may ultimately turn on this issue, in my view the evidence, including the evidence of Professor Karoly, tended to support the general proposition that there is a near or approximately linear relationship between temperature increases and most climate impacts at both the global and local or regional level, though the scale of the linearity may vary between different geographical locations. Regional factors may also affect the extent or degree of the linearity at the local level. In other words, the linear relationship may be clearer and more obvious in some places than others due to various local factors. Another way of putting that

proposition is that there is a direct and almost proportionate relationship between temperature increases and climate impacts at both a global and regional level, though the scale and extent of that proportionate relationship may vary in respect of some of the impacts in some regions. The critical point is that the relationship is essentially direct. The greater the temperature increases, the greater the adverse climate impacts.

288 As noted earlier, the Commonwealth's submission in respect of the significance of regional variations relied to an extent on a paragraph ([B.2]) taken from the IPCC Summary for Policymakers. The following paragraphs, which appear immediately after the paragraph relied on by the Commonwealth, make the direct nature of the relationship between global warming and climate impacts abundantly clear:

It is *virtually certain* that the land surface will continue to warm more than the ocean surface (*likely* 1.4 to 1.7 times more). It is *virtually certain* that the Arctic will continue to warm more than global surface temperature, with *high confidence* above two times the rate of global warming.

With every additional increment of global warming, changes in extremes continue to become larger. For example, every additional 0.5°C of global warming causes clearly discernible increases in the intensity and frequency of hot extremes, including heatwaves (*very likely*), and heavy precipitation (*high confidence*), as well as agricultural and ecological droughts in some regions (*high confidence*). Discernible changes in intensity and frequency of meteorological droughts, with more regions showing increases than decreases, are seen in some regions for every additional 0.5°C of global warming (*medium confidence*). Increases in frequency and intensity of hydrological droughts become larger with increasing global warming in some regions (*medium confidence*). There will be an increasing occurrence of some extreme events unprecedented in the observational record with additional global warming, even at 1.5°C of global warming. Projected percentage changes in frequency are larger for rarer events (*high confidence*).

Some mid-latitude and semi-arid regions, and the South American Monsoon region, are projected to see the highest increase in the temperature of the hottest days, at about 1.5 to 2 times the rate of global warming (*high confidence*). The Arctic is projected to experience the highest increase in the temperature of the coldest days, at about three times the rate of global warming (*high confidence*). With additional global warming, the frequency of marine heatwaves will continue to increase (*high confidence*), particularly in the tropical ocean and the Arctic (*medium confidence*).

It is *very likely* that heavy precipitation events will intensify and become more frequent in most regions with additional global warming. At the global scale, extreme daily precipitation events are projected to intensify by about 7% for each 1°C of global warming (*high confidence*). The proportion of intense tropical cyclones (Category 4–5) and peak wind speeds of the most intense tropical cyclones are projected to increase at the global scale with increasing global warming (*high confidence*).

Additional warming is projected to further amplify permafrost thawing and loss of seasonal snow cover, of land ice and of Arctic sea ice (*high confidence*). The Arctic is *likely* to be practically sea ice-free in September at least once before 2050 under

the five illustrative scenarios considered in this report, with more frequent occurrences for higher warming levels. There is *low confidence* in the projected decrease of Antarctic sea ice.

(Italics in original; citations omitted.)

289 As has already been noted, the evidence concerning the impacts of climate change on the Torres Strait Islands is discussed in more detail later. So too is an issue concerning the modelling of regional impacts.

Tipping points

290 Tipping points are critical thresholds in components of the system which, if crossed, can cause abrupt and possibly irreversible change in those components. Those components are called tipping elements. Increases in global temperature and continued deforestation could, for example, cause the Amazon rainforest, a tipping element, to cross a threshold after which the rainforest dies back or dies out. Other examples of tipping points are global temperature increases causing rapid enhancement of sea level rise from the collapse of the Greenland or West Antarctic ice sheets, and the die-off of tropical coral reefs.

291 Passing tipping points can cause “positive feedback loops”, where global temperature increases are further enhanced once the threshold is crossed. The dieback of the Amazon rainforest, for example, would reduce the ability of that ecosystem to remove CO₂ from the atmosphere, which would then increase the level of atmospheric CO₂, which would in turn cause further warming.

292 It is uncontroversial that the risk of passing tipping points increases with global temperature increases. That means, for example, that the risk of triggering tipping points is greater if global temperature increases beyond 1.5°C of warming, than it would be if global temperature increases were kept at or below 1.5°C. There are, however, difficulties in modelling exactly which temperature increases will likely trigger particular tipping points, what the impacts of the triggering of those tipping points are likely to be, and whether or not those impacts are likely to be irreversible.

293 The evidence of Professor Church and Professor Karoly identified three particular tipping points that, if passed or triggered, would be likely to have a significant impact on the low-lying islands in the Torres Strait.

294 The first of those tipping points was the collapse of the Greenland icesheet. Temperature increases could cause the ice sheet to rapidly melt and contribute up to 7.4 metres of sea level

risers over centuries to a millennium or more. The threshold that could cause the collapse of the ice sheet is in the range of 1°C to 4°C of warming. Higher levels of warming would cause greater loss of ice and consequently greater sea level rises.

295 The second tipping point that may be of particular relevance to the Torres Strait Islands is the collapse of the West Antarctic ice sheet. That tipping point could again cause significant sea level rises. Professor Church's evidence (expressed in simple terms) was to the effect that this tipping point might not be triggered with respect to the East Antarctic ice sheet if global temperatures were kept below 2°C from pre-industrial levels. The evidence suggests that the collapse of the West Antarctic ice sheet may already be underway.

296 If either or both of those first two tipping points were triggered, the resulting rises in sea levels would continue for centuries to millennia. That is because it can take centuries to millennia for ocean temperature to decrease and ice sheets to reform. There was essentially no dispute that the low-lying islands in the Torres Strait would be particularly vulnerable to the likely sea level rise that would result from the loss of the world's glaciers and ice sheets.

297 The third tipping point that would have a particular impact on the Torres Strait is the rapid melt of permafrost. Permafrost is frozen ground that includes soil and ice. The rapid melt of permafrost could trigger a positive feedback loop that would enhance the effects of climate change. When permafrost melts, trapped methane and CO₂ can be released. That can in turn lead to increased greenhouse gas emissions and further warming. That would then further enhance the effects of climate change, including sea level rises.

298 There is undoubtedly a degree of scientific uncertainty about the different temperature thresholds at which the various tipping points are likely to be triggered. What is abundantly clear and effectively uncontroversial, however, is that the risk of exceeding any of the critical thresholds or tipping points is, as Professor Karoly put it, "much lower in a global world where global temperatures are less than 1.5°C warmer than the Baseline [the period 1850-1900]" and that the "risk of reaching any of these tipping points is greater for every increase of global temperature from 1.5°C warmer than the Baseline".

299 In short, the likelihood of tipping points being triggered, and irreversible change then occurring, increases as global temperatures rise.

Time lags

- 300 Time lags are the lag between the emissions of greenhouse gases and the climate change impacts caused by those emissions. For example, ocean warming and ice sheet melt take a long time to respond to rises in temperature, meaning that sea level rises that are happening now are likely the product of past greenhouse gas emissions.
- 301 The existence of time lag means that there is a level of sea level rise that can no longer be prevented. That is because current temperature rises are essentially caused by greenhouse gases already in the atmosphere. That means that even if surface temperatures stop rising, some sea level rise will continue due to the continuing effects of past emissions.
- 302 As ocean warming and ice sheets take a long time to respond to changes, many impacts of climate change will continue for centuries to millennia, even if emissions begin to decline in the future.

Modelling regional impacts of climate change

- 303 As has already been touched on, it is essentially uncontroversial that the relationship between temperature increases and regional climate impacts is more complex and subject to variations than is the case with the relationship between temperature increases and climate impacts at the global level. The impacts of climate change can undoubtedly vary region by region depending on regional weather and environment conditions, such as wind patterns and ocean currents. The variability that may exist at local and regional levels means that it is more difficult to make detailed predictions concerning the future impacts of climate change at the regional level or in specific locations.
- 304 Professor Pitman's evidence was that most climate models are designed to simulate global climate. To keep computational costs to a reasonable level, they generally use "latitude-longitude grid points" which are "coarse", usually around 80km-by-80km to 250km-by-250km in size. Equations are then run over each grid box or "pixel" to provide a prediction of, for example, the surface temperature or rainfall in that area over time and into the future. Because each "pixel" is relatively large, the models have limitations in terms of capturing climate change on "spatial scales below large regions". According to Professor Pitman, meteorological or hydrological predictions for areas as large as 80km-by-80km or 250km-by-250 km are "not typically useful in assessing the impacts of climate change ... at regional scales". For example, the city of Sydney is about 100km-by-100km in size, so a

climate change model with pixels of that size would produce figures for, for example, temperature changes over the entire city over time, when in reality temperature changes could be quite different between suburbs close to the ocean (which tend to be cooler) compared to those further away from the ocean.

305 Professor Pitman did, however, acknowledge that the “challenges” associated with using course grids in climate change models have led to the development of regional climate models that utilise “dynamical” or regional “downscaling” to predict the course of climate change at regional levels. That method of modelling operates in a similar way to the global models, but uses smaller grids, such as a 10km-by-10km grid, to model the impact of regional climate change. Information concerning, for example, wind, temperature, pressure and humidity at the boundaries of the region of interest (referred to as “boundary condition data”) is fed into the model and applied to the smaller grid representing the region. The boundary condition data is necessary because the climate within any region is “substantially affected” by how the larger scale state of the atmosphere and ocean responds to changes in greenhouse gas concentrations.

306 According to Professor Pitman, the scientific community had a “diversity of views” concerning the value of regional climate change models that used dynamical downscaling. One criticism of such models concerns the fact that the boundary condition data that is fed into the model is derived from global models. The criticism is that the regional models therefore can inherit biases from those global models. Other scientists, however, strongly support the use of regional climate models and argue that higher spatial resolution in such models (the smaller grids or pixels) add considerable value.

307 Professor Pitman’s own view was that the scientific value of regional climate models depended on the use to which the models were to be put. Regional models were particularly useful in areas with complicated physical features, such as mountains. Global models tended to “smooth” over such features because they use large or course grids. They were therefore less accurate than regional models in predicting some climate impacts which tended to be impacted by the physical features of the land, such as where rain would fall or where temperatures would increase. It followed that regional models could improve on what global models could do in such areas. Professor Pitman nonetheless remained uncertain about whether a regional model could provide any additional information about the impacts of climate change in non-mountainous areas such as the Torres Strait.

308 Professor Pitman did note that an international program called the Coordinated Regional Climate Downscaling Experiment (**CORDEX**), which is part of the World Climate Research Program, had produced a regional climate change model using dynamical downscaling for Australasia, including the Torres Strait.

309 In his evidence, Professor Karoly agreed with Professor Pitman that there were some in the scientific community who disagreed with the dynamical downscaling approach. He noted, however, that that was not the case in respect of the majority of climate scientists. He also noted that the IPCC had assessed the projections produced by the CORDEX model as having value. Moreover, he indicated that, while he was unaware of any peer-reviewed published analysis of the CORDEX data specifically relating to the Torres Strait region, he was aware that the dynamically downscaled data for Australia generally had been evaluated as having value.

310 Professor Pitman also referred to other regional climate change models which, instead of using dynamical downscaling, use a “stretched grid” or “variable resolution” approach. Those models use a spatial grid that is very high resolution (for example 10km-by-10km) which is centred over the region of interest, with gradually coarser spatial resolutions moving away from that region. Importantly, however, those models do not use boundary condition data derived from global models, though they rely on global models for projections of sea surface temperature. Professor Pitman was not aware of any studies which considered whether the use of those projections had any implications in respect of regional models in respect of areas, like the Torres Strait, which had small islands surrounded by oceans. He noted, however, that any errors in the sea surface temperatures simulated by the global models would most likely influence the projections of future conditions in such regions.

311 Professor Pitman noted that the Queensland Government had undertaken an “exemplar project” using this “stretched grid (variable resolution)” approach. The resulting regional model extended to the Torres Strait.

312 In his report, Professor Karoly referred to specific projections of the future climate prepared using the “down-scaled high resolution regional climate model simulations” undertaken by the Queensland Government and taken from the Queensland Future Climate Dashboard. That would appear to be the “stretched grid” model referred to by Professor Pitman. Those projections, and Professor Karoly’s evidence in relation to them, are discussed in more detail later in the context of the evidence and findings concerning the impacts of climate change on

the Torres Strait Islands. It suffices to note at this point that Professor's Karoly's evidence was that he had evaluated the data from the Queensland Government's regional model for the period 1950 to 2020 and had found that data to be consistent with the observed data in respect of climate in the Torres Strait Islands. In particular, he found that there had been statistically significant changes in mean temperature and increases in extreme rainfall amounts that agreed with the model simulations. His evidence was that, while there may be uncertainties in the regional climate projections, the "observed changes are entirely consistent with those climate projections from 1950 till the present date". He also maintained that "the future projections are consistent with amplified climate changes consistent with increases in global average temperature and increases in greenhouse gases ... that are used in those model projections".

313 It is largely unnecessary to resolve any disagreement between Professor Pitman and Professor Karoly about the utility and reliability of regional climate change models in predicting future climate change impacts at the regional level. Were it necessary to do so, I would be inclined to accept the views in Professor Karoly's evidence concerning the value and usefulness of the regional models. In short, while there may be some technical issues about regional models and some resulting uncertainties about the reliability of their projections, those projections are nonetheless of some value in predicting the impacts of climate change in certain regions into the future.

Impacts of climate change on the Torres Strait Islands

314 The evidence concerning the current and projected impacts of climate change on the Torres Strait Islands is discussed in detail later in these reasons. It is sufficient to note at this point that there was essentially no dispute that all the significant global impacts of climate change have been experienced to some degree on the Torres Strait Islands, including: rising sea levels; extreme sea level events; inundation and flooding, particularly of low-lying coastal areas and on the low-lying islands; coastal erosion; increases in ocean temperature; coral bleaching; damage to ecosystems; and the increased mortality of certain marine life. The only real factual issue concerned the precise nature and extent of those impacts, particularly in recent times.

MITIGATING CLIMATE CHANGE

315 Climate change is undoubtedly a global problem. The solution to that global problem requires input from all countries and all governments around the world. While it is not a

problem that any one country or government could fix by itself, it is important that all countries and governments cooperate with each other and contribute to the solution. That includes Australia and the Commonwealth. The global response to climate change, and the global cooperation of most countries, has largely been facilitated or undertaken through the United Nations Framework Convention on Climate Change (**UN Convention on Climate Change, UNFCCC, or the Convention**). The global response to climate change will be addressed shortly. Before addressing that topic, however, it is useful to briefly address some of the climate science and methodologies that has informed or underpinned that global response.

Net zero

316 It is uncontroversial that, to stop further global temperature increases and the resulting impacts of climate change, it will be necessary to reach a balance between the amount of CO₂ that is emitted and the amount of CO₂ that is removed from the atmosphere. That balance is generally referred to as **net zero**, or as net zero CO₂ emissions. Strategies for achieving net zero include reducing CO₂ emissions from human activities or increasing “carbon sinks” – a term used to describe anything that absorbs CO₂ from the atmosphere – or a combination of both strategies. It is also uncontroversial that, once the Earth reaches net zero CO₂ emissions, the atmospheric concentration of CO₂ will decline for a short period “before stabilising at an elevated level that [will] last for many hundreds or thousands of years”. The parties broadly agreed that achieving net zero CO₂ emissions was necessary to stabilise global surface temperature increases, although the Commonwealth’s position was that it was unnecessary to achieve net zero emissions of greenhouse gases other than CO₂.

Global CO₂ budgets

317 As there is a near linear relationship between CO₂ emissions and global temperature increase, the cumulative amount of global CO₂ emissions that can be emitted globally over a certain timeframe can be calculated to give a specified probability of holding global temperature increase at a given level. That amount is known as a **CO₂ budget**. As Professor Meinshausen put it, a CO₂ budget is the maximum amount of CO₂ that can be emitted while keeping global mean temperature rise below a given threshold. When the CO₂ budget refers to future emissions, it is generally referred to as the **remaining CO₂ budget**.

318 The CO₂ budget concept applies globally. There is a near linear relationship between global total CO₂ emissions and global mean warming. Each tonne of CO₂ which is emitted globally

increases global mean temperatures and increases them by roughly the same amount. It does not matter where the CO₂ emissions occur or when they occurred.

319 The IPCC has calculated CO₂ budgets since its Fifth Assessment Reports, which were published in 2013 and 2014. In its Sixth Assessment Reports, published in August 2021, the IPCC calculated that the remaining CO₂ budget, from the start of 2020, for keeping global warming below 1.5°C was 500 gigatonnes (Gt or GtCO₂). A gigatonne of CO₂ is one billion tonnes of CO₂ or one trillion kilograms of CO₂. Since the start of 2020, humans have emitted approximately 135 GtCO₂. Therefore, the remaining CO₂ budget to hold global warming to 1.5°C is (as at the time the figure for emissions from the start of 2020 was calculated) approximately 365 GtCO₂.

320 There is, however, a degree of scientific uncertainty in respect of the precise quantification of CO₂ budgets. That is because there is some uncertainty about how much warming each tonne of CO₂ emissions causes. For that reason, CO₂ budgets are formulated as a budget that keeps warming below a certain level with a given probability. The IPCC's CO₂ budget published in its Sixth Assessment reports, referred to earlier, was expressed as having a probability of 50%. In other words, the global remaining CO₂ budget of 500 GtCO₂ was stated as having a 50% chance of holding global temperature increase to 1.5°C.

CO₂ budgets and cumulative greenhouse gas emissions targets

321 As discussed in more detail later in these reasons, most nations set targets in respect of greenhouse gas emissions, not targets in respect of CO₂ emissions alone. Professor Meinshausen's evidence, however, was that it is possible to calculate the quantity of cumulative greenhouse gas emissions which are or would be consistent with given CO₂ budgets. For example, it is possible to calculate the remaining cumulative greenhouse gas emissions that can be emitted globally which are or would be consistent with a CO₂ budget that limits global warming to 1.5°C.

322 Professor Meinshausen's evidence was that the literature concerning the reduction of emissions which has been investigated by the IPCC in its Sixth Assessment Report indicated that there is a linear relationship between the CO₂ budget and cumulative greenhouse gas emissions in scenarios that model the worldwide transition to net zero emissions. It follows that, once the CO₂ budget which would keep global mean temperature rise below a given threshold within a specified time period is known, it is possible to calculate the corresponding

cumulative greenhouse gas emissions that can be emitted in that time period so as to keep the global temperature increase to that threshold.

323 Professor Meinshausen noted, however, that in performing that calculation, it is necessary to take into account that the atmospheric life of CO₂ is different to the atmospheric life of other greenhouse gases. Carbon dioxide is considered a long-lived greenhouse gas because, once released into the atmosphere, the increased concentration of CO₂ in the atmosphere remains for 1000 years or more. In contrast, nitrous oxide has an atmospheric lifetime of about 109 years and methane has an atmospheric lifetime of about 12 years. The consequence of having a shorter atmospheric life is that it is necessary to have regard to the time when the units of the short-lived gases, in particular methane, were released. Emitting a certain amount of methane at once, for example, has a much larger effect in terms of peak warming than emitting the same amount gradually over a long period.

The remaining cumulative greenhouse gas emissions until 2050 to limit global warming to 1.5°C.

324 Professor Meinshausen calculated the remaining cumulative greenhouse gas emissions until 2050 consistent with a CO₂ budget to limit global temperature increase to 1.5°C above pre-industrial levels as of 2014 and 2022. It is unnecessary to explain the technical details of Professor Meinshausen's calculations in that regard, particularly as those calculations were not challenged or disputed by the Commonwealth or the expert witnesses called by it.

325 Professor Meinshausen's evidence was that, based on his calculations, the best estimate of the remaining global cumulative greenhouse gas emissions from 2014 until 2050 consistent with a CO₂ budget to limit global temperature increase to 1.5°C above pre-industrial levels is 823 GtCO₂-eq – that is, 823 gigatonnes of CO₂ equivalent greenhouse gases. As of the start of 2022, the best estimate is that the remaining global cumulative greenhouse gas emissions until 2050 consistent with a CO₂ budget to limit global temperature increase to 1.5°C above pre-industrial levels is 446 GtCO₂-eq.

The allocation between nations of the remaining greenhouse gas emissions to limit global warming

326 Once it is accepted that it is possible to calculate the remaining cumulative greenhouse gas emissions which would be consistent with a CO₂ budget to limit global temperature increase to 1.5°C above pre-industrial levels, consideration can then be given to how those remaining emissions can or should be allocated between countries so that each country knows the part

that it must play in order to keep global temperature increase to 1.5°C above pre-industrial levels. If, for example, one takes the figure calculated by Professor Meinshausen for the remaining global cumulative greenhouse gas emissions as at 2022 (446 GtCO₂-eq), the question is what proportion of that amount should be allocated so each country is able to determine an emissions limit consistent with a global intention to limit temperature increase to 1.5°C. In other words, what quantity of greenhouse gas can be emitted by each nation in an effort to keep the maximum emissions from 2022 to 2050 below the global threshold of 446 GtCO₂-eq?

327 Professor Meinshausen used the following analogy in his report to explain the idea of allocating the remaining cumulative greenhouse gases between the world's nation states (at [49]):

Once global limits on cumulative greenhouse gas emissions are established, the next question is what the share of those emissions should be for each country. An analogy for this is sharing a rubbish skip with your neighbours. The skip can only take so much rubbish (this is analogous to the limit on cumulative greenhouse gas emissions). If one of the neighbours puts all their rubbish in the skip straight away, there is less room for everyone else. If someone takes more than their fair share of space, then there is less room for everyone else. If everyone takes more than their fair share, then you end up with rubbish on the street, creating a new problem which everyone has to deal with. The key question is how much each neighbour should be allowed to put into the skip and how that allocation should be decided: should the allocation be based on need, how much rubbish each neighbour has already put in the skip, on wealth, on the ability to avoid creating rubbish in the first place or on something else?

328 This issue has been the subject of considerable academic and scientific discourse internationally. In its Fifth Assessment Reports, the IPCC examined the various different “effort-sharing regimes” that had been discussed in the scientific literature in its Fifth Assessment Reports. Professor Meinshausen’s report also contains details of some of the key publications. It is unnecessary to give any detailed consideration to the various regimes or the literature in which they are discussed. It was common ground that the scientific community has identified three broad categories into which the different allocation methodologies can be categorised. Those three categories are: first, the **equality** or equal per capita methodology; second, the **historical responsibility** methodology; and third, the **grandfathering** methodology.

329 The equality or equal per capita methodology is premised on the principle that every person on earth should be allocated approximately the same amount of the remaining greenhouse gases irrespective of present-day conditions, historical emissions or capability. As such, these

methodologies are calculated on an equal per capita basis. In essence, the allocation to each nation will be based on its population.

330 The historical responsibility methodology allocates greater shares of remaining greenhouse gas emissions to those nations that have either emitted less in the past, or have less capacity to facilitate a transition to net zero in their domestic economies.

331 The grandfather methodology allocates a greater share of remaining emissions to nations that have high emissions in the present day. That approach gives historical polluters more emissions so that their transition to net zero is smoother. Professor Meinshausen's evidence was that the grandfathering approach had been criticised in the scientific literature as inequitable given that it provides higher pollution allocations to those who polluted more in the past and were therefore largely responsible for the problem of climate change.

332 While the three categories of methodologies have been the subject of considerable discussion and debate, there has been and is no current consensus on what methodology should be adopted or exactly how remaining global cumulative greenhouse gas emissions should be allocated to countries. Professor Meinshausen indicated that the countries who participated in international climate negotiations have not agreed on a single approach that should be used. Professor Meinshausen's evidence was to the effect that it was not a matter for climate scientists to reach such a consensus because the decision as to which methodology should be adopted involves value or policy judgments. Professor Meinshausen, being a climate scientist, did not express any opinion about which methodology was most appropriate or should be adopted. Instead, Professor Meinshausen calculated Australia's allocation using each of the methodologies.

The remaining cumulative gas emissions for Australia until 2050 consistent with a CO₂ budget to limit global temperature increases to 1.5°C

333 Professor Meinshausen calculated Australia's share of the remaining global cumulative greenhouse gas emissions until 2050, consistent with a temperature increase threshold of 1.5°C, under each of the three different categories of allocation methods to which reference has been made. His calculations were as at two dates, 2014 and 2022 – that is, assuming emissions reduction targets aimed at meeting those allocations were set in 2014, on the one hand, and 2022, on the other. In each case, Professor Meinshausen began with the remaining global cumulative greenhouse gas emissions until 2050 consistent with a CO₂ budget to limit global temperature increase to 1.5°C above pre-industrial levels as at 2014 of 823 GtCO₂-eq.

334 Professor Meinshausen also identified the emissions reduction “milestones” or targets that Australia would have been required to meet if those greenhouse gas emissions allocations were to be met.

335 It is unnecessary to detail the precise methodology adopted by Professor Meinshausen in calculating Australia’s allocation of cumulative greenhouse gas emissions based on the various methodology scenarios to which reference has been made. That is because his calculations were not disputed, though the Commonwealth took issue with aspects of his “approach” and ultimately disputed the relevance or significance of his calculations. The same can be said about Professor Meinshausen’s conclusions concerning the pathway milestones or targets that Australia would have had to set as at 2014 and 2022 to meet those milestones. The Commonwealth did not dispute Professor Meinshausen’s calculation of those milestones, but rather took issue with his approach and disputed the relevance of what it characterised as “hypothetical targets”.

336 The Commonwealth’s contentions concerning the approach taken by Professor Meinshausen, the relevance of his calculations, and the inferences or conclusions that can be drawn from them are discussed in detail later. It is first necessary to identify what those calculations were. It should be emphasised at this point, however, that Professor Meinshausen’s calculations are in many respects a critical plank in the applicants’ case. The question whether any relevant or meaningful conclusions can be drawn from them is accordingly a critical question in this case.

Allocations and required emissions reductions as at 2014

337 Professor Meinshausen’s evidence was that if the equality, or equal per capita methodology was to be employed, Australia would, or would have been, allocated a 0.33% share of the remaining global cumulative greenhouse gas emissions as at 2014 (823 GtCO₂-eq). Australia’s allocation would therefore have been 2.72 GtCO₂-eq. Assuming that any action in relation to emissions reductions started in 2014, to limit emissions to that figure would have required, on a straight-line trajectory or pathway, Australia to reach net zero CO₂ equivalent greenhouse gas emissions by 2024.

338 If the historical responsibility methodology was to be employed, Australia would, or would have been, allocated significantly less than its per capita share (0.33%) of the remaining global cumulative greenhouse gas emissions as at 2014 (823 GtCO₂-eq). That is because under the historical responsibility allocation methodology, countries like Australia, that have

large historical emissions and have a relatively high capacity to reduce emissions, would receive a smaller share of cumulative emissions. Professor Meinshausen did not quantify that share. Rather, he concluded that Australia's allocation would have been significantly less than 2.72 GtCO₂-eq. Assuming action in relation to emissions reduction started in 2014, to limit emissions to that figure would have required, on a straight-line trajectory or pathway, Australia to reach net zero emissions *before* 2024.

339 If the grandfathering methodology was to be employed, Australia would, or would have been, allocated a 0.97% share of the remaining global cumulative greenhouse gas emissions as at 2014 (823 GtCO₂-eq). Professor Meinshausen based that figure on a review of Australia's greenhouse gas emissions goals conducted by the CCA in 2014. Professor Meinshausen's opinion was that the CCA's proposed allocation was a form of grandfathering that provided Australia with an allocation at the high-end of the range. Australia's allocation would on that basis have been 7.98 GtCO₂-eq. Assuming that action in relation to emissions reduction started in 2014, to limit emissions to that figure would have required, on a straight-line trajectory or pathway: emissions reductions below 2005 levels of 47% by 2025, 62% by 2030, 78% by 2035, 93% by 2040 and net zero by 2043.

Allocations and required emissions reductions as at 2022

340 As indicated earlier, Professor Meinshausen did the same calculations as at 2022; that is, on the assumption that emissions reduction targets aimed at meeting those allocations were set in 2022. His calculations as at 2022 were as follows.

341 If the equality, or equal per capita methodology was to be employed, Australia's allocation would therefore have been *negative* 1.32 GtCO₂-eq. In other words, Australia had already exhausted that allocation before 2022. It could not meet its allocation.

342 If the historical responsibility methodology was to be employed, Australia's allocation would have been *less than negative* 1.32 GtCO₂-eq. That would again mean that Australia had already exhausted that allocation before 2022 and therefore could not meet its allocation.

343 If the grandfathering methodology was to be employed, Australia's allocation would have been 3.94 GtCO₂-eq in 2022. To limit emissions to that figure would have required, on a straight-line trajectory or pathway commencing in 2022: emissions reductions below 2005 levels of 44% by 2025, 63% by 2030, 83% by 2035, and net zero by 2040.

Australia's allocation of cumulative greenhouse gas emissions and its emissions reduction targets

344 The applicants contended that the emissions reduction targets set by Australia in 2015 and 2022 were inconsistent or incompatible with Australia limiting its greenhouse gas emissions to its allocation, based on Professor Meinshausen's calculations, of the remaining global cumulative greenhouse gas emission allocations which would be consistent with a CO₂ budget which would limit global temperature increase to 1.5°C above pre-industrial levels. That contention is a particularly important plank in the applicants' case that the Commonwealth breached its targets duty of care.

345 The emissions reduction targets set by Australia are considered in detail later in these reasons. It is sufficient to note at this point that the target set by Australia in 2015 was to reduce greenhouse gas emissions by 26 to 28% of its 2005 levels by 2030. The target set by Australia in 2022 was to reduce its greenhouse gas emissions by 43% of 2005 levels by 2030. The applicants contended that, based on Professor Meinshausen's evidence, neither of those emissions reduction targets would or could have seen Australia limiting its greenhouse gas emissions to its remaining cumulative greenhouse gas emission allocations consistent with limiting global temperature increase to 1.5°C above pre-industrial levels. That was the case whichever of the three allocation methodologies was employed.

Professor Meinshausen's evidence

346 Professor Meinshausen was specifically asked to consider whether the greenhouse gas emissions reduction targets that were set by Australia in 2015 (though Professor Meinshausen's report states that the target was set in 2014) and 2022 were consistent with Australia remaining within the remaining cumulative gas emission allocations which, according to his calculations, would be consistent with a CO₂ budget which would limit global temperature increase to 1.5°C above pre-industrial levels. The effect of Professor Meinshausen's evidence, in short summary, was that neither of those targets were consistent with Australia remaining within the cumulative greenhouse gas allocation limits that were calculated by him.

347 In relation to the 2014 emissions reduction target, in summary (and as discussed earlier), Professor Meinshausen calculated that Australia's allocation of remaining cumulative greenhouse gas emissions was 2.72 GtCO₂-eq (employing the equality or equal per capital allocation methodology), less than 2.7 GtCO₂-eq (employing the historical allocation

methodology) or 7.98 GtCO₂-eq (employing the grandfathering allocation methodology). The emissions reduction target set in 2015 could not, in Professor Meinshausen's opinion, have resulted in Australia remaining within any of those limits. Rather, Australia would at best have exhausted its greenhouse gas emissions limit by 2030, and at worst seen Australia emit more than three times its allocation by 2030.

348 In relation to the 2022 emissions reduction target, Professor Meinshausen calculated that Australia's allocation of remaining cumulative greenhouse gas emissions was negative 1.32 GtCO₂-eq (employing the equality or equal per capital allocation methodology), less than negative 1.32 GtCO₂-eq (employing the historical allocation methodology) or 3.94 GtCO₂-eq (employing the grandfathering allocation methodology). The emissions reduction target set in 2022 could not, in Professor Meinshausen's opinion, have resulted in Australia remaining within any of those limits. In the best-case scenario (based on the grandfathering allocation methodology), the target was *theoretically* consistent with it remaining within the limit. According to Professor Meinshausen, however, it would in this scenario be practically impossible for Australia to remain within its allocation by 2050 because Australia would have used up virtually all its allocation by 2030 and would almost inevitably exceed the limit a few years later. In the other two scenarios, Australia would have exhausted its allocation before, or even well before, 2022.

349 It would follow that, based on Professor Meinshausen's purely scientific analysis, the greenhouse gas emissions targets set by Australia in 2014 and 2022 were not consistent with Australia keeping its greenhouse gas emissions below its allocation of global cumulative greenhouse gas emissions until 2050 consistent with a CO₂ budget which would limit global temperature increase to 1.5°C above pre-industrial levels. That would be the case irrespective of which of the three broad allocation methodologies was adopted to determine Australia's emissions allocation.

The Commonwealth's criticisms of Professor Meinshausen's approach

350 The Commonwealth criticised Professor Meinshausen's approach on two main bases.

351 The first criticism was that his approach was based on "hindsight analysis". That was said to be because, in calculating a CO₂ budget for 2014, Professor Meinshausen worked backwards from (and adjusted) data that was not published until 2021. The Commonwealth also pointed out that Professor Meinshausen's conclusions were premised on there having been a global consensus that it was necessary to limit global temperature increase as at 2050 to 1.5°C above

pre-industrial levels. The Commonwealth contended, however, that the “focus” on limiting global temperature increase to 1.5°C above pre-industrial levels did not emerge until after 2014. According to the Commonwealth, the focus in 2014 was on limiting global temperature increase to 2°C above pre-industrial levels.

352 In relation to the first of those two criticisms, Professor Meinshausen made it clear, both in his report and in his oral evidence, that he used actual emissions data that was published *after* 2014 to calculate the CO₂ budget as at 2014. He maintained, however, that his calculation would not have been materially different if he had used the data that was available in 2014. His evidence in that regard was:

Q: Okay. Thank you. That is, your budget for 2014, you would accept, isn’t based upon knowledge only known as at 2014?

A: No because I used the actual emissions also between 2014 to 2020. So it’s the best scientific judgment of what the budget would have been in 2014 for the 1.5 degree target.

Q: Yes. And the scientific budget, including what has been discovered since 2014?

A: Yes. But the changes are not material, I would say. There’s not a huge change up or down.

353 It was not put to Professor Meinshausen that he, or anyone else, would not have been able to calculate a CO₂ budget in 2015 based on data that was in existence at that time, or that, if that had been done, the calculation would have been materially different to the calculation Professor Meinshausen performed based on the data published in 2021. The inference available from his evidence is that the calculation could have been done in 2015 and would not have been materially different. The Commonwealth’s submission that it could not have undertaken the same analysis in 2014 has no apparent evidential basis.

354 Professor Meinshausen also readily accepted that the emphasis on limiting global temperature increase to 1.5°C above pre-industrial levels did not emerge until after the Paris Agreement in 2015. His evidence that it was “primarily after the countries through the Paris Agreement decided on the 1.5 degree target that then the IPCC and the scientific community investigated the 1.5 degree target more” and that “science was reacting to the political decision to include the 1.5 degree target in [A]rticle 2 of the Paris Agreement and then there was a flurry of scientific activity to investigate the 1.5 degree target more because it was ... part of the internationally accepted long-term target of the Paris Agreement”. Professor Meinshausen did, however, suggest in his evidence that the Fifth Assessment Reports, which were

published in 2013 and 2014, contained calculations in respect of other temperature increase targets and that “[i]n the background, all the levels pretty much were calculated”. It would accordingly have been possible in 2015 to perform the calculations he performed in his report.

355 That is perhaps not a complete answer to the question whether the Commonwealth ought reasonably to have set emissions reduction targets in 2015 that were referable to a global target of limiting global temperature increase to 1.5°C above pre-industrial levels in circumstances where that target had not at that stage been clearly agreed upon at the global level. That issue is discussed in more detail later in the context of considering whether the Commonwealth could be said to have breached any duty of care it owed to Torres Strait Islanders. It is, however, a credible answer to the apparent suggestion by the Commonwealth that it could not have performed the calculations that provided the basis for Professor Meinshausen’s opinion that the greenhouse gas emissions target set by Australia in 2015 were not consistent with Australia keeping its greenhouse gas emissions below its allocation of cumulative greenhouse gas emissions until 2050 consistent with a CO₂ budget which would limit global temperature increase to 1.5°C above pre-industrial levels. The evidence indicates that it could have performed those calculations when Australia set its target in 2015.

356 It should also be emphasised in this context that Professor Meinshausen was at pains to emphasise that his opinions concerning Australia’s 2015 and 2022 greenhouse gas emissions targets were purely scientific opinions. He did not express the opinion that Australia should have set any particular emissions target. When questioned about his calculation which indicated, in effect, that to meet its cumulative national greenhouse emissions allocation, as at 2014, based on the grandfathering methodology, Australia would have had to set a greenhouse gas emissions target of net zero by 2043, Professor Meinshausen gave the following evidence:

Q: Well, could I ask this; In relation to, say, OECD countries in and about 2015, would you accept that none of those countries had set a target for reductions of the kind that you’ve said Australia should have [set] if it met the grandfathering standard?

A: The 2043 yes, but I – just to clarify a misunderstanding, I’m not saying that Australia should have set that target in 2014. I’m just saying that under the equity calculations that have been done at that time and that with reasonable assumptions still hold today because they are basically grandfathering and they’re the top of the end of what one could perceivably – or what discussed as fair is the grandfathering, applying that in combination with Australia’s agreement to the Paris Agreement and one and a half degrees, that would be the result. I’m not saying that Australia should have adopted a net zero target by 2043 at the time of 2014.

357 The second criticism that the Commonwealth levelled at Professor Meinshausen's approach was that it was supposedly based on an assumption that the Commonwealth was obliged to take one of the three approaches to the allocation of global CO₂ budgets, whereas the evidence indicated that there was no consensus that such approaches should be taken. There are a number of responses to that criticism.

358 First, it is not a criticism that could be levelled against Professor Meinshausen or his analysis. Professor Meinshausen made no such assumption. He readily accepted that there was no consensus in the scientific community as to which of the three broad categories of methodologies of allocating CO₂ budgets between countries was the appropriate methodology. He did not suggest that the Commonwealth should have used one or the other of those methodologies when it set its emissions targets. Second, the Commonwealth did not dispute Professor Meinshausen's summary of the three categories of methodologies and did not suggest that there was some other available category of methodology that had been formulated by the scientific community. Between them, the three categories of methodologies reflected the recognised methodologies for apportioning the remaining global CO₂ budget between countries. Third, Professor Meinshausen's opinions concerning Australia's 2015 and 2022 emissions reduction targets effectively remained the same whichever of the three methodologies applied. Whichever methodology was adopted, the result was that the greenhouse gas emissions targets that were set by Australia were not consistent with Australia keeping its greenhouse gas emissions below its allocation of cumulative greenhouse gas emissions until 2050 consistent with a CO₂ budget which would limit global temperature increase to 1.5°C above pre-industrial levels.

359 The Commonwealth advanced some other submissions about whether Professor Meinshausen's analysis, if accepted, could have any relevance to the question whether the Commonwealth breached its duty of care as alleged and whether, if it did, that breach could be said to have had any direct or material climate-related impacts on the Torres Strait Islands. Those submissions are addressed in that context later in these reasons.

The evidence of Dr Canadell and Professor Pitman

360 It is useful to briefly summarise, in this context, the evidence of Dr Canadell and Professor Pitman insofar as it relates to the implications of Professor Meinshausen's evidence concerning the emission reductions that Australia would have had to achieve for it to remain within its allocation of cumulative remaining greenhouse gas emissions consistent with the

1.5°C target. I will endeavour to summarise their evidence in fairly simple and non-technical terms, particularly given that the technical aspects of their evidence were largely not challenged or disputed.

361 Dr Canadell was, in general terms, asked to calculate the change in temperature in the Torres Strait Islands that would have occurred if Australia had reduced its greenhouse gas emissions in line with the reductions that Professor Meinshausen calculated would have been necessary for Australia to remain within its allocation of remaining cumulative greenhouse gas emissions. His evidence was that his best estimate of the “avoided global temperature increase” which would result from a 47% reduction of emissions over 2005 levels by 2025 (that being the necessary reduction calculated by Professor Meinshausen as at 2014 using the grandfathering methodology) was 0.000218°C (with an uncertainty range of 0.00013-0.00030°C). His best estimate of the avoided global temperature which would result from a reduction of emissions which would achieve net zero by 2024 (being the reduction calculated by Professor Meinshausen as at 2014 using the equity methodology) was 0.0012°C (with an uncertainty range of 0.00073-0.0016°C).

362 Dr Canadell’s evidence was that it was not possible to quantify the actual and specific climate impacts that would have been avoided by temperature reductions of that nature given the limitations in the existing climate models.

363 Professor Pitman was asked to give his opinion about, among other things, the impact that the avoided temperature increases calculated by Dr Canadell would have had on the impacts of climate change on the Torres Strait Islands. His evidence was that avoided warming of the nature calculated by Dr Canadell “could not be demonstrated, or measured”, because the accuracy of temperature measurements are “typically a few tenths of a degree”. Perhaps more significantly, he expressed the opinion that “it is not possible to demonstrate that the avoided emissions would have had a measurable impact on the Torres Strait, and any impact is dwarfed by natural variability such that any link between avoided temperature rises and the avoided emissions could not be made with scientific rigor”.

364 The general thrust of Professor Pitman’s evidence in that respect was that the limitations of climate change models, particularly regional climate change models, were such that it was not possible to measure or quantify the effect that very small changes in emissions, or very small temperature changes, would have on the impacts of climate change in particular regions, including the Torres Strait Islands. Professor Pitman’s evidence in respect of the limitations

of regional climate change modelling were discussed at some length earlier. Importantly, he agreed in cross-examination that, when he said that it was not possible to demonstrate any link between the avoided emissions postulated by Dr Canadell and the climate impact, he was referring to the “ability to quantitatively measure those impacts”. He was not saying that there was no impact.

Relevant findings

365 I accept Professor Meinshausen’s evidence concerning his calculation of the cumulative greenhouse gas emissions allocations for Australia until 2050, under the three different categories of allocation methodologies, which would have been in line with a global temperature increase threshold of 1.5°C above pre-industrial levels. I do not accept that Professor Meinshausen’s calculations were affected by any material hindsight bias, or that his use of post-2014 data in his calculations voided or adversely affected his analysis in any material way.

366 I also accept Professor Meinshausen’s evidence to the effect that the greenhouse gas emissions reduction targets that were set by Australia in 2015 and 2022 were not consistent with Australia remaining within its remaining cumulative greenhouse gas emissions allocations which, according to his calculations, would be consistent with a CO₂ budget which would limit global temperature increase to 1.5°C above pre-industrial levels. I do not accept that Professor Meinshausen’s evidence in relation to the 2015 target was significantly undermined by the fact that the global focus or emphasis on limiting global temperature increase to 1.5°C above pre-industrial levels did not really emerge until the Paris Agreement in 2015. That fact, however, may ultimately be of some significance to the relevance of, or weight to be given to, Professor Meinshausen’s evidence when it comes to consider whether the Commonwealth breached any duty of care it owed to Torres Strait Islanders.

367 As for the evidence of Dr Canadell and Professor Pitman, it may readily be accepted that the avoided temperature increases calculated by Dr Canadell were, to say the least, extremely small. It may also be readily accepted that it is not possible, using current climate models, to measure or quantify the climate change impacts of such small temperature increases, particularly at a regional level. It does not necessarily follow, however, that it can be concluded that such small temperature increases have *no* climate change impacts. As Professor Meinshausen put it in his evidence:

... scientifically speaking, there is no question that any greenhouse gas emission

causes radiative forcing, and – in aggregate – they then cause global-mean warming with various regional climate impacts, that might or might not be smaller or larger in magnitude than natural variability or our capability to directly measure the temperature change on site.

368 The more difficult question of whether it can be concluded that such very small temperature increases (or avoided temperature increases) can be said to *materially* contribute to the impacts of climate change and the harm caused by those impacts on the Torres Strait Islands is addressed later in these reasons.

THE GLOBAL RESPONSE TO CLIMATE CHANGE

369 The applicants’ targets case focuses on the Commonwealth’s setting and communication of greenhouse gas emissions targets. It is accordingly necessary to consider the nature and function of those targets and the international framework within which they were set and communicated. The relevant facts in respect of the international framework were mostly uncontentious.

The United Nations Framework Convention on Climate Change

370 The UN Convention on Climate Change was adopted on 9 May 1992 and opened for signature on 4 June 1992. Australia is one of 197 parties to the Convention. It entered into force in Australia on 21 March 1994.

371 Article 2 of the Convention, which sets out the objective of the Convention, is in the following terms:

The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

372 Article 4 of the Convention sets out the commitments of the parties to the Convention “taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances”. One of the commitments which is of potential importance to this matter is the commitment set out in Art 4(2)(a) concerning the adoption of policies and measures to mitigate climate change. It provides as follows:

2. The developed country Parties and other Parties included in Annex I commit

themselves specifically as provided for in the following:

- (a) Each of these Parties shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs. These policies and measures will demonstrate that developed countries are taking the lead in modifying longer-term trends in anthropogenic emissions consistent with the objective of the Convention, recognizing that the return by the end of the present decade to earlier levels of anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol would contribute to such modification, and taking into account the differences in these Parties' starting points and approaches, economic structures and resource bases, the need to maintain strong and sustainable economic growth, available technologies and other individual circumstances, as well as the need for equitable and appropriate contributions by each of these Parties to the global effort regarding that objective. These Parties may implement such policies and measures jointly with other Parties and may assist other Parties in contributing to the achievement of the objective of the Convention and, in particular, that of this subparagraph;

(Footnote omitted.)

373 Article 7 of the Convention establishes the Conference of the Parties, which is generally referred to as the **COP**. The COP is the supreme body of the Convention. Its duties and responsibilities relevantly include: to periodically examine the obligations of the parties in light of, among other things, the evolution of scientific and technological knowledge; to assess the implementation of the Convention, the overall effects of the measures taken pursuant to the Convention and the extent to which progress towards the objective of the Convention is being achieved; and to consider and adopt regular reports on the implementation of the Convention and ensure their publication.

374 Formal meetings of the COP are regularly held. At those meetings, governments of the countries that are parties to the Convention come together to, broadly speaking, measure progress and negotiate ways to address climate change, including by cutting greenhouse gas emissions. The COP meetings are often referred to by number. For example, the COP meeting held in 2015, during which the Paris Agreement was adopted, was the 21st meeting of the COP and so is usually referred to as COP21.

Early protocols and accords under the Convention

375 The **Kyoto Protocol** was adopted at the meeting of the COP held in Kyoto in 1997. Its first commitment period spanned the period from 2008 to 2012. Australia's commitment in

respect of that period was to limit emissions to 108% of 1990 levels from the period 2008 to 2012.

376 On 18 December 2009, at COP15, the parties to the Convention adopted the Copenhagen Accord. That accord recognised “the scientific view that the increase in global temperature should be below 2°C” and included an agreement that deep cuts in global emissions were required “so as to hold the increase in global temperature below 2°C”. That was effectively the first time the parties to the Convention agreed or reached consensus in respect of a goal to limit global temperature increases to a specified level to stabilise climate change.

377 On 8 December 2012, the parties to the Kyoto Protocol adopted an amendment to the protocol. That amendment is referred to as the Doha Amendment. The Doha Amendment provided for a second commitment period which spanned from 2013 to 2020. Australia’s commitment under the second commitment period of the Kyoto Protocol was to reduce emissions to 99.5% of 1990 levels from 2013 to 2020. That was effectively equivalent to a 5% reduction on 2000 levels.

The IPCC and its reports

378 The IPCC was established in 1988 by the WMO and the UNEP. It plays a particularly important role in the international response to climate change. Its objective is to provide governments at all levels with scientific information that they can use to develop policies. The IPCC invites countries and other international bodies to nominate scientists to be involved as authors of its reports. Its reports, which are commissioned every five to seven years, are highly respected and are a key input into international climate change negotiations. The IPCC has three working groups. Working Group I deals with the physical science basis of climate change. Working Group II deals with the impacts of climate change, adaptation and vulnerability. Working Group III deals with the mitigation of climate change.

379 It was essentially common ground between the parties that IPCC reports can be said to form part of, or to contain or reproduce, the best available science in respect of climate change and its impacts. It is not difficult to see why. The authors of the reports assess the peer-reviewed science from a range of publications. The process by which each chapter of an IPCC report is drafted and settled is complex and painstaking. Professor Karoly explained the process in the following terms:

Q: Yes?

A: ... The chapters are prepared through multiple processes of draft and expert review, and they're made publicly available for expert review, and the only condition is that people – the scientists who do the reviews have to give their name and agree to their review comments being made publicly available at the end of the review process. It is the most thorough review – peer review of the chapters, and there are typically four separate complete peer reviews and government reviews, and governments can nominate experts as well. It is a complex review and, typically, each chapter has between 1000 and 2000 review comments in every stage of the review.

Q: So just pausing there – and there may well be more you want to say there, but I just want to get to this point. What do governments do with those reports – the state parties do?

A: Yes. The state parties are involved in providing government reviews, and then, at the final stage in what's called a plenary meeting, accepting the chapters or rejecting them or then – and not or then – and then going through the summary for policy makers word by word and sentence by sentence over a one week period.

Q: Okay?

A: And it has to be agreed – the summary for policy makers – by consensus, and consensus here doesn't mean the majority. It means every country – representatives – and if two countries object, they can prevent a sentence being accepted. In other words, it is – a 98 per cent or more majority has to agree and, in fact, it's typically 99 per cent or unanimous consensus. That doesn't happen in any other report process that I'm aware of.

380 It is necessary to have regard to the contents of some of the important IPCC reports in order to fully understand both the international response to climate change and Australia's response to climate change.

The IPCC Fifth Assessment Reports

381 In 2013 and 2014, the IPCC working groups published the Fifth Assessment Reports.

382 The IPCC Working Group I published its Contribution to the Fifth Assessment Report in September 2013. That report addressed the physical science basis of climate change. Among other things, the report formulated estimated CO₂ budgets to limit global warming to less than 2°C.

383 The IPCC Working Group II published its Contribution to the Fifth Assessment Report in March 2014. That report addressed the topics of impacts, adaptation and vulnerability. The report relevantly reported several important findings. The applicants highlighted the following findings.

384 First, "[t]here was medium confidence that risks relating to extreme weather events, including coastal flooding and heatwaves, are high at a global temperature increase of approximately

1.85°C” and “[t]here was high confidence that these risks increase further at higher temperatures.”

Second, even with adaptation measures, the risks of widespread damage to coastal infrastructure and low-lying ecosystems were significantly higher in the case of warming at 2°C as compared to warming at 1.5°C.

Third, risks to coral reef systems in Australia were “medium” to “high” in the near term at 1.5°C and approaching “very high” at 2°C.

Fourth, indigenous peoples in Australia have higher than average exposure to climate change because of a heavy reliance on climate-sensitive primary industries and strong social connections to the natural environment. They also face particular constraints to adaptation. There was high confidence that Torres Strait communities are vulnerable even to small sea level rises.

The IPCC Working Group III published its Contribution to the Fifth Assessment Report in April 2014. That report addressed the mitigation of climate change.

In October 2014, the IPCC published the Synthesis Report for the Fifth Assessment Report. That report also reported several important findings. The applicants highlighted the following findings.

First, the impacts of climate change involving risks to unique and threatened systems and risks associated with extreme weather events were moderate to high at temperatures 1°C to 2°C above pre-industrial levels.

Second, the risks of tipping points being triggered “increase at a steepening rate under an additional warming of 1 to 2°C and become high above 3°C, due to the potential for large and irreversible sea level rise from ice sheet loss”.

The Paris Agreement

Between 30 November 2015 and 13 December 2015, the parties to the UN Convention on Climate Change met at COP21 to negotiate, among other things, a new agreement on climate change. The parties ultimately resolved to adopt the Paris Agreement. The Paris Agreement entered into force in Australia and globally on 9 December 2016. As at February 2024, 198 states have committed to the Paris Agreement.

393 Article 2.1(a) of the Paris Agreement essentially sets out one of the key objectives of the agreement. It provides as follows:

1. This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:
 - (a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;

394 That objective essentially reflected a shift in focus or emphasis from aiming to hold global average temperature increases to “well below” 2°C to aiming to limit global average temperature increases to 1.5°C above pre-industrial levels.

395 Article 2.2 provided that the agreement “will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances”.

396 Article 4 of the Paris Agreement required each party to the agreement to “prepare, communicate and maintain successive nationally determined contributions that it intends to achieve”. Nationally determined contributions are often referred to as **NDCs**. Article 4.1 to 4.4 relevantly provided as follows:

1. In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.
2. Each Party shall prepare, communicate and maintain successive nationally determined contributions that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions.
3. Each Party's successive nationally determined contribution will represent a progression beyond the Party's then current nationally determined contribution and reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.
4. Developed country Parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets. Developing country Parties should continue enhancing their mitigation efforts, and are

encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances.

397 Article 4.8 provided that “[i]n communicating their nationally determined contributions, all Parties shall provide the information necessary for clarity, transparency and understanding in accordance with decision 1/CP.21 and any relevant decisions of the Conference of the Parties serving as the meeting of the Parties to this Agreement.” Decision 1/CP.21 requested that those parties whose NDCs contained a time frame up to 2030, communicate or update those contributions by 2020 and do so every five years thereafter pursuant to Article 4.9 of the Paris Agreement.

398 The Paris Agreement is legally binding on Australia under international law. It does not, however, operate as a source of rights and obligations under Australian domestic law as it has not been enacted by Parliament: *CPCF v Minister for Immigration and Border Protection* (2015) 255 CLR 514 at [490] (Keane J) and the cases there cited.

399 At COP21, the meeting at which the Paris Agreement was adopted, the parties to the Convention also resolved to invite the IPCC to provide a special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways. The reasoning that lay behind that resolution was in due course described in the foreword to the Special Report which was published in October 2018:

Five years ago, the IPCC’s Fifth Assessment Report provided the scientific input into the Paris Agreement, which aims to strengthen the global response to the threat of climate change by holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.

Many countries considered that a level of global warming close to 2°C would not be safe and, at that time, there was only limited knowledge about the implications of a level of 1.5°C of warming for climate-related risks and in terms of the scale of mitigation ambition and its feasibility. Parties to the Paris Agreement therefore invited the IPCC to assess the impacts of global warming of 1.5°C above pre-industrial levels and the related emissions pathways that would achieve this enhanced global ambition.

The IPCC’s Special Report on Global Warming of 1.5°C

400 As already noted, the **IPCC’s Special Report** on Global Warming of 1.5°C was published in October 2018.

401 Following is a short summary of some of the key findings referred to in the Special Report’s Summary for Policymakers: IPCC, 2018: Summary for Policymakers. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-*

industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Mason-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3-24.

- 402 First, climate-related risks for natural and human systems are higher for global warming of 1.5°C than at present, but lower than at 2°C (high confidence). Those risks depend on various factors, including the magnitude and rate of warming and geographic location.
- 403 Second, climate models project robust differences in regional climate characteristics between present-day and global warming of 1.5°C, and between 1.5°C and 2°C. Those differences include increases in: mean temperature in most land and ocean regions (high confidence); hot extremes in most inhabited regions (high confidence); heavy precipitation in several regions (medium confidence); and the probability of drought and precipitation deficits in some regions (medium confidence).
- 404 Third, by 2100, global mean sea level rise is projected to be around 0.1 metre lower with global warming of 1.5°C compared to 2°C (medium confidence). A slower rate of sea level rise enables greater opportunities for adaptation in the human and ecological systems of small islands, low-lying coastal areas and deltas (medium confidence).
- 405 Fourth, on land, impacts on biodiversity and ecosystems, including species loss and extinction, are projected to be lower at 1.5°C of global warming compared to 2°C. Limiting global warming to 1.5°C compared to 2°C is projected to lower the impacts on terrestrial, freshwater and coastal ecosystems and to retain more of their services to humans (high confidence).
- 406 Fifth, limiting global warming to 1.5°C compared to 2°C is projected to reduce increases in ocean temperature as well as associated increases in ocean acidity and decreases in ocean oxygen levels (high confidence). Consequently, limiting global warming to 1.5°C is projected to reduce risks to marine biodiversity, fisheries, and ecosystems, and their functions and services to humans, as illustrated by recent changes to Arctic sea ice and warm-water coral reef ecosystems (high confidence).

- 407 Sixth, climate-related risks to health, livelihoods, food security, water supply, human security,
and economic growth are projected to increase with global warming of 1.5°C and increase
further with 2°C.
- 408 Seventh, most adaptation needs will be lower for global warming of 1.5°C compared to 2°C
(high confidence).
- 409 Eighth, pathways limiting global warming to 1.5°C with no or limited overshoot would
require rapid and far-reaching transitions in energy, land, urban and infrastructure, and
industrial systems (high confidence).
- 410 Ninth, estimates of the global emissions outcome of current nationally stated mitigation
ambitions as submitted under the Paris Agreement, and the pathways reflecting those
ambitions, would not limit global warming to 1.5°C, even if supplemented by very
challenging increases in the scale and ambition of emissions reductions after 2030 (high
confidence). Avoiding overshoot can only be achieved if global CO₂ emissions start to
decline well before 2030 (high confidence).
- 411 The IPCC’s Special Report also reported the following findings relevant to the impacts of
climate change on small islands and coastal and marine ecosystems.
- 412 First, small islands were projected to experience “multiple inter-related risks at 1.5°C of
global warming that will increase with warming of 2°C and higher levels”, with climate
hazards at 1.5°C projected to be lower than at 2°C (high confidence). There was increased
long-term risks of coastal flooding and impacts on populations, infrastructures and assets, and
risks across marine ecosystems at 1.5°C (high confidence).
- 413 Second, impacts associated with sea level rise and changes to the salinity of coastal
groundwater, increased flooding and damage to infrastructure, are projected to be critically
important in vulnerable environments, such as small islands, low-lying coasts and deltas, at
global warming of 1.5°C and 2°C (high confidence).
- 414 Third, the change in risk when moving from 1.5°C to 2°C was particularly high for small
islands, which are very sensitive to coastal climate change and other stressors such as oceanic
warming, sea level rise resulting in salinisation, flooding and erosion, heavy precipitation,
cyclones, and mass coral bleaching and mortality.

415 Fourth, there were higher risks to marine systems and associated livelihoods at 2°C compared to 1.5°C. At 1.5°C, approximately 70–90% of global coral reefs are projected to be at risk of long-term degradation due to coral bleaching, with these values increasing to 99% at 2°C (high/very high confidence).

416 Fifth, it is widely recognised that small islands are very sensitive to climate change impacts such as sea level rise, oceanic warming, heavy precipitation, cyclones and coral bleaching (high confidence). Even at 1.5°C of global warming, the compounding impacts of changes in rainfall, temperature, tropical cyclones and sea level are likely to be significant across multiple natural and human systems.

417 In short, the IPCC’s Special Report concluded and reported that the impacts of climate change were likely to be far greater and more severe, particularly on small islands like many of the Torres Strait Islands, if global average temperature increases were only limited to 2°C as opposed to 1.5 °C.

418 It should also be noted in this context that in 2020, the IPCC released its **Special Report on the Ocean** and Cryosphere in a Changing Climate. That report identified the risks posed by sea level rise, ocean warming and other impacts of climate change. Among other things, it reiterated the importance of limiting global average temperature limits to 1.5°C to lessen the impacts of climate change on small and low-lying islands. To give but one example, the report concluded that:

Risks of severe impacts on biodiversity, structure and function of coastal ecosystems are projected to be higher for elevated temperatures under high compared to low emissions scenarios in the 21st century and beyond. Projected ecosystem responses include losses of species habitat and diversity, and degradation of ecosystem functions. The capacity of organisms and ecosystems to adjust and adapt is higher at lower emissions scenarios (*high confidence*). For sensitive ecosystems such as seagrass meadows and kelp forests, high risks are projected if global warming exceeds 2°C above pre-industrial temperature, combined with other climate-related hazards (*high confidence*). Warm-water corals are at high risk already and are projected to transition to very high risk even if global warming is limited to 1.5°C (*very high confidence*).

The IPCC’s Sixth Assessment Reports

419 Between 2021 and 2023, the IPCC working groups published the IPCC Sixth Assessment Reports.

420 The IPCC Working Group I published its Contribution to the Sixth Assessment Report in August 2021. That report addressed the physical science basis of climate change.

421 The IPCC Working Group II published its Contribution to the Sixth Assessment Report in
February 2022. That report addressed the topics of impacts, adaptation and vulnerability.

422 The IPCC Working Group III published its Contribution to the Sixth Assessment Report in
April 2022. That report addressed the mitigation of climate change.

423 In March 2023, the IPCC published the Synthesis Report for the Sixth Assessment Report.

424 Some of the key findings or conclusions that were expressed in Working Group I's report
were summarised earlier in these reasons by reference to that report's summary for
policymakers – the IPCC 2021 Summary for Policymakers. For present purposes the
following findings need only be emphasised or reiterated.

425 First, any changes in the climate system become larger in direct relation to increasing global
warming. Those changes include: increases in the frequency and intensity of hot extremes;
marine heatwaves; heavy precipitation in some regions and droughts in other regions; an
increase in the proportion of intense tropical cyclones; and reductions in Arctic sea ice, snow
cover and permafrost. With every increment of global warming, changes in extreme
temperatures continue to become larger. For example, every additional 0.5°C of global
warming causes clearly discernible increases in the intensity and frequency of hot extremes
(very likely) and heavy precipitation (high confidence), as well as droughts in some areas
(high confidence).

426 Second, with further global warming, every region is projected to increasingly experience
concurrent and multiple changes in climatic impact-drivers. Changes in several climatic
impact-drivers would be more widespread at 2°C compared to 1.5°C global warming and
even more widespread and pronounced for higher warming levels. More climatic impact-
drivers across more regions are projected to change at 2°C and above compared to 1.5°C
global warming (high confidence). Region-specific changes relevantly include intensification
of tropical cyclones and extratropical storms (medium confidence).

427 Third, it is very likely to virtually certain that regional mean relative sea level rise will
continue throughout the 21st century, except in a few regions with substantial geologic land
uplift rates. Approximately two-thirds of the global coastline has a projected regional relative
sea level rise within plus or minus 20% of the global mean increase (medium confidence).
Due to the relative sea level rise, extreme sea level events that occurred once per century in
the recent past are projected to occur at least annually at more than half of all the tide gauge

locations by 2100 (high confidence). Relative sea level rise contributes to increases in the frequency and severity of coastal flooding in low-lying areas and to coastal erosion along most sandy coasts (high confidence).

428 The following conclusions were expressed in Working Group II's report in respect of the impacts of climate change on small islands.

429 First, freshwater systems on small islands are exposed to dynamic climate impacts and are among the most threatened on the planet.

430 Second, small islands host significant levels of global terrestrial species diversity and endemism. Due to the large range of insular-related vulnerabilities, almost 50% of terrestrial species presently considered at risk of global extinction also occur on islands (high confidence).

431 Third, projected climate and ocean-related changes will significantly affect marine and terrestrial ecosystems and ecosystem services, which will in turn have cascading impacts across both natural and human systems (high confidence).

432 Fourth, projected changes in the wave climate superimposed on sea level rise will rapidly increase flooding on small islands (high confidence).

433 Fifth, modelling of both temperature and ocean acidification effects under future climate scenarios suggest that some small islands will experience severe coral bleaching on an annual basis before 2040 (medium confidence).

434 Sixth, reef island and coastal area habitability in small islands is expected to decrease because of increased temperature, extreme sea levels and degradation of buffering ecosystems, which will increase human exposure to sea-related hazards (high confidence).

435 The report expressed the following conclusions in respect of the future risks from climate change on small islands:

The reduced habitability of small islands is an overarching significant risk caused by a combination of several key risks facing most small islands even under a global temperature scenario of 1.5°C (*high confidence*). These are loss of marine and coastal biodiversity and ecosystem services; submergence of reef islands; loss of terrestrial biodiversity and ecosystem services; water insecurity; destruction of settlements and infrastructure; degradation of health and well-being; economic decline and livelihood failure); and loss of cultural resources and heritage. Climate-related ocean changes, including those for slow-onset events, and changes in extreme events are projected to cause and/or amplify Key Risks in most small islands.

436 There could be no doubt that the Torres Strait Islands are small islands that are subject to the future risks referred to in the IPCC's Sixth Assessment Reports.

AUSTRALIA'S RESPONSE TO CLIMATE CHANGE

437 It would be fair to say that the Commonwealth has responded to climate change in various ways over the last two decades. The applicants' primary or targets case is directed mainly at the greenhouse gas emissions targets that that the Commonwealth set and communicated in the last decade in accordance with its international obligations. This section of the reasons deals with that aspect of Australia's response to climate change. The applicants' alternative or adaptation case, which will be considered later in these reasons, is directed more at the Commonwealth's responses to the impacts of climate change on the Torres Strait Islands which involve adaptation and seawall infrastructure in particular.

438 As has already been noted, one of the key issues raised by the applicants' case is whether the greenhouse gas emissions reduction targets that were set by the Commonwealth were not consistent or in accordance with the best available science. The applicants contended that the emissions targets that were set by the Commonwealth were not based on, supported by, or consistent with, the best available science. Indeed, the applicants contended that the Commonwealth effectively failed to have regard at all to the best available science when setting its targets. The applicants also contended that in setting the targets the Commonwealth failed to have regard to the impacts of climate change on the Torres Strait Islands and that the targets that were set would not avoid the worst impacts of climate change on the Torres Strait Islands.

439 The following consideration of the evidence concerning the emissions targets that were set by the Commonwealth focus primarily on those issues and contentions. Other arguments advanced by the applicants concerning the emissions targets set by the Commonwealth are discussed later in the context of the applicants' case that the Commonwealth breached the duty of care it owed to Torres Strait Islanders.

The setting of Australia's greenhouse gas emissions targets

440 The Commonwealth adduced evidence from two witnesses who had some degree of involvement in the bureaucratic processes that preceded the setting of Australia's greenhouse gas emissions reduction targets. Ms Kelly **Pearce** was a senior public servant who was appointed head of a taskforce, the UNFCCC **Taskforce**, which was established in January

2015 by the government of the day ostensibly to advise the government on options for a credible emissions reduction target that it could take to COP21 in Paris in late 2015. Ms Julia **Gardiner** was also a senior public servant who had experience in international climate negotiations and attended COP21 as a member of Australia's delegation.

Early targets

441 As noted earlier, Australia's commitment in respect of the first commitment period under the Kyoto Protocol was to limit emissions to 108% of 1990 levels from the period 2008 to 2012. Australia's commitment under the second commitment period of the Kyoto Protocol was to reduce emissions to 99.5% of 1990 levels from 2013 to 2020. That was effectively equivalent to a 5% reduction on 2000 levels.

The NDC target set in 2015

442 In August 2015, the Commonwealth announced a greenhouse gas emissions reduction target of 26 to 28% below 2005 levels by 2030. More will be said about the announcement in due course. It is first necessary to consider the evidence, such as it was, about how the Commonwealth came to arrive at that target.

The Commonwealth's knowledge about climate change and its impacts in 2015

443 Before addressing the processes and steps taken by the Commonwealth in relation to the setting of the NDC target in 2015, it is relevant to briefly consider the Commonwealth's state of knowledge in the period leading up to the setting of the target. That issue can be dealt with in brief terms as there was little, if any, dispute that those responsible for setting the NDC target in 2015 not only knew about global warming, climate change, and the impacts on Australia of climate change in a broad sense, but also knew what the best available science was reporting about those topics.

444 In the years immediately preceding the setting of the 2015 NDC target, reports of Commonwealth bodies, such as the CSIRO and BOM, had referred, amongst other things, to increases in average temperatures, including in Australia, the likelihood that average temperatures would continue to increase if greenhouse gas emissions continued to grow at rates consistent with past trends, and the climate impacts that increasing temperatures were having and were likely to continue to have in Australia. For example, the CSIRO and BOM State of the Climate Report in 2010 reported as follows:

5. What this means.

Australia will be hotter in coming decades

Australian average temperatures are projected to rise by 0.6 to 1.5 °C by 2030. If global greenhouse gas emissions continue to grow at rates consistent with past trends, warming is projected to be in the range of 2.2 to 5.0°C by 2070. Warming is projected to be lower near the coast and in Tasmania and higher in central and northwestern Australia. These changes will be felt through an increase in the number of hot days.

Much of Australia will be drier in coming decades

In Australia compared to the period 1981-2000, decreases in rainfall are likely in the decades to come in southern areas of Australia during winter, in southern and eastern areas during spring, and in south-west Western Australia during autumn. An increase in the number of dry days is expected across the country, but it is likely that there will be an increase in intense rainfall events in many areas.

It is very likely that human activities have caused most of the global warming observed since 1950

There is greater than 90% certainty that increases in greenhouse gas emissions have caused most of the global warming since the mid-20th century. International research shows that it is extremely unlikely that the observed warming could be explained by natural causes alone. Evidence of human influence has been detected in ocean warming, sea-level rise, continental-average temperatures, temperature extremes and wind patterns. CSIRO research has shown that higher greenhouse gas levels are likely to have caused about half of the winter rainfall reduction in south-west Western Australia.

Climate change is real

Our observations clearly demonstrate that climate change is real. CSIRO and the Bureau of Meteorology will continue to provide observations and research so that Australia's responses are underpinned by science of the highest quality.

445 The State of the Climate reports published by the CSIRO and BOM in 2012 and 2014 contained similar statements. As noted earlier, the Commonwealth conceded that those reports formed part of, or contained, the best available science. It also conceded that it was aware of the content of those reports at or about the time they were published.

446 Perhaps more significantly, the Commonwealth admitted that it knew the contents of the IPCC Fifth Assessment Reports from around the date of their publication. There could be no doubt that those reports constituted or contained the best available science in respect of climate change and its impacts, and it may readily be inferred that the Commonwealth knew that to be the case. Some of the findings included in those reports were referred to earlier in these reasons. The IPCC's Fifth Assessment Reports included calculations relating to CO₂ budgets that would be consistent with limiting global warming to less than 2°C above pre-industrial levels.

The CCA's reports

- 447 The CCA is a Commonwealth statutory agency responsible for providing independent advice to government on climate change policy. It was established by and operates under the *Climate Change Authority Act 2011* (Cth) and commenced operations on 1 July 2012. It published reports in the period leading up to the setting of Australia's NDC target in 2015. The members of the CCA include eminent scientists.
- 448 In February 2014, the CCA published a report entitled 'Reducing Australia's Greenhouse Gas Emissions – Targets and Progress Review Final Report'. As the title of that report indicated, the report contained a review of Australia's greenhouse gas emissions reduction goals and reported on the progress towards them. In the report, the CCA advised that: "climate change poses major risks for Australia's people, economy and environment"; the "international community has made a commitment to keeping global warming below 2 degrees"; Australia needed to "strengthen" its "emissions reduction efforts"; and Australia's existing emissions reduction target was "inadequate" and was not a "credible start ... towards achieving the below 2 degree goal".
- 449 Importantly, the report also identified the global CO₂ budget that climate scientists had calculated had a reasonable chance of achieving the "below 2 degree goal" and calculated a CO₂ budget for Australia for the period 2013 to 2050 that would represent an "equitable share for Australia". Professor Meinshausen's evidence was that the CO₂ budget that the CCA calculated for Australia was a generous allocation which was essentially based on the grandfathering methodology which was discussed earlier in these reasons. Based on that CO₂ budget, the CCA recommended "a trajectory range for emissions reductions from the 2020 target to a level between 40 and 60 per cent below 2000 levels in 2030". The CCA advised that its recommended trajectory range was both consistent with global analysis and achievable.
- 450 In December 2014, the Minister for the Environment requested the CCA to conduct a Special Review, a part of which required the CCA to provide advice on Australia's future emissions reduction targets, particularly for the period beyond 2020. The CCA's report in respect of that review was intended to be used as an input into the government's deliberations in respect of Australia's NDC target. The CCA produced a draft report in respect of its review in April 2015 and a final report in July 2015. Both the draft report and final report supported and reiterated the CCA's recommendation in its February 2014 report concerning Australia's

NDC target which, the CCA maintained, were “consistent with climate science, with what comparable countries are doing, and with Australia’s best interests”.

The work of the UNFCCC Taskforce

451 In December 2014, the Prime Minister and Minister for Foreign Affairs announced the establishment of a Taskforce in the Department of the Prime Minister and Cabinet “to propose possible new post-2020 targets for Australia to take to the Paris Conference of the UN [Climate Change Conference] in December 2015”. As noted earlier, Ms Pearce was appointed head of the Taskforce. Following is a short chronological account of Ms Pearce’s evidence and the work undertaken by the Taskforce.

452 The Taskforce’s terms of reference indicated, among other things, that it had been established to coordinate the provision of information to the government and was also responsible for the “coordination and advice on options to reduce Australia’s greenhouse gas emissions and adapt to our changing climate and the range, combination and cost of domestic instruments that could be used to meet a post-2020 target.”

453 The Taskforce published an issues paper in March 2015. That paper acknowledged that a “strong and effective global agreement, that addresses carbon leakage and delivers environmental benefit, is in Australia’s national interest” and noted, in that context:

The latest climate information from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Bureau of Meteorology indicates that Australia has warmed by 0.9°C since 1910, with most of the warming since 1950. There has been a rise in sea levels of about 20 centimetres over the past century, increased ocean acidification and a shift in rainfall patterns.

(Footnote omitted.)

454 In relation to the setting of Australia’s post-2020 emissions reduction target, the paper stated:

Australia’s target must provide certainty to business and the Australian community to facilitate decision making and investment.

The target will represent Australia’s fair share of the global effort needed to respond to climate change.

The Australian Government will consider a range of factors in determining Australia’s post-2020 target, including:

- Australia’s national circumstances – our economic structure, projected economic growth, resource endowments, geography and demography – will have implications for Australia’s emissions reduction opportunities. Different targets have different costs and benefits for Australia.
- The scope and nature of other countries’ targets – so that our target represents

Australia's fair share and does not put Australia at a competitive disadvantage to our key trading partners and the major economies.

Australia's post-2020 target will be consistent with continued strong economic growth, jobs growth and development in Australia.

455 The issues paper did not explicitly state that the best available science in respect of climate change was one of the "range of factors" that would be considered in setting Australia's targets. Nor did it refer to there being any need to set targets that were consistent with, or had regard to, the best available science concerning climate change.

456 The Taskforce invited submissions, including from a list of "stakeholders". It ultimately received and considered 498 submissions from various persons and bodies. Ms Pearce's evidence was that she recalled reading in their entirety submissions from the Business Council of Australia and the Minerals Council of Australia. She also said that she read submissions from the AAS and Australian Conservation Foundation in their entirety. According to Ms Pearce, the Taskforce also consulted with stakeholders through a series of "Ministerial Roundtables" and engaged with stakeholders at various events hosted by other organisations.

457 It would appear from Ms Pearce's evidence that a major source of information that the Taskforce relied on in preparing its final report was economic modelling and analyses prepared by various individuals and bodies, including Professor Warwick McKibbin AO, "RepuTex", "ClimateWorks", Treasury and the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education. The Taskforce also gave consideration to intended NDCs that had been provided by some other countries.

The Taskforce's final report

458 The Taskforce published its final report on 21 August 2015. As noted later, the publication of the report occurred *after* the Commonwealth announced its decision in respect of the target.

459 The Taskforce's final report is lengthy, running to over 90 pages including appendices and a list of references. There is only one reference on one page of the report to what is said to be "climate science". That page contains the following information in a box under the heading "Climate science":

Data and analysis released by the Bureau of Meteorology (BOM) and Commonwealth Scientific and Industrial Research Organisation (CSIRO) shows that:

- Australia's climate has warmed by 0.9°C since 1910, and the frequency of extreme weather has changed;

- rainfall averaged across Australia has slightly increased since 1900, with the largest increases in the northwest since 1970;
- rainfall has declined since 1970 in the southwest. Autumn and early winter rainfall has mostly been below average in the southeast since 1990;
- extreme fire weather has increased, and the fire season has lengthened, across large parts of Australia since the 1970s;
- global mean temperature has risen by 0.85°C from 1880 to 2012; and
- global mean sea level has risen by 22.5 cm from 1880 to 2012 (BOM & CSIRO 2015).

Average rainfall in southern Australia is projected to decrease and heavy rainfall is projected to increase over most parts of Australia.

In 2014, the global average near-surface temperature was 0.57°C above the 1961-1990 average. Global average rain and snowfall was close to the long term average, but was unusually low or high in particular areas. Sea surface temperatures were 0.44°C above the 1961-1990 average.

Further climate change is expected, with a high degree of confidence that warming will continue and sea levels will keep rising. Changes in rainfall patterns are also expected, but scientific confidence about this is lower. The size of future climate change impacts depends on a range of factors, including future global emissions.

The Intergovernmental Panel on Climate Change (IPCC), established in 1988, provides an assessment of the state of climate science every six years. These assessments are subject to multiple rounds of review from IPCC member governments, including the Australian Government, registered experts and observer organisations.

460 As can be seen, that information essentially comprises data from the CSIRO and BOM concerning temperature increases and some changes in Australia's climate. Nothing is said about the actual science of climate change, including the causes of global warming. There is not even a reference to the uncontroversial and incontrovertible scientific fact that global warming and climate change are the result of anthropogenic greenhouse gas emissions, despite the fact that the report was supposedly addressing the very issue of what greenhouse gas emissions reduction targets Australia should adopt.

461 The reference to the IPCC on the single page of the Taskforce's final report that referred to climate science is the only reference to the IPCC in the entire report, aside from a citation, in the list of references, of an IPCC report published by the IPCC in 2007. No reference is made anywhere in the report to the IPCC Fifth Assessment Reports, or any of the findings referred to in those reports. That is despite the fact that those reports unquestionably represented the best available science in respect of the causes and impacts of climate change at the time and had been published fairly shortly before the Taskforce's final report.

462 In her oral evidence, Ms Pearce appeared to accept that it was relevant for the Taskforce to take into account, in setting Australia's emissions reduction targets ahead of the Paris Agreement, the best available scientific information. She also appeared to have some general awareness of the content of some IPCC reports, including the IPCC Fifth Assessment Reports. She described them as a "known quantity" that formed part of the "context" in which the Taskforce was operating, though she suggested that the findings in those reports concerning carbon budgets were "[n]ot the specific focus of our work". When questioned about the fact that the Taskforce's final report made only brief reference to what was said to be the climate science, and said nothing about the IPCC's findings, Ms Pearce gave the following somewhat unsatisfactory and bewildering evidence:

Q: Is that indicative of the extent to which you took the climate science into account as a contextual consideration?

A: No.

Q: How else did you take it into account?

A: So in the general advice and consideration in discussing with government getting to the point of targets, of course, we talked about, you know, the science impacts. There were a number of, kind of, submissions that also raised these issues. There were people who raised these issues in a range of, kind of, face-to-face forums as well.

Q: Would you agree that a reader of this report would be unaware of the extent to which the ...

A: Yes.

Q: ... climate science was taken into account in the way you've described?

A: Yes.

Q: And is there a reason why the – what you've just referred to as the discussions that took place weren't referred to at all in the report?

A: So other than in the – talking about the consultation process, the decision was taken to wait towards the new information rather than – otherwise the report would have been much, much longer than this and the agreement was to focus on the – you know, what you see in the report.

463 While that evidence is difficult to understand, the effect of it would appear to be that the "science impacts" were talked about in discussions with government and some of the submissions raised those "issues". The overwhelming inference that flows from Ms Pearce's evidence, considered together with the final report, is that, to the extent that climate science was considered at all, it was considered at a very high level of generality and essentially as, at best, a background consideration. There is nothing whatsoever to suggest that the Taskforce gave any consideration, let alone any real or genuine consideration, to the best available

science concerning CO₂ budgets and what was needed in terms of emissions reductions to have any chance of keeping global average temperature increases to less than 2°C or any other threshold.

464 The inference that climate science, in a very broad, high level and general sense, was at best a contextual or background consideration when it came to the Taskforce’s deliberations concerning Australia’s emissions reduction targets is supported by the content of Chapter 5 of the final report, which essentially explains why and how Australia’s target of 26 to 28% below 2005 levels by 2030 was chosen or arrived at. The science of climate change does not rate a mention in that chapter. The considerations or factors that are said to support the chosen target, in short, would appear to have been that the target was comparable to the range of targets announced by other developed countries, that reducing Australia’s emissions will affect Australia’s economy, and that the economic impacts of the chosen target would be “manageable” compared with the economic impacts of other scenarios. There is nothing in the report which suggests that the Taskforce analysed whether the chosen target was compatible with the UN Convention on Climate Change’s objective of keeping global temperature increases below 2°C. Ms Pearce also could not recall whether the Taskforce sought any input from anyone about whether the chosen target was consistent with keeping global temperature increases below 2°C.

465 Another notable feature of the Taskforce’s final report is that it makes only one fleeting reference to the CCA, that reference being to the minimum target recommended by the CCA of 40% below 2000 levels by 2030. That was said to be the basis of one of the six target scenarios that were examined by the Taskforce. There was no detailed reference to the CCA’s reports that were published in February 2014 and July 2015, even though the CCA had been specifically tasked with providing advice to the government on Australia’s emissions reduction targets.

466 The absence of any meaningful reference in the Taskforce’s final report to the CCA’s reports and recommendations is somewhat difficult to understand. In her oral evidence, Ms Pearce acknowledged and agreed that the work undertaken by the CCA was directly relevant to the Taskforce’s terms of reference and a very important factor for the Taskforce to consider. When questioned about the fact that the Taskforce’s report made only one fleeting reference to the CCA, Ms Pearce gave the following rather unsatisfactory and unpersuasive evidence:

Q: And is that indicative of the extent to which you took those reports into

account in reaching the conclusions you did in your report?

A: In – no, or in the Government reaching its conclusions about what target to choose, but no. Because they were part of the [mix in] government.

Q: But not part of your [mix in] advising government – you meaning the task force?

A: No. Not directly.

Q: Why not?

A: Because their report was sitting in side-by-side with ours. We then, obviously, looked at their report. You've seen from some of the evidence that we were quite aware of that report. We summarised it for the Prime Minister's office. So certainly – and we interacted with the Climate Change Authority a fair bit to talk about what they were doing. So it certainly was there in our consideration, but ultimately, not in the report.

Q: Right. And how did you take the contents of the climate change reports into account if you did?

A: Well, we ended up picking up one of their scenarios.

Q: That's scenario 6?

A: Yes.

Q: Well, you picked it up but didn't accept it?

A: The Government didn't accept it.

Q: Well, your report didn't recommend it?

A: No. The report reflects the Government's decision making.

Q: You didn't engage with any of the Climate Change Authority's reasoning in respect of its recommendations in the report?

A: So – no. It's not in the report.

Q: Any reason for that?

A: Our focus were on the things that we were acquitting from our terms of reference.

467 What can be gleaned from that evidence is that the Taskforce apparently summarised the CCA's report for the Prime Minister's office, though that summary appears nowhere in the report itself. And, while the report referred to one of the CCA's "scenarios", albeit in the most fleeting way possible, that scenario was rejected by the government. The report says nothing whatsoever about why that scenario was rejected, supposedly because the Taskforce's "focus" was "acquitting" its terms of reference. It is not entirely clear what Ms Pearce meant when she referred to acquitting the Taskforce's terms of reference, though it appears from Ms Pearce's evidence as a whole that she saw the Taskforce's role, and the role of its report, as being to support the government's decision about the target, as opposed to

being to provide the government with information and advice upon which it could make its decision. That perhaps also explains why the report was published after the government's announcement of its decision and refers to the chosen target.

468 It should also be observed in this context that Ms Pearce acknowledged in her evidence that the government of the day had a stated policy of abolishing the CCA and had unsuccessfully attempted to fulfil that policy. That appears to be another explanation for why the Taskforce's final report appears to ignore or disregard the CCA's reports and recommendation.

469 The final point to note about the Taskforce's report is that it makes no mention of the Torres Strait, or Torres Strait Islanders, or the fact that Torres Strait Islanders were particularly vulnerable to climate change. The report contains a very brief and general section on the impacts of climate change, though it contains no specific reference to the particular vulnerability of the low-lying islands in the Torres Strait. Ms Pearce's evidence was that the specific risks to coastal communities and low-lying islands in Australia, including in the Torres Strait, were known and were part of the context or "mix", but the Taskforce's role was to provide advice about the options which the government had in respect of the targets that it would take to the Paris Agreement. It was implicit in that evidence that the advice that the Taskforce provided did not include any advice about the target that would be consistent with avoiding the worst impacts of climate change on the Torres Strait Islands.

470 As has already been noted, the Taskforce's final report was published after the government had announced the emissions reduction target that Australia would take to the Paris Agreement. Ms Pearce conceded in her evidence that the target had been settled on as government policy before the report was published. Ms Pearce's evidence was that the purpose of the report was to explain why and how the government had "landed" on the chosen policy and to "support the government in its decision making".

The announcement and communication of the 2030 target

471 On 11 August 2015, the then Prime Minister, the Minister for Foreign Affairs and the Minister for the Environment issued a media release which announced that "Australia will reduce greenhouse gas emissions so they are 26-28% below 2005 levels by 2030". That was said to be a "responsible and achievable target" which was "comparable to the targets of other developed countries and allows [Australia's] economy and jobs to grow strongly". The target was also said to get "the right balance between [Australia's] economic and

environmental responsibilities”. It is noteworthy that the announcement said nothing about the target being based on or consistent with the best available climate science.

472 The government subsequently published a document which communicated an intended NDC (iNDC) which included the 2030 target. That document included the following statements concerning the iNDC:

Australia’s intended nationally determined contribution is an ambitious, fair and responsible contribution to global efforts toward meeting the objective of the UNFCCC with the goal of limiting global average temperature rise to below two degrees Celsius.

The target is a significant progression beyond Australia’s 2020 commitment to cut emissions by five per cent below 2000 levels (equivalent to 13 per cent below 2005 levels). The target approximately doubles Australia’s rate of emissions reductions, and significantly reduces emissions per capita and per unit of GDP, when compared to the 2020 target. Across a range of metrics, Australia’s target is comparable to the targets of other advanced economies. Against 2005 levels, Australia’s target represents projected cuts of 50 to 52 per cent in emissions per capita by 2030 and 64 to 65 per cent per unit of GDP by 2030.

The target represents serious and ambitious effort for Australia. This effort takes account of Australia’s unique national circumstances, including a growing population and economy, role as a leading global resources provider, our current energy infrastructure, and higher than average abatement costs. The target places Australia on a stable pathway towards longer term emissions reductions in the context of future global action and technological innovation.

473 While the document baldly asserted that the iNDC was an ambitious, fair and responsible contribution to the objective of limiting global average temperature increases to below 2°C, there is no explanation as to how the iNDC could accurately be said to be fair and reasonable, or how the iNDC could sensibly be said to be compatible with that objective, having regard to the best available science.

474 What had been Australia’s intended NDC became its first NDC under the Paris Agreement upon Australia’s ratification of the agreement on 9 November 2016.

Was the chosen target set having regard to the best available science?

475 The Commonwealth submitted that, although the target set in 2015 “was not derived purely from BAS [the best available science]”, it was “set having regard to BAS and also considering the CCA reporting”. I reject that submission. It is not supported by the evidence.

476 Professor Meinshausen’s evidence, which was discussed at length earlier, was to the effect that the greenhouse gas emissions reduction target that was set by Australia in 2015 was not consistent with Australia staying within its share of the remaining cumulative greenhouse gas

emission allocation which, according to his calculations, would be consistent with a CO₂ budget which would limit global temperature increases to 1.5°C above pre-industrial levels. Indeed, on Professor Meinshausen's calculations, the best-case scenario if that target was met would be that Australia would exhaust its share of that greenhouse gas or CO₂ budget before 2030. That evidence, which I accept, tends to support the inference that the target set by the Commonwealth in 2015 was not set having regard to the best available science. The Commonwealth's criticisms of Professor Meinshausen's evidence were discussed earlier. I reject those criticisms for the reasons given earlier. In my view the points raised by the Commonwealth do not undermine Professor Meinshausen's evidence in any material respect.

477 The target set by the Commonwealth was also significantly lower than the target range recommended by the CCA based on the best available science. As has already been noted, the Taskforce's report barely mentions the CCA's reports. It may readily be inferred that the Commonwealth ignored or disregarded the CCA's recommendation.

478 Overall, for the reasons that have effectively already been given, the evidence of Ms Pearce and Ms Gardiner, together with the documentary evidence relating to the decision regarding the 2030 target, indicates that, to the extent that climate science was considered at all by the relevant decision-makers, it was only considered in a very cursory, general and high level sense, and at best as a background or contextual consideration. There is certainly no indication in the evidence that the Taskforce or the relevant decision-makers in government, gave any, or any genuine, material or meaningful, consideration to the best available science concerning the calculation of CO₂ budgets, both globally and among nations. If it was considered at all, which is highly doubtful, it was given no weight when determining the target.

479 The evidence indicates that the target chosen by the government was based entirely on essentially pragmatic political considerations, such as the comparability of the target with targets chosen by other nations, and economic considerations. There is nothing whatsoever to suggest that the target was based on any best available science methodology, or on any consideration of whether the target was compatible or consistent with Australia remaining within its remaining cumulative greenhouse gas allocations consistent with limiting global average temperature increases to 1.5°C, or even 2°C, above pre-industrial levels. As has already been noted, the evidence of Professor Meinshausen, suggested that the chosen target was inconsistent with the best available science in that respect. The chosen target was also

inconsistent with, and unsupported by, the CCA's reports and recommendations, which were based on the best available science, which were either ignored or disregarded. While the evidence does not disclose why the CCA's recommendations were ignored or disregarded, it is open to infer from Ms Pearce's evidence and the Taskforce's report that they were ignored or disregarded simply because they were inconsistent with the target which had been chosen by the Commonwealth for reasons that had nothing to do with the best available science.

480 I should perhaps note that in her evidence Ms Gardiner maintained that Australia's first NDC under the Paris Agreement was "broadly consistent with the best available science at the time", though her view in that regard appeared to be based on little more than her view that the NDC was "broadly consistent with the level advised by the [CCA]". I do not accept that evidence. For the reasons already given, I am unable to see how the NDC settled on by the government in 2015 could be said to be broadly consistent with the CCA's recommendation at the time, or that it could otherwise be said to be consistent with the best available science at the time. It would appear that Ms Gardiner was not involved in providing any advice to the Taskforce or the government at the time in relation to the NDC or its consistency with either the CCA's report or the best available science. Her very general evidence concerning that issue is deserving of little, or no, weight.

481 The final point to note about the setting of Australia's first NDC is that there is no evidence to suggest that, in setting that target, the government specifically considered the impacts of climate change on the Torres Strait Islands and the vulnerable communities who lived there. Nor was there any evidence to suggest that the Commonwealth specifically considered whether the target that it set was one which would, having regard to the best available science, prevent or minimise the worst impacts of climate change on the Torres Strait Islands.

The NDC update in 2020

482 Article 4(9) of the Paris Agreement required each party to submit an NDC every five years in accordance with Decision 1/CP.21. Paragraph 24 of Decision 1/CP.21 requested that parties, such as Australia, whose NDCs contained a time frame up to 2030, communicate or update by 2020 those contributions and to do so every five years thereafter pursuant to Art 4(9).

483 In December 2020, Australia submitted an updated NDC which reaffirmed its 2030 target of reducing greenhouse gas emissions by 26 to 28% below 2005 levels. As can be seen, the update simply reaffirmed or restated the NDC that had been communicated in 2015.

484 As there was no change to the target, Professor Meinshausen’s evidence in respect of the 2015 NDC applies equally to the reaffirmed target. That evidence suggests that the target was not consistent with Australia remaining within its allocation of the remaining cumulative gas emission allocations which would be consistent with a CO₂ budget which would limit global temperature increases to 1.5°C above pre-industrial levels. It therefore supports the inference that the reaffirmed target was not set having regard to the best available science. That inference is also supported by the other evidence, such as it was, concerning the reaffirmation of the target.

485 The evidence adduced by the Commonwealth in relation to the formulation of the December 2020 reaffirmed NDC was essentially limited to documentary evidence, including some fairly uninformative Ministerial Briefing documents. At the time of the reaffirmation, Ms Gardiner was the Assistant Director of the International Climate Change Negotiations Section, International Climate Branch at the Department of the Environment and Energy. Her evidence concerning the decision to reaffirm the first NDC added little if anything to the documentary record.

486 There was no evidence to suggest that the decision to reaffirm Australia’s first NDC was based on, or took into account, the best available science in respect of climate change or any developments in that science. Indeed, the evidence suggested that the government gave no real consideration to any developments in the best available science since the setting of the first NDC, including any IPCC reports, when it decided to stick with its original target. Ms Gardiner’s evidence, if anything, tended to suggest that, because the government which was responsible for setting the first NDC was returned to power at the elections in 2019, it considered that it had a mandate to retain the existing NDC and therefore gave no real consideration to revising it based on the best available science. Ms Gardiner agreed with the proposition that “the government had made it clear that they weren’t going to change that target whatever the international community, the United Nations or any of [the] ... international reporting agencies said”.

487 It should be noted in this context that, as discussed earlier, in 2018 the IPCC published the IPCC Special Report. The documentary record, such as it is, concerning the decision to reaffirm Australia’s first NDC, makes no mention of that report or any of its findings or recommendations. The Ministerial Briefings did not indicate that an option for the government was to revise the first NDC in light of the IPCC’s findings in that report. Ms

Gardiner’s evidence was that the briefing contained no options other than to reaffirm the first NDC because she was “operating under the clear parameters that that target was set”.

488 I would have no hesitation in concluding from the evidence that the Commonwealth had no regard whatsoever to the best available science when it decided, in 2020, to simply reaffirm the emissions reduction target it had set in 2015 – a target which itself was not based on, or consistent with, the best available science.

The NDC update in 2021

489 On 28 October 2021, the Commonwealth communicated another updated NDC in which it again reaffirmed the target it had set in 2015 of reducing Australia’s greenhouse gas emissions by 26 to 28% below 2005 levels by 2030. On this occasion, however, the Commonwealth added or adopted an additional target of net zero emissions by 2050.

490 As can be seen, the update involved no change to the emissions reduction target for 2030 that constituted the first NDC. The only change was the addition of the target of net zero emissions by 2050. Ms Gardiner’s evidence was that the net zero 2050 target was included in the 2021 NDC update for the purpose of subjecting that target to the same reporting and accounting obligations under the Paris Agreement as applied to the 2030 target. The decision to adopt a target including net zero emissions by 2050 was made by Cabinet.

491 There was no direct evidence about the basis for the 2021 update or the reasons for it, though that was likely a product of the fact that the decision was a Cabinet decision. There was no documentary evidence of any advice given to the government concerning the updating of the NDC. Ms Gardiner, however, gave the following evidence concerning the advice that was given to the government:

Q: So the 2021 second updated first NDC again committed to the same reduction of emissions by 26 to 28 per cent below 2005 levels by 2030?

A: Uh-huh.

Q: So, again, there wasn’t any advice that was communicated in writing to the government about how recommitting to that twenty-five – 2005 level, 26 to 28 per cent below 2005 level by 2030, there’s no advice as to how that would consistently fall below the information that was revealed in the UNEP emissions gap reports, the IPCC 1.5 degree Celsius report, there was no advice as to how that recommitting of that same NDC would fail to meet the target set out in the Paris Agreement?

A: So I think what was very clear at that time is that we were providing consistent advice that that target was going to draw increasing international criticism because other countries were [taking on], you know, all of our peer

countries. [Were] taking on more ambitious targets at the time. We would say in – the government was quite clear at the time, again, that they had taken that target to the election, they had a mandate for it. But they were looking for other ways to communicate enhanced ambition. And that’s – they did that through taking on the net zero by 2050 target ...

492 The inference which I would draw from that evidence is that the government decision-makers did not give any material or meaningful consideration to the best available science when deciding to retain the existing 2030 target which had been first set in 2015. The government considered that it had a mandate to retain that target and did not give any serious consideration to revising it, despite the advice that it was receiving to the effect that retaining that target would be likely to attract international criticism. The available inference is that the government decided to adopt the net zero emissions by 2050 target to meet that likely criticism. It does not necessarily follow, however, that in deciding to adopt the net zero emissions target the decision-makers had regard to the best available science.

493 Ms Gardiner was involved in the drafting of the communication in respect of the updated NDC, though her evidence added little to the terms of the communication itself. It is also important to emphasise that the communication was drafted after the government had made its decision in respect of the target. It does not necessarily reflect the advice that the government received before making the decision. The communication relevantly included the following statement in answer to the question of how the updated NDC contributed towards achieving the objective of the Convention:

Achievement of Australia’s 2030 and 2050 emissions reduction targets will contribute towards stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. ...

494 The communication also included the following statement in answer to the question of how the NDC contributed towards the Paris Agreement’s temperature and mitigation goals:

Achievement of Australia’s 2030 and 2050 emissions reduction targets will contribute towards holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.

495 Those statements might at first blush tend to indicate that at least some consideration had been given to the science in respect of climate change in formulating the NDC update in 2021. On close analysis of the targets that formed part of the update, however, it would appear that the net zero emissions target was in effect a type of “window dressing” designed to distract

attention from the fact that the 2030 target was entirely inconsistent with the best available science. That is because it is readily apparent that retention of the original 2030 target meant that it would be virtually impossible for Australia to meet the net zero emissions by 2050 target. That was again clearly established by the evidence of Professor Meinshausen.

496 As discussed in detail earlier in these reasons, Professor Meinshausen's evidence was to the effect that the 2030 target set by Australia in 2015, which was reaffirmed in 2020 and 2021, would at best (if the grandfathering methodology of allocation was applied) have seen Australia exhaust its allocation of remaining cumulative greenhouse gas emissions (being its allocation consistent with keeping global temperature increases below 1.5°C by 2050), by 2030. If either of the other two methodologies was applied (the equality and historical responsibility methodologies of allocation) the target would have seen Australia emit more than three times its allocation of remaining cumulative greenhouse gases by 2030.

497 The overall effect of Professor Meinshausen's evidence, which reflected the best available science, was that an emissions reduction target for Australia, based on the best available science alone, would have been required to be to be much higher than the 2030 target set in 2015 for it to be consistent with the objective of limiting global average temperature increases to 1.5°C above pre-industrial levels at 2050. In short, from a purely scientific perspective, the target set by Australia was inconsistent or incompatible with that objective. Moreover, if the 2030 target set by Australia in 2015 (and reaffirmed in 2020 and 2021) would have seen Australia relevantly exhaust its allocation of remaining cumulative greenhouse gas emissions by or before 2030, the addition of the net zero emissions target for 2050 was essentially irrelevant or even pointless. That is because that target would be entirely unachievable. If Australia's relevant allocation of remaining cumulative greenhouse gas emissions was exhausted by 2030, there was no possible pathway to net zero emissions by 2050.

498 In my view, the evidence as a whole tends to support the inference that, in reaffirming, in 2021, Australia's target of 26 to 28% below 2005 levels by 2030, the government did not give any real or meaningful consideration to the best available science. If it had regard to the science of climate change at all, it did so at a very high level of generality and gave it little or no weight in the face of competing political, social and economic considerations. I would also infer that the decision to add a target of net zero emissions by 2050 was not based on the best available science and was instead political window dressing to distract attention from the

retained 2030 target. If consideration had in fact been given to the best available science, Professor Meinshausen's evidence indicates that it would have been readily apparent that the 2050 target was unobtainable given the retained 2030 target.

499 There is also no evidence to suggest that the Commonwealth decision-makers in respect of the NDC update in 2021 gave any active or material consideration to the interests of Torres Strait Islanders, or the effect that the targets set by the Commonwealth might have in respect of the impacts of climate change on the Torres Strait Islands. The available inference is that the decision made in 2021 did not focus on the interests of those communities in Australia that were most exposed or vulnerable to the impacts of climate change, like the communities in the Torres Strait Islands, but rather focussed on more macro or higher level political, social and economic considerations.

The NDC update in 2022

500 Before dealing with the NDC update in 2022, it is relevant to note that the IPCC published the Sixth Assessment Reports between August 2021 and March 2023. The findings reported in those reports were summarised earlier.

501 In May 2022, there was a change in government in Australia. The Australian Labor Party (ALP) won a majority of seats in the House of Representatives and formed government.

502 Ms Gardiner's evidence was that, prior to the federal election in 2022, she became aware from media reporting that the ALP had adopted a policy of changing Australia's NDC target under the Paris Agreement to reflect an updated 2030 target of reducing Australia's greenhouse gas emissions by 43% below 2005 levels. The ALP's policy document included several statements that suggested that it was aware that Australia's first NDC, as affirmed in 2020 and 2021, was not compatible with its international obligations under the Paris Agreement, including the setting of emissions reduction targets that were consistent with the objective of pursuing efforts to limit the increase in global average temperature to 1.5°C above pre-industrial levels. It stated, for example, that the "scientific imperatives" included that the recent IPCC reports showed that Australia had "already warmed 1.4°C – well above the global average of 1.1°C." It also stated:

Since 2015, Australia has been committed to the Paris Agreement goal of "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels".

Australia is currently the world's 14th largest emitter and the Commonwealth's current 2030 emissions reduction target would be consistent with 4°C of warming if other nations followed suit.

In signing the Paris Agreement in 2015, Australia and other signatories agreed to consider updating the 2030 Nationally Determined Contributions at COP26. Scott Morrison failed to do that despite overwhelming evidence that it is in Australia's national interest to do so.

At the conclusion of COP26, the Morrison-Joyce Government then voluntarily signed the COP26 Climate Pact, which "requests parties to revisit and strengthen the 2030 targets in their nationally determined contributions as necessary to align with the Paris Agreement temperature goal by the end of 2022, taking into account different national circumstances."

Only hours later, because of internal Coalition chaos, they issued a press release saying "Australia's 2030 target is fixed".

The Morrison-Joyce Government has either been lying to the Australian public, or the international community, neither for the first time.

Once again Australia's interests have gone under the bus in favour of Scott Morrison's political interest.

Australia's pariah status makes it much harder for us and our allies to encourage stronger action from other nations who might be seen to be slowing action.

503 Having become aware of the ALP's policy in respect of the appropriate emissions reduction target, Ms Gardiner and her team in the Department of Environment commenced work on an updated NDC in anticipation that an incoming ALP government would likely want to communicate its strengthened 2030 target to the UNFCCC early in its term.

504 Shortly after the election, Ms Gardiner received an instruction to prepare an update to Australia's NDC under the Paris Agreement. She subsequently supervised the preparation of the 2022 NDC update and was involved in drafting aspects of that document. Ms Gardiner's evidence was that the communication was based on the ALP's policy. The 2022 NDC update was subsequently approved by Cabinet. It updated the first NDC by strengthening Australia's greenhouse gas emissions target for 2030 to a target to reduce emissions by 43% below 2005 levels by 2030 and an affirmation of the net zero emissions by 2050 target.

505 The updated NDC was communicated to the UN Convention on Climate Change in June 2022. The 2022 NDC communication included the following general statement concerning the updated target:

In this updated NDC, Australia is increasing the ambition of its 2030 target, committing to reduce greenhouse gas emissions 43% below 2005 levels by 2030.

Australia also reaffirms its target to achieve net zero emissions by 2050. Both targets are economy-wide emissions reduction commitments, covering all sectors and

gases included in Australia's national inventory.

Australia's new 2030 target is a significant increase in ambition. It is a 15 percentage point increase on the upper end of the previous 2030 target of 26 – 28% below 2005 levels – or half as much again as the previous target. The revised 2030 commitment is both a single-year target to reduce emissions 43% below 2005 levels by 2030 and a multi-year emissions budget from 2021-2030.

The updated 2030 target puts Australia on track to achieve net zero emissions by 2050. It reflects the Australian Government's resolve to urgently step up action and work alongside global partners to tackle the climate crisis, achieve the goals of the Paris Agreement, and keep 1.5°C within reach. Our aspiration is that the commitments of our industry, states and territories and the Australian people will yield even greater emissions reductions in the coming decade.

(Emphasis in original.)

506 The communication also included statements in answer to the questions of how the NDC contributed towards achieving the objective of the Convention, and how the NDC contributed towards the Paris Agreement's temperature and mitigation goals, which were essentially in identical terms to the statements in answer to those questions in the 2021 NDC update communication. Those statements again tended to indicate, at least at first blush, that the government had given some consideration to the best available science when setting the updated target. But was the target consistent with the best available science?

507 The applicants submitted that Australia's updated 2030 target was not set having regard to the best available science and failed to reflect the global temperature limit to prevent or minimise the current and projected impacts of climate change. The applicants pointed, in that regard, to the fact that the updated target was still below the lowest end of the emissions reduction range recommended by the CCA, that being a range that the CCA considered to be appropriate for limiting global average temperature increase to 3°C. More significantly, the applicants relied on the evidence of Professor Meinshausen in respect of the updated 2030 target.

508 As discussed earlier, Professor Meinshausen calculated Australia's allocation of remaining cumulative greenhouse gas emissions until 2050 based on the three categories of accepted methodologies – the equality or equal per capita allocation methodology, the historical responsibility allocation methodology and the grandfathering allocation methodology. Professor Meinshausen's opinion in respect of the updated 2030 target was that, in the best-case scenario (using the more generous grandfathering methodology), the updated 2030 target was theoretically consistent with Australia remaining within its allocation as at 2050, but that Australia would have used up almost all its allocation by 2030. It would almost inevitably

exceed the limit a few years later. If either of the other two allocation methodologies were applied, Professor Meinshausen calculated that Australia would have exhausted its allocation before, or even well before, 2022.

509 The Commonwealth submitted, in effect, that on Professor Meinshausen's analysis, under the updated (43%) emissions reduction target, it remained possible for Australia to remain within its allocation of remaining cumulative greenhouse gas emissions for 2050 based on the grandfathering methodology. It therefore could not be said that the updated target was inconsistent or incompatible with the best available science reflected in Professor Meinshausen's evidence. The applicants, however, submitted that, even employing the grandfathering methodology, the updated 2030 target "would result in Australia's emissions needing to fall at an unprecedented and unfeasible rate after 2030 in order for Australia not to exceed its share of a 1.5°C budget". In other words, while it was theoretically possible that, under the updated 2030 target, Australia could remain within its remaining cumulative greenhouse gas emissions allocation using the grandfathering methodology, it was practically impossible for that to occur because its allocation was likely to be expended within a few years of 2030.

510 The applicants relied on Professor Meinshausen's evidence which employed a metaphor of a car speeding towards a cliff to explain that impossibility:

Q: Okay. I might move on to question 9. You undertake the same exercise for the 2022 budgets and targets. And you say at 74 that Australia's 43 per cent 2030 target is not inconsistent with the allocated budget under the CCA grandfathering approach because if Australia stuck to that target it could stay within its greenhouse gas allocation so long as it reached net zero one year later. Is that correct?

A: Yes. The analogy is a little bit – if you see a car racing with 100 kilometre per hour towards the cliff and you stop the movie 10 metres before the car runs over the cliff, and then you ask a question "is the car in the scene consistent with the car not going over the cliff", then you could say from what I see the car is 10 metres away from the cliff, but the speed at which it goes, as soon as you start the movie again, there's no feasible pathway with which the car could stop then before the cliff. And that is similar to the 43 per cent target. Yes, it has not completely reached the budget, but since we then have only one year of emissions afterwards remaining, it is with, I would say, fairly high certainty that we can say the target in 2030 is inconsistent because it sets us on the path that does not allow us to stay within the budget because we would cross it then a few years later.

511 I accept Professor Meinshausen's evidence that, under the updated 43% emissions reduction target for 2030, it was theoretically possible but highly unlikely that Australia would or could

remain within its allocation of remaining cumulative greenhouse gas emissions for 2050 based on the grandfathering methodology. I do not accept, however, as the applicants effectively submitted, that it necessarily follows that the updated 2030 target was inconsistent or incompatible with the best available science because it was incompatible with the Paris Agreement objective of limiting average global temperature increase to 1.5°C above pre-industrial levels by 2050. Nor do I accept that it necessarily follows that, in setting the updated 2030 target in 2022, the government did not give any real or meaningful consideration to the best available science.

512 Part of the difficulty in addressing this issue is that there is a disjunct, at least to some extent, between Professor Meinshausen’s analysis and calculations and Australia’s international obligations arising from the Paris Agreement. That observation is not intended in any way to be a criticism of Professor Meinshausen or his analysis. Professor Meinshausen addressed certain questions that he was specifically asked to address. The unstated premise that appeared to underlie the relevant questions he was asked about Australia’s announced emissions reduction targets or NDCs was, in effect, that parties to the Paris Agreement, like Australia, were required to communicate greenhouse gas emissions targets which were set by reference to their respective allocations of remaining cumulative greenhouse gas emissions until 2050 that were consistent with a CO₂ budget to limit global temperature increase to 1.5°C above pre-industrial levels.

513 The Paris Agreement, however, was not so prescriptive or definitive. As discussed earlier, the Paris Agreement clearly identified that its key objectives included to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels” and to pursue “efforts to limit the temperature increase to 1.5°C above pre-industrial levels”: Art 2.1(a). It did not, however, explicitly tether those objectives to the year 2050. Parties were required to “undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century”: Art 4.1. That obligation, however, was stated by reference to “the second half of this century”, not explicitly to the year 2050.

514 This issue was touched on by Dr Canadell in his evidence. When pressed in cross-examination about whether the updated NDC communicated by Australia in 2022 (reduction of greenhouse gas emissions by 43% by 2030) was consistent with the Paris Agreement, Dr Canadell gave the following evidence:

Q: Yes?

A: So the question was it's consistent with the Paris Agreement?

Q: Yes. Do they encompass pathways to achieve the temperature goals of the Paris Agreement?

A: So the answer is yes. The Paris [Agreement's] main goal is well below two degrees.

Q: Yes?

A: The Paris Agreement establishes very clearly that all sources of anthropogenic emissions need to be balanced with renewables by mid – the second half of this century. That's globally. And Australia has committed this 43 per cent by 2030 and net zero emissions by 2050. So that's well before the global average, which we could set [by] 2075, signifying that it's trying to more than the global – as expected by the convention.

...

Q: So, would you agree with me that it's not impossible [to meet the goal of well below two degrees], but we've made it very hard with the targets we've set?

A: I cannot fully agree. I mean, the Paris Agreement – again, I'm just going back to – this is a different question from, you know, impacts. Just looking at Paris Agreement, it says well below two degrees. Well below two degrees has not been defined. It can be 1.95, it can be 1.99, it can be a 1.7 – we don't know. Then, the Paris Agreement specifically said the ultimate tangible goal in emissions for the globe, which is the balance of removals and sources by sometime the second half of this century – which, you can call it 2075 just for the purpose of this discussion. And Australia has made a commitment of net zero emissions by 2050, that's 25 years earlier. That would show some consistency with the frame of convention of common but differentiated responsibilities and capabilities.

515 It should also be noted in this context that, while the best available science had clearly projected that the impacts of climate change would be considerably greater at temperature increases of 2°C above pre-industrial levels than they would be at temperature increases of 1.5°C, and had calculated global CO₂ budgets that were consistent with limiting global temperature increases to 1.5°C as opposed to 2°C, the best available science did not address what emissions reduction targets countries should set. As Professor Meinshausen acknowledged in his evidence, the IPCC's mandate was to be “policy relevant”, not “policy prescriptive”, and it was therefore not the role of the IPCC to suggest any particular emissions reduction targets.

516 On balance, while I accept Professor Meinshausen's analysis and evidence concerning the updated 2030 emissions reduction target of 43%, I do not consider that his evidence alone supports an inference that, in setting the target, the Commonwealth did not meaningfully

engage with or have regard to the best available science. Unlike Australia's first NDC communicated in 2015 and reaffirmed in 2020 and 2021, the updated 2030 target that was communicated in 2022 could fairly be said to be a target that was capable of realistically contributing towards limiting the increase in the global average temperature to 1.5°C above pre-industrial levels. The significantly strengthened targets that were set in 2022 tend to indicate that the government was likely to have had regard to the best available science, even if the target could not be said to be one which would necessarily have seen Australia remaining within the figures calculated by Professor Meinshausen as representing Australia's allocation of remaining cumulative greenhouse gas emissions consistent with a CO₂ budget to limit global temperature increase to 1.5°C above pre-industrial levels. I do not accept that the target is so low as to manifest a disregard of the best available science. Nor do I accept that the target is so low that it could be said to be entirely inconsistent or incompatible with the best available science.

517 It should finally be noted the updated NDC was also enshrined in legislation. The *Climate Change Act 2022* (Cth) commenced operation in September 2022. Subsection 3(a) of the Climate Change Act provides that one of the objects of the Act was:

- (a) to set out Australia's greenhouse gas emissions reduction targets which contribute to the global goals of:
 - (i) holding the increase in the global average temperature to well below 2°C above pre-industrial levels; and
 - (ii) pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels;

518 Subsection 10(1) of the Climate Change Act provides that:

- (1) Australia's greenhouse gas emissions reduction targets are as follows:
 - (a) reducing Australia's net greenhouse gas emissions to 43% below 2005 levels by 2030:
 - (i) implemented as a point target; and
 - (ii) implemented as an emissions budget covering the period 2021-2030;
 - (b) reducing Australia's net greenhouse gas emissions to zero by 2050.

519 Subsection 10(4) of the Climate Change Act provides that s 10(1) does not "prevent or limit the exercise of the executive power of the Commonwealth to" prepare and communicate a new NDC, or adjust Australia's NDC, in accordance with Art 4 of the Paris Agreement. The Climate Change Act does not, however include any provision which deals with how

Australia's greenhouse gas emissions reduction targets were determined, or how any future greenhouse gas emissions reduction targets, or new or adjusted NDCs, were to be determined.

Australia's greenhouse gas emissions

520 In considering the greenhouse gas emissions reduction targets that were set by the Commonwealth, it should be borne in mind that, in global terms, Australia is a relatively high emitter of greenhouse gases. In particular, Australia is undoubtedly one of the largest global emitters on a per capita basis. According to Climate Watch, Australia ranked eighth globally in greenhouse gas emissions per capita in 2015, 2017 and 2019, ninth in 2014, tenth in 2016 and sixth in 2018. Australia's share of total annual global greenhouse gas emissions between 2014 and 2019 was approximately 1.2-1.3%, while its population constituted approximately 0.33% of the global population. Dr Canadell's evidence, relied on by the Commonwealth in its submissions, was that Australia had ranked tenth globally in per capita emissions each year between 2014 and 2022, except 2020, when it was ranked ninth. Dr Canadell's calculations were based on the Emissions Database for Global Atmospheric Research (EDGAR) by the Joint Research Centre of the European Commission.

THE IMPACTS OF CLIMATE CHANGE ON THE TORRES STRAIT ISLANDS

521 There was no dispute, nor realistically could there be, that the Torres Strait Islands had been significantly adversely impacted by the impacts of climate change. Those impacts included rising sea levels, more and more severe extreme sea level events and inundation of coastal areas, terrestrial temperature increases and extreme heat, ocean temperature increases, erosion, and harm to and the destruction of some important ecosystems and non-human species. There was, however, some disagreement concerning the precise nature and extent of those impacts. There was also some disagreement about when those impacts had occurred.

522 The time at which the impacts or effects of climate change had occurred is of considerable importance in this matter given that the applicants' case is in negligence, meaning that the relevant harm or damage in respect of which relief is sought must have been suffered after the alleged breach of the duty of care. In respect of the applicants' primary or targets case, the duty of care was allegedly first breached in 2015 when the Commonwealth set its first target or NDC. The date from which the Commonwealth is alleged to have first breached the alternative or adaptation duty of care is not entirely clear, though it is difficult to see how that duty could have been breached before December 2011 when the TSIRC first expressed interest in obtaining funding from the Commonwealth in respect of the Seawalls Project.

523 The applicants relied on two broad categories of evidence as establishing the impacts of climate change on the Torres Strait Islands. The first category is scientific evidence. The second category is evidence of some Torres Strait Islanders concerning their own observations.

Scientific evidence

524 The applicants primarily relied on the expert scientific evidence of Professors Karoly and Church in respect of the impacts of climate change on the Torres Strait Islands. The Commonwealth did not seriously dispute the evidence of Professors Karoly and Church in respect of the impacts of climate change, or at least did not adduce any expert evidence which contradicted, criticised or qualified any of their evidence. The applicants also relied on the expert evidence of Mr Bettington in respect of extreme sea level events and flooding or inundation in the Torres Strait Islands. Some aspects of Mr Bettington's evidence were challenged by the Commonwealth and disputed or contradicted by some of the evidence of two witnesses that it called, Dr Bruce **Harper** and Dr Mathew **Barnes**.

Sea level rises

525 The Commonwealth admitted that the Torres Strait has been affected by sea level rise due to climate change. That admission was hardly surprising given the evidence.

526 Professor Church's evidence was that, as a result of the acceleration in global sea level rise, sea level is now rising along all parts of the Australian coastline at an average rate roughly consistent with global mean trends, with an increase in the rate of rise in the early 1990s. Professor Church also noted that the sea level rise along northern Australia has been larger than southern Australia and the global average over the last three decades, though he acknowledged that part of that larger than global average rise along the northern coastline may have been a result of climate variability. He accepted in cross-examination that, if the influence of the El Niño southern oscillation were removed from this measurement, sea level rise in northern Australia would be closer to the global mean.

527 Professor Karoly's evidence was that sea levels are rising by statistically significantly amounts in the Torres Strait. Professor Karoly referred in that context to a report prepared by the TSRA (*Torres Strait 2021 State of the Environment Report Card*) which stated that sea level rise has been increasing at about twice the global rate in the Torres Strait.

528 The Commonwealth appeared to take issue with the proposition that the sea level rise in the Torres Strait, or the rate that the sea level was rising, was higher in the Torres Strait than the global average. The evidence, such as it was, however, tended to support that proposition. Whether that was the case or not is in any event somewhat beside the point. Even if the sea level rise in the Torres Strait was no higher than the average global sea level rise, that rise was relatively large. That is of particular significance given that many communities in the Torres Strait live on low-lying islands or in coastal areas that are particularly vulnerable to the impacts of higher sea levels.

529 Professor Church's evidence was that the global mean rise in sea level in the period 1900 to 2020 was about 21 centimetres. The Commonwealth accepted that it can be assumed that the Torres Strait Islands experienced an at least equivalent rise in sea levels over that period.

Extreme sea level events and inundation of coastal areas

530 The applicants submitted that Torres Strait Islanders are experiencing more extreme sea level events, inundation and flooding in their communities at more frequent intervals as a result of the rising sea level in the region. They relied, in support of that proposition, on the expert opinion evidence of Professor Church and Mr Bettington.

531 The Commonwealth accepted that there had been an increase in mean sea level in the Torres Strait Islands and also accepted, as a general proposition, that an increase in mean sea levels can increase the frequency of extreme sea level events. The Commonwealth therefore can be taken to have accepted that it was at least likely that there had been more extreme sea level events, and therefore more and worse inundation and flooding, in the Torres Strait Islands as a result of the increase in the sea level in the region that had resulted from global warming and climate change. The Commonwealth submitted, however, that the precise frequency and severity of such extreme events in the Torres Strait Islands was uncertain, particularly in the period from 2014. The Commonwealth also disputed aspects of Mr Bettington's analysis. It relied on the expert evidence of Dr Harper and Dr Barnes which, it submitted, should be preferred to the evidence of Mr Bettington.

532 Professor Church's evidence in respect of this topic was essentially not disputed by the Commonwealth. His evidence, in general terms, was that the frequency and severity of extreme sea level events had increased over recent decades and that extreme sea level events were already causing flooding on the Torres Strait Islands. As has already been noted, Professor Church's evidence was that the global mean rise in sea level in the period 1900 to

2020 was about 21 centimetres. In Professor Church's opinion, the dominant driver of the observed increase in flooding from extreme sea level events, including on the Torres Strait Islands, has been the rise in the sea level. Drawing on the results of modelling, Professor Church concluded that the average depth of flooding in the Torres Strait was likely to have increased by about 0.25 metres from 1900 to 2023, and that there has been at least a doubling in the frequency of extreme sea level events of a given height between 1993 and 2023.

533 Mr Bettington is a civil engineer who specialised in coastal and maritime engineering. He had many years of experience preparing hazard assessments in respect of foreshore erosion, inundation and flooding in the Torres Strait. He had also been involved in designing, among other things, seawalls and flood barriers on the Torres Strait Islands. The overall effect of his opinion evidence was that there had been a significant increase in the size and frequency of extreme sea level events in the Torres Strait Islands between 1900 and 2023. That had in turn led to more frequent and more severe flooding and inundation events in the Torres Strait Islands.

534 Extreme sea level events, in simple terms, are events which occur when the sea level rises to extreme levels as a result of storm tides and storm surges. Storm tides are the combined impacts of storm surge, reef top wave setup and tide. Storm surge is the elevated water level that occurs when barometric pressure and wind combine to push up water, usually during extreme weather events such as cyclones.

535 There were, in simple terms, three steps in Mr Bettington's analysis which provided the basis for his opinion that the size and frequency of extreme sea level events and flooding on the Torres Strait Islands has increased. The first step involved calculating the extreme water levels (or storm tide levels) relative to Australian Height Datum (*AHD*) on various islands (Boigu, Saibai, Poruma and Warraber) in various different scenarios as at the baseline (1900) and 2023. The different scenarios ranged from a one in 10-year inundation event to a one in 500-year inundation event. Mr Bettington's calculations indicated that the water levels in those scenarios were significantly higher in 2023 than they were in 1900. For example, Mr Bettington calculated that the water level in a one in 100-year extreme water level event on Boigu in 1900 was 3.58 metres, whereas the water level in such an event on Boigu in 2023 was 3.79 metres.

536 Two points should be noted in respect of this step in the analysis. The first point is that, as will be discussed in more detail shortly, the starting point in this step of Mr Bettington's

analysis was data he obtained from a 2011 study and model in relation to storm tide levels in the Torres Strait. The main contributor to the study was Dr Harper. Importantly, however, Mr Bettington applied what he referred to as a “regional lift” to that data. The effect of applying that lift was to increase the calculated extreme water levels on each of the islands in each of the scenarios by between 0.1 metres (in respect of a one in 25-year inundation event) and 0.5 metres (in respect of a one in 500-year inundation event). The application of that regional lift was the critical point of disagreement between Mr Bettington and Dr Harper.

537 The second point is that Mr Bettington factored into his calculation Professor Church’s estimate that sea levels had risen 21 centimetres between 1900 and 2023 in line with the global average. That sea level rise was the result of climate change. It is readily apparent that the rise in sea level as a result of climate was one of the main reasons why the water levels in the various inundation scenarios were significantly higher in 2023 than they were in 1900.

538 The second step in Mr Bettington’s analysis involved creating digital elevation models in respect of the ground surfaces on the relevant Torres Strait Islands, namely Boigu, Saibai, Poruma and Warraber. While there were some issues between the various experts in relation to the digital elevation models, ultimately those differences were not considered to be material differences.

539 The third step involved creating “flood maps” in respect of the relevant islands by applying the calculated water levels in each of the scenarios to the digital elevation models using what was referred to as the “bathtub method”. Those flood maps showed those parts of the island what would be affected or inundated during the extreme water level events in each of the scenarios at the relevant times. The maps also depicted the level or extent of the inundation. What those maps showed, in general terms, was that the areas affected by significant flooding and inundation during the various scenarios (for example, a one in 100-year extreme water level event) were far more extensive in 2023 than they were in 1900. Dr Barnes’ involvement in the analysis was essentially limited to the production of various flood maps using the data supplied to him. His evidence was essentially uncontroversial.

540 Mr Bettington also calculated water levels and produced flood maps in respect of what he referred to as “township inundation events”. The determination of township inundation levels involved Mr Bettington identifying the water level that would flood approximately 50% of the townships on the islands in question. The process he employed involved

adjusting the water levels in small increments and mapping the resulting flood impact on the township. Upon reaching a water level that was assessed as resulting in flooding of 50% of the township, that was determined to be a township flooding event. The upshot of Mr Bettington's analysis of township inundation events was that the frequency of those inundation events had increased significantly between 1900 and 2023, at least on Boigu and Saibai. On Mr Bettington's analysis, Boigu township inundation events occurred once every 35 years in 1900, whereas in 2023 they occurred once in every 12 years. In Saibai, township inundation events occurred once every 25 years in 1900, whereas in 2023 they occurred once in every five years. As discussed later, the Commonwealth criticised the validity of Mr Bettington's analysis based on township inundation events.

541 The Commonwealth disputed Mr Bettington's calculations and submitted that they should not be accepted. It largely relied on the evidence of Dr Harper in that regard. As has already been noted, the key issue between Mr Bettington and Dr Harper concerned Mr Bettington's application of the regional lift. Mr Bettington's reason for adding the regional lift was, at least initially, based on his observations of what he called "significant water level anomalies" that regularly occurred on the Torres Strait Islands. The significant water level anomalies were, in essence, observed non-cyclonic inundation events on certain islands between 2006 and 2023. Mr Bettington's view, in essence, was that Dr Harper's 2011 did not adequately account for those anomalies.

542 After conferring with Dr Harper, Mr Bettington's reasoning in respect of the regional lift shifted to some extent. His view was that the "low values" in Dr Harper's modelling were the result of uncertainties or errors in the modelling. Those uncertainties or errors included not accounting for certain geographic features and processes in the region, including underwater dune heights in certain areas and the processes of wave runup and "overtopping" those dunes. In his oral evidence, Mr Bettington accepted that his quantification of the regional lift was somewhat arbitrary, simplistic and rudimentary, particularly when compared with Dr Harper's highly sophisticated and detailed modelling.

543 Dr Harper's evidence was that there was no sound basis for the application of Mr Bettington's regional lift to his (Dr Harper's) 2011 modelling and data. While Dr Harper respected Mr Bettington's regional knowledge, he maintained that his data and modelling had appropriately accounted for the anomalies identified by Mr Bettington. He also pointed out that the "concerns" expressed by Mr Bettington based on the underwater dunes and the

processes of wave runup and overtopping did not apply to Boigu and Saibai, but had nevertheless been applied by Mr Bettington across all the relevant islands.

544 I do not consider it to be necessary to resolve the difference of opinion between Mr Bettington and Dr Harper in respect of the calculation of storm surge levels and the application by Mr Bettington of the regional lift. That is because I am in any event satisfied from the evidence as a whole that, even if Mr Bettington's evidence concerning the appropriateness of applying the regional lift is not accepted, the size and frequency of storm tides or extreme sea level events on the Torres Strait Islands have materially increased as a result of the rising sea levels that have resulted from global warming and climate change. For more abundant caution, however, I should address and make a finding concerning this disputed aspect of the expert evidence.

545 Having read the expert reports, including the joint report of Mr Bettington, Dr Harper and Dr Barnes, and heard the concurrent evidence of those witnesses concerning the modelling and the regional lift, I prefer and accept the evidence of Dr Harper. In my view there was no sound basis for applying the regional lift to Dr Harper's data and modelling in respect of storm tide levels. That is not to say, however, that all of Mr Bettington's evidence and analysis should be rejected. There are nonetheless aspects of Mr Bettington's evidence that were either not disputed or challenged, or were in my view reliable and effectively corroborated by other evidence.

546 As for the regional lift, it may be accepted that Mr Bettington has considerable regional knowledge and experience concerning extreme weather events in the Torres Strait. It may also be accepted that his concern, based on his observations of water levels during past extreme weather events, that Dr Harper's modelling did not accurately capture those water levels, was not entirely unreasonable or baseless. Indeed, Dr Harper accepted that Mr Bettington's concern in that regard was not unreasonable. I am, however, ultimately not persuaded that Dr Harper's modelling did not sufficiently account for what Mr Bettington considered to be anomalous water level events. Nor am I persuaded that Mr Bettington's method of quantification of the regional lift was sufficiently rigorous or empirically justifiable to be reliable. As Mr Bettington himself conceded, his quantification of the regional lift was somewhat arbitrary, rudimentary and simplistic. I am also not persuaded that it was appropriate to apply the regional lift uniformly across all the relevant islands, particularly in circumstances where the justification for the regional lift was based in part on

observations concerning fairly isolated events on some of the islands and geographic features and natural processes that would have different impacts on different islands.

547 I am nevertheless satisfied that Mr Bettington’s analysis indicates that the water levels of the storm tides or extreme water level events that occur on the Torres Strait Islands now are materially higher than the water levels of storm surges that occurred in the past, even if the regional lift is removed from his analysis. While his tables that include the regional lift may have overestimated the size of the storm tides to a certain extent, that does not detract from the fact those tides are now materially higher than they were previously, mainly as a result of the higher sea levels resulting from global warming and climate change. Moreover, some weight should be given to Mr Bettington’s more general observations concerning recent extreme water level events in the Torres Strait Islands given his extensive knowledge and experience in respect of coastal and marine engineering in the region. As already indicated, I am also satisfied that other aspects of Mr Bettington’s evidence and analysis should be accepted.

548 As for Mr Bettington’s analysis based on township inundation events, the Commonwealth criticised that analysis on the basis that it is not an analysis that is usually undertaken in coastal risk assessments and the choice of 50% inundation as being the relevant measure was arbitrary. The Commonwealth also submitted that the “bathtub” methodology employed in creating the flood maps was unreliable because it did not take account of “coastal barriers” such as seawalls and bunds.

549 I reject those criticisms of this aspect of Mr Bettington’s analysis. I see little significance, if any, in the fact that this methodology was not usually undertaken in coastal risk assessments and note that this was not a point that was either pressed with any vigour when it came to the cross-examination of Mr Bettington, or put to either Dr Harper or Dr Barnes. I also do not accept that it was in any relevant sense arbitrary for 50% to be chosen as the appropriate measure for the analysis. This was also not a point that was pursued with any vigour in cross-examination or addressed by Dr Harper or Dr Barnes. As for the bathtub method, in the joint report Dr Barnes accepted that bathtub mapping is the correct approach for the relevant localities. His only criticism of Mr Bettington’s mapping was that it showed flooding where there were no obvious connections to the sea, though he considered that to be a minor issue. Mr Bettington also explained in his oral evidence that the relevant seawalls and bunds were incomplete barriers and that water can readily come around them. I accept that evidence.

550 I also accept Mr Bettington's analysis to the extent that it indicated that storm tides or extreme weather events that are likely to cause flooding in the Torres Strait Island communities in question now occur more frequently than they did in the past. Dr Harper did not express any disagreement with Mr Bettington's analysis in respect of the frequency of events that cause flooding in the communities, though he did observe that the removal of the regional lift from the water level model would alter the calculation of the frequency of the events. That said, even if the storm tide values used by Mr Bettington in his township inundation event analysis are adjusted to remove the regional lift, the results still indicate that the frequency of flooding events has increased, albeit perhaps not to the same extent as Mr Bettington had calculated. On Boigu, township inundation events would only have occurred once in every 500 years or more in 1900, whereas in 2023 they would have occurred once in every 25 years. In Saibai, township inundation events would have occurred once in every 100 years or more in 1900, whereas in 2023 they would have occurred once in every 10 years or less. That is obviously still a material increase in the frequency of flooding events on those islands.

551 It would also be wrong to consider the evidence of Mr Bettington (and Dr Harper) in isolation. As has already been noted, Professor Church's effectively unchallenged evidence was that the frequency and severity of extreme sea level events, including on the Torres Strait Islands, had increased over recent decades and that those events had already caused flooding on the Torres Strait Islands. Professor Church's unchallenged evidence was to the effect that the main driver of those changes was the increase in sea level that had resulted from global warming and climate change. Professor Church's evidence in that regard was entirely consistent with Mr Bettington's evidence, though it was expressed at a higher level of generality. Moreover, as discussed later, the evidence of Professor Church and Mr Bettington concerning the increased size and frequency of flooding events on the Torres Strait Islands was supported or corroborated by the evidence of Torres Strait Islanders based on their actual observations.

552 In my view, the evidence as a whole indicated that the size and frequency of extreme water level events and associated inundation and flooding on the Torres Strait Islands has increased in recent decades. That phenomenon can clearly be linked to higher sea levels in the region that have resulted from global warming and climate change.

553 It should perhaps be noted in the context of flooding on the Torres Strait Islands that the increased incidence and severity of flooding events does not appear to be linked to any increase in rainfall in the Torres Strait Islands in recent years. Professor Karoly's evidence was that the Torres Strait Islands has a pronounced wet season from November to April and a dry season from June to September, with large year-to-year and decadal variations in rainfall amounts. Annual total rainfall was somewhat higher in 1995-2022 compared with 1952-80, however that change was not statistically significant. The number of heavy rain days (days where rainfall exceeded 25mm) had, however, increased from 17 days per year during 1952-80 to 24 days per year during 1995-2022. Moreover, data published by the IPCC in its Sixth Assessment Reports indicated that, while there had been an observed change in heavy precipitation in northern Australia since 1950, the conclusion that that change was a result of human-induced climate change could only be expressed with low confidence due to limited agreement.

Temperature increases and extreme heat

554 It is clear that the Torres Strait and its communities have been affected by warmer temperatures as a result of climate change. The Commonwealth submitted, however, that the extent or quantum of the warming is not clear on the evidence.

555 The applicants primarily relied on the evidence of Professor Karoly in relation to temperature increases in the Torres Strait in recent times. The key elements of Professor Karoly's evidence were as follows.

556 First, a recent comprehensive report by the CSIRO and BOM reported that the average land temperatures across Australia had increased by $1.47 \pm 0.24^{\circ}\text{C}$ since high quality national records began in 1910. Sea surface temperatures around Australia have increased by an average of 1.05°C since 1900. Those temperature increases had led to an increase of extreme heat events over land and sea.

557 Second, Professor Karoly's evidence was that the data concerning warming in Australia was "generally relevant to the Torres Strait Islands".

558 Third, high-quality temperature observations for Horn Island from the Australian Climate Observations Reference Network – Surface Air Temperature dataset of the BOM indicated that average maximum temperature on the Torres Strait Islands had increased by 0.80°C from 1951-60 to the most recent decade 2011-2020. Professor Karoly's evidence was that that

data was consistent with the long-term warming trend in sea surface temperatures around northern Australia. Horn Island is one of the islands in the Torres Strait which is closest to the Australian mainland. When questioned about that evidence and whether the recorded temperature increases could be attributed to climate change, Professor Karoly gave the following evidence:

Q: By that do you mean to say that the trend can be attributed, that is, it's caused by global increase in greenhouse gases or only that that could be consistent with it? You're not actually attributing the trend to global warming, but you're saying it could be significant or could be consistent, basically. It would be slightly different. And I just want to - - -?---

A: Yes. Yes. You are correct that I – at the time, I did not say – make an attribution to statement or a causal link, but I have done analysis of regional temperature changes in every region, grid box, across Australia and found significant changes on the century timescale from 1900 for which there was observed data on the century timescale – I haven't done it for Horn Island – showed that it was consistent with climate-model projections of the expected temperature changes at Horn Island. But I have done that, an attribution analysis. So I cannot formally say that there is a peer-reviewed analysis of the observed temperature change and model simulations of temperature change from 1950 to 2022, **but the observed change is consistent with climate-model simulations of the response to an increase in greenhouse gases in the Australian region and at Horn Island.**

(Emphasis added.)

559 Fourth, there has been a statistically significant increase in the number of hot days (maximum temperatures greater than 30°C) on Horn Island from 154 days per year in 1951-60 to 231 days per year in 2011-2020. The number of very hot days (maximum temperatures greater than 34°C) at Horn Island has also increased significantly from 0.7 days per year in 1951-60 to 2.5 days per year in 2011-2020.

560 It may be accepted that the relatively short time frame of the temperature data from Horn Island makes it difficult to fully attribute the temperature increases to global warming and climate change, as opposed to normal seasonal variations. As Professor Pitman put it, “[t]he observational record at Horn Island ... is insufficient to **fully** characterise the impact of natural variability” (emphasis added). I nevertheless accept Professor Karoly's evidence that the observed temperature increases are at least consistent with climate-model simulations which tend to link temperature increases in Australia to the increase in greenhouse gases. I would infer from the evidence as a whole that the recorded temperature increases on Horn Island, and the Torres Strait more generally, are at least in part attributable to human-induced climate change.

Ocean temperature increases

561 There was no dispute, nor could there be, that the Torres Strait has been affected by increases in ocean temperatures due to climate change. The Commonwealth once again submitted, however, that the evidence does not provide the Court with a reliable basis to reach any conclusions regarding the precise quantum of the increase. While it may perhaps be accepted that the evidence did not provide a reliable basis making findings concerning the precise extent of ocean temperature increases in the Torres Strait, the evidence nevertheless clearly established that ocean temperature increases in the Torres Strait in recent times were both significant and alarming.

562 Professor Karoly's evidence concerning the recorded increases in sea surface temperatures was referred to earlier in the context of temperature increases in the Torres Strait more generally. The evidence of Professor Hughes in relation to the recent increases in ocean temperature and the impacts of those increases on coral reefs included the following:

Prior to 1998, then the hottest year on record, coral bleaching was rare and localized because sea temperatures were cooler than those experienced today, including during historical El Nino periods ... Sea surface temperatures on the Great Barrier Reef in December 2021 – at the beginning of the most recent mass bleaching event - were the hottest recorded by the Australian Bureau of Meteorology since their measurements began in 1900.

...

The Great Barrier Reef as a whole has experienced mass coral bleaching six times in the past 24 years due to global heating, in 1998, 2002, 2016, 2017, 2020, and 2022. Two of these events coincided with El Nino conditions (1998 and 2016), and the remaining four did not. Sea surface temperatures (SSTs) during El Nino summers are slightly warmer in most parts of the tropical Ocean. However, due to anthropogenic heating, average SSTs during cooler La Ninas are now hotter than they used to be 30-40 years ago during El Ninos ... Bleaching in 2022 is particularly significant because it was the first time, due to ongoing anthropogenic heating, that mass bleaching occurred during strong La Nina conditions. This latest event (which has not yet been fully analyzed) was the 4th mass bleaching in just 6 years.

563 Professor Hughes' report included a graph of sea surface temperatures on the Great Barrier Reef from 1900 to 2021 and observed that the data showed a "clear warming trend in sea surface temperatures on the Great Barrier Reef over the past 120 years". The graph itself suggested that the clear warming trend had become significantly more pronounced since about the 1970s.

564 The Commonwealth submitted that Professor Hughes' evidence in respect of increasing sea surface temperatures and their impact related to the Great Barrier Reef and that some caution

should therefore be exercised in drawing inferences from that evidence about sea surface temperatures in the Torres Strait. The Commonwealth fairly conceded, however, that the reliable observations by Professor Hughes may provide a basis for inferring similar impacts within the Torres Strait. I would readily infer that similar warming trends have been experienced in the seas surrounding the Torres Strait Islands, particularly in the absence of any evidence that would suggest that sea temperatures in the Torres Strait had not been similarly affected.

565 I should also note in this context that the unchallenged evidence of Professor Karoly was that extensive coral bleaching events have occurred in the Torres Strait over the last two decades due to ocean warming and marine heatwaves.

566 Finally, a report prepared by the CSIRO which was in evidence reported that the average annual sea surface temperature in the Torres Strait region rose by about 0.16°C to 0.18°C per decade from 1950 to 2010. The Commonwealth submitted that the figures in that report should be treated with some caution because they predate the period that is the subject of this proceeding, and the report was prepared by persons who were not called to give evidence. I reject those submissions. There is no sound reason to doubt the reliability of data in the table prepared by the CSIRO, a highly respected Commonwealth organisation. While the report included data in respect of periods prior to the period which is directly relevant to the applicants' case, it is consistent with Professor Hughes' evidence and provides a sound basis for inferring that the warming trend experienced in the seas surrounding the Great Barrier Reef have also been experienced in the seas in the Torres Strait.

Erosion

567 The Commonwealth did not dispute that some islands in the Torres Strait had been impacted by erosion, though it again submitted that the evidence did not provide a basis for the Court to make findings about the extent of the erosion or how it has changed over time. That might perhaps be so in respect of the scientific or expert evidence, however given the evidence of the Torres Strait Islanders about erosion, which will be discussed in detail later, that is at best a trivial point. It is tolerably clear that erosion on some of the Torres Strait Islands has been particularly significant in recent times. It is equally clear that the evidence of the Torres Strait Islanders concerning erosion, considered together with the expert evidence, supports the inference that the significant erosion that has occurred on the Torres Strait Islands in

recent times is in large part due to rising sea levels caused by global warming and climate change.

568 Mr Bettington's evidence was to the effect that rising sea levels in the Torres Strait had exacerbated erosion, particularly on coral cay and rock islands such as Poruma, Warraber and Badu. Mr Bettington explained that the location and shape of sand formations on those islands are controlled by reef top waves and currents that drive morphological processes. The reef edge generally absorbs some of the energy caused by waves and currents. As sea levels rise, however, the depth of the water over the reef edge increases and as a result the reef top absorbs less of that energy. That in turn alters the morphological processes and causes imbalances in sand transport and, by extension, erosion. Mr Bettington referred in that context to a study of sand transport rates on Poruma which had revealed that the "annual transport rates" of sand on Poruma had increased. That had in turn resulted in a loss of balance which had in turn driven erosion on the island.

569 Mr Bettington's evidence was that as sea levels rise, the energy on the reef top will drive changes to sand distribution with a "long term trend towards sand being increasingly washed off the platform and lost to the system". He also expressed the view that "[r]ecent changes to the coastline on Poruma and Warraber reveal the dramatic changes that are possible" and that "if the morphological processes are severely out of balance the erosion pressure on the islands is relentless and islands can be lost".

Harm and destruction of ecosystems and non-human species

570 The Commonwealth, perhaps not surprisingly, conceded that there had been extensive coral bleaching events in the waters off northeast Australia in recent decades and as recently as 2016, 2017, 2020 and 2022. Professor Hughes' evidence concerning coral bleaching was touched on earlier in the context of rising ocean temperatures. Professor Hughes also referred, in his evidence, to aerial surveys by TSRA and the Australian Research Council Centre of Excellence for Coral Reef Studies which documented, among other things, that coral reefs in the central and inner regions of the Torres Strait had suffered "extreme levels of bleaching and massive levels of mortality" and that, of the 25% of reefs that had been most severely impacted, "mortality of corals following bleaching ranged from 84-99%".

571 The evidence indicated that coral bleaching was also having an impact on fisheries. Professor Hughes' evidence was that "[r]eef-associated fisheries are particularly vulnerable to the loss of corals due to coral bleaching caused by temperature extremes" and that "[h]igher

sea surface temperature, longer wet seasons, rising sea-level and ocean acidification are likely to have further significant impacts on these fisheries”.

572 Putting coral bleaching to one side, the Commonwealth appeared to take issue with the inferences or conclusions that could be drawn from the evidence in respect of the damage and destruction that climate change is causing to other ecosystems. In my view, however, there could be no doubt that the evidence indicated that climate change is having severe impacts on other ecosystems in the Torres Strait.

573 There are large areas of tidal wetlands in the Torres Strait. Those tidal wetlands are predominantly mangroves, but include saltmarsh, saltpans and freshwater and brackish wetlands. Professor Hughes’ evidence was that “[s]ea level rise due to climate change, along with storm surges, king tides and ENSO [El Nino Southern Oscillation]-related tidal anomalies, have already caused significant damage to these habitats, and created new hypersaline wetlands on Boigu and Saibai”. The evidence of Torres Strait Islanders concerning the salination of wetlands on Boigu and Saibai is considered in detail later in these reasons. Professor Hughes also referred to a study which documented that there were “significant indications of longer term, deteriorating trends and widespread damage” of mangroves and tidal wetlands in the Torres Strait due to, among other things, rapid rises in sea levels.

574 Professor Hughes also referred in his evidence to studies and reports which documented substantial “diebacks” and significant declines in the condition of seagrass in various areas in the Torres Strait. While Professor Hughes acknowledged that the causes of the die-offs of seagrass are poorly understood because of the infrequency of monitoring, he nevertheless indicated that the causes are “increasingly linked to climate change”.

575 Professor Hughes’ evidence was that the loss of seagrasses was also having a deleterious impact on sea life in the Torres Strait. According to Professor Hughes, the “specialist diet of dugong and green turtles makes them especially vulnerable to loss of sea grasses” and studies had indicated that the “diebacks of sea grasses have resulted in significant local mortality and loss of physiological condition of dugong”. Dugong are listed as vulnerable to global extinction on the International Union for Conservation of Nature “Red List of Threatened Species”.

- 576 Professor Hughs also referred in his evidence to the fact that rising sea temperatures were causing the population of green turtles in the Great Barrier Reef and Torres Strait to have a “female bias”. Turtles that have hatched in the Torres Strait are now “extremely female dominated”.
- 577 The Commonwealth appeared to suggest that Professor Hughes’ evidence concerning ecosystems and marine life other than coral reefs was questionable given that he was, so the Commonwealth submitted, predominantly a coral reef ecologist and that the main focus of his work during some of his visits to the Torres Strait was on coral reefs rather than mangroves or coral wetlands. The Commonwealth also submitted that much of Professor Hughes’ evidence concerning mangroves was drawn from literature.
- 578 I reject the Commonwealth’s attempt to impugn the cogency and reliability of Professor Hughes’ evidence concerning ecosystems other than coral reefs. Professor Hughes did not deny that he was predominantly a coral reef ecologist by training and practice, though he maintained that his research extended beyond that area of expertise. It is also readily apparent that his academic qualifications and publications extended to ecology and marine ecosystems more generally. The Commonwealth did not object to the admissibility of those parts of Professor Hughes’ opinion evidence concerning ecology and marine ecosystems other than coral reefs on the basis that his opinions in respect of those topics were not based on his specialised knowledge, qualifications, training or experience. Nor was it expressly put to Professor Hughes that he was not qualified to give evidence in respect of ecology or ecosystems beyond those involving coral reefs.
- 579 As for the Commonwealth’s submission that Professor’s Hughes’ evidence in relation to mangroves was drawn from the literature, it would perhaps be more accurate to say that Professor Hughes cited numerous scholarly reports and studies which provided support for his opinions. That could hardly be said to be worthy of criticism. The Commonwealth questioned Professor Hughes in respect of the content of some of the reports or studies that he had cited. Professor Hughes’ evidence in response to that questioning indicated that he had a sound knowledge or understanding of those reports or studies. The Commonwealth did not seek to impugn or question the reliability of any of the reports or studies cited by Professor Hughes.
- 580 One of the studies about which Professor Hughes was questioned, and which featured in the Commonwealth’s submissions, was a 2022 study concerning mangroves. The proposition

that the Commonwealth appeared to put to Professor Hughes was that the study did not link the dieback of mangroves to climate change. Professor Hughes' response was that his questioner was "cherrypicking individual sentences" from the report, and that, when read fairly and as a whole, the authors of the study were not, as the Commonwealth had suggested, saying that the dieback was not a "global warming event". Indeed, Professor Hughes' evidence was that the study supported his opinion that the diebacks could at least in part be attributed to "prolonged drought and unprecedented high sea temperatures due to climate change".

581 It is noteworthy that the Commonwealth did not adduce any evidence, expert or otherwise, which challenged, qualified or criticised Professor Hughes' evidence in respect of the impact of climate change on mangroves, mudflats and coastal wetlands on the Torres Strait Islands. I accept Professor Hughes' evidence concerning those and the other topics addressed in his evidence.

Heat-induced mortality and morbidity

582 The applicants alleged that the current impacts of climate change on the Torres Strait Islands included harm to human health. They claimed that indigenous communities are at particular risk to the "health consequences" of climate change due to "poor health, inadequate infrastructure, and poverty". They also alleged that heatwaves and prolonged periods of high temperatures increase the incidence of sudden onset heat stress, heart attacks, strokes, respiratory issues, cognitive performance and other health issues, particularly in people with poor health, and that global temperature increases foster or exacerbate the favourable conditions for infectious diseases such as malaria and dengue fever.

583 The Commonwealth admitted that Torres Strait Islanders in the Torres Strait Islands were at risk of harm to their health due to the impacts of climate change. The Commonwealth disputed, however, that there was evidence that any relevant perceptible health impacts on Torres Strait Islanders had in fact occurred. It also disputed that any such health impacts could be linked to any impacts of climate change that could be linked to any alleged act or omission by the Commonwealth.

584 I do not propose to make any detailed findings about whether the health of Torres Strait Islanders generally has been adversely impacted by climate change. That is because the applicants themselves did not claim that their health had been adversely impacted by climate change. Nor was there any evidence that the applicants' health had been adversely affected

in any perceptible or material way. The applicants also did not adduce any evidence that the health of any particular or identified Torres Strait Islander, or Torres Strait Islanders, had been adversely affected by the impacts of climate change. Moreover, the agreed common questions do not include any questions concerning the harm to the health of Torres Strait Islanders as a result of climate change. I will, however, make some very brief observations concerning the evidence adduced by the applicants in respect of this issue.

585 The applicants relied on the expert opinion evidence of Dr Selvey, a public health physician and infectious diseases epidemiologist who has held senior positions in the Department of Health in Queensland.

586 Dr Selvey expressed the opinion that Torres Strait Islanders who were living in the Torres Strait Islanders “are already experiencing the impacts of climate change on their health and wellbeing” and that “it is very likely that Torres Strait Islander people living in the Torres Strait are already experiencing increased morbidity and mortality from increasing heat exposure”. Those opinions, however, were not based on Dr Selvey’s own clinical observations of any Torres Strait Islanders, or her examination of the health records of any particular or identifiable Torres Strait Islanders, or even any studies conducted by others in respect of the health impacts of climate change on Torres Strait Islanders. Rather, her opinion was essentially based on: generalisations from data about the morbidity (health) and mortality (death) of Aboriginal and Torres Strait Islander populations; studies that had investigated the association between heat exposure and increased morbidity and mortality in tropical regions (though not in the Torres Strait Islands specifically), rural areas and in areas where the population were in the lowest socio-economic stratum; and her general opinion that exposure to high temperatures can have a direct impact on health by causing heat exhaustion and heat stroke and exacerbate cardiovascular, respiratory and kidney disease.

587 Dr Selvey also expressed some general opinions concerning: health impacts arising from increased rainfall; the impact of salinity on the availability of safe drinking water; and the likelihood of gastrointestinal infections as a result of increased ambient temperatures and the availability of safe drinking water. She also expressed some general opinions concerning other health impacts that might flow indirectly from climate change, such as: exposure to extreme weather events such as storms; reduced nutrition; the increasing costs of healthy foods and decreased access to traditional foods; and negative impacts on cultural and mental

health and wellbeing. Those opinions were again not based on Dr Selvey's own clinical observations, or on any identified studies concerning Torres Strait Islanders.

588 The Commonwealth, perhaps with some justification, was critical of the generality of many of the opinions expressed by Dr Selvey. The Commonwealth also submitted that Dr Selvey's evidence should be treated with caution because she was an environmentalist and activist and had publicly advocated against climate change. It also claimed that Dr Selvey had exhibited a willingness to express opinions about matters that were outside the area of her expertise. That said, the Commonwealth did not submit that Dr Selvey was not a truthful or credible witness, or that her evidence was given otherwise than in good faith.

589 For the reasons given earlier, I do not propose to address or making findings concerning many, if not most, of Dr Selvey's opinions. I should also add that the applicants' submissions concerning Dr Selvey's evidence and the findings that should be made based on that evidence, were very sparse. I would be prepared to accept that it is likely that the health of some Torres Strait Islanders is likely to have been adversely affected to some extent by the hotter temperatures that have been experienced in the Torres Strait in recent times. The evidence concerning temperature increases and extreme heat in the Torres Strait Islands was discussed earlier. I would also accept, as a general proposition, that there is a material risk that the health of some Torres Strait Islanders is likely to have been adversely affected by some of the impacts of climate change. It is not, however, possible to make any findings concerning the nature and extent of any adverse health impacts in fact suffered by any Torres Strait Islanders as a result of the impacts of climate change. As already indicated, there is no evidence that any identified or identifiable Torres Strait Islander has suffered any identified or identifiable injury, or suffered any identifiable disease or medical complication, as a result of the impacts of climate change.

The evidence of Torres Strait Islanders

590 The applicants adduced evidence from Torres Strait Islanders who lived on various islands in the Torres Strait. The evidence of those witnesses included evidence of the changes that they had observed in recent times in respect of, for example, the increase in sea levels, erosion, inundation and flooding, the increasing salination of gardens and mangroves, changing weather patterns and other changes to the natural environment and ecosystems on and surrounding the islands. The applicants submitted that the evidence of the Torres Strait

Island witnesses reflected, or was broadly consistent with, the scientific evidence concerning the impacts of climate change.

591 The Commonwealth queried the reliability and congruency of the evidence of the Torres Strait Islanders concerning the changes in the climate and environment they had observed and the impacts that those changes were having on their islands and on their way of life. It made three general observations concerning that evidence. First, it accepted that the witnesses could give evidence concerning their observations in respect of those matters, but submitted that that evidence does not provide a basis to infer that the changes that they had observed had been caused by greenhouse gas emissions. Second, it submitted that the evidence of the Torres Strait Islanders was often expressed at such a high level of generality that could not enable the Court to make findings about when the changes occurred, or the rate and extent of those changes. Third, it submitted that some of the evidence obviously concerned environmental changes that had occurred well before the alleged breach or breaches of duty by the Commonwealth. It was therefore not possible to discern a causal connection between those changes and the alleged breaches of duty.

592 While there may be some merit in some of those submissions in respect of some of the evidence, in my view the evidence of the Torres Strait Island witnesses was broadly consistent with, and therefore tended to support and corroborate, the scientific evidence to which reference has already been made. It may of course be accepted that the evidence of the observations of the Torres Strait Island witnesses did not itself link the observed changes to global warming caused by greenhouse gas emissions. The evidence was nevertheless broadly consistent with the scientific evidence concerning the changes in the environment and that evidence did link those changes to global warming and greenhouse gas emissions. The evidence of the Torres Strait Island witnesses was certainly not inconsistent with the scientific evidence. The Commonwealth also did not adduce, or identify, any evidence which tended to suggest that the observed changes were the result of some other phenomenon, natural or otherwise.

593 It may also be accepted that some of the evidence of some of the Torres Strait Island witnesses was expressed at a fairly high level of generality. That, however, is hardly surprising in all the circumstances. Indeed, I would have been somewhat sceptical if the witnesses had purported to give evidence about the precise rate or scale of the changes. Some of the evidence of some of the witnesses was also somewhat vague and uncertain as to

the timing of some of the observed changes. That again is hardly surprising in all the circumstances. The evidence also included evidence of observed changes that occurred before, sometimes well before, the alleged breaches of duty by the Commonwealth. That evidence, however, did not detract from the evidence concerning changes more recently observed by the witnesses.

594 It may obviously be accepted that vague and general evidence, whether as to the rate or scale of the observed changes or the timing of those changes, should generally be given less weight. It is nevertheless deserving of some weight and provides some support for the more specific scientific evidence. Evidence of the witness' observations in respect of changes or events that occurred prior to the alleged breaches of duty by the Commonwealth may not be of direct relevance to the applicants' case, though it is nevertheless of some contextual relevance. The following evidence summaries include some references to that evidence, though it may be accepted that it is deserving of fairly limited weight.

595 I should note in this context that nothing that I have said concerning the evidence of the Torres Strait Island witnesses should be construed as being critical of those witnesses in any way. I have no hesitation whatsoever in accepting the honesty and integrity of the Torres Strait Islanders who, on my assessment, were endeavouring to give their best recollections of the changes that they had observed occurring in and around their lands. I was impressed by the frankness and candour of all of the Torres Strait Islander witnesses and see no reason to doubt the reliability of their evidence.

Observed changes and impacts on Boigu

596 The main witnesses who gave evidence concerning the changes that they had observed on Boigu were Mr Pabai Pabai and Mr Fred Pabai. Those witnesses gave evidence on Boigu, including during a view. Photographs were taken during the view.

597 Boigu is one of the northern group of islands. It is very close to the Pawa New Guinea coastline and is a small low-lying muddy alluvial island formed by the sediments from rivers in Papua New Guinea.

The evidence of Pabai Pabai

598 Mr Pabai Pabai is known in his community as '*Waduam* (maternal uncle) *Pabai*' because of the role he holds as a leader and representative of his clan, the crocodile clan. He is a native title holder (see *Gibuma on behalf of Boigu People v State of Queensland* [2004] FCA 1575,

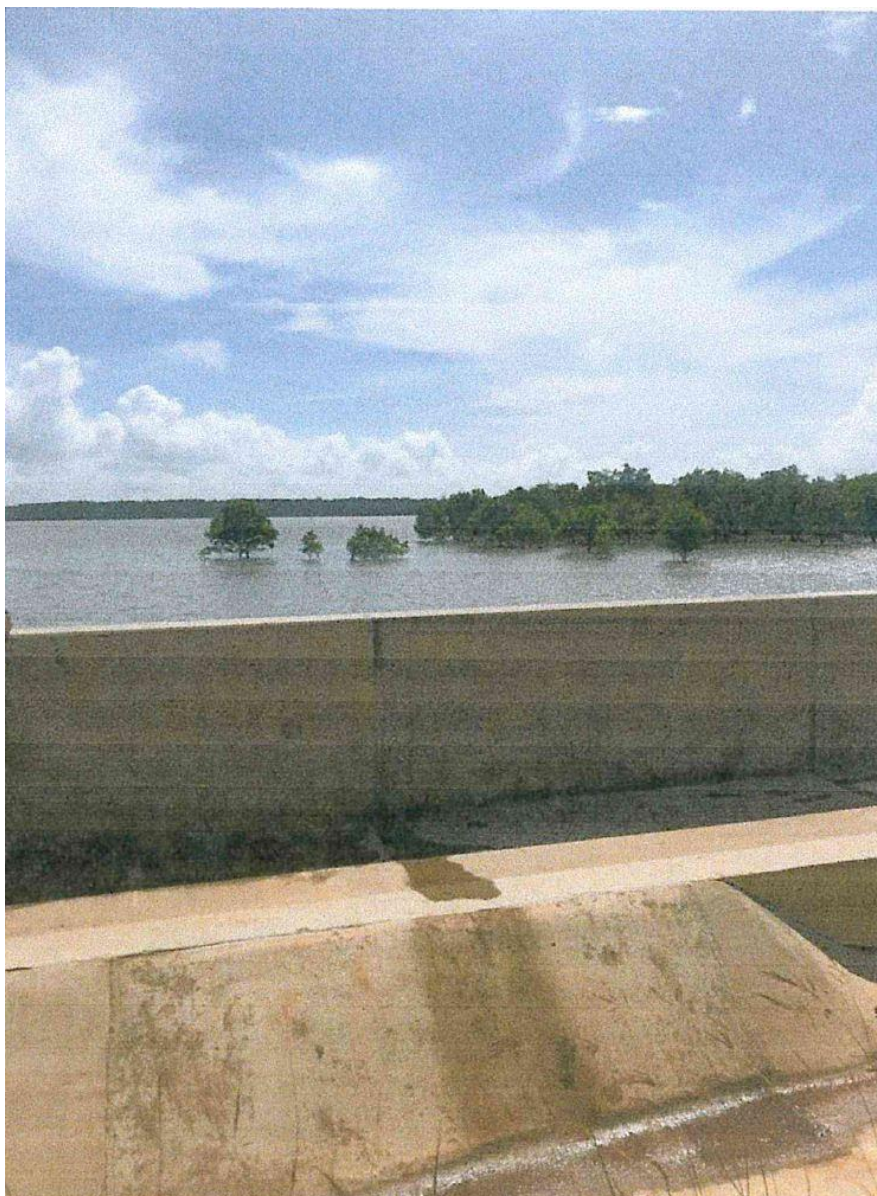
schedule 3), a traditional owner of Boigu and the caretaker of six blocks of land on Boigu. He is a director of the Prescribed Body Corporate which deals with land issues and native title. His family has lived on Boigu for at least five generations.

599 The overall effect of Mr Pabai Pabai's evidence was that over the years he had observed many significant changes on Boigu. Those changes included changed weather patterns, increased rising sea levels, flooding and the erosion of beaches. His evidence was that those changes had impacted his way of life at Boigu, including his ability to engage in long-held cultural practices, his ability to engage in ceremonies and protect sacred sites.

600 Mr Pabai Pabai's evidence in relation to flooding and inundation was that every few years, usually in about January and February, Boigu was inundated during king tides. That inundation had been occurring for many years. Mr Pabai Pabai's recollection was that in about the 1970s, when he was a small child, the community constructed a seawall on the shoreline to try and protect the island from the high tides. The original seawall was, however, a rather makeshift affair and the protection it offered was fairly limited. It needed to be repaired by the community in the 1980s and again in 2012. As discussed in more detail later, a more substantial seawall was constructed with government assistance in 2022. According to Mr Pabai Pabai, that seawall constructed is about two metres higher than the original community constructed seawall.

601 Mr Pabai Pabai's recollection was that Boigu was subjected to a particularly large flood that occurred in about 2007. The community built seawall offered no protection against that flood. The inundation during the flood extended well into the village where the water was up to one metre in depth.

602 Mr Pabai Pabai observed that parts of Boigu had been subject to significant erosion over the years. His evidence was that, when he was a young boy in the 1970s, the land in front of the village used to extend out about 20 metres beyond the shoreline as it is today. The shoreline was also a sandy beach. Now the beach has gone. The area in front of the large concrete seawall which was constructed by the government is now a mudflat that is covered by the ocean other than at low tide. The following photograph, which is taken from the new seawall shows some mangroves. Mr Pabai Pabai's evidence was that the beach used to extend out to where those mangroves can be seen in the photograph.



603 The village cemetery is in an area adjacent to and to the west of the village. It is fronted by mangroves. Mr Pabai Pabai's ancestors, and the ancestors of others on Boigu, are buried in the cemetery. Mr Pabai Pabai's evidence was that there also used to be a beach in front of the cemetery which extended about 20 metres past the area where the mangroves are now. That beach was still there in the 1980s. It is now gone.

604 The cemetery is a particularly important place for the community on Boigu. Mr Pabai Pabai and other members of the community spend time at the cemetery talking to the ancestors, with whom they have a strong connection, and looking after the graves. Mr Pabai Pabai's evidence was that the cemetery is now regularly inundated by sea water, particularly in January and February each year. That inundation has caused erosion and damaged many of the gravesites. Some of the gravestones have been broken and even been washed away. That

has caused considerable sadness in the community. Following is a photograph that depicts some of the damage to the cemetery and gravestones.



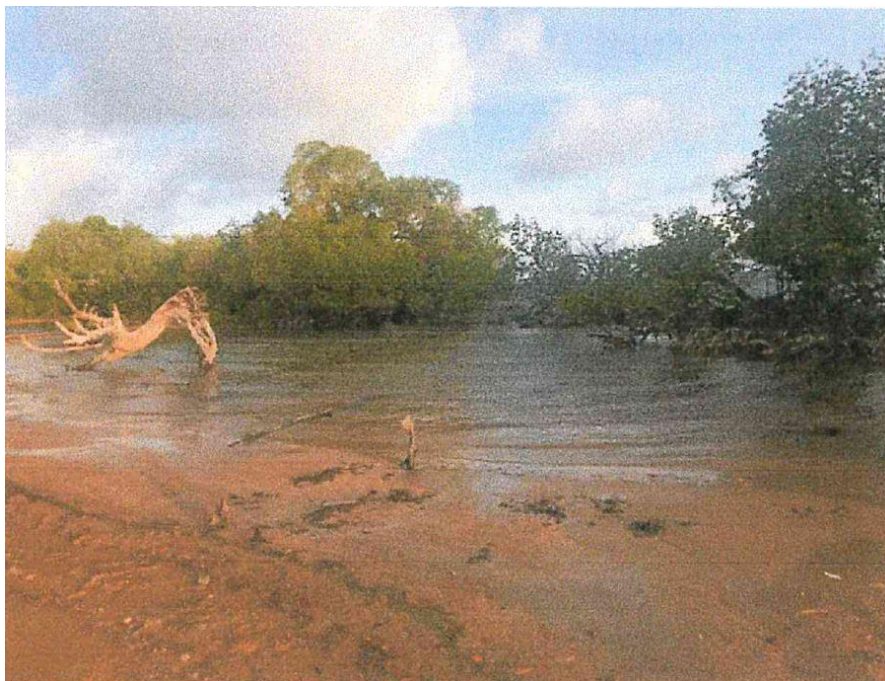
605 A small concrete seawall was built on the seaward side of the cemetery in about 2021. That
small seawall had obviously not provided any effective protection from the inundation events.

606 In his evidence, Mr Pabai Pabai also described the erosion of a red sandbank on the western
tip of the island. That sandbank is a sacred place for the Boigu community who believe,
based on the stories told by their ancestors, that when they die, their spirits must go to the
sandbank before going on to Warul Kawa. Warul Kawa (“island of turtles”) is an uninhabited
island about 50 kilometres from Boigu. It is a very sacred place for the people of Boigu and
neighbouring Saibai. According to Mr Pabai Pabai, the red sandbank was first eroded during
a high tide in the monsoon season in 2010. The community planted coconut trees in an
endeavour to stop the erosion. Mr Pabai Pabai was very concerned about losing the sandbank

because the spirits of the ancestors would “turn back on the people of Boigu”. He was equally concerned about losing Warul Kawa to erosion.

607 Like other members of his community, Mr Pabai Pabai’s family had a campsite on the southern side of island. They would spend time at the campsite and had built a small shelter there. Mr Pabai Pabai’s evidence was that the campsite had been significantly impacted by inundation and erosion in the last 10 years. The shelter used to be situated some distance back from the water, however now the water comes right up to the shelter during the inundation events. A lot of sand has been washed away, as have many trees. The roots of many of the remaining trees are now exposed. Mr Pabai Pabai and his family no longer go to the campsite due to the erosion damage and higher tides.

608 The following two photographs of the campsite show the erosion damage. Mr Pabai Pabai’s evidence was that the sand used to extend out to the dead tree which may be seen on the left hand side of the first photograph. The second photograph depicts the exposed roots of a remaining coconut tree. According to Mr Pabai Pabai, once the roots of a coconut tree are exposed, the tree eventually dies and falls over.





609 As discussed later, Mr Pabai Pabai's campsite was visited during the Court's visit to the island.

610 According to Mr Pabai Pabai, inundation and changing sea levels had also affected his ability to go crabbing. His evidence was that he used to go crabbing in the swampy areas in the middle of the island, however those areas are now frequently flooded. The erosion of sand on the island had also affected the muddy areas where the crabs used to live and breed. According to Mr Pabai Pabai, the sand now mixes with the mud and the crabs have moved elsewhere and are harder to catch.

611 Mr Pabai Pabai's evidence was that gardening was traditionally an important activity and source of food for him and his family. He and his family were no longer able to garden and grow crops for food, such as bananas, coconuts and cassava, because the groundwater in the areas where he used to garden is too salty. He was first unable to grow cassava in his garden due to salinity in around 1970 to 1980. In his evidence, however, Mr Pabai Pabai described how, more recently, in about 2013 or 2014, he conducted soil tests with the community to try to relocate the gardens, but the tests demonstrated that the soil was too salty at all sites.

612 In his evidence, Mr Pabai Pabai also described other changes which he had perceived in the seasons and their alignment with the constellations. He described how the monsoon used to regularly arrive in early December, but how in the last 10 years it has been irregular and difficult to predict. He also described how the elders used to teach him and others how to

read the constellations to determine when was a good time to plant and harvest crops. The effect of his evidence was that the seasons and the constellations no longer align. He similarly described how he used to use the stars to determine the tides, but the stars and the tides do not match any more. That had also caused him problems in determining when to plant crops.

The evidence of Fred Kabai

613 Mr Fred Pabai is also a traditional owner and has native title rights over Boigu. He is part of the *Guda Maluyligal* nation. He is Mr Pabai Pabai's biological brother, however he was adopted out to the *Ganaia* family when he was "very young" and was raised in the emu clan. His adoptive parents are traditional custodians of the island and respected elders. He has lived in Brisbane for the last 17 years but grew up on Boigu.

614 In his evidence, Mr Fred Pabai described how he first observed flooding and erosion on Boigu when he was about 13 years old. As he was born in 1957, it follows that his first observations in respect of flooding and erosion must have been in about the late 1960s or early 1970s. His evidence, however, was that the flooding and erosion "started off as very slow" but that in the last 10 or 15 years "it was rapid change", that the "speed started to pick up really fast", and that there was "rapid erosion of the water, the land and the beaches". He indicated, in his evidence, that Boigu had "lost a lot of land to the flooding" and referred, in that context, to the loss of the beach which used to be in front of the village. He said that 10 or 20 years ago the shoreline in front of the village was 20 metres beyond the current shoreline and the new seawall.

615 Mr Fred Pabai's evidence was that the sand that had been eroded from the island had washed out into the sea and settled on the seagrass around the island. That had an adverse impact on the seagrass, which in turn meant that marine life that fed on seagrass, such as turtles and dugong, had moved away.

616 Mr Fred Pabai also gave evidence, albeit in fairly general terms, about changes that he had observed in the weather patterns on Boigu, including his observation that the monsoon used to fall in the end of December or January, but can now be either earlier or later. He also said that those changes in the weather patterns had affected the ability of people on Boigu to grow vegetables, fish and hunt turtles and dugong like they used to.

617 It should perhaps be noted that some of Mr Fred Pabai’s general observations about the changes he has observed on Boigu must be approached with a degree of caution. That is because, while he still maintains a very strong connection with Boigu, he has not lived on Boigu on a full-time basis for some time.

The view on Boigu

618 As noted earlier, the Court conducted a view at various locations on Boigu. The locations that were viewed included: St Saviour’s Church; the main seawall; a sacred place known as the “cod” where warrior rituals have traditionally taken place; the cemetery; and the southern beaches, including Mr Pabai Pabai’s family camping area. At those locations both Mr Pabai Pabai and Mr Fred Pabai gave supplementary evidence and some photographs were taken.

619 During the view of the cemetery, the damage caused by inundation events and erosion described earlier was clearly visible. Mr Fred Pabai’s evidence was that in the past there was a beach out in front of the cemetery, but the beach has now been eroded away and replaced by mangroves.

620 During the view of Mr Pabai Pabai’s family camp and beach on the southern side of the island, the damage caused by the erosion described by Mr Pabai Pabai in his evidence was also clearly evident. Following are two photographs that were taken during the view of that location that show damage caused by erosion, including fallen coconut trees.





Summary of findings – Boigu

621 As discussed earlier, it may be accepted that some of the evidence given by Mr Pabai Pabai and Mr Fred Pabai about the changes that they had observed on Boigu was expressed in quite general terms. The time frames over which those changes had been observed were also often unclear. Some of the observed changes undoubtedly related to periods before the alleged breaches of duty by the Commonwealth. Despite that, the evidence was nevertheless broadly consistent with the scientific evidence concerning the impacts of climate change on the Torres Strait Islands.

622 I am satisfied from the evidence of Mr Pabai Pabai and Mr Fred Pabai, including the evidence taken, and the observations made, during the Court's view on Boigu, that the following events have occurred, and the following environmental changes have been observed, on and around Boigu in recent times: increasing sea levels and higher tides; flooding and inundation, including of cemeteries and other sacred sites; the erosion of, and

loss of, sand and beaches; loss or degradation of seagrass surrounding the island; changing weather patterns; and the loss of viable areas for gardening due to salination.

623 While Boigu no doubt began to experience the impacts of climate change many years ago, the evidence of Mr Pabai Pabai and, perhaps to a lesser extent Mr Fred Pabai, tended to indicate that the impacts of climate change had been more marked and severe in recent times.

624 I am also satisfied that the changes that have occurred on Boigu have had a significant adverse effect on the traditional way of life of Mr Pabai Pabai and many, if not most, of the other traditional inhabitants of Boigu. It has, in particular, had a profound impact on their ability to practice Ailam Kastom. That is discussed in more detail later in these reasons.

Observed changes and impacts on Badu

625 The main witnesses who gave evidence about the changes in the climate and environment on Badu were Mr Laurie **Nona**, Mr Peo **Ahmat** and Mr Gerald **Bowie**.

626 Badu is one of the western cluster of islands in the Torres Strait. It is one of the larger populated islands. Unlike Boigu and Saibai, it is a rock island, made up of volcanic and granite hills and sandy beaches and mangroves.

The evidence of Laurie Nona

627 Mr Laurie Nona is a traditional owner and native title holder of Badu. His totem is the ‘Papuan’ (black tiger snake). He lived on Badu, as had his father and grandfather. He was a councillor on the TSIRC and had previously been Chair of the Badu Prescribed Body Corporate.

628 Mr Nona’s family’s house was located on higher ground at the back of the township on the southeast side of the island. He also occupied land on the beachfront on the southwest of the island where he and his family would camp on the weekends. That land is considered to be his land as a result of both his occupation of the land and a process of recognition through the island’s Prescribed Body Corporate or council of elders.

629 Mr Nona’s evidence was to the effect that he had observed numerous changes to the environment and climate on Badu, including in recent years. One of those changes was that parts of the island were now more prone to flooding than was previously the case. His evidence was that the land in front of the township was now subject to flooding as a result of very high tides, particularly during the monsoon season . According to Mr Nona, the small

seawall along the shoreline of the town, which was built by the community in the late 1980s or 1990s, had not been able to prevent that flooding. Mr Nona's evidence was that due to the flooding the TSIRC now does not permit building in the area along the beachfront in front of the township.

630 According to Mr Nona, since about 2010 the tides have been getting higher and the highwater mark is "getting further and further inland". He recalled that, during the wet season in 2021 and 2022, the tide was higher than ever before and had caused significant flooding in the township. The flooding from the high tide was made worse by the presence of rain and wind.

631 Mr Nona's campsite was also flooded and damaged during that event. The following year, Mr Nona placed large sandbags in front of his campsite to protect it from flooding. Photographs of those sandbags, which remain in place, were taken during the Court's view on Badu. In January 2023, the king tide came right up to the base of the sandbags. Mr Nona's campsite and the beach behind which it is located have also been impacted by erosion caused by the large tides. That erosion was clearly evident during the view. Photographs of that erosion taken during the view, which are reproduced below, reveal the extent of the recent erosion. Mr Nona also gave evidence that since 2010 the swampland between the town and his campsite has flooded all the way through to the grasslands at the rear of his campsite. The floods that now occur at least once a year during the wet season are so high that he often has difficulty driving to his camp.

632 Mr Nona had also observed changes in relation to the migration and breeding patterns of various birds and animals on Badu. He had, for example, observed changes to the migration patterns of the *birru birru* (rainbow bee-eater bird) which had traditionally been used to mark the beginning of the turtle mating season. He did not see the *birru birru* migrating in the same numbers anymore. Similarly, the ripening of the fruit of the *woeyba* used to indicate the end of the turtle mating season, but now the fruit takes longer to ripen. Mr Nona had similarly observed changes in the number of dragonflies and mosquitos, which were traditionally linked to the squid mating season. His evidence was that the number of squid has significantly decreased, especially in the last six to 10 years. Mr Nona's evidence was that the misalignment of those natural signs of the mating season of turtles and squid was confusing and had impacted his ability to teach and pass on important aspects of his culture, including traditional hunting and gathering practices.

- 633 Other changes that Mr Nona had recently observed included the sighting of dugong around reefs and sandbanks which were much closer to the island than used to be the case. He thought that was unusual and believed that it was a sign that the dugong were confused and that something was wrong. It made them much easier to hunt. Similarly, when he went hunting for crabs, he now frequently saw crabs on the sandbanks around the island, instead of in the seaweed like they used to be. He again thought that to be unusual because it made the crabs more exposed and much easier to spot and therefore easier to hunt. Those sorts of changes made it difficult for elders to pass on knowledge of traditional hunting practices and educate the young about important cultural practices.
- 634 Mr Nona also gave evidence that the changed weather patterns had impacted traditional gardening practices, including knowing when it was time to plant. The overall effect of his evidence was that the misalignment of the seasons and ecosystems had adversely impacted his ability to pass on and preserve his culture.

The evidence of Peo Ahmat

- 635 Mr Peo Ahmat has lived on Badu for most of his life, though he went to high school in Brisbane. He is a traditional owner of Badu and holds native title. His totem is ‘*Tupmul*’ (stingray) and his clan is Badu. He was previously Chair, and is currently a director, of the Badu Prescribed Body Corporate. He was previously a police officer on the island and currently operates a commercial fishing business and crayfish factory on the island. As part of his fishing business, Mr Ahmat sails around various islands in the Torres Strait, with his main fishing areas being Mabuiag Island, Badu, Saibai and Boigu.
- 636 Mr Ahmat resided in the village on the south-eastern side of the island, however most weekends he frequents a beach house that he has built on his family’s traditional land on the western side of the island. Mr Ahmat’s evidence was that over the last three to five years he has observed significant erosion of the beach in front of his beach house. The erosion has resulted in the loss of sand. The loss of sand has led to the roots of coconut trees becoming exposed and those trees dying and falling over. He produced several photographs which depicted that erosion, one of which is shown below:



637 Mr Ahmat's evidence was that, while the erosion mainly happens during the monsoon season, when there are big tides and heavy rain, it now also occurs during the south easterly breeze (the *sager*) that blows in the cooler months from April to October. He had observed that the *sager* had been getting stronger every year, which meant that the beach in front of his beach house was being eroded all year round. Mr Ahmat also regularly sailed past other parts of the Badu coastline and had observed erosion in other places. The erosion had again resulted in the loss of sand and the exposure of rocks that had not previously been visible. He produced several photographs of erosion on the part of the coastline that is to the south of his beach house. Two of those photographs are shown below:





638 Mr Ahmat had also observed erosion on the island of Warul Kawa, which he had visited three years earlier to hunt dugong. During that visit he observed that, in the time since his previous visit, in about 1985, approximately 50 metres of beach had been eroded, trees and vegetation had been washed away and a sandbar on the northwest side of the island was no longer visible. Like other witnesses, Mr Ahmat referred to the spiritual significance of Warul Kawa to Torres Strait Islanders and his fear about what would occur if it disappeared due to erosion.

639 Mr Ahmat had also observed that in the last few years there had been higher tides during the monsoon than in previous years. In 2022, the tides came right up to the road between his beach house and the beach, something that he had never seen before. The flooding that occurred during the monsoons was also higher than it had been before. The flooding starts at the creek which was about 50 metres from his beach house. During the previous year, the water in his house from the floods was 10 centimetres high. Mr Ahmat also described flooding that had occurred in his crayfish factory in January 2023 as a result of very high tides. His evidence was that the tides were now higher than they were five years ago.

640 Mr Ahmat also described in his evidence various other climate or environmental changes that he had observed in recent years. Among other things, he had observed that a lot of mud that had been in the rivers and mangroves had been disappearing and that sand had been brought into those areas by the higher tides. He also said that the weather patterns had changed and were more difficult to predict using the constellations and the migratory patterns of birds. The *sager* now continued to blow right up to December and the number of migratory birds, like the *birru birru*, whistling ducks and magpie geese were smaller.

641 Mr Ahmat had also observed that there were fewer crayfish because sand had gone through the reefs and was killing the seagrass that crayfish and other marine life feed on. According to Mr Ahmat, sand had also suffocated the coral reefs in some areas. Dugong and turtles were also coming closer to the island because the seagrass on which they usual feed is dying and they are feeding on the algae on the reefs.

642 Finally, Mr Ahmat said that he had been measuring the water temperature between December and May because he pumps seawater into the tanks in his factory where he keeps crayfish that he has caught. His evidence was that the water temperature had increased in recent times, which had caused the death of some of the crayfish in his tanks.

The evidence of Gerald Bowie

643 Mr Gerald Bowie is a man in his mid-forties who has lived most of his life on Badu. His parents were also from Badu. Mr Bowie's totem is 'Argan' (stingray) and his tribe is 'Argan' and 'Wakaid' (dog). He is a traditional owner of Badu.

644 Mr Bowie worked as a ranger supervisor for the TSRA with the responsibility for the islands of Badu and Mabuiag. Mabuiag is a small island which lies about ten kilometres to the north of Badu. Mr Bowie travels to Mabuiag Island for one week every fortnight. Mr Bowie's responsibilities as ranger supervisor included, among other things, recording tide levels, monitoring turtles and dugong, reporting on seagrass levels, recording tide levels and providing feedback on changes to the environment to the island's Prescribed Body Corporate. He also regularly visited sacred sites.

645 Mr Bowie's evidence was that he had observed many changes to the environment on and around Badu in recent years. Those changes included, in summary: the erosion of beaches; higher tides; dying seagrass; the seasons becoming less predictable and generally hotter; and changes in wave patterns.

646 In relation to higher tides, Mr Bowie's evidence was that, since starting as a ranger in 2014, he had observed that the sea level and tide has risen each year. At high tide, the water level is often higher than the small seawall that runs along the beachfront in front of Badu township on the southeast of the island. That seawall was built by the TSRA in the 1990s. Mr Bowie's view was that the seawall had not been engineered properly, though it emerged in cross-examination that his view in that regard was based in part on the fact that the seawall had not been built in certain areas. Mr Bowie referred in his evidence to an event in January 2023

where parts of the township were flooded during a king tide which came up and over the seawall. He produced photographs of that flooding event. He also gave evidence that the area in front of the cemetery had been flooded at high tides in the last five to 10 years.

647 Mr Bowie's evidence concerning his method in taking readings of the tides was tested in cross-examination. It is unnecessary to refer in detail to Mr Bowie's evidence in that regard, particularly as the tidal data, which was provided to the TSRA, was not in evidence. It is sufficient to note that the system employed by Mr Bowie was not particularly sophisticated or scientific. It involved placing a measuring stick in roughly the same location at both high and low tides. I nevertheless accept Mr Bowie's general evidence that he had observed that the sea level and tides were getting higher in recent times.

648 In relation to the monitoring of seagrass, Mr Bowie described how twice a year rangers used three GPS waypoints (with the aid of buoys) and an underwater camera to document changes in seagrass. The information from those exercises was provided to the TSRA and James Cook University. Mr Bowie's evidence was that the amount of seagrass had reduced every year since he commenced as a ranger in 2014, and that it was now hardly visible in various areas where seagrass had previously been present, or would ordinarily be expected to be present. Mr Bowie expressed the view that the loss of seagrass in those areas was the result of sand inundation, stronger tides and increased movement in the water.

649 Mr Bowie had also observed recent changes in the health and behaviour of marine life around Badu. His observations in that regard were made both in his capacity as a ranger and as a traditional hunter. His evidence was that he used to see far more dugong than he does now. Dugong mostly feed on seagrass, however according to Mr Bowie he now often observed dugong feeding on the top of reefs and closer to shore. That was not normal and Mr Bowie believed that it was occurring because a lot of the seagrass was now covered in sand. He also indicated that the dugongs that he now saw were often "sick and have noticeably less fat". He believed that that was because they were no longer able to feed mainly on seagrass like they used to. Like several other Torres Strait Islanders, Mr Bowie described how dugong were important, not only for cultural and ceremonial purposes, but also as a source of good food for the community.

650 Mr Bowie similarly observed that he now sees less turtles in certain areas and that those that he does see appear to be sick and have less fat. He also gave evidence that, as part of his job as a ranger supervisor, he monitored turtles at Bramble Cay and Raine Island. Turtles

typically lay eggs on those islands, however Mr Bowie had observed that in recent years those islands had been eroded and there was therefore less space on the beaches for the turtles to lay eggs. He observed that sometimes the turtles had laid eggs on top of each other, presumably because of the limited space on the islands.

The view on Badu

651 A view of various locations was conducted during the hearing days held on Badu. The locations visited by the Court during the view included: the area around St Mark's Church, including the seawall in front of the church; the cemetery near the church; Mr Ahmat's crayfish factory and Mr Nona's and Mr Ahmat's family beach camps on the southwest of the island. Mr Ahmat and Mr Nona each gave supplementary evidence during the view and several photographs were taken.

652 Damage to the seawall that runs along the beachfront in front of Badu township was observed during the view conducted in the vicinity of St Mark's Church and the cemetery. That damage appeared to have been caused by erosion and inundation events. Both Mr Nona and Mr Ahmat described how sand which had previously been in front of the seawall had been eroded away with the result that the wall's footings had been exposed. In some areas the seawall had collapsed. Following are photographs of an area of the seawall in front of the church and in front of the cemetery which were taken during the view. They show some areas of damage to the existing seawall.



653 Damage caused by erosion was also evident during the view conducted at and around Mr Nona's and Mr Ahmat's beach camps. Areas where sand from the beach had been lost due to erosion was clear, as was the fact that many *wongai* trees on the beachfront had died and fallen over. The photographs below, which were taken during the view, show the sandbags

that Mr Nona had placed in front of his camp to protect it from rising tides, extreme sea level events and erosion, and a fallen *wongai* tree on the beach near Mr Nona's camp.





Summary of findings – Badu

- 654 The evidence of the three residents and traditional owners of Badu was consistent and compelling. They had all observed significant climatic and environmental changes on and around the island in recent times. Those changes included: higher tides; flooding, particularly during the monsoon; changing weather patterns; changing patterns and timing in respect of the flowering and fruiting of certain plants; changing migratory patterns of birds; the misalignment of natural seasonal and environmental signs and the mating seasons of various marine life; the dying-off of seagrass, which is an important source of food for totemic marine life like dugong and turtle; and changes in relation to the number, location and behaviour of dugong and turtles.
- 655 The changes observed by the three traditional owners of Badu was also broadly consistent with, and corroborated much of, the scientific evidence in respect of the impacts of climate change in the Torres Strait.

Observed changes and impacts on Saibai

656 The main witnesses who gave evidence concerning the changes that they had observed on Saibai were Mr Kabai, Mr Mark **Warusan** and Ms Jennifer **Enosa**. Those witnesses gave evidence on Boigu, including during a view. Photographs were taken during the view.

657 Saibai is one of the northern group of islands which lies very close to the Papua New Guinea coastline. It is about 30 kilometres to the southeast of Boigu. Like Boigu, Saibai is a small (about 20 kilometres by 6 kilometres) flat low-lying muddy alluvial island. About 450 people live on Saibai. The village on Saibai is in an area adjacent to the seashore. Nobody now lives inland because the inland is mostly comprised of swamps which are now often covered during high tides, particularly in the wet season.

The evidence of Paul Kabai

658 Mr Kabai was born on Thursday Island, however his family was from Saibai and, save for a series of short relocations for high school (both for himself and his children), he had lived much of his life on Saibai. Importantly, he has resided on Saibai full time since 2000. He said that his ancestors had lived on Saibai for thousands of years. He has had considerable involvement in the community and management of Saibai. He is a traditional native title holder and a member of the ‘*Umai*’ (dog) clan. At various points in time, he has been a member and director of the Saibai Mura Buway Corporation, a Councillor of the *Umai* clan, an immigration officer, a police liaison officer, Deputy Chair of the island, and more recently until around 2017, a sewerage officer.

659 Mr Kabai’s house is opposite the seawall which was built in 2017. The seawall runs along the entire length of the seashore adjacent to the village and the main road on the island. Mr Kabai’s evidence was that, when he was young, there used to be a beach in front of his family’s house which extended about 20 to 25 metres beyond the shoreline as it is now. The beach is no longer there. His family also used to have a garden in front of their house. The garden is no longer there because the road in front of the house had to be moved back from the seashore due to erosion. All that is left of his garden is a dying beach almond tree.

660 Mr Kabai’s evidence was that the old seawall that preceded the current seawall in front of his house was built in the 1970s. According to Mr Kabai, that seawall had not been effective in preventing seawater from occasionally inundating the village. That seawall had also been undermined by the incoming water and had eventually collapsed.

661 Mr Kabai also observed that the village was also often inundated not just from seawater that came over the seawall, but also from water that came from the swampy area behind the village. The seawater would come in through the rivers from the south and east of the island and through the swamps, particularly during king tides in the monsoon season. The water would eventually flow from the swamps and into the village. That meant that the village was inundated by sea water from both sides – from the beachfront and from the swamps.

662 Mr Kabai described a particularly bad flood which occurred in about 2012. On that occasion, the roads were all underwater and many homes were flooded. His washing machine and tools were damaged by the floodwaters. The cemetery on the island was also badly damaged by inundation from seawater at about that time and many graves were washed away.

663 The concrete seawall which was built in 2017 is about 2 metres high in some places and about 1 metre high in others. Dirt bund walls were also constructed in about 2017. According to Mr Kabai, the bunds were intended to stop water from the swamps flowing into the village.

664 Mr Kabai's evidence was that the new seawall and bunds were not completely effective in preventing inundation from the sea. He recalled that in about February 2020, there was a king tide and seawater crashed over the seawall and onto the streets. Seawater also came through the drainage system in the seawalls. Some water also entered the streets from the back of the village and over or around the bunds. The floodwater came into houses and in some areas was knee deep. It stayed there until the tide retreated. Mr Kabai's washing machine and tools were damaged.

665 Mr Kabai's evidence indicated that Saibai's cemetery and the gravesites therein had also been damaged by inundation and flooding in recent years. The cemetery and gravesites were, according to him, particularly important places for him because that is where his ancestors are buried. The cemetery played a crucial role for the Saibai community. Residents of Sabai visit the cemetery on most days to pay respects to ancestors, attend to burial ceremonies, to communicate with ancestors and for secret men and women's business.

666 A low seawall was constructed adjacent to the cemetery in 2017. Mr Kabai's evidence was that, before the construction of that seawall, many gravesites had been subject to erosion. Perhaps more significantly, in his evidence during the Court's view of the cemetery, Mr Kabai explained that, despite the presence of the low seawall, the area nevertheless floods

during virtually every king tide. The flooding had caused several headstones to be washed away. As a result, it was difficult if not impossible for some people to identify their ancestor's gravesites. As discussed later, the damage to the cemetery which had apparently been caused by inundation was obvious during the view.

667 Mr Kabai also explained, albeit in fairly general terms, that there were various sacred sites on Saibai that could no longer be visited due to sea level rise and the flooding of the swamps. That was said to be significant because several cultural ceremonies, including initiation ceremonies, were traditionally conducted in those places. Some culturally significant trees on the island, including almond trees planted in sacred places, were also dying.

668 In his evidence, Mr Kabai described how he and his family used to grow taro, cassava, yam, sweet potato, pumpkin, sugar cane and bananas in their gardens which were located behind the village near the swamps. His evidence was that his family's gardens have now all been destroyed by storms. The crops that were previously grown in the gardens also cannot be grown anymore because there is too much salt in the soil. According to Mr Kabai, water from the sea now comes in through the swamps because the sea levels are higher. Most of the inland swamps no longer have any freshwater. While the inundation of the swamps and gardens by salt water had occurred since he was young, Mr Kabai's evidence was that it had occurred more rapidly in recent years. According to him, there are now no fertile gardens on the island. The salination of the swamps has also impacted Mr Kabai's ability to hunt for barramundi and crabs.

669 Mr Kabai's evidence was that he and other Saibai islanders traditionally hunted dugong and turtles. Dugong and turtles were an important source of food, and the hunting of dugong was an important feature of men's initiation ceremonies. According to Mr Kabai, however, it was now more difficult to hunt turtles and dugong because the foraging areas where dugong and turtles used to be present are now covered in sand from erosion. It is therefore now more difficult to find dugong and turtles.

670 Mr Kabai's evidence also included his observation that the seasons on Saibai had changed and were no longer predictable. That was particularly the case in relation to the monsoon season. According to him, the increased variability of the seasons had been most notable in the last five to 10 years. The seasons also no longer matched up to the constellations. That was significant to Mr Kabai because his knowledge of how to read the constellations to

determine the best time for planting, harvesting and hunting, which had been passed down to him from his elders, could no longer usefully be passed onto his children and grandchildren.

The evidence of Mark Warusan

671 Mr Warusan was born in Cairns but has lived his whole life on Saibai. His parents and grandparents are from Saibai. He is a member of the ‘*Dhibau*’ (wild yam) clan and a traditional owner and native title holder over Saibai.

672 Since his appointment in 2012 as a ranger with the TSRA, Mr Warusan has had an active role in managing the environment on Saibai. He explained in his evidence that his role as a ranger included: identifying and maintaining traditional methods for environment management; fire management; recording traditional knowledge and stories; data collection by various means; and other projects. His evidence largely focused on the erosion, inundation and salination he has observed both in his capacity as a ranger and as a resident of Saibai.

673 Mr Warusan’s evidence was that in the late 1980s he used to swim on the breach in front of the Saibai village. Now, however, the beach has eroded away and there is no sand, just rocks. The loss of the beach has also resulted in the loss of the traditional practice of butchering hunted dugong and turtles on the beach, a practice that also had ecological significance because the remains were returned to the ecosystem.

674 Another significant change that Mr Warusan had observed was the shifting of sands on the southwest of the island. He considered that the shifting of the sands was the result of high tides, rising sea levels and erosion. Mr Warusan’s evidence was that the big tides on Saibai were getting bigger and more frequent. He also indicated that the shifting of sands was not only killing mangroves, but was also affecting the seagrass in the vicinity of the island and, in turn, the prevalence of dugong.

675 According to Mr Warusan, inundation from rising sea levels and bigger tides was also having an adverse impact on the swamps and rivers on the island. The swamps and rivers on the island are now all salty and the salt is not getting washed out by heavy rain like it used to. The *gawats* – the areas where the freshwater meets the mangroves – are also being affected by saltwater inundation and frequent high tides. As a result, certain fish, like barramundi, that used to populate those areas are now less likely to be found there. Mr Warusan also believed that the poor state of the mangroves and swamps explained why magpie geese were no longer flocking to Saibai like they used to. Mr Warusan acknowledged in cross-

examination that the salinity of the swamps had not been scientifically tested, but maintained that the salination was self-evident.

676 Mr Warusan gave evidence about other changes he had observed in relation to the climate and environment on Saibai. His evidence was to the effect that the weather on Saibai had changed and that the seasons were no longer consistent with what he called the “seasonal calendar”. According to Mr Warusan, the seasonal calendar used to be like “clockwork” in the sense that the seasons could be read or predicted by observing natural phenomena, such as the constellations and the migratory patterns of birds. Mr Warusan referred, by way of example, to the fact that the “big rains” (the monsoon season) would ordinarily come in late November when the “spear of the *tagai* (warrior) constellation touches the ground”, however now, while “the stars are the same, the weather is different” and it “just rains constantly now”. Similarly, Mr Warusan said that the magpie geese used to arrive after the big rain, but “they are two thirds gone now”.

677 Mr Warusan’s evidence was that, because the seasons no longer aligned with the customary seasonal calendar, people on Saibai were unable to rely on their traditional knowledge to determine when to plant or harvest crops. Now they were just “guessing”. That often meant that their crops were not planted or harvested at the right time and were ruined as a result.

678 Mr Warusan also gave evidence about his observations in respect of changes that had occurred on and around the island of Warul Kawa. Other witnesses referred to Warul Kawa as being an important sacred place for Torres Strait Islanders, in particular those who were from Boigu and Saibai. As part of his work as a TSRA ranger, Mr Warusan had monitored erosion and the shifting of sand in the Torres Strait Islands. His opinion was that Warul Kawa is the worst eroded island in the Torres Strait. He recalled having observed very old and large almond trees and heritage *wongai* trees on Warul Kawa falling over as a result of erosion and storm surges. Mr Warusan described how the spiritual ceremonies on Saibai are connected to Warul Kawa as part of the spirit world and how the erosion of Warul Kawa has had a “profound spiritual effect” on him and others.

The evidence of Jennifer Enosa

679 Ms Enosa was born on Thursday Island, but her parents are from Saibai. Her ancestors have lived on Saibai since before the 1870s and she is a member of the ‘*Koedhal*’ (crocodile) and ‘*Dhoeybaw*’ (wild yam) clans. She spent most of her childhood on Saibai before moving to Thursday Island in 1991. She currently works as a radio presenter and frequently visits

Saibai for work, cultural events, ceremony and family. It was clear from her evidence as a whole that, despite the fact that she has resided on Thursday Island for some time, she has remained very closely connected to Saibai, physically, culturally and spiritually.

680 Much of Ms Enosa’s evidence focussed on cultural and spiritual beliefs and practices on Saibai and Ms Enosa’s observations about how those beliefs and practices have been impacted by changes in the climate on Saibai. Her evidence in that regard did, however, touch on the physical changes that she has observed on Saibai. The following summary focusses on that aspect of her evidence, though that is not intended to understate the importance of her evidence about the spiritual and cultural elements.

681 Ms Enosa’s evidence was that the seasons are interconnected with the way of life on Saibai. There were traditional songs about weather and she recalled being taught how to “read the weather” and look for the signs of the changing seasons. That informed how she and others went about gardening, hunting and gathering. According to Ms Enosa, “[w]omen have always used the seasons to guide [their] roles”. She gave various examples of how the “seasonal calendar” spoke to her. Those examples included: knowing when and where to go to catch certain fish, or collect turtle eggs, based on when certain plants or trees flowered; knowing when the turtle mating season had begun based on the arrival of certain migratory birds, or the arrival of a particular wind (the *naigai* or dry northerly breeze); and knowing when the heavy rains were likely to begin, or when it was a good time to go turtle hunting, based on the constellations.

682 Ms Enosa’s evidence was that “[t]he rhythm is now broken” and the seasons no longer align with the traditional teachings. Her evidence, in that context, was that she had observed, or had otherwise become aware or perceived, that migrating birds were coming at different times and that plants were flowering at different times. That made teaching younger generations more difficult and had led to younger generations questioning the lessons of their elders in relation to the seasonal calendar.

683 Ms Enosa’s evidence was that she had observed that the temperature was now “noticeably hotter”. She suggested that Torres Strait Islanders are typically outdoors and communal, and that the rising temperature has meant that the people of Saibai do not go outside as much to share their practices and teachings.

The view on Saibai

684 As outlined earlier, the Court conducted a view of various locations on Saibai. Mr Kabai, Mr Warusan and Ms Enosa gave evidence during the view and several photographs were taken. The locations visited during the view included: the area near the council office; several locations in the vicinity of the seawall; the cemetery; various abandoned community gardens, including an area known as *Thurikan Goegath*; and an area known as *Surum*, which was an area on the southwestern tip of the island that was traditionally used by the people of Saibai for camping and fishing.

685 Damage caused by erosion and inundation events was clearly evident at various locations that were visited during the view. The two photographs below were taken of areas surrounding the seawall near the cemetery. They show damage to areas in the cemetery that were caused by inundation events that the seawall obviously did not prevent.





- 686 Mr Kabai's evidence during the view was that a lot of erosion happened in the cemetery area before the seawall was built and in about 2012, however he maintained that the inundation and erosion was still occurring. He believed that the area was still being inundated, despite the seawall, because seawater entered the drainage pipes in the seawall during high tides when the pressure of the waves forces water into those pipes.
- 687 Damage caused by inundation and erosion in Surum was also clearly evident. The two photographs below that were taken during the view show dead and dying trees in that location.





Summary of findings – Saibai

688 While the evidence of each of Mr Kabai, Mr Warusan and Ms Enosa concerning the changes that they had observed on Saibai was often expressed in general terms and was not specifically limited to the time period relevant to the cause of action in negligence, the evidence nonetheless established that there had been several observable and observed environmental changes on Saibai in recent times. While the evidence of the lay witnesses was not capable of directly linking those changes to climate change and its impacts, that inference in my view is nonetheless available.

689 The evidence of the Torres Strait Island witnesses established that the following climatic and environmental changes had been observed, on and around Saibai in recent times: increasing sea levels and higher tides; flooding and inundation, including of cemeteries and other sacred sites; the erosion of, and loss of, sand and beaches; changing weather patterns; the loss of

alignment between the seasons and natural phenomena, such as the constellations and the migratory patterns of birds, which were traditionally used to identify the changing seasons; the loss of viable areas for gardening due to salination; and declining numbers of turtles and dugong. While the witnesses observed some of those changes had been occurring over many years, their evidence also tended to indicate that they had observed that the rate and scale of the changes had increased over the last five to 10 years.

Observed changes on Warraber and Poruma

690 The Court also heard evidence from Mr Boggo **Billy** and Mr Frank **Fauid** about observed changes on Warraber and Poruma. The Court did not, however, hear evidence on Warraber or Poruma and did not conduct a view on those islands.

691 Warraber is one of the islands in the central group of islands in the Torres Strait. It is a small coral island that is oval in shape and only about 1.4 kilometres long and 700 metres wide. It is very flat and low lying, with its highest point being only about six metres above sea level.

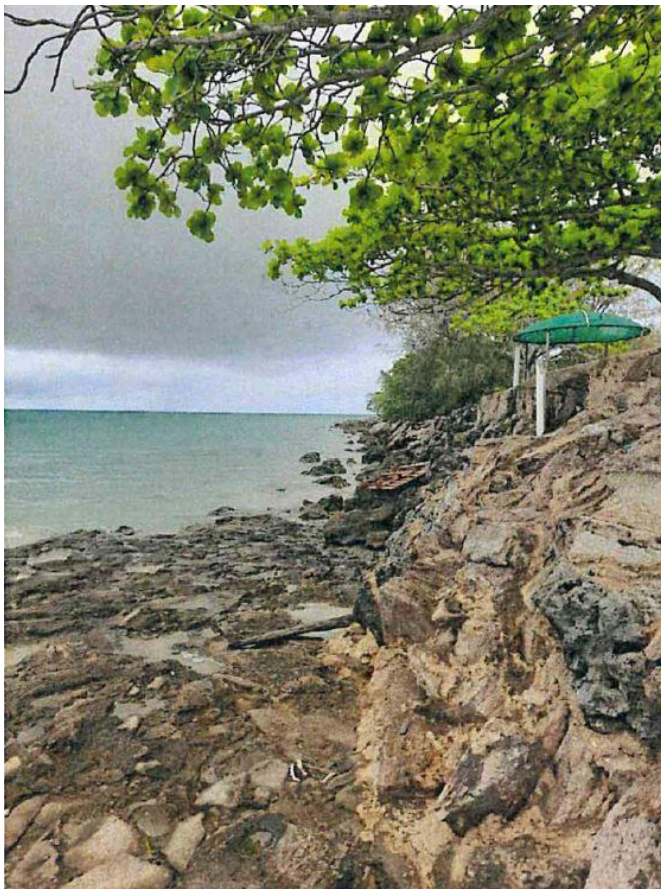
692 Poruma is also in the central cluster of islands in the Torres Strait and lies to the northeast of Warraber. Like Warraber, Poruma is a small coral cay surrounded by coral reefs. It is known as the Coconut Island. It is only about 1.4 kilometres long and 400 metres wide. It is flat and low-lying, with much of the island being around 4.9 metres above sea level. Its highest point is 12 metres above sea level. The high side of the island is the southwest side. Most of the houses on Poruma are built on the west side of the island.

The evidence of Boggo Billy

693 Mr Billy is an elder and native title holder of Warraber Island. His family are also one of the traditional owner groups of Poruma. While he was born on Thursday Island, he grew up on Poruma Island and would often travel with his family to Warraber for various reasons, including to obtain fresh drinking water. During the 1980s, he moved back and forth living and working between Warraber and Poruma. From 1997, he lived and worked as a commercial diver on Warraber. His evidence was that, through his family, he had a cultural connection with all the central islands of the Torres Strait, including Poruma, Warraber, Masig (Yorke Island) and Iama (Yam Island).

694 Mr Billy's evidence mostly concerned the changes he had observed on Warraber. He recalled that in the late 1970s, part of the cemetery on Warraber was washed away and some of the bones of those who had been buried in the cemetery were washed out to sea. Those

bones that were able to be collected were reburied in a large hole, which understandably made the community very sad. As a result of that incident, in the 1980s the community built a small seawall on the northeast side of the island. That seawall mostly comprised of truck tyres, though in the 1990s some contractors who were building a nearby shipping channel rebuilt the seawall with rocks as a favour to the community. The rudimentary nature of that seawall can be seen from the following photographs that were identified by Mr Billy.





695 The council also built a small seawall on the island in the late 1990s and early 2000s using concrete and rocks from the channel. That structure is also fairly rudimentary, as the following photograph identified by Mr Billy clearly shows:



696 Mr Billy's evidence was that he had observed significant erosion on Warraber in the last four or five years. According to Mr Billy, the beach on the northeast side of the island had been particularly affected by erosion as it is on the lowest part of the island. The beach, which is not protected by any seawall, used to extend a further 10 metres out towards the ocean than it does now. The erosion has mainly occurred during the monsoon season when the waves

come from the northwest side of the island, particularly when there are also king tides and it is raining. The erosion on the northeast side of the island can be seen in the following three photographs that were identified by Mr Billy. The third photograph was taken in January 2023. Mr Billy's evidence was that the shed depicted in that photograph was subsequently washed away.

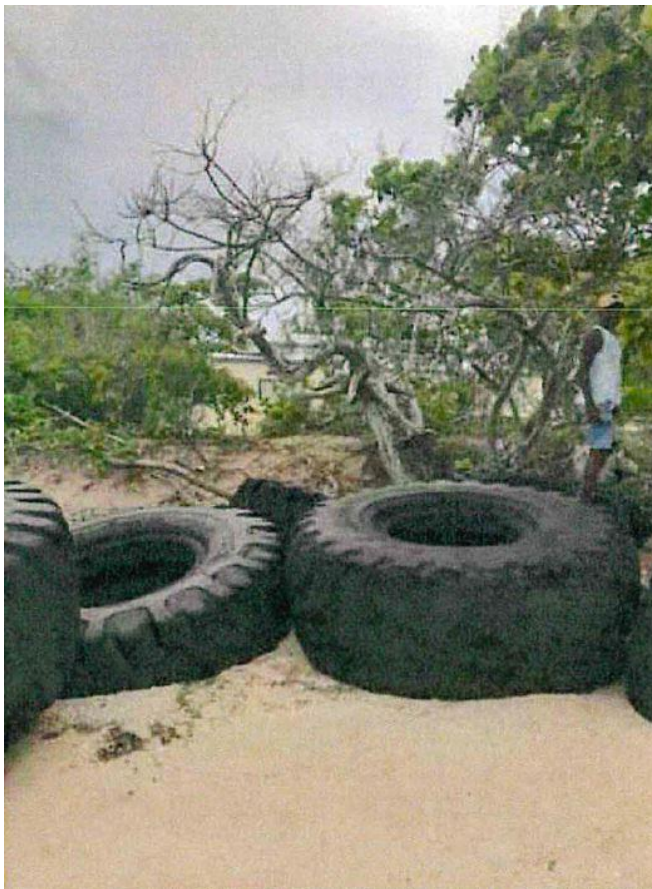




697 Mr Billy’s evidence was that the southwest side of the island had also been affected by erosion. That erosion was still occurring.

698 Mr Billy indicated that some measures have been taken by the community to combat the erosion. Those measures included the ranger planting coconut trees and native plants, the council and the rangers creating a barrier of green waste, and the community placing truck tyres and construction rubble around the area which was being eroded. According to Mr Billy, however, those measures had been largely unsuccessful because “[w]ater always finds a way”.

699 Following are some photographs, identified by Mr Billy in his evidence, which show construction rubble and tyres that had been placed on the northeastern side of the island in an apparent endeavour to prevent erosion, and a photograph of green waste that had been placed on the southwest side of the island, again in an attempt to limit erosion.





700 It should be noted that Mr Billy agreed that erosion had been taking place on the island during monsoon storms for many years, including when he was growing up. The general thrust of his evidence, however, was that the erosion had become worse in the last 10 years or so and that the erosion on the northeast side of the island is now “really bad”.

701 Mr Billy’s evidence included his observations of various other changes that he had observed on Warraber and Poruma and the surrounding reefs and sea and his views about the effect that those changes were having on the traditional way of life on the islands. In relation to changes on Warraber and Poruma, his evidence was that it is now much more difficult to grow crops on the islands. According to him, the viable gardening areas on Warraber were now much smaller, though he agreed that some of the garden areas had been reduced to make way for housing. He maintained that the topsoil in many areas on the island had been washed away and that many areas were also difficult to grow crops on because they are affected by saltwater that has pervaded the groundwater.

702 Mr Billy also indicated that gardening was more difficult now because the weather patterns had changed. The sun had become hotter and the rainfall was not as reliable. While he agreed in cross-examination that he did not keep rainfall records, and that sometimes there was more rain, he maintained that most of the time there was less rain than there used to be.

703 According to Mr Billy, it had also become more difficult to garden because it used to be possible to determine when to plant and harvest by reference to when certain trees were flowering or fruiting. The migratory patterns of certain birds were also used to provide a guide to when to plant or harvest. Mr Billy’s evidence was that that had changed and it is

now not possible to rely on those traditional signs. He gave various examples of those changes, though it must be said that some of his evidence about the changes he had observed in respect of the flowering and fruiting of some plants was somewhat confusing. In any event, he maintained that the inability to rely on those traditional signs of the changing of the seasons was making it difficult to pass on traditional knowledge about gardening to children.

704 Overall, Mr Billy maintained that the reduced ability to grow crops and to garden had made him and others more reliant on supermarket food. It had also had an effect on cultural practices that were related to traditional food sources.

705 Mr Billy's evidence was that he had also observed several changes to the seas and reefs surrounding Warraber and Poruma and that those changes were having an impact on traditional hunting and gathering. His evidence was that warmer waters around Warraber and Poruma in recent years were having an effect on the surrounding reefs. According to Mr Billy, the coral reefs between Warraber and the neighbouring island Burrar had been affected by bleaching in the last five to 10 years and the bleaching and warmer water meant that there were less crayfish and fish around the reefs. He agreed that some fish were returning, but maintained that their numbers were still reduced. Diving and fishing for crayfish on and around the reefs had provided an important source of food in the past, however it was now much more difficult to catch fish and crayfish.

706 Mr Billy also gave evidence that there were also less turtles and dugong around the islands. He believed that the reduction in numbers of dugong and turtles was a result of warmer waters which had affected the seagrass around the islands which had been their primary source of food. He agreed in cross-examination that his beliefs in that regard were informed to an extent by local knowledge, some of which had been passed down from his ancestors. He also agreed that the reduction in the number of turtles and dugong had started many years ago. Turtles and dugong were not only a traditional source of food, but were important for cultural reasons.

The evidence of Frank Fauid

707 Mr Fauid is an elder, traditional owner and native title holder of Poruma. He is over 60 years old and has lived on Poruma for virtually his entire life, save for a three-year period between 1981 and 1984. He is a Minister and, in that capacity, has provided social welfare services for the communities throughout the Torres Strait Islands. He is on the board of directors of

the Prescribed Body Corporate of Poruma and has been on the board of various other Torres Strait Island organisations.

708 Mr Fauid’s evidence was that Poruma used to be larger than it is today. It used to extend out further, particularly on the western side of the island. He gave various rough estimates of the distance the island used to extend out, though the accuracy and reliability of some of those estimates was somewhat questionable. In any event, his evidence was that areas adjacent to the ocean on the west side of the island, and to a lesser extent on the south and north sides of the island, began to suffer erosion in about the 1980s.

709 According to Mr Fauid, the west side of the island used to be an important community garden area, but that it has now been “lost to the sea”. As a result of erosion, the old village had also been moved further inland and the gardens were moved to individual houses. He also maintained that it is difficult to grow any crops on the island now and that gardening has “dropped off”. Mr Fauid’s evidence was that Poruma had also lost a lot of coconut trees as a result of high tides and erosion.

710 In his evidence, Mr Fauid referred to some other changes that he believed were related to, or had been caused by, erosion on or near Poruma. He said that the little islets near Poruma used to have some vegetation on them and that he and others used to collect bird and turtle eggs from them. Now, according to him, they were just “moving sandbanks” and it was no longer possible to collect eggs from them. He also maintained that sand eroded from the island was adversely impacting the reefs and seagrass that surround the island. He had observed that occurring over the last 10 years. Those impacts on the reefs and seagrass had in turn caused dugong and turtles that used to feed on the reefs and seagrass to move to different places.

711 Mr Fauid’s evidence was a seawall made of “geobags” was built on the western tip and northwest side of Poruma between about 2020 and 2022. Geobags are large synthetic fabric bags that are filled with sand. According to him, however, while the geobag seawall provides some protection from erosion on the northern side of the island, it does not stop the waves and wind that come from the southeast. He said that he had seen water coming over the geobag seawall and had also seen the geobags “fall away”. He indicated that the worst affected side of the island is the south or southwest side. According to him, the sand from that side of the island ends up on the northwest side of the island near the wharf. The community is then often required to dig out the sand from the wharf area a few times a year.

Summary of findings – Warraber and Poruma

712 The evidence concerning the recent observed environment changes on Warraber and Poruma was similar in many respects to the evidence concerning the changes on Boigu, Badu and Saibai. The evidence of Mr Billy and Mr Fauid concerning their observations was at times fairly general and often related, or appeared to relate, to changes that had first been observed many years ago. Nevertheless, the evidence did tend to indicate that the rate and scale of the environmental changes that had been observed in the last five to 10 years was greater. The evidence, in general terms, established that the following changes on Warraber and Poruma had been observed: significant erosion of beaches; changing weather patterns; loss of viable gardening areas; warmer waters and the degradation of seagrass; and declining numbers of certain sea life, including dugong, turtles, fish and crayfish.

Summary of findings – Impacts of climate change on the Torres Strait Islands

713 The inferences and conclusions that can be drawn from the combined effect of the scientific evidence and the evidence of the traditional owners of islands and residents of major islands in the Torres Strait, including Boigu, Badu, Saibai and, perhaps to a lesser extent, Poruma and Warraber, are clear and compelling. Climate change has had, and is continuing to have, significant and deleterious impacts on the Torres Strait Islands. Those impacts have become more severe and more frequent in recent times. The impacts include: rising sea levels and higher tides; more frequent and more severe sea level events; more severe erosion resulting from the rising sea levels, higher tides and extreme sea level events; ocean temperature increases; harm and destruction of various ecosystems, including in particular coral reefs and areas of seagrass; adverse impacts on certain sea life, including in particular turtles and dugong; increased heat and changing weather patterns. It may be accepted that the nature and extent of some of those impacts is difficult to precisely quantify. That does not alter the fact that the impacts of climate change on the Torres Strait Islands are real and are worsening. That is certainly the experience of Torres Strait Islanders.

714 Most, if not all, of those changes have been observed and experienced first-hand by Torres Strait Islanders. Torres Strait Islanders have also perceived other slightly less tangible environmental changes that coincided with the more direct impacts of climate change. Those changes, which have had perhaps a less direct but nonetheless significant impact on Torres Strait Islanders' way of life, include: changes in the timing or arrival of the seasons; changing migratory patterns of birds; changes in the breeding seasons or patterns of certain marine life;

and changes in the timing of the flowering and fruiting of certain plants. Torres Strait Islanders traditionally conducted their gardening, hunting and gathering and cultural practices by reference to the patterns and timing of those types of natural phenomena. Torres Strait Islanders accordingly now perceive there to be a misalignment or discord between the natural phenomena and their traditional way of life. That has in turn made it difficult for the elders in the community to pass on their traditional knowledge and cultural practices to the younger generation. As discussed in more detail later, this has also had an adverse impact on Torres Strait Islanders' practise of Ailan Kastom.

Future impacts of climate change on the Torres Strait Islands

715 The applicants submitted that the evidence established not only that the Torres Strait Islands will continue to suffer the impacts of climate change into the future, but that those future impacts will become more frequent and more severe if long-term global temperature is not limited to 1.5°C. Conversely, the impacts of climate change in the future will be materially less frequent or severe if long-term global temperature is limited to 1.5°C.

716 The Commonwealth admitted, or at least did not seriously dispute, that the impacts of climate change will continue to be experienced or suffered around the world, including in the Torres Strait Islands, into the future. It also appeared to accept, or at least not to dispute, that those impacts will be significantly worse if global temperature increases are not stabilised or reduced. There was, for example, no real dispute that if global temperatures continue to rise at their current levels into the future: surface temperatures are likely to continue to rise, including in the Torres Strait Islands; sea levels will continue to rise; there will be higher and more frequent extreme sea level events, including in the Torres Strait Islands; the seas and oceans, including those surrounding the Torres Strait Islands, will continue to warm and acidify; and ecosystems, including those on and surrounding coral reefs in the Torres Strait, will be damaged or even destroyed, including as a result of coral bleaching.

717 The main area of dispute between the applicants and the Commonwealth in respect of the future impacts of climate change in the Torres Strait related to the precise nature and extent of those impacts. In particular, the Commonwealth appeared to take issue with the applicants' contention that the impacts of climate change are likely to be materially worse or more extreme if global average temperature increases are not limited to 1.5°C above pre-industrial levels. The Commonwealth submitted that the evidence does not establish that 1.5°C is a "limit" beyond which the impacts are likely to be significantly worse. It also

submitted, in effect, that there was an absence of evidence concerning the precise impacts that climate change is likely to have in the Torres Strait in the future. The Commonwealth appeared, in that regard, to take issue with the accuracy or voracity of some of the scientific modelling of the future impact of climate change, particularly at a regional level.

718 In my view, the Commonwealth's approach to the issue concerning the future impacts of climate change in the Torres Strait was too narrow and overly technical. Since at least the publication of the IPCC's Special Report, it has been generally accepted by the mainstream science community, and the best available science, that the adverse impacts of climate change are likely to be significantly worse if global average temperature increases in the future exceed 1.5°C above pre-industrial levels. The IPCC's Special Report found, among other things, that climate-related risks for natural and human systems are higher for global warming of 2°C than global warming of 1.5°C and that climate models project robust differences in regional climate characteristics between present-day and global warming of 1.5°C, and between 1.5°C and 2°C.

719 It perhaps may be accepted that global warming of 1.5°C does not represent any sort of hard or rigid scientific limit or threshold. Rather, it is more of an aspirational or ambitious figure at which to aim to prevent the worst impacts of climate change in the future. It is, however, tolerably clear that the consensus among climate scientists is that the impacts of climate change will be worse if global average temperature increases materially exceed 1.5°C. That is no doubt why the applicants' case fixed on global temperature increase of 1.5°C as a realistic aspirational limit to which the Commonwealth ought to have had regard when it came to fixing its greenhouse gas emissions targets.

720 It may also perhaps be accepted that scientific models may not be capable of predicting the precise extent of some of the impacts of climate change that will be suffered or experienced in the Torres Strait Islands in the future. As discussed in some detail earlier in these reasons, views in the scientific community are mixed or divided concerning the accuracy of certain types of regional climate change models. The evidence in respect of regional climate change models that focus specifically on the Torres Strait Islands was also somewhat limited. That, however, in my view is essentially beside the point.

721 The applicants' case does not depend on the precise calculation of the future impacts of climate change on the Torres Strait Islands. Rather, it relies on the simple proposition that the impacts of climate change that the Torres Strait Islands are currently experiencing are

likely to continue into the future and that the adverse impacts are highly likely to be more frequent and more severe if global average temperature increases materially exceed, or are not limited to, 1.5°C above pre-industrial levels. In my view the correctness of that proposition is established by the evidence in this case, even if the precise extent of the future impacts of climate change may not be able to be determined. As has already been noted, the consensus among climate scientists is that the impacts of climate change globally will be significantly worse if global average temperature increases in the future materially exceed 1.5°C above pre-industrial levels. It is, in my view, not a large leap to infer that that conclusion is also likely to apply at a regional level in the Torres Strait Islands.

722 Following is a short summary of the evidence concerning the projections in relation to some specific impacts of climate change, including in the Torres Strait Islands.

Sea level rise in the future

723 Professor Church's expert report included detailed evidence concerning the projected increase in sea levels both globally and regionally in the Torres Strait Islands. It is unnecessary to reproduce much of that detail. The Commonwealth accepted that sea levels are predicted to rise by 2050 and thereafter under all the various emissions scenarios considered by the IPCC. It did not dispute the IPCC's predictions as to the size of global mean sea level rise by 2050 and 2100 relative to 1900 under all the various scenarios. The Commonwealth also accepted Professor Church's regional projections of likely sea level rise in the Torres Strait Islands by 2050 and 2100 relative to 1900.

724 It is unnecessary to reproduce the tables in Professor Church's report that set out the predicted sea level rise both globally and in the Torres Strait under all the various scenarios. It is sufficient to note that Professor Church estimated that sea levels will rise by approximately 34 cm in the Torres Strait region in the period from 1900 to 2050 if global warming is limited to 1.5°C (scenario SSP1-1.9) but will in the same period rise to 36 cm if global warming reaches 2°C (SSP1-2.6) and 37 cm if global warming reaches 3°C (SSP2-4.5). The equivalent sea rise figures for the Torres Strait for 2100 are 56 cm (SSP1-1.9), 62 cm (SSP1-2.6) and 74 cm (SSP2-4.5).

725 Professor Church's evidence was that the projections indicated that "past greenhouse gas emissions have not only resulted in sea-level rise during the 20th century but also guarantees ongoing sea-level rise" and that "the amount of sea-level rise before 2050 are partly a result of past greenhouse gas emissions and are only weakly dependent on greenhouse gas

emissions between now and 2050”. In other words, the projected sea level rises before 2050 are likely to occur irrespective of any reductions in greenhouse gases between now and 2050. That is because of the time lag between the emission of greenhouse gases and the consequential rise in sea level caused by those emissions. Emissions reductions from now to 2100 will, however, have a significant impact on sea level rise in the period 2050 to 2100. Professor Church’s evidence in that regard was that “[g]reenhouse gas emissions determine the rate of acceleration of sea-level rise and are thus a strong control on the amount of sea-level rise after 2050, by 2100 and beyond” and “delayed mitigation leads to a larger sea-level rise”.

726 The Commonwealth described the projected sea level rises, or the differences between the projected sea level rises in the different scenarios, as being “marginal” and submitted that there was no evidence to support the conclusion that those marginal differences will have any impact on the habitability of different islands in the Torres Strait. I do not accept that it is necessarily correct to describe either the projected sea level rise, or the differences in sea level rise between the different emissions scenarios, as “marginal”. Nor do I accept that there was no evidence to support the proposition that the projected sea level rise is likely to affect the habitability of some of the Torres Strait Islands in the future.

727 There was essentially no dispute that the low-lying islands, and low-lying coastal areas of other islands, in the Torres Strait are particularly vulnerable to the impacts of climate change, including rising sea levels. The evidence of the Torres Strait Islanders also indicated that the rise in sea levels in the Torres Strait in recent times has adversely affected the habitability of those islands, or parts thereof, as a result of flooding, erosion and the increased salinity of the groundwater and soil. It is, in my view, open to infer from the evidence as a whole that the projected sea level rises in the Torres Strait Islands are likely to further adversely impact the habitability of some islands, or parts of some islands, in the Torres Strait. I would readily draw that inference, particularly in the absence of any evidence to the contrary. This issue is discussed further in the context of the evidence concerning projections in respect of extreme sea level events and inundation in the Torres Strait Islands.

728 It should finally be noted in this context that the Commonwealth also appeared to take some comfort from the fact that Professor Church agreed that sea level rise in particular locations depends on a range of factors, which in turn meant that it could not be said that there was a precise linear relationship between increasing global temperatures and sea level rise in

particular locations. It is tolerably clear, however, that the effect of Professor Church's evidence was that sea level rise resulting from increasing global temperatures was nonetheless a significant contributor to sea level rise in particular locations. He gave the following metaphorical example to illustrate his point:

[Regional sea level rise in particular locations] certainly depends on a range of factors, but there is a direct relationship – you know, there's a simple analogue here. Think of a bathtub. You can wave your hand backwards and forwards in the water and you will see the water sloshing upwards and down – backwards and forwards in the bathtub, but if you leave the tap dripping, ultimately, the bathtub overflows regardless of the sloshing. Maybe it sloshes – overflows more quickly because you're sloshing, but – so at any particular time, that sloshing might dominate what you think you see, but if the tap is still dripping, ultimately, the bathtub overflows.

729 The dripping tap in that metaphor represented increasing sea levels resulting from climate change and the “sloshing” resulting from the waving of a hand backwards and forwards in the bathtub represented regional factors or influences. Ultimately, however, “the bathtub overflows” as a result of the dripping tap. In my view, the regional variations are of relatively limited significance in the overall scheme of things.

Future extreme sea level events and inundation of coastal areas

730 Professor Church's evidence was that “[r]egional sea level change has been the main cause of changes in extreme sea level events during the 20th century and will be the main cause of a substantial increase in the frequency of extreme sea level events during the 21st century”. He also expressed the opinion that there will be a “rapid increase in the number of coastal locations that will experience the present-day 100-yr extreme-sea-level events at least once a year”. In support of that opinion, Professor Church cited the IPCC's finding (in the Sixth Assessment Reports) that “extreme sea levels will occur about 20 to 30 times more frequently by 2050 and 160 to 530 times more frequently by 2100 compared to the recent past”. Professor Church concluded that “[a]ny changes in tides, storm surges or waves, would further change these return frequencies”. Professor Church's evidence was also that the size of the extreme weather events will increase with rises in mean sea level. I accept Professor Church's evidence concerning those projected changes and impacts. It was not directly challenged.

731 The Commonwealth's submissions in respect of future extreme sea level events and inundation in the Torres Strait Islands were mainly based on its critique of Mr Bettington's evidence. The evidence of Mr Bettington was discussed earlier, as was the competing evidence of Dr Harper in respect of some of Mr Bettington's analysis. I do not propose to

revisit that evidence. The main issue of contention between Mr Bettington and Dr Harper concerned Mr Bettington's addition of a regional lift to his figures for extreme sea levels. For the reasons given earlier, I prefer Dr Harper's evidence that the addition of the regional lift was not entirely justified. I am nevertheless satisfied that Mr Bettington's evidence, adjusted to remove the addition of the regional lift, provides some support for the proposition that the frequency and size of extreme sea level events in the Torres Strait have increased, and are likely to continue to increase in the future as sea levels continue to rise. That is particularly the case when that evidence is considered together with the evidence of Professor Church and the evidence of the Torres Strait Islanders.

Future temperature increases and intensification of heat extremes

732 In his evidence, Professor Karoly referred to "down-scaled high resolution regional climate model simulations undertaken by the Queensland Government" which supported the following projections in respect of temperature increases in the Torres Strait:

Mean annual temperature change in the Torres Strait region relative to 1986-2005 is projected to be 0.7°C (0.5°C - 0.9°C) for global warming of 1.5°C; 1.3°C (0.9°C – 1.5°C) for global warming of 2°C; and 2.0°C (1.7°C – 2.5°C) for global warming of 3°C.

...

The mean annual change in heatwave duration in the Torres Strait region relative to 1986-2005 is projected to be an increase of 2.5 days per year (-0.4 days to +3.0 days per year) for global warming of 1.5°C; 9 days per year (5 days to 17 days per year) for global warming of 2°C; and 55 days per year (37 days to 120 days per year) for global warming of 3°C.

(Footnote omitted.)

733 The Commonwealth submitted that those projections "would not be a matter of scientific consensus" essentially because there was a divergence of opinions concerning the accuracy of regional climate change models. The competing evidence of Professor Karoly and Professor Pitman concerning regional climate models was discussed at some length earlier in these reasons. For the reasons given there, I would tend to prefer the evidence of Professor Karoly concerning the efficacy and value of regional climate change models. While there may be some technical issues about regional models and some resulting uncertainties about the reliability of their projections, those projections are nonetheless of some value in predicting the impacts of climate change in certain regions into the future. The Commonwealth did not adduce, or point to, any evidence that cast any doubt on the relevant regional model used by

the Queensland Government or its projections concerning temperature increases in the Torres Strait Islands.

734 More broadly, Professor Karoly's evidence in respect of temperature increases related to climate change in Australia, based on assessments by the IPCC and the CSIRO and BOM, was that:

In a world with global warming of 1.5°C, Australian average temperature would be about 2.1°C above 1850-1900 levels. This is likely to be experienced in the 2021-2040 period. In a world with global warming of 2°C, Australian average temperature would be about 2.8°C above 1850-1900 levels.

735 While those projections relate to Australia generally, and not the Torres Strait Islands specifically, they provide further support for the proposition that the impacts of climate change that will be experienced by the Torres Strait Islands in the future include significant temperature increases. Those temperature increases are also likely to be higher in the higher emissions scenarios, particularly those scenarios involving global warming of 2°C and above.

Ocean temperature increases

736 The evidence indicated that average global ocean temperature increases were projected to increase broadly in line with, though smaller than, global mean temperature increases. Professor Karoly's evidence was that "global land surface temperature will continue to increase more than the ocean surface temperature (likely 1.4 to 1.7 times more) and more than the global mean temperature". The IPCC Sixth Assessment Reports stated that the future global mean ocean temperature increase projected by models for the period 1995–2014 to 2081–2100 is 0.86°C at 2°C of global warming and 1.51°C at 3°C.

737 The Commonwealth correctly pointed out that those projections were in respect of global average ocean temperature increases, not projections in respect of increases in ocean temperature in the oceans surrounding the Torres Strait Islands. The Commonwealth also relied on Professor Karoly's evidence that ocean temperature increases vary geographically due to factors such as ocean current systems and variations in the mixing of surface waters into deeper oceans. It followed that in some locations there will not be a linear relationship.

738 It may be accepted that there is no evidence of projected ocean temperature increases specifically referable to the Torres Strait Islands. It may equally be accepted that there may be some regional variations in ocean temperature increases resulting from climate change. That said, the Commonwealth did not adduce, or point to, any evidence that indicated that

future mean ocean temperature in the vicinity of the Torres Strait Islands was unlikely to follow the general global pattern of increasing broadly in line with the projected global land surface temperature. Moreover, Professor Karoly's evidence, albeit expressed in fairly general terms, was that the projected impacts of climate change in Australia included warmer seas and more frequent and more intense marine heatwaves. I would, in all the circumstances, readily infer that the Torres Strait will almost certainly experience increasing ocean temperatures due to climate change into the future and that those increases will be roughly in line with the projections in respect of global ocean temperature increases.

739 It should also be reiterated in this context that the Commonwealth does not dispute that the Torres Strait Islands are at risk of increased ocean warming in the future as a result of climate change. The Commonwealth also conceded that, as global temperatures increase, the Torres Strait is likely to be at higher risk of marine heatwaves, though there is no precise quantification of the impacts at different levels of warming.

Ocean acidification

740 Professor Karoly's uncontested evidence in respect of future ocean acidification was:

Ocean acidification will increase in direct response to the increases in atmospheric CO₂ concentrations. For global warming of 1.5°C, ocean acidity will be about 20% higher than current levels, about 30% higher for global warming of 2°C at the end of the century, and about 50% higher for global warming of 3°C at the end of the century.

741 That evidence again concerned projections in respect of global ocean acidification, not ocean acidification specifically in the oceans surrounding the Torres Strait Islands. Professor Karoly's evidence was that ocean acidification varied geographically. Professor Karoly did, however, give more general evidence to the effect that the projected impacts of climate change in Australia included more acidic seas. The IPCC also estimated in its Fifth Assessment Reports that pH levels in Australian oceans will drop by 0.1 at global warming of 2°C and 0.3 for global warming of 4.3°C by the end of the century. It should be noted, in this context, that, lower pH levels indicate higher acidity.

742 The Commonwealth effectively accepted that the oceans or seas around the Torres Strait Islands are likely to experience higher acidity in the future.

Precipitation patterns

743 The applicants relied on Professor Karoly’s evidence concerning the projected impact of continued global warming on the “global water cycle”. Professor Karoly’s evidence concerning projected precipitation in the Torres Strait Islands specifically, however, was more circumspect. His evidence was that the projected mean changes in total annual rainfall in the Torres Strait region were “small and quite uncertain across the range of different global climate models”. Data examined by Professor Karoly did not show any statistically significant projected changes for extreme rainfall in the Torres Strait region.

Erosion

744 The evidence of Mr Bettington was to the effect that erosion on some of the Torres Strait Islands, in particular the coral cays such as Poruma and Warraber, was likely to worsen and become more severe as sea levels rise in the future. In relation to the mud islands, which include Boigu and Saibai, the effect of Mr Bettington’s evidence was that rising sea levels in the future will result in a decline in the mangrove forests on those islands, which will in turn “make erosion issues significantly more severe”, though he acknowledged that “[d]ue to the complex nature of the problem no calculations to quantify the issue exist”.

745 The evidence of the Torres Strait Islanders, discussed in detail earlier, was to the effect that they had observed that erosion on Boigu, Saibai, Badu, Poruma and Warraber had become worse in recent years as sea levels rose. That evidence tended to support Mr Bettington’s evidence and the overall inference that erosion on some of the islands in the Torres Strait is likely to worsen as a result of climate change in the future, particularly if global temperature increases are not limited or stabilised.

Groundwater contamination

746 Mr Bettington’s evidence was that saltwater intrusion is a persistent issue in the Torres Strait and that as “sea levels rise the groundwater contamination events will increase in frequency and intensity”. That will cause “die back with salt tolerant vegetation taking over from terrestrial vegetation and in areas with severe contamination even salt tolerant vegetation will not survive”. Mr Bettington projected that the mud islands, including Boigu and Saibai will be “severely impacted” by groundwater contamination by 2050 and that large parts of both islands will “not be able to sustain terrestrial trees.” I accept that evidence. It was essentially unchallenged and is also broadly consistent with the evidence of the Torres Strait Islanders concerning the increasing salination of parts of their islands in recent years.

Harm and destruction of ecosystems and non-human species

- 747 The evidence clearly established that coral reefs and associated ecosystems, including those in and around the Torres Strait, will continue to be adversely impacted by climate change in the future and that those impacts will be significantly more severe if the increase in global temperature is not limited to 1.5°C.
- 748 Professor Hughes' evidence was that restricting overall global warming to 1.5°C will prevent the total loss of coral reefs globally, however the consequences will still be severe even if global temperature increases are restricted to 1.5°C. That level of heating will permanently alter original species composition, limit the capacity of coral reefs to recover from successive bleaching events and cause an overall decline of 70-90% coral cover. If, however, global temperature increases are not limited to 1.5°C and temperatures rise by 2°C, that will cause a total loss of all coral reefs across the globe. There would be no "spatial refuges" – areas of reef that remain unbleached at 1.5°C – with the result that damaged reefs will not be able to "re-seed". In short, the very survival of coral reefs in the future depends on limiting global warming increase to 1.5°C.
- 749 Mr Bettington's evidence in relation to the likely adverse effect on mangroves in the Torres Strait Islands as a result of climate change was referred to earlier in the context of erosion. The upshot is that higher temperatures in the future will lead to higher sea levels which will in turn damage mangroves and associated ecosystems in the Torres Strait.
- 750 Mr Bettington's evidence concerning saltwater contamination was also noted earlier. The upshot is again that future temperature increases are likely to lead to higher sea levels which will in turn result in more saltwater contamination on some Torres Strait Islands, which will then lead to declines in terrestrial vegetation.
- 751 Professor Hughes' evidence included that rising temperatures have been linked to the increasing incidence of severe disease in seagrasses. Given that average ocean temperature and the frequency and intensity of heatwaves correlates with global temperature increase more generally, it may be inferred that the decline in seagrass in the Torres Strait is likely to be greater if global temperature increase is not limited to 1.5°C. Any ongoing decline in seagrass in the Torres Strait is likely to have an ongoing adverse impact on the numbers of dugong and turtles in the Torres Strait. That is because, as Professor Hughes noted in his evidence, the populations of dugong and turtles in the Torres Strait are dependent on the availability of seagrass for their diet and habitat. The evidence of the Torres Strait Islanders

also supported the proposition that turtle and dugong numbers in the Torres Strait Islands have fallen as a result of climate change and are likely to continue to fall if global average temperature increases are not restricted.

Impacts on human health

752 Dr Selvey projected that the risk that the health of Torres Strait Islanders living in the Torres Strait will be adversely affected by climate change will increase if temperatures in the Torres Strait Islands continue to increase as a result of climate change. The risks to human health in the Torres Strait Islands that arise from higher temperatures include: heat-induced mortality and morbidity; contamination of fresh water supplies; increasing unavailability of traditional foods; and various illnesses and infectious diseases. Some issues and limitations of Dr Selvey's evidence were highlighted earlier. Despite those limitations, I consider that it is open to infer that there is at least a risk that the health of at least some Torres Strait Islanders is likely to be adversely impacted by climate change in the future. Those risks are likely to increase if temperatures continue to increase into the future..

Tipping points

753 The concept of tipping points was discussed at length earlier in these reasons. It is unnecessary to revisit the expert evidence concerning tipping points. It is sufficient to note that in their evidence, both Professor Church and Professor Karoly identified three tipping points that were likely to have a particular impact on the Torres Strait Islands. Those tipping point are the collapse of the Greenland ice sheet, the collapse of the Antarctic icesheet and rapid permafrost melt. It was essentially uncontroversial that the risk of passing tipping points increases as global temperatures continue to increase at higher rates. That essentially means that the risk of passing tipping points is greater if global temperature increases are not restricted to 1.5°C.

754 The Commonwealth accepted that the collapse of the Greenland and Antarctic ice sheets, if that occurred, could contribute metres of sea level rise over centuries to millennia. That undoubtedly would have significant impacts on the world, including the Torres Strait. The Commonwealth also accepted that the rapid thawing of the permafrost would emit CO₂ and methane, which would in turn further increase global temperatures. The Commonwealth pointed out, however, that there were uncertainties in the science in relation to tipping points, including uncertainties in respect of the estimated temperature thresholds the passing of which might lead to the collapse of the icesheets and the extent of their potential collapse,

and uncertainties in respect of the timing, magnitude and linearity of any thaw of the permafrost.

755 It may be accepted that there are some uncertainties in respect of the science surrounding tipping points, and that some of the conclusions concerning the risk of the tipping points being crossed have been expressed with varying degrees of confidence. It may, however, nevertheless be readily inferred and concluded both that the risk of triggering a tipping point increases with global temperature increase, and that the triggering of one or more of the key tipping points would have catastrophic impacts on the Torres Strait Islands. It may equally be accepted that the risk of one or more of the tipping points being triggered would most likely be lower if global temperature increase is stabilised at 1.5°C, rather than at 2°C or higher.

Summary of conclusions – Future impacts of climate change in the Torres Strait Islands

756 There could be little, if any, doubt that the significant adverse impacts of climate change that have been experienced in the Torres Strait Islands will almost certainly continue into the future. There could equally be little, if any, doubt that those impacts are likely to be more severe if global temperatures continue to rise at their current rate or higher. While it may perhaps be accepted that there is some degree of uncertainty in the science in respect of projecting the precise degree or extent of some of the impacts of climate in the future, it may confidently be inferred and concluded that the impacts are likely to be more severe, and their occurrence more frequent, the more global temperature increases in the future. Conversely, it can be inferred and concluded that minimising long-term global temperature increases will in turn prevent or at least minimise some of the more harmful impacts of climate change to small and low-lying islands, such as those in the Torres Strait Islands.

757 The applicants' case undoubtedly hinged to some extent on the proposition that holding long-term global temperature increase to below 1.5°C will prevent or minimise many of the most dangerous projected impacts of climate change in the Torres Strait Islands. The applicants did not suggest, however, that 1.5°C is a hard or rigid scientific limit or threshold. Rather, they contended that, from at least 2014, the best available science has been that holding long-term global temperature increase to below 1.5°C will prevent or minimise many of the most dangerous projected impacts of climate change. There is in my view considerable merit in that contention.

758 The evidence, discussed at length earlier in these reasons, indicated that by about 2013 or 2014, when the IPCC published its Fifth Assessment Report, climate scientists had fixed on limiting global temperature increase to 1.5°C as being a critical target to aim towards in seeking to limit the harmful impacts of climate change going forward. It was no doubt for that reason that the parties to the Paris Agreement ultimately agreed, in 2015, to take steps to hold the increase in the global average temperature to “well below 2°C” above pre-industrial levels and to pursue efforts to limit temperature increase to 1.5°C above pre-industrial levels. There is merit in the applicants’ submission that the scientific consensus effectively predated the international political consensus.

759 The critical point, however, is that the evidence, including the expert scientific evidence and the reports and publications which reflect and reproduce the best available science in respect of climate science, supports the conclusion that Torres Strait Islanders will likely face more frequent and more severe impacts of climate change if global average temperature increases are not restricted to somewhere in the vicinity of 1.5°C above pre-industrial levels. Restricting global average temperature increases to around 1.5°C above pre-industrial levels would undoubtedly materially assist in avoiding or reducing some of the most harmful impacts of climate change in the Torres Strait Islands.

The Commonwealth’s knowledge of the impacts of climate change on the Torres Strait Islands

760 The Commonwealth’s knowledge about climate change and its causes and impacts was addressed earlier. It is unnecessary to repeat what was said there. It is, however, worth noting at this point that it may be inferred that, by at least 2012, and certainly by 2020, the Commonwealth was not only aware of the impacts of climate change generally, but was also aware that climate change was having, and was likely to continue to have, serious impacts on the Torres Strait Islands specifically. It may also be inferred that the Commonwealth knew that the Torres Strait Islands, and Torres Strait Islanders, were particularly vulnerable to the impacts of climate change.

761 The inference that the Commonwealth was aware of the current impacts and likely future impacts of climate change in the Torres Strait Islands was supported by, among other things, the fact that the Commonwealth was aware of the contents of several reputable reports which detailed the impacts of climate change and the particular vulnerability of small low-lying islands and coastal areas, including the Torres Strait Islands. Those reports included: the

State of the Climate Reports published by the CSIRO and BOM in 2010, 2012 and 2014; a 2009 report produced by the Department of Climate Change and Energy Efficiency titled ‘*Risks from Climate Change to Indigenous Communities in the Tropical North of Australia*’ which referred specifically to Saibai; the TSRA’s Climate Change Strategy and Regional Adaptation and Resilience Plan (2016-2021); the IPCC’s Fifth Assessment Reports; the IPCC’s Special Report on the Ocean; the IPCC’s Special Report ; and the IPCC’s Sixth Assessment Reports.

762 In an address to the National Press Club in June 2022, the then Minister for Climate Change and Energy stated: “[w]e cannot forget that we have Australian citizens in the Torres Strait who are living with the impacts of climate change right now”. Perhaps more significantly, the Commonwealth Government’s *Annual Statement on Climate Change* for 2022 included the following statement:

Torres Strait Islanders are dealing with the acute impacts of climate change right now. Communities are experiencing sea level rises at approximately three times the rate of the global average, resulting in more frequent and severe inundation flooding events and accelerated coastal erosion. Higher temperatures and storm events create other challenges for community health, infrastructure, and services. Hotter and more frequent marine heatwaves are threatening locally and nationally significant fisheries, as well as culturally important species and ecosystems such as dugongs, turtles, coral reefs and seagrasses.

763 While that statement post-dates much of the period which is critical to the applicants’ case, the Commonwealth did not seriously dispute that it was, at all relevant times, aware of both the impacts of climate change on the Torres Strait Islands and the particular vulnerability of Torres Strait Islanders to those impacts.

ADAPTATION MEASURES AND THE SEAWALLS PROJECT

764 As outlined earlier, the applicants’ case in respect of the alleged alternative or adaptation duty of care ultimately focussed primarily on the funding of the Seawalls Project. They alleged, in effect, that to discharge its duty of care to protect Torres Strait Islanders from the impacts of climate change, the Commonwealth was required to provide adequate funding for the Seawalls Project and pay the approved funding for the Seawalls Project without delay. More generally, they alleged that the Commonwealth’s duty of care required it to “provide access to predictable funding ... that was sufficient to construct seawalls on the Torres Strait Islands” and “lead and coordinate and establish a coherent plan for the provision of funding for the protection of the Torres Strait Islanders from the adverse effects of sea level rise,

inundation and erosion through the construction of seawalls”. It is accordingly necessary to consider the facts and evidence concerning the Commonwealth’s involvement in, and funding of, the Seawalls Project.

765 As its name suggests, the Seawalls Project, in broad terms, was a project that involved the construction of seawalls on certain islands in the Torres Strait. It was funded by the Commonwealth and Queensland Governments and implemented by the TSIRC. The project commenced in 2011, though it was ultimately split into two stages. Under what turned out to be the first stage, the plan was to construct seawalls on Saibai, Boigu, Poruma, Iama, Masig and Warraber. As it turned out, however, only the seawall on Saibai, and some very minor works on Boigu and Poruma, were completed as part of that stage. Under the second stage, it was planned to complete the works on Boigu and Poruma and construct seawalls on Iama, Warraber and Masig. The seawalls on Boigu and Poruma were eventually completed as part of the second stage of the project, though those on Iama, Masig and Warraber were not.

766 The essence of the applicants’ complaint is that the construction of seawalls on Saibai, Boigu and Poruma took far too long to complete, and that the seawalls on Iama, Warraber and Masig are yet to be completed. The applicants contended, in essence, that the delays in the construction of those seawalls left those islands and their residents exposed to the impacts of climate change, in particular flooding and inundation from extreme sea level events. The applicants claimed that the delays in completing the project on Saibai, Boigu and Poruma, and the failure to complete the project on Iama, Warraber and Masig, were in large part due to the Commonwealth’s relative inaction and delays in funding, or taking a lead role in funding, the project. They contended that the Commonwealth did not have any coherent plan to fund the construction of seawalls and that the funding that was eventually provided was unpredictable, delayed and inadequate.

767 Before embarking on a more detailed consideration of the evidence concerning the Seawall Project, it should be noted that, technically speaking, a “seawall” is a wall, usually constructed using rocks, “seabee” blocks or “geobags” (essentially large sandbags), which is mainly designed and intended to defend coastal areas from erosion. In a more general sense, seawalls can be said to include “wave return walls” and “bunds”. A wave return wall is a concrete wall, usually built on top of or set back from a seawall, which is designed to protect coastal areas from flooding and inundation during extreme sea level events and storms. A “bund” is an embankment which is intended to operate as a flood mitigation defence. In

these reasons, the word seawall will be used in this more general sense and will include wave return walls and bunds unless it is necessary to be more specific in relation to the particular nature of the seawall in question.

768 Another point that should be emphasised is that it is important to bear in mind, when considering the chronology of events that occurred in respect of the Seawalls Project, the respective roles and responsibilities of the Commonwealth, State and Local governments when it came to the planning and implementation of climate change adaptation measures. The respective roles and responsibilities of the three tiers of government in respect of climate change adaptation were discussed at length earlier in these reasons.

769 The facts in relation to the Seawalls Project were mostly uncontroversial. Much of the evidence was documentary, though the Commonwealth adduced evidence from two witnesses who had some involvement in the funding and implementation of the project from the Commonwealth's perspective. Mr Christopher **Connolly** worked in the **Department** of Infrastructure and Regional Development and oversaw the assessment process for the competitive grants program pursuant to which the Commonwealth provided funding for the Seawalls Project. While he gave evidence concerning the grants and funding process, it would be fair to say that he had little, if any, independent recollection concerning the events relating to the funding of the Seawalls Project.

770 The other witness, Dr Shay **Simpson**, commenced work as an engagement officer within the National Indigenous Australians Agency (NIAA) in 2020 and was involved, in that capacity, in the management of grants to the TSRA in relation to the Seawalls Project. It would again be fair to say that much of his evidence was based on the documentary record, rather than personal recollection.

Seawalls Project Stage 1

771 In 2011, the Commonwealth announced a \$1 billion dollar fund called the Regional Development Australia Fund, which was created for the purpose of funding projects in regional Australia. The Regional Development Australia Fund was a competitive grants process administered by the Department. It followed the usual process that was applied to Commonwealth competitive grants programs. Under that process, the money that was available to the fund was distributed among funding applicants who met the criteria of the grants program as set out in the grant guidelines for that program.

- 772 The Seawalls Project was ultimately funded through the second round of the Regional Development Australia Fund under which \$200 million was available to be divided among successful applicants. Applicants for that funding were required to lodge an expression of interest with their local Regional Development Australia Committee. The Committees assessed the expressions of interest according to guidelines and identified three priority projects who were then invited to submit funding applications to the Department. The Department then assessed those funding applications against both eligibility and selection criteria. Among other things, the viability of the project was assessed, and relevant Commonwealth and State entities were consulted. The Department's assessment was in due course provided to an advisory panel which was tasked with considering the relative merits of each application and providing advice to the responsible Minister. It was the Minister who ultimately decided which projects to fund.
- 773 The TSIRC lodged an expression of interest with the Regional Development Australia Committee for Far North Queensland on 1 December 2011. That application was ranked within the top three expressions of interest and the TSIRC was accordingly invited to lodge a funding application with the Department. That application was lodged on 15 February 2012.
- 774 The TSIRC's funding application stated, among other things, that: the Seawalls Project would commence on 1 September 2012 and would be completed by 30 June 2015; the total cost of the Seawalls Project would be \$24 million; the TSIRC sought funding of \$5 million from round two of the Regional Development Australia Fund and that it had \$19 million in partner funding from the Major Infrastructure Program (an infrastructure program in the Torres Strait Islands jointly funded by the Commonwealth and Queensland Governments); and the project overall would be funded jointly by the Commonwealth and Queensland Governments, with each government funding 50% of the project.
- 775 In accordance with the process described earlier, the Department assessed the TSIRC's funding application. The Department's assessment was then considered by the advisory panel, along with the Department's assessment of other funding applications, in late April 2012. The advisory panel's recommendations were in due course sent to the Minister for decision. The Minister made his funding decisions on 31 May 2012. The TSIRC's funding application was successful.
- 776 It could scarcely be said that there were any unreasonable delays in the process up to this point. There was, however, a delay in the next step in the funding process, which involved

the Department entering into a funding agreement with the TSIRC. The Department and the TSIRC did not enter into a funding agreement in respect of the Seawalls Project until 11 April 2014 – a delay of 22 months.

777 In his evidence, Mr Connolly referred to several factors which he considered had contributed to that delay. First, before the funding agreement could be finalised, it was necessary for the TSIRC to prove that it would receive \$19 million in partner funding from the Commonwealth and Queensland Governments pursuant to the Major Infrastructure Program. The Queensland Government did not confirm that it would provide its share of that funding until January 2013. It should also be noted that the Commonwealth and Queensland Governments subsequently decided to provide that \$19 million in funding directly to the TSRA. Second, Mr Connolly's evidence was that there were concerns about the TSIRC's financial position which needed to be addressed before the funding agreement could be executed. The requisite assurances were not provided by the Department of Local Government of Queensland until January 2013. Third, it was necessary for the funding partners to agree on the governance arrangements for the project before the funding could proceed. The documentary record indicated that the governance arrangements were not agreed until February 2013. Fourth, it was necessary for the Department and the TSIRC to agree on the project "milestones and outcomes" before the funding agreement could be finalised. That appeared to take an inordinate amount of time. The documentary record indicated that correspondence in respect of that issue continued up to at least August 2013. Fifth, a federal election was called for September 2013 and the government went into caretaker mode, during which time the Department was not permitted to finalise the funding agreement.

778 The outcome of the September 2013 election was that a new government was elected. The election of the new government led to further delays. According to Mr Connolly, the incoming government took some time to consider whether, and if so how, it would provide the \$12 million in total of funding for the Seawalls Project that had been committed by the previous government. That funding included \$5 million from the Regional Development Australia Fund and \$7 million which was apparently to be drawn from the Indigenous Housing and Infrastructure Appropriation. The sticking point for the new government appeared to be where, from within the Commonwealth, the funds would be provided, not if they were to be provided. It was not until late February 2014 that the responsible Ministers agreed that \$7 million would be drawn from the Indigenous Housing and Infrastructure Appropriation and the remaining \$5 million, which was originally to come from the Regional

Development Australia Fund, would come from the Community Development Grants Programme, which was a non-competitive programme. Mr Connolly could not recall why the \$5 million funding came out of that programme.

779 I accept Mr Connolly’s explanation of the delay in the Commonwealth actually providing the \$5 million in funding that the TSIRC successfully applied for in respect of the Seawalls Project. That is not to say, however, that I accept that the delay was justified or reasonable in all the circumstances. While I would readily accept that the Commonwealth and its officers were justified in carefully scrutinising the governance and proposed administration of the project and otherwise exercising due diligence, much of the delay appeared to be the product of bureaucratic hand-wringing or political wrangling. The funding of the project appears not to have been approached with any degree of urgency or haste, despite the fact that it was well known that the Torres Strait Islands and their inhabitants were particularly vulnerable to the impacts of climate change and had already been impacted by what might reasonably be inferred were climate change related flooding and inundation events. In fairness to the Commonwealth, however, it must be said that at least some of the delay appears to have been caused by the Queensland Government and bureaucracy.

780 The TSIRC was responsible for the implementation of the Seawalls Project. It received a total funding of \$26.2 million for the project. Of that funding, \$19 million was provided by the Commonwealth and Queensland Governments. The Commonwealth contributed \$7 million of that funding out of the Indigenous Housing and Infrastructure Appropriation and the Queensland Government provided \$12 million. The \$19 million component of the funding was managed by the TSRA as trustee for the Major Infrastructure and Other Projects Trust Fund and was the subject of a funding agreement between the TSRA and TSIRC. That funding agreement provided that the TSIRC was the project manager and was “fully responsible” for the project. The TSRA also provided \$2.2 million in funds for the project.

781 The remaining \$5 million of funding was provided by the Commonwealth under the Community Development Grants Programme. The provision of that funding was the subject of a separate funding agreement between the Department and the TSIRC. As noted earlier that funding agreement was entered into in April 2014. It provided, among other things, that the Department was not responsible for providing any further funding for the project and that the TSIRC was required to take all reasonable steps to minimise delay in the completion of the project. The money provided under the funding agreement was transferred to the TSRA

(as trustee for the Major Infrastructure and Other Projects Trust Fund) in November 2015, with the result that all the funding for the Seawalls Project at that stage was effectively administered under the agreement between the TSRA and the TSIRC.

782 All of the works that were planned to be constructed on Saibai at this stage of the project were in due course completed. A wall near the cemetery was constructed by the TSIRC and completed in June 2015. A seawall and bund were constructed by private contractors. They were completed in May 2017 and certified in June 2017.

783 Of the works planned for Boigu under this stage of the project, only the upgrade of the drains, some repairs to the existing bund and seawalls, and the rebuilding of a rock armour seawall near the boat ramp were completed. Practical completion of those works was achieved in November 2017. The other works planned under the project, including the construction of a wave return wall, the reconstruction of a jetty and barge ramp, and the repair and extension of a bund wall, were not completed.

784 The only work completed on Poruma under this initial stage of the project involved some emergency sandbagging which was considered necessary to protect certain infrastructure on the island. The other planned works on Poruma, including “emergency coastal infrastructure repairs and seawall and erosion control”, were not constructed. None of the works that had been planned for Iama, Masig and Warraber under the project were constructed.

785 The inference available from the evidence is that the planned works on Boigu, Poruma, Iama, Masig and Warraber were not completed essentially because all the available funding had been expended on Saibai and the initial works on Boigu, though some documents characterised this as a reduction in the scope of the project. In late 2017, the Minister for Indigenous Affairs asked the TSRA to commission an independent review and evaluation of the project. It is clear that the Minister wanted to understand how the funding had been spent before considering whether any further funding should be provided for the project. The evaluation report prepared by independent advisers was completed in April 2018.

Seawalls Project Stage 2

786 Shortly after the completion of the evaluation report, the TSRA provided the Minister for Indigenous Affairs with a summary of the report’s findings and asked the Commonwealth to match the Queensland Government’s commitment to provide further funding for the Seawalls

Project. That request was repeated in June 2018, by which time the Queensland Government had formally announced that it would provide a further \$20 million in funding for the project.

787 By late August 2018, pressure on the Commonwealth to provide further funding for the project was escalated when the Premier of Queensland wrote to the Prime Minister with a request that the Commonwealth match Queensland's commitment to provide a further funding commitment of \$20 million. That request appears to have prompted the Department of Prime Minister and Cabinet to brief the Minister for Indigenous Affairs about the request in October 2018 and again in March 2019. The latter brief recommended that the Minister approve a funding contribution of \$20 million to the TSRA via a non-competitive grant. The Minister was advised that the project and funding request had been assessed against the criteria in the Indigenous Advancement Strategy Grant Guidelines.

788 The Minister did not accept that recommendation. Instead, in April 2019, he approved the provision of a total of \$12 million to the second stage of the Seawalls Project. Of that amount, \$5 million was to be provided to the TSRA and \$7 million was to be provided to the Gur A Baradharaw Kod Torres Strait Sea and Land Council (**GBK**). Before that funding was provided, however, a federal election was called and a new government was elected.

789 In July 2019, the new Minister for Indigenous Affairs was briefed by the National Indigenous Australians Agency about the second stage of the Seawalls Project. The brief noted, among other things, that the Agency was negotiating with the GBK and was considering whether the GBK had the technical capability to manage the project. It is not entirely clear what happened in the following months. In mid-December 2019, however, the Minister approved the provision of \$20 million funding to the Seawalls Project Stage 2.

790 There were two funding agreements in respect of the Seawalls Project Stage 2. The first was an agreement between the Commonwealth and the TSRA which provided for a total of \$20 million in funding to be provided for the project subject to the TSRA reaching certain milestones. The second was an agreement between the TSRA and the TSIRC. That agreement provided that the TSRA would provide the TSIRC with a maximum of \$40 million in funding, being the combined funding provided by the Commonwealth and Queensland Governments.

791 There was evidence which indicated that, like the first stage of the project, the Seawalls Project Stage 2 was impacted by cost overruns. Those cost overruns were said to have

largely been the product of cost increases in the construction industry. The evidence indicated that the project governance committee that oversaw the administration of the project, which included representatives of the Queensland Government, the TSRA, the TSIRC and others, considered and sought advice about reducing the scope of the project in light of the cost overruns. The evidence, such as it was, indicated that by May 2023 it had been decided to reduce the scope of the Stage 2 planned projects on Iama, Masig and Warraber. That decision appeared to be based on advice received from the external program manager of the Seawalls Project Stage 2 and advice provided by an external engineering consultant that specialised in coastal, port and marine projects.

Status of the Seawalls Project

792 It is necessary to briefly address the status of the Seawalls Project on the six islands upon which seawalls related work was, or was to be, carried out.

Saibai

793 A seawall designed to protect the cemetery was completed in June 2015 as part of the Stage 1 works. A 2.2 kilometre rock seawall along the township foreshore was completed as part of the Stage 1 works in May 2017, as was construction of an earth bund. The initial budget for the works was \$20.3 million. The actual cost of the works was \$23.8 million. The main reason for the cost overrun was identified (somewhat unhelpfully) as “price escalation”.

Boigu

794 As has already been noted, the works that were initially planned for Stage 1 on Boigu were downgraded. The planned Stage 1 works included the construction of a wave return wall, reconstruction of the jetty and barge ramp areas, and the raising and repair of a bund behind the township. The initial budget for those works was estimated at \$2.6 million, however by March 2016 that estimate had increased to at least \$6 million. The scope of the Stage 1 works was subsequently downgraded to include only upgrades to the existing seawall and bund and upgraded drainage. Those works were completed in November 2017 at a cost of \$2.4 million.

795 The main Stage 2 works for Boigu included the construction of a new wave return wall, earthworks to raise and extend the existing bund, stormwater drainage and construction of new rock armour seawalls or reconstruction of existing failed seawalls. Those works were completed within budget in March 2022 at a cost of \$14.3 million.

Poruma

796 The Stage 1 planned works for Poruma comprised emergency coastal infrastructure repairs and seawall erosion control. The planned works on Poruma were, however, downgraded largely as a result of the increased cost of the works on Saibai. The only work in fact completed on Poruma as part of Stage 1 involved the provision of emergency sandbagging to protect infrastructure in 2015 and 2016 at a cost of \$238,000.

797 The planned State 2 works on Poruma included sand stockpiling, the installation of geotextile sandbag seawalls at four locations and alteration of an existing groyne. Those works were completed within budget in November 2022 at a total cost of approximately \$4 million.

Iama

798 The Stage 1 planned works for Iama included a rock wall upgrade, a bund or wave return wall and the raising of a boat ramp. That work was not completed. The Stage 2 planned works which remained after the decision to reduce the scope of the project essentially comprised sand stockpiling and the construction of a wave return wall (reduced from approximately 2,100 metres to approximately 349 metres in length). The budget for those works was approximately \$8.6 million. As at September 2023, the works were at a “pre-construction phase”.

Warraber

799 The Stage 1 planned works for Warraber included the extension of the existing seawall. The budget for those works was \$1.2 million, however the work was not completed as part of Stage 1. The Stage 2 planned works on Warraber which remained after the decision to reduce the scope of the project essentially comprised sand stockpiling and the installation of a geotextile sandbag seawall (approximately 295 metres long) at a budget of \$7 million. Those works had not commenced as at September 2023.

Masig

800 The Stage 1 planned works for Masig comprised sand replenishment and berm restoration. The budget for those works was \$200,000, however the work was not completed as part of Stage 1. The Stage 2 planned works on Masig which remained after the decision to reduce the scope of the project essentially involved sand stockpiling and the installation of geotextile sandbag seawalls at four locations (totalling approximately 1.1 kilometres in length) at a budget of \$6 million. Those works had not commenced as at September 2023.

Was the Commonwealth’s funding of the Seawalls Project inadequate or insufficient?

801 As discussed in more detail later, the applicants’ case in respect of the Commonwealth’s alleged breach of the alternative or adaptation duty of care ultimately hinged on the proposition that the construction of the necessary or appropriate seawalls on Saibai, Boigu and Poruma was delayed, and the construction of the necessary or appropriate seawalls on Iama, Warraber and Masig has not occurred, because of inadequacies and deficiencies in the Commonwealth’s approach to the funding of those projects. The applicants alleged, in effect, that the consequent delay in the construction of effective and appropriate seawalls on those six islands caused or contributed to the loss and damage suffered by Torres Strait Islanders on those islands as a result of inundation events that occurred during the period of the delay. Those allegations are considered in more detail later. It is, however, useful at this stage to briefly address the purely factual question of whether the construction of the seawalls on those islands was delayed by any issues relating to the funding of the projects and, if so, whether the delays were caused by, or contributed to, by any unreasonable actions or inaction on the part of the Commonwealth.

802 The applicants contended that the Commonwealth’s funding of seawalls on the Torres Strait Islands was deficient or inadequate in a general sense because the Commonwealth did not “lead and coordinate” the funding and did not have any “coherent plan” which clearly identified its role in funding seawalls in the Torres Strait, the source of that funding, and the amount of funding available. The funding that was originally to be provided under the Regional Development Australia Fund was said to be unpredictable because that fund was a competitive fund and that the provision of the funding was contingent on the Queensland Government matching the Commonwealth’s funding. The funding was also said to be inadequate.

803 The overall suggestion appeared to be that it was somehow unreasonable for the TSIRC to have to apply for Commonwealth funding under the competitive Regional Development Australia Fund, or that the processes or procedures that were required for the provision of funding under that fund were somehow unsatisfactory, or that, even though the funding application was entirely successful, the funding that was provided was nevertheless somehow deficient, inadequate or unsatisfactory. The applicants also contended that that there were unreasonable delays in the provision of the funding.

804 I have some difficulty understanding those contentions and even more difficulty in accepting them.

805 As the earlier summary of the evidence indicates, the Seawalls Project was initiated and effectively implemented by the TSIRC. The TSIRC first lodged an expression of interest for funding from the Commonwealth for that project under the Regional Development Australia Fund in December 2011. It ultimately secured *all* the funding it had sought from the Commonwealth for that project, though it did take some considerable time for the funding agreement to be finalised. While the Commonwealth funding was initially approved under a competitive grants process, it was ultimately provided under a non-competitive programme.

806 The Seawalls Project was not able to be completed within budget. The initial funding provided by the Commonwealth and Queensland Governments turned out to be insufficient to complete all the planned works. That necessitated the Seawalls Project Stage 2. The Commonwealth ultimately provided *all* the funding that was sought from it for that second stage of the project. That funding matched the funding provided by the Queensland Government. Again, however, the project was not able to be completed within budget.

807 The applicants' case appeared to be that, if the Commonwealth had put in place a plan for the provision of funding for seawalls in the Torres Strait Islands that involved some process other than the TSIRC applying for funding of a specified amount under a grants program like the Regional Development Australia Fund, more funding would have been provided by the Commonwealth and that funding would have been provided sooner than it was. The suggestion appeared to be that, if such a plan had been in place, the Commonwealth could and should have provided funding for the project even before the TSIRC made a request for that funding, or that the TSIRC would have applied for Commonwealth funding earlier than it did, or that the TSIRC would have applied for more Commonwealth funding than it did, or that the Commonwealth funding would have been provided sooner than it was.

808 Even putting to one side the broader question of whether the Commonwealth was required to put in place any such amorphous plan by virtue of a duty of care it allegedly owed to Torres Strait Islanders, I am unable to accept that there was any, or any sufficient, evidence capable of establishing any of those matters.

809 It is in my view somewhat fanciful to suggest that the Commonwealth could, or should, have provided the TSIRC with funding for seawalls before any funding request was made. I am

unable to see how it could be said to be unreasonable for the Commonwealth to have expected the TSIRC to request or apply for funding for seawalls, either pursuant to an established grants process like the Regional Development Australia Fund or otherwise. As for the apparent suggestion that the TSIRC would have sought funding from the Commonwealth prior to December 2011 if there had been some other plan in place, the only evidence that indicated that the TSIRC had sought funding for coastal protection at some earlier point in time was a minute of a meeting of the Torres Strait Coastal Management Committee held on 23 November 2011, shortly before the TSIRC lodged its expression of interest. That document included the following note:

TSRA in collaboration with TSIRC and TSC have made various submissions to government seeking funds to address erosion and inundation issues in the region, but as yet the required funding has not yet been secured. Submissions include:

- Applications under the Natural Disasters Mitigation Program (2007)
- A submission to the House of Representatives Standing Committee on Climate Change, Water, Environment & the Arts: Inquiry into climate change and environmental impacts on coastal communities (2008)
- [sic]
- A submission to the Senate Standing Committee report on Torres Strait: Bridge and Border 2010.

810 There was, however, no evidence about the dates on which any of the applications or submissions adverted to in that note were made, and no evidence concerning the content of any those applications or submissions, or the precise nature and extent of the funding that had been sought, or the reasons why that funding had not been provided by the Commonwealth. In any event, if anything, the note suggested that the TSIRC had previously applied for Commonwealth funding to address “erosion and inundation issues” even though, at least on the applicants’ case, the Commonwealth did not have any other “coherent plan” in respect of the funding of such projects. There is nothing to suggest that the TSIRC was prevented or inhibited in any way from seeking funding from the Commonwealth because of the absence of any such coherent plan. It follows that the note provides no support for the applicants’ case.

811 There was also no evidence to suggest that the TSIRC had sought less funding than it would otherwise have sought from the Commonwealth if the Commonwealth had put in place some other system, process or plan for the provision of finance other than the grants processes that it had in place, including the competitive grants process under the Regional Development

Australia Fund. There is no suggestion that the Commonwealth placed any constraint or limit in respect of the amount of funding that could be sought by the TSIRC, or that the TSIRC believed that it was subject to any constraint. It was entirely up to the TSIRC to nominate the amount of funding that it sought from the Commonwealth.

812 It may be accepted that the amount of funding sought by the TSIRC turned out to be inadequate or insufficient to complete all the planned seawall projects within time. As discussed earlier, only the works on Saibai were completed as part of Stage 1 of the project and only the works on Boigu and Poruma were completed as part of Stage 2. The works on Iama, Warraber and Masig have still not been completed. The fact remains, however, that the Commonwealth provided all the funding that the TSIRC sought from it in respect of both stages of the project. The fact that the funding turned out to be inadequate was, if anything, a result of the fact that the TSIRC appears to have underestimated the extent and cost of the overall project, or that the project simply ran over budget. I am unable to see how it could be concluded that the inadequacy of the funding that was provided by the Commonwealth and Queensland Governments was somehow the result of the failure of the Commonwealth to have in place a plan of the sort contended by the applicants. It could scarcely be said that the Commonwealth should have provided, or undertaken to provide, unlimited funding for the project.

813 The applicants' contention that the Commonwealth otherwise unreasonably delayed the provision of finance pursuant to the TSIRC's expression of interest and funding application requires slightly closer consideration. The applicants relied, in that regard, on the fact that the TSIRC lodged its expression of interest on 11 December 2011 and yet the funding agreement was not finalised and executed until 11 April 2014 – a delay of almost two and a half years. The evidence concerning the reasons for the delay was discussed in detail earlier. As I observed earlier in that context, I would accept that the evidence indicated that the TSIRC's application for funding was perhaps not approached with the degree of urgency or haste that might reasonably have been expected given what was known about the vulnerability of Torres Strait Islanders to the impacts of climate change. It was, however, not inappropriate or unreasonable for the Commonwealth and its officers to have carefully scrutinised and performed appropriate due diligence in respect of the funding application and the project for which funding was sought. Perhaps more significantly, at least some of the delay was the result of inaction on the part of the Queensland Government and some of the delay was reasonably explicable on the basis of a change in government.

- 814 I am ultimately not persuaded that the delay in the finalisation of the funding agreement and the provision of funding was solely attributable to the Commonwealth, or that the delay that can be attributed to the Commonwealth was unreasonable.
- 815 I am similarly not persuaded that the provision of funding by the Commonwealth in respect of Stage 2 of the Seawalls Project was delayed by any unreasonable action or inaction on the part of the Commonwealth. As discussed earlier, the evidence, such as it was, concerning the funding of Stage 2 indicated that additional funding from the Commonwealth was not sought until about April or May 2018 and the funding agreement was ultimately signed in December 2019. While that would at first blush appear to be a fairly lengthy delay, it is necessary to have regard to a number of contextual considerations, including that: the additional funding was required because the funding that had initially been sought by the TSIRC to complete the project had turned out to be inadequate; the additional funding sought from the Commonwealth (\$20 million) was substantial and therefore required reasonable scrutiny and due diligence; the Stage 2 funding again involved the Queensland Government; and there was again a change in government at the federal level during the period in which the provision of funding was under consideration.
- 816 I am, in all the circumstances, unable to accept that there were any material inadequacies or deficiencies in the overall approach that the Commonwealth took in respect of the funding of the Seawalls Project. I do not consider that it was unreasonable for the Commonwealth to expect that the TSIRC would apply for funding for the construction of seawalls through one of its existing grants or funding schemes, like the Regional Development Australia Fund. In any event, I am unable to accept that, if the Commonwealth had put in place some other plan or process or scheme in respect of the funding of the construction of seawalls in the Torres Strait Islands, the TSIRC would have applied for funding for the Seawalls Project any earlier than it did, or that it would have applied for more funding, or that the funding would have been provided sooner than it ultimately was. I also do not consider that the Commonwealth acted unreasonably in assessing the TSIRC's application for funding through a transparent, competitive grants process. While as events transpired various delays were encountered during the assessment, approval and finalisation of the funding agreement pursuant to the process, I am not persuaded that those delays were solely attributable to the Commonwealth or that the delays were, in all the circumstances, unreasonable.

Adequacy and effectiveness of the seawalls that have been constructed

817 This issue can be addressed briefly. Some of the evidence adduced by the applicants tended to suggest that it was the applicants' case that the seawalls that were constructed on Saibai and Boigu were inadequate or ineffective to prevent all inundation or flooding during extreme sea level or weather events. It is, however, unnecessary to address that evidence. That is because, even if the evidence did establish that the seawalls that were constructed were inadequate or ineffective, the applicants did not ultimately contend that the blame for that could be attributed to any action, inaction or want of care on the part of the Commonwealth.

THE APPLICANTS' PRIMARY OR TARGETS CASE

818 As is clear from the earlier consideration of the principles that apply in respect of the tort of negligence, for the applicants to establish that the Commonwealth is liable to them in the tort of negligence, they must establish: first, that the Commonwealth owed them (and more broadly Torres Strait Islanders) a duty of care; second, the Commonwealth breached that duty of care; and third, the Commonwealth's breach of its duty of care caused the applicants compensable loss or damage. The applicants' primary case was that the Commonwealth owed them (and Torres Strait Islanders more generally) a duty of care which, broadly speaking, required it to both identify an emissions reduction target which, based on the best available science, would prevent or minimise the impacts of climate change on the Torres Strait Islands and implement measures to reduce Australia's greenhouse gas emissions so as to meet that target. That alleged duty of care will generally be referred to in these reasons as the **primary or targets duty or targets duty of care**.

819 The first question that must be addressed is whether, having regard to all the relevant facts and circumstances, it can be concluded that the Commonwealth owed Torres Strait Islanders the targets duty of care.

Did the Commonwealth owe a duty of care to set an emissions target based on the best available science?

820 While the general nature and scope of the alleged targets duty has been outlined earlier, it is necessary to closely consider the precise way in which that duty of care was pleaded and particularised by the applicants. That is all the more so given that the Commonwealth, perhaps not surprisingly, raised several issues concerning the applicants' pleading of the duty. The complexity of the pleading perhaps also highlights some of the difficulties involved in

formulating and imposing on the Commonwealth a realistic, rational or sensible duty of care in respect of the setting of greenhouse gas emissions reduction targets. While it might seem, at least at first blush, to be reasonable to impose some sort of duty of care on the Commonwealth to protect vulnerable communities, like those on the Torres Strait Islands, from the ravages of climate change, the devil is very much in the detail when it comes to formulating the duty.

The nature and scope of the alleged duty of care

821 The applicants’ pleading in respect of the targets duty of care is complex and convoluted. As noted earlier, the complexity is exacerbated by the unfortunate (though regrettably common) use of the pleading device which involves the use of defined terms, many of which in turn use defined terms. The excessive use of defined terms in a pleading often makes it somewhat opaque and even impenetrable. That regrettably is the case with the applicants’ pleading.

822 The terms of the alleged targets duty of care is initially framed at a very high level of abstraction. The allegation is (3FASOC at [81]):

Accordingly, by reason of the above matters, the Commonwealth owes a duty to Torres Strait Islanders, including the Applicants and the Group Members, to take reasonable steps to:

- (a) protect Torres Strait Islanders; and/or
- (b) protect Torres Strait Islanders’ traditional way of life, including taking steps to preserve *Ailan Kastom*; and/or
- (c) protect the marine environment in and around the Protected Zone, including the Torres Strait Islands;

from the Current and Projected Impacts of Climate Change in the Torres Strait Islands (**Duty of Care**).

823 Because the alleged targets duty is expressed at such a high level of abstraction, it is necessary to have regard to other factual allegations in order to ascertain the nature and extent of the alleged duty.

824 The “above matters” which are said to support the imposition of this alleged duty of care appear to comprise seven key allegations that are outlined earlier in the pleading. The capitalised words or expressions in the following summary of those allegations are words or expressions that are defined in the pleading. The seven key allegations are as follows.

825 First, Torres Strait Islands are vulnerable to the Current and Projected Impacts of Climate Change in the Torres Strait Islands: 3FASOC [61].

826 Second, the degree of harm to Torres Strait Islands from Climate Change is “extremely
significant”: 3FASOC [62].

827 Third, Torres Strait Islanders have rights and interests possessed under traditional laws and
customs, recognised by the common law of Australia, which create a unique connection with
the land and waters of the Torres Strait Islands: 3FASOC [62A].

828 Fourth, the unique connection of Torres Strait Islanders to the land and waters of the Torres
Strait Islands is vulnerable to the Current and Projected Impacts of Climate Change in the
Torres Strait Islands: 3FASOC [62B].

829 Fifth, Torres Strait Islanders cannot protect themselves from, or sufficiently mitigate, the
harms associated with the Current and Projected Impacts of Climate Change in the Torres
Strait Islands: 3FASOC [63].

830 Sixth, since at least 2014 the Commonwealth has had control over, and the power or ability to:
set and meet a Best Available Science Target to hold Global Temperature Increase to the
Global Temperature Limit; otherwise prevent or minimise further Global Temperature
Increase by reducing the Commonwealth’s Own Emissions, so as to minimise or reduce the
likely Current and Projected Impacts of Climate Change in the Torres Strait Islands; and
control greenhouse gas emissions through existing statutes and regulations: 3FASOC [76].

831 Seventh, that the Commonwealth knew or ought reasonably to have known: the Current and
Projected Impacts of Climate Change; the Current and Projected Impacts of Climate Change
in the Torres Strait Islands; the Global Temperature Limit; the need to prevent further Global
Temperature Increase and to limit Global Temperature Increase to the Global Temperature
Limit, in order to minimise the Current and Projected Impacts of Climate Change in the
Torres Strait Islands; the Best Available Science regarding the measures, including
greenhouse gas emissions reductions, required to prevent further Global Temperature
Increase and to limit Global Temperature Increase to the Global Temperature Limit; and that
Torres Strait Islanders were vulnerable to the consequences of the failure of the
Commonwealth to take reasonable measures to prevent or minimise further Global
Temperature Increase and limit Global Temperature Increase to the Global Temperature
Limit, including by setting and meeting a Best Available Science Target: 3FASOC [77], [78]
and [79].

- 832 These key allegations are discussed in more detail later in the context of the so-called salient features analysis.
- 833 As can be seen, the pleaded duty of care employs a bewildering array of defined words and terms. The defined meaning of most of the key expressions were summarised earlier in these reasons when considering the common questions. It is unnecessary for present purposes to repeat what was said there. It is sufficient in this context to highlight four defined terms which are critical to understanding the sixth and seventh key allegations.
- 834 The Current and Projected Impacts of Climate Change in the Torres Strait Islands are defined to include, in short summary: higher average surface temperatures; ocean acidification and higher ocean temperatures; sea level rises and consequential impacts, including flooding and coastal erosion; the increase in frequency, size and intensity of extreme weather events such as terrestrial and marine heatwaves, and severe storms and flooding; harm and destruction of ecosystems and non-human species; and harm to human health. As discussed earlier in these reasons, it is essentially uncontroversial that the Torres Strait Islands have experienced those impacts of climate change. The evidence concerning the impacts of climate change on the Torres Strait Islands was in any event compelling and largely unchallenged.
- 835 The Projected Impacts of Climate Change in the Torres Strait Islands are defined to include, in essence, the impacts of Climate Change (defined earlier) that are projected to occur in the Torres Strait Islands if Global Temperature Increase (the increase in global average surface temperature above pre-industrial levels) exceeds the Global Temperature Limit.
- 836 The Global Temperature Limit is defined as meaning, in effect, holding the long-term Global Temperature Increase to below 1.5°C. The impacts of climate change that will occur if the increase in global average surface temperature above pre-industrial levels is not limited to 1.5°C are alleged (by virtue of the definition) to include, in summary: the further increase in average surface temperature; further ocean acidification and increases in ocean temperature; further sea level rise and associated impacts, including inundation, erosion, and contamination of freshwater sources; further increase in the number of intense tropical cyclones, and incidence, intensity and duration of other extreme weather events, such as heatwaves, severe storms and flooding, and associated impacts such as personal injury, property damage, erosion, and impacts to infrastructure, emergency services facilities and roads; further harm and destruction of ecosystems and non-human species, including coral reefs, marine ecosystems and species and mangroves and coastal wetlands; and the greater

likelihood of injury, disease, and death due to extreme weather events, increased likelihood of undernutrition resulting from diminished food production, and increased risks from food and water borne diseases and vector-borne diseases.

837 The term Best Available Science Target is defined in the pleading by reference to several other defined terms. In summary, however, it means an emissions reduction target set by a country which, based on the best available science, will reduce that country's greenhouse gas emissions in a specified time period to a level which will limit global temperature increase to a specified level.

838 If the key allegations and defined terms are unpacked and simplified, the central allegation against the Commonwealth which appears to underly the alleged targets duty of care is that the Commonwealth had both the knowledge and ability to set greenhouse gas emissions reduction targets for Australia which, having regard to the best available science, would see Australia play its part in limiting global temperature increase to 1.5°C above pre-industrial levels and thereby prevent or minimise the prospect of Torres Strait Islanders suffering the more serious projected impacts of climate change in the future.

839 It is also necessary, in order to ascertain the nature and extent of the alleged targets duty, to have regard to the nature and extent of the "reasonable steps" the duty allegedly required the Commonwealth to take in order to protect Torres Strait Islanders, their way of life, and their surrounding marine environment, from the impacts of climate change. Those reasonable steps are identified in the applicants' pleaded allegations concerning the standard of care and the breach of the duty of care.

840 The alleged standard of care is framed in the pleading in the following terms (3FASOC at [82]):

At all material times since at least 2014, the Commonwealth's Duty of Care to protect Torres Strait Islanders, including the Applicants and the Group Members, from the Current and Projected Impacts of Climate Change in the Torres Strait Islands, required it to take reasonable steps to ensure that, having regard to the Best Available Science, it:

- (a) identified the Current and Projected Impacts of Climate Change in the Torres Strait Islands;
- (b) identified the risk, scope and severity of Current and Projected Impacts of Climate Change in the Torres Strait Islands;
- (c) identified the Global Temperature Limit necessary to prevent or minimise many of the most dangerous Current and Projected Impacts of Climate

Change to small and low lying islands, such as the Torres Strait Islands;

- (d) identified a Best Available Science Target reflecting the Global Temperature Limit identified at sub-paragraph (c) above to prevent or minimise the Current and Projected Impacts of Climate Change in the Torres Strait Islands; and
- (e) [deleted]
- (f) implemented such measures as are necessary to reduce Australia's GHG emissions consistent with the Best Available Science Target identified at subparagraph (d) above.
- (g) [deleted]

841 As can be seen, the alleged standard of care incorporates and employs many of the key defined terms which have been explained earlier, including the Global Temperature Limit and the Best Available Science Target. If the complex drafting is unpacked and simplified, the “reasonable steps” that the alleged targets duty of care required the Commonwealth to take to protect Torres Strait Islanders included, in essence, the identification of an emissions reduction target which, having regard to the best available science, would hold average global temperature increases to below 1.5°C above pre-industrial levels and thereby prevent or minimise the most dangerous impacts of climate change in the Torres Strait Islands. Despite the plethora of defined terms in the pleading, there is no definition or particularisation of the “most dangerous” impacts of climate change. It may be noted that the alleged standard of care only required the Commonwealth to “identify”, not set or communicate (to, for example, the UNFCCC) the “Best Available Science Target”. Nevertheless, the parties essentially proceeded on the basis that the standard of care involved the setting of emissions reduction targets.

842 Importantly, the reasonable steps that the Commonwealth was allegedly required to take to discharge the targets duty of care also included the implementation of such measures as were necessary to reduce Australia's greenhouse gas emissions consistent with the identified emissions reduction target. I will refer to that allegation as the implementation element of the standard of care. More will be said later concerning the implementation element of the alleged standard of care. It suffices at this point to note that the applicants appeared to allege that the implementation measures included action pursuant to various existing statutes and regulations. It is also important to emphasise that it is only alleged that the Commonwealth was required to take those reasonable steps “since at least 2014”.

843 The breach of the alleged duty of care is pleaded as follows (3FASOC at [83]):

Negligently, and in breach of the Duty of Care owed to Torres Strait Islanders, including the Applicants and the Group Members, the Commonwealth has failed to take any, or any reasonable, steps identified at paragraph 82.

Particulars

The Commonwealth failed to take any, or any reasonable, steps identified at paragraph 82 in regard to:

- (i) Australia's 2030 Target;
- (ii) Australia's Re-affirmed 2030 Target;
- (iii) Australia's 2050 Target;
- (iv) Australia's Updated 2030 Target.

844 The three targets identified in the particulars were the NDC targets discussed in detail earlier, namely the NDC target set in 2015, the NDC update in 2020, the NDC update in 2021 and the NDC update in 2022. The essence of the allegation of breach, therefore, would appear to be that the four NDC targets which were set and communicated by the Commonwealth were not targets which, having regard to the best available science, would hold (or perhaps were not consistent with holding) average global temperature increases to below 1.5°C above pre-industrial levels and thereby prevent or minimise the most dangerous impacts of climate change in the Torres Strait Islands. Importantly, it is not alleged that the Commonwealth breached the implementation element of the duty or standard of care.

845 It should perhaps also be noted in this context that the alleged duty of care, as framed by the applicants in their pleading, is not only expressed at a very high level of abstraction, but also is deficient in that it does not frame the duty of care by reference to the kind of damage that the applicants and other Torres Strait Islanders have suffered: cf *Heyman* at 487 (Brennan J); *Brookfield* at [196] (Gageler J). Nevertheless, it is apparent from the applicants' pleaded case that the harm that the applicants allege was suffered by Torres Strait Islanders as a result of the breach of duty included personal injury, property damage and the loss of Ailan Kastom suffered as a result of the impacts of climate change on the Torres Strait Islands.

Should the imposition of the alleged duty of care be rejected because it concerns matters of high or core government policy?

846 A key threshold issue in determining whether the Commonwealth owed the applicants and other Torres Strait Islanders the alleged targets duty of care is whether the alleged duty concerns decisions or conduct of the Commonwealth in respect of matters of core or high government policy or policymaking, or matters involving political judgment, or the exercise

of quasi-legislative powers, such that it would be inappropriate or impractical for the Court to pass judgment in respect of the reasonableness or otherwise of the Commonwealth's decisions or conduct in that regard. The relevant principles in respect of this threshold issue were discussed at length earlier in these reasons.

847 The applicants submitted that it is more appropriate to consider whether the Commonwealth's actions involved questions of government resource allocation and competing policy imperatives at the standard of care or breach stage of the inquiry. That approach was said to be consistent with the approach taken by Beach J in *Sharma*. In the applicants' submission, dealing with that issue at the duty of care stage of the inquiry would "put the cart before the horse" and would "assume that any decision to act (or not to act) raises policy concerns before an analysis is undertaken, by reference to the evidence, as to what matters would in fact be relevant to such a decision". That would, so it was said, mean that "justiciability issues" would be determined in the abstract. The applicants also characterised the determination of this issue at the duty stage as amounting to a grant of immunity which would, so it was submitted, effectively prevent the Court from giving any consideration of the governmental conduct in question and would thereby result in a "dangerous limit on executive accountability".

848 I reject those submissions. I do not accept that it would be more appropriate to defer the consideration of this question to the standard of care or breach stages of inquiry. While that may be appropriate in some cases, this is not such a case. The question whether the alleged duty of care raises or involves questions of policy or political judgment, such that it would be inappropriate or impractical to impose that duty and subject it to the judgment of the Court, is squarely raised by the way in which the alleged duty of care is framed in the applicants' pleading. The authorities to which detailed reference was made earlier in these reasons, in particular *Graham Barclay Oysters* and *Sharma*, clearly indicate that in some cases the question can and should be addressed at the duty stage, rather than at the breach stage. That is because there are some cases where it is apparent from the very nature of the alleged duty of care that the imposition of the duty would require the Court to consider and determine the reasonableness of government conduct involving matters of policy choice, or policymaking or political judgment. This is such a case.

849 That is not to put the cart before the horse, as the applicants contended. Nor does it mean that the analysis of whether it would be inappropriate to impose the alleged duty because it

involves matters of policy or politics would be determined in the abstract. The issue will be determined having regard not only to the way the duty of care is framed in the applicants' pleading, but also having regard to the facts and circumstances of the case as established by the evidence. As has already been noted, much of the evidence relevant to the alleged targets duty was not significantly contested and many of the key facts and circumstances were largely uncontroversial.

850 I also consider that it is inapposite to characterise this issue as one involving the grant of immunity. As Allsop CJ observed in *Sharma* (at [238]), a finding that some government conduct is not amenable to the imposition of a duty of care is “not an abrogation of judicial responsibility or the adoption of some governmental immunity”, but rather it is to “recognise that decisions that involve certain types of policy ... may be made by government in its decision-making role in the interests of the polity which cannot be judged by a legal standard or the consideration of which cannot be reliably made in a curial environment of private litigation”.

851 As for the approach taken by Beach J in *Sharma*, putting to one side the fact that both Allsop CJ and Wheelahan J took a different approach, it is apparent that Beach J's reasons for determining that the consideration of policy considerations could be adequately dealt with at the breach stage turned on the nature of the exercise of power in question in that case. The exercise of power in issue in *Sharma* was the exercise of a statutory power and Beach J reasoned (at [633]) that “policy is no answer to denying the duty unless the Act itself makes such policy questions so fundamental to the exercise of statutory power that such a conclusion is compelling”. This case is distinguishable from *Sharma* because it does not involve the exercise of any specific statutory power. The reasoning of Beach J in *Sharma* is accordingly inapplicable to the circumstances of this case. In any event, I would prefer the approach of Allsop CJ and Wheelahan J in respect of this issue.

852 The nature and scope of the targets duty of care that the applicants contended the Commonwealth owed Torres Strait Islanders was discussed in detail earlier. There could, in my view, be no doubt whatsoever that, to use the words of Allsop CJ in *Sharma* (at [7]), “the posited duty throws up for consideration at the point of breach matters that are core policy questions unsuitable in their nature and character for judicial determination”. While courts have often grappled with the somewhat slippery distinction between what may constitute policy or policymaking, in respect of which it would be inappropriate to impose a duty of

care, and what may constitute other more operational government action which may properly be subjected to a duty of care, this case is far from a borderline case. The actions of the Commonwealth Government that are attacked under the rubric of the alleged targets duty of care are in my view clearly political and policy-laden governmental decisions and conduct of the highest order.

853 As the preceding consideration of the alleged targets duty of care makes clear, the alleged duty, when considered in light of the alleged standard of care and the applicants' allegations concerning the breach of the duty, focuses on actions of the executive Commonwealth Government in determining greenhouse gas emissions targets for Australia and communicating those targets as NDCs pursuant to Australia's international obligations under the Paris Agreement. The applicants essentially allege that the "steps" taken by the Commonwealth in setting and communicating the targets were unreasonable, and constituted a breach of the alleged duty of care to take reasonable steps to protect Torres Strait Islanders and their traditional way of life and marine environment from the impacts of climate change. The steps taken by the Commonwealth in the setting of the targets are alleged to have been unreasonable essentially because the targets were inconsistent with the best available science, or because the Commonwealth failed to have regard to the best available science when it set those targets.

854 The issues inevitably thrown up by those allegations include: the nature and extent of the Commonwealth's international obligations under the UN Convention on Climate Change and the Paris Agreement in respect of the setting of emissions reduction targets and the communication of NDCs; the extent to which Australia's international obligations required it to set such targets by reference to the best available science; the extent to which the Commonwealth was otherwise required or reasonably expected to set emissions reduction targets by reference to, or solely by reference to, the best available science; whether, and to what extent, the Commonwealth could reasonably have regard to other considerations, such as budgetary, economic, social and even political considerations, in setting emissions reduction targets and, more broadly, in responding to climate change and its impacts; and the extent to which the Commonwealth was required to take into account the interests of, or the need to protect, particular communities in Australia when setting emissions reduction targets and responding to climate change. More broadly, the applicants' posited duty of care and its allegations of breach throws up various issues in respect of the executive government's policy responses to the undoubted threat posed by climate change.

855 It is in my view abundantly clear the issues raised by the applicants’ posited targets duty of care and its alleged breach concern matters of core or high government policy and political judgments. They are the very types of issues that the authorities that were discussed in detail earlier indicate should not be subjected to a common law duty of care in negligence, essentially because they are unsuitable for resolution by courts of law.

856 While it may be accepted that the facts and circumstances in *Sharma* were different to and distinguishable from the facts and circumstances of this case, some of the observations of Allsop CJ and Wheelahan J are nevertheless particularly pertinent and persuasive in considering whether it would be inappropriate and impractical to impose the posited duty of care in this case.

857 As discussed earlier, *Sharma* concerned a Minister’s decision to approve a coalmine pursuant to applicable legislation. The applicant at first instance contended that, when making decisions to approve coalmines, the Minister owed her and everyone else in Australia who was under the age of 18 a duty of care to avoid causing them physical harm arising from the fact that coalmines led to the emission of CO₂ into the Earth’s atmosphere which in turn caused global warming and climate change. The primary judge found that the Minister owed the applicant and others that duty of care. On appeal, in rejecting the imposition of that duty of care, Allsop CJ stated (at [15]) that the posited duty of care raised for consideration “the question of the proper policy response to climate change and considerations unsuitable for resolution by the Judicial branch of government” and that a duty that calls up such questions should not be imposed because “[i]t is one of core, indeed high, policy-making for the Executive and Parliament involving questions of policy (scientific, economic, social, industrial and political) which are unsuitable for the Judicial branch to resolve in private litigation by reference to the law of torts”.

858 Subsequently, when considering the context for the imposition of the alleged duty and the dangers posed by climate change, his Honour said (at [227]-[228]):

... the very nature of the underlying danger that gives rise to the risk of world and human catastrophe is one that can only be addressed by global co-ordinated policy and action, by countries around the world formulating and implementing effective policy measures to address the nature of the cause of the potential catastrophe, in particular, to address the accretion, incrementally, over centuries of greenhouse gases from countless individuals, corporations and governments.

... the development of that policy for any nation and for nations generally involves scientific, economic, social and political considerations, often depending on the nature and character of the countries in question, their populations and economies,

including but not limited to industrial development and innovation in a decarbonised world and the development of energy sources alternative to fossil fuels. That is not to say that there cannot be seen to be policy or scientific imperatives of an overwhelmingly important character.

859 The Chief Justice concluded as follows (at [246]-[248]):

... Here, if the duty is to be imposed, the considerations and judgements attending the decision will involve an evaluation of the adequacy of national and State policies taken within the framework of international agreement and whether such policy or policies was or were adequate and whether it or they should be persisted with or remade. Such policy or policies and such agreement draw out and are based on multi-disciplinary considerations including environmental, climatic, economic, social and political considerations. These are not only the natural province of the Executive and Parliament, but also, by their nature and character as attending the safety and wellbeing of all Australians, and (on the uncontested evidence) the wellbeing of the world and humanity, comprise the foundation of the (public or political) duty of consideration and policy formulation by at least the Executive on this subject.

The duty concerns matters of so-called “core” policy. Such is to appreciate the nature and character of the necessary appropriate power to deal with the problem and so the nature and extent or scope and content of the duty. The evaluation of good or bad decision-making about greenhouse gas emissions and the risks of global warming is one to which the highest considerations of the welfare of the Commonwealth attend, by reference to a range of matters that involve scientific, social and economic considerations and ultimately democratic political choice. This can be called, at the very least, core government policy. It is perhaps better described as public policy of the highest importance. The uncontested evidence makes that pellucidly incontestable.

The fundamental question of legality aside, it is not the function of the Judicial branch to rule upon any lack of adequacy or any lack of wisdom of government policy by reference to the law of torts. These matters of policy are not ones merely of resource allocation, funding and other such matters to which statutory authorities often must direct themselves, dealt with in cases such as *Brodie*. The matters of policy here involve considerations drawn from the gravity and seriousness of the international subject matter: the risk of catastrophe for the world and humanity. These considerations and the policy response involve scientific, social, economic and political factors and choices to inform the appropriate national and State responses to a world problem the subject of international discussion and agreement, conformable with the maintenance and advancement of the well-being, including health and safety, and social and economic circumstances of the people of Australia (for the Commonwealth) and of New South Wales (for New South Wales).

860 Justice Wheelahan also highlighted that the posited duty of care raised questions involving government policy and political judgment. His Honour expressed the view (at [868]) that the issues raised by the duty of care were issues which bore upon “the social compact and the welfare of the Commonwealth” the resolution of which was “uniquely suited to elected representatives and executive government responsible for law-making and policy-making”. His Honour also observed (at [868]) that the issues were ones upon which “reasonable minds will likely differ” and posed the rhetorical question: “[h]ow is a court to evaluate the reasonableness of one view over another in this political and policy context?”.

861 While the government action in issue in this matter – the setting of greenhouse gas emissions reduction targets and the communication of those targets as NDCs pursuant to the Paris Agreement – is different in a number of respects to the government action in question in *Sharma*, the underlying policy and political considerations are nevertheless essentially the same as those that were considered in *Sharma*. The observations of both Allsop CJ and Wheelahan J in *Sharma* about the inherently political and policy-laden nature of the issues raised by the posited duty of care in that case apply equally to the posited targets duty of care in this case.

862 As was the case in *Sharma*, it would be both inappropriate and impractical for the Court to assess the reasonableness of the Commonwealth’s actions in setting and communicating the relevant emissions reduction targets. I do not doubt that the Court can appropriately make relevant findings about, for example, the best available science, and whether a particular emissions reduction target could be said to be consistent or compatible with what the best available science said about CO₂ budgets, and whether those budgets are likely to assist in limiting global temperature increases to within defined limits. The applicants’ posited duty of care and its allegations concerning the standard of care and breach, however, are essentially premised on the contention that the emissions reduction targets that were set by the Commonwealth were unreasonable and therefore failed to protect Torres Strait Islanders because they were inconsistent with, or did not appropriately have regard to, the best available science. By what criterion, however, is the Court to judge whether it was or was not unreasonable for the Commonwealth to set emissions reduction targets by reference to considerations that were not restricted to the dictates of the best available science? Can it be said that a reasonable state actor in the position of the Commonwealth would not, for example, have regard to national budgetary, economic or social considerations when setting an emissions reduction target? If so, on what basis? As Wheelahan J observed in *Sharma* (at [868]), the “issues inevitably slide into political considerations, and require the making of value judgements” about which reasonable minds might differ.

863 The applicants submitted that the criterion by which the Court could assess and determine the reasonableness of the steps taken by the Commonwealth in respect of the emissions reduction targets was the best available science itself. I am unable to accept that submission. It involves an element of circular reasoning. As has already been noted, the Court can no doubt assess and determine whether the targets set by the Commonwealth were consistent or compatible with what the best available science said about CO₂ budgets, and whether those

budgets are likely to assist in limiting global temperature increases to within defined limits. That does not, however, resolve the question whether the targets constituted reasonable steps to protect Torres Strait Islanders from the impacts of climate change, that being the overarching content of the alleged duty. That question hinges to a large extent on another question, that question being whether it can be said to be reasonable for the Commonwealth, when setting emissions reduction targets, to have regard to other considerations, beyond the best available science, such as economic, social and political considerations. The best available science cannot provide an answer to that question. That is because the answer to that question involves value judgments, policy choices and political judgments.

864 As Professor Meinshausen effectively acknowledged in his evidence, scientists and the scientific community do not set emissions reduction targets. It might equally be said that the courts do not set emissions reduction targets. The setting of emissions reduction targets is a matter for policymakers. It is ultimately up to the policymakers in the governments of nation states around the world, including Australia, to determine the basis upon which emissions reduction targets are determined, including the extent to which they should be based on the best available science and the extent to which other policy considerations, including budgetary, economic and political considerations, should play a role in that regard.

865 It is, in all the circumstances, both inappropriate and impractical for the Court to pass judgment on the reasonableness of the Commonwealth's actions concerning such issues, involving as they do matters of high or core government policy and political judgment. The basis upon which greenhouse gas emissions targets are set and communicated to the UN Convention on Climate Change involve matters of policy and political judgments that properly fall within the province of the elected representatives and executive government of the day. If judgment is to be passed in respect of the actions of the government in respect of such matters, that judgment should be passed at the ballot box by those who are responsible for electing the government, not in the courts.

866 It follows that it would be inappropriate to impose on the Commonwealth the alleged targets duty of care upon which the applicants' case in negligence is based. It must accordingly be concluded that the Commonwealth owed no such duty of care to Torres Strait Islanders.

Relationship and salient features analysis

867 Given the conclusion that has been reached in relation to the inappropriateness of the duty of care alleged by the applicants, it is strictly unnecessary to embark on any analysis of the

salient features that are said by the applicants to support the existence of the duty of care. It is nevertheless prudent to conduct that analysis given the prospect of an appeal and the possibility that my conclusion that it would be inappropriate to impose the duty of care is found to be in error.

The relationship between the Commonwealth and Torres Strait Islanders

868 As Allsop CJ observed in *Sharma* (at [211]), it is necessary to begin the analysis by considering the relationship between the parties because “[w]ithout such a commencement, an approach to the inquiry by reference to many diverse features within the salient features risks fragmentation and confusion by individual particular analysis of features, almost in the abstract and divorced from context, without a proper understanding of the possible interrelations between the various features attending the relationship”. As the earlier discussion of the applicable principles indicated, it is necessary to consider the total relationship between the parties in their broader legal and social context.

869 The parties’ submissions in respect of the nature of the relationship between the Commonwealth and Torres Strait Islanders diverged significantly.

870 The applicants submitted that there existed between the Commonwealth and Torres Strait Islanders a “special protective relationship” which was akin to a neighbourly or neighbourhood relationship. They based that submission on a broad range of mostly historical factors or considerations.

871 First, the applicants relied on various historical statements made by colonial officials and others about the nature of the relationship between colonies and the indigenous populations of those colonies. Those statements suggested that colonial administrators or governments had a duty to protect the “natives”. The applicants also relied on some colonial enactments that manifested an intention on the part of colonial governments to protect aboriginal people. The statements and enactments relied on by the applicants were, however, made before the Commonwealth came into being and did not directly relate to the relationship between the Commonwealth and Torres Strait Islanders. The applicants also rightly conceded that those statements and enactments, considered in the modern context, could now properly be viewed as paternalistic. In the same vein, the applicants relied on the fact that one of the purposes for which the Torres Strait was annexed by the Colony of Queensland in 1879 was said to be the “protection of the native inhabitants of the islands”: see *Mabo v Queensland (No 2)* (1992) 175 CLR 1 at 23 (*Mabo (No 2)*).

872 Second, the applicants relied on statements made by Brennan J in *Mabo (No 2)* and *Wik Peoples v Queensland* (1996) 187 CLR 1 which, considered in isolation, might tend to suggest that the Crown had various duties in respect of lands that were subject to native title rights. Those statements, however, must be understood in the context in which they were made, which obviously differed markedly from the present context. The same can be said about statements made by Nettle J in *Love v The Commonwealth* (2020) 270 CLR 152 which, considered in isolation, suggested that the Commonwealth owed indigenous persons a “unique obligation of permanent protection” (at [274]). Those statements were made in the context of considering whether an indigenous person could be an “alien” for the purposes of s 51(xix) of the Constitution and must be understood in that context.

873 Third, the applicants relied on some provisions in a Treaty between the Commonwealth and Papua New Guinea in 1978: *Treaty between Australia and the Independent State of Papua New Guinea Concerning Sovereignty and Maritime Boundaries in the Area Between Two Countries, Including the Area Known as Torres Strait, and Related Matters* entered on 18 December 1978, in force from 15 February 1985 (Australian Treaty Series 1985 No 4) (the **Torres Strait Treaty** or **Treaty**). The preamble to the Treaty recognised “the importance of protecting the traditional way of life and livelihood of Australians who are Torres Strait Islanders” as well as Papua New Guineans who lived adjacent to the Torres Strait. The applicants did not rely on the Treaty as a source of international law informing the content of the common law, but rather relied on the historical fact that, by entering into the Treaty, the Commonwealth may be taken to have acknowledged its obligation to protect the livelihood and lifestyles of Torres Strait Islanders: see H Burmester, ‘The Torres Strait Treaty: Ocean Boundary Delimitation by Agreement’, (1982) 76 *American Journal of International Law* 321, 322.

874 Fourth, the applicants relied on the Commonwealth’s endorsement of the United Nations **Declaration** on the Rights of Indigenous Peoples and the Commonwealth’s ratification of the International Covenant on Civil and Political Rights. The Declaration recognises that indigenous peoples have a “distinctive spiritual relationship with their traditionally owned ... lands, territories, waters and coastal seas” and obliges States to give “protection to these lands, territories and resources” and protect against the deprivation of culture, dispossession of land and population transfer.

875 The Commonwealth submitted that, when properly analysed, the factors or considerations relied on by the applicants in support of the proposition that there is a special protective relationship between the Commonwealth and Torres Strait Islanders in fact carry little weight. Moreover, it submitted that several other contextual considerations, said to have been identified by Allsop CJ in *Sharma*, outweighed the considerations relied on by the applicants. The contextual considerations relied on by the Commonwealth were: first, the fact that the threat of climate change is a global threat that can only be addressed by global coordinated action; second, the fact that governmental responses to that threat involve weighing many different and competing factors; and third, the fact that those government responses involve decisions of high-level government policy. The Commonwealth submitted that those three contextual considerations compelled the conclusion that the relationship between the Commonwealth and Torres Strait Islanders was essentially the same as the relationship between the Minister and the group members (all Australians under the age of 18 years) in *Sharma* – namely, a relationship “between the governing and the governed in a democratic polity”: *Sharma* at [232] (Allsop CJ).

876 It is unnecessary to separately consider in detail the contextual considerations relied on by the Commonwealth as informing the nature of the relationship between the Commonwealth and Torres Strait Islanders. They have been touched on, albeit in different contexts, in other parts of these reasons. It may be accepted that, broadly speaking, the threat of climate change is a global threat that can realistically only be arrested by global coordinated action. It may equally be accepted, again speaking at a high level of generality, that governmental responses to climate change involve high-level policy decisions that generally involve not only scientific considerations, but also economic, social and political considerations.

877 I do not disagree that the three propositions concerning climate change and global and governmental responses thereto upon which the Commonwealth relied are of some relevance to the assessment of the relationship between the Commonwealth and Torres Strait Islanders. That is because they form part of the broader legal and social context in which the relationship between the Commonwealth and Torres Strait Islanders must be considered. That said, I reject the Commonwealth’s submission that those contextual considerations compel the conclusion that the relationship between the Commonwealth and Torres Strait Islanders is relevantly nothing more than one between the governing and the governed in a democratic polity. Torres Strait Islanders are undoubtedly a group of people who are, broadly speaking, governed by the Commonwealth, though the nature of their relationship

with the Commonwealth relevantly extends beyond that. I would not, however, go so far as to conclude that the relationship was or is a “special protective relationship” as the applicants contended.

878 The broader social context in which the relationship between the Commonwealth and Torres Strait Islanders must be considered includes the fact that Torres Strait Islanders are an ethnically distinct indigenous people who for thousands of years have inhabited a remote far-northern region – the Torres Strait Islands – that now forms part of Australia. Most Torres Strait Islanders who inhabit the Torres Strait Islands continue to practise their traditional way of life and customs, including, as discussed earlier, Ailan Kastom. Native title has been recognised over, or in respect of, much of the Torres Strait Islands, including all, or almost all, of the inhabited islands.

879 The relevant history of the Torres Strait Islands and their traditional inhabitants is discussed in some of the native title determinations and decisions, including *Mabo (No 2)* (in particular at 16-25 per Brennan J) and *Akiba and Another v Queensland and Others (No 2)* (2010) 204 FCR 1 at [17]-[50] (Finn J). As interesting as that history may be, it is unnecessary to repeat it here. The point is that, on just about any view, Torres Strait Islanders comprise a discreet and unique group of people who are far-removed – geographically, ethnically, culturally and spiritually – from the broader mainland Australian populace. They are also a relatively small group. The population of the Torres Strait Islands was approximately 4,500 in 2016 and 4,125 in 2021.

880 The fact that Torres Strait Islanders comprise a small, discreet and unique group of indigenous Australians is of some significance. It distinguishes them from the class of people to whom the duty was allegedly owed in *Sharma*. The class of allegedly affected persons in *Sharma* essentially comprised the entire population of Australia, at least if what Beach J (at [704]) described as the “pleader’s construct”, which limited the class to people under the age of 18 years, was removed or disregarded. It is perhaps not surprising that the relationship between the Minister and that class was characterised by Allsop CJ in *Sharma* as being between the governing and the governed.

881 There are other facts and circumstances that relevantly distinguish Torres Strait Islanders as a group or body of people from most of the rest of the Australian populace. Those distinguishing facts and circumstances are addressed in more detail as part of the salient features analysis. Most significantly, there could be little, if any, doubt that as a group,

Torres Strait Islanders are particularly vulnerable to the impacts of climate change – far more so than most other Australians or groups or communities of Australians. As discussed in more detail later, that vulnerability arises primarily because of where they live, but also because of their general socio-economic disadvantage.

882 The vulnerability and relative disadvantage of Torres Strait Islanders is part of the broader social context in which the relationship between the Commonwealth and Torres Strait Islanders must be considered. The point is that their vulnerability and relative disadvantage in terms of protecting themselves from the ravages of climate change means that they are a group of people who could reasonably be considered to be deserving of particular protection from the impacts of climate change by those that govern them, including the Commonwealth.

883 I should finally note that I consider it to be of some contextual relevance to the nature of the relationship between the Commonwealth and Torres Strait Islanders that the Commonwealth has some international treaty obligations, and has acknowledged and declared, in the international context, that it will give protection to the lands, territories and resources of indigenous peoples, including Torres Strait Islanders, and protect against the deprivation of their culture. It may be accepted that those international obligations and declarations have not been incorporated into Australian domestic law and cannot therefore alone give rise to a duty of care. They are nonetheless part of the broader social and legal context in which the relationship between the Commonwealth and Torres Strait Islanders must be considered.

Reasonable foreseeability

884 As stated earlier when considering the applicable principles in respect of the tort of negligence, the test in respect of foreseeability at the duty of care stage of analysis is whether it is reasonably foreseeable as a possibility that careless conduct of any kind on the part of the defendant may result in damage of some kind to the plaintiff. That test can be satisfied even if the possibility of harm is remote, provided it is not far-fetched or fanciful. The test has been described as “undemanding”: *Tame v State of New South Wales; Annetts v Australian Stations Pty Ltd* (2002) 211 CLR 317 at [96] (McHugh J). The question in respect of foreseeability at this stage of the analysis in this case, therefore, is whether it was reasonably foreseeable that there was a real and not fanciful possibility that careless conduct of any kind on the part of the Commonwealth in respect of the setting and implementation of greenhouse gas emissions reduction targets might cause or materially contribute to harm to Torres Strait Islanders arising from the impacts of climate change.

885 The Commonwealth submitted that it was not reasonably foreseeable that any breach of the targets duty of care would cause or materially contribute to the applicants and group members suffering harm from the impacts of climate change. That submission was based on two propositions that were said to flow from the evidence. The first proposition was that, because Australia's greenhouse gas emissions make up a tiny proportion of global annual greenhouse gas emissions, it could not be foreseen that any failure by the Commonwealth to set higher targets would have any material climate impact in the Torres Strait Islands, or on Torres Strait Islanders. The second proposition was that, as the impacts of climate change vary regionally, it could not be foreseen that a tiny incremental increase in greenhouse gas emissions would cause particular impacts on the Torres Strait Islands.

886 I reject the Commonwealth's submissions concerning foreseeability at this stage of the inquiry. The Commonwealth's submissions overstate the foreseeability test at the duty stage. The test is not whether it was reasonably foreseeable that any breach of the alleged duty by the Commonwealth *would* cause or materially contribute to the harm suffered by Torres Strait Islanders. Rather, as already noted, the test is whether it is reasonably foreseeable that any careless conduct on the part of the Commonwealth *might* result in damage to Torres Strait Islanders, provided that the possibility of harm is not far-fetched or fanciful.

887 In any event, even putting that overstatement by the Commonwealth to one side, I am satisfied that the evidence established that there was a reasonably foreseeable possibility that careless conduct on the part of the Commonwealth in respect of the setting and implementation of greenhouse gas emissions reduction targets might cause, or materially contribute to, harm to Torres Strait Islanders arising from the impacts of climate change. That possibility of harm was real and not fanciful.

888 The evidence that supports that finding is discussed in detail later in these reasons in the context of the element of causation. As will be seen, there are real issues as to whether the evidence is capable of proving, to the requisite standard, that the alleged breach by the Commonwealth of the alleged duty of care actually caused the applicants to suffer any loss or damage. At this stage of the inquiry, however, it suffices to note that the evidence does establish that it was reasonably foreseeable that there was a possibility, which was real and not remote, that a failure by the Commonwealth to set higher emissions reduction targets which were consistent with the best available science might result in Torres Strait Islanders suffering harm as a result of escalating impacts of climate change.

889 In simple terms, the evidence established, at the very least, that if the Commonwealth set unreasonably low emissions reduction targets, that might lead to increased emissions, which might in turn lead to increased global warming, which might in turn exacerbate the impacts of climate change, including in the Torres Strait Islands, which might in turn result in Torres Strait Islanders suffering compensable harm from those exacerbated impacts of climate change. The possibility that that chain of events might occur was real and not remote and was supported by the best available science. The chain of events was real and not remote even in circumstances where the increased emissions were, relatively speaking, likely to be fairly small, and even where the increased temperatures, including in the Torres Strait Islands, were likely to be small to the point of being unable to be scientifically measured. That Torres Strait Islanders might suffer harm as a result of that chain of events was also reasonably foreseeable. There was ample evidence that the Commonwealth was aware, among other things, that the Torres Strait Islands and Torres Strait Islanders were particularly vulnerable to climate change and its impacts and were likely to suffer harm if those impacts were exacerbated.

Knowledge of risk

890 There was evidence that indicated that by at least 2014 the Commonwealth knew that, in simple terms, greenhouse gas emissions led to global warming, that global warming led to climate change, and that Australia had been adversely impacted, and was likely to continue to be adversely impacted, by climate change. It also knew that the impacts of climate change, including in Australia, included, among other things, surface temperature increases, ocean temperature increases, ocean acidification, changes in precipitation patterns, sea level rises and the inundation of coastal lands, extreme weather events, and the harm to, and even destruction of, ecosystems. It also knew that Torres Strait Islanders were particularly vulnerable to the impacts of climate change given that many Torres Strait Islanders lived in coastal areas and low-lying islands and were, as indigenous Australians who lived in remote areas, socially disadvantaged.

891 The sources of the Commonwealth's knowledge were discussed earlier in these reasons. They relevantly included: the State of the Climate Reports authored by the CSIRO and BOM (various dates, but including 2014); the IPCC's Fifth Assessment Reports (2013-2014); the IPCC's Special Report (2018); and the IPCC's Sixth Assessment Reports (2021-2023). The Commonwealth admitted that it was aware of the contents of those reports at around the dates

of their publication. It may of course be accepted that the best available science evolved over time and that it is necessary, particularly when considering the allegations concerning breach, to have regard to the Commonwealth's state of knowledge at particular points in time. Some of the relevant reports postdate the NDC target set in 2015 and some of the updated NDCs.

892 The Commonwealth admitted, or at least did not dispute, that at all material times it knew that human influence, in particular greenhouse gas emissions, had warmed and continued to warm the Earth and had led to climate change. It also admitted that it knew that limiting climate change and mitigating its worse impacts required committed and sustained action by every country, including Australia, to reduce emissions of greenhouse gases. It may also be inferred that the Commonwealth knew that in the absence of that global action, including action by Australia, to reduce greenhouse gas emissions, the adverse impacts of climate change were likely to escalate.

893 It is, however, difficult to accept that the evidence went so far as to establish that the Commonwealth knew (or even had constructive knowledge) that if Australia did not set its emissions reduction targets strictly in accordance with what the best available science indicated was required to keep global temperature increases to within certain thresholds, that was likely to result in Torres Strait Islanders suffering harm from any resulting exacerbated impacts of climate change. While, for the reasons given earlier, the evidence indicated that it was reasonably foreseeable that carelessness on the part of the Commonwealth in setting Australia's emissions reduction targets might cause or materially contribute to harm to Torres Strait Islanders arising from the impacts of climate change, and that the possibility of such harm was real and not fanciful, I would not go so far as to conclude that the Commonwealth actually knew (or even had constructive knowledge) that the setting of targets for Australia that were inadequate from a purely scientific perspective was likely to result in Torres Strait Islanders suffering any material harm they would not otherwise have suffered as a result of climate change.

Vulnerability

894 There could be little doubt that the evidence established that, in a general sense, Torres Strait Islanders were particularly vulnerable to the impacts of climate change. That was due to the fact that many Torres Strait Islanders live in coastal communities and on small low-lying islands. Coastal communities and low-lying islands are undoubtedly particularly prone to the impacts of climate change, in particular inundation and flooding as a result of sea level rises

and extreme weather events. It may also be accepted that Torres Strait Islanders are also generally more vulnerable to, or at risk of harm from, those impacts of climate change because they are, on the whole, disadvantaged from a socio-economic perspective as compared to the broader Australian community.

895 From as early as 2007, the IPCC advised as follows (Working Group II contribution to the IPCC Fourth Assessment Reports at p 689):

Small islands, whether located in the tropics or higher latitudes, have characteristics which make them especially vulnerable to the effects of climate change, sea-level rise, and extreme events (very high confidence).

896 In 2014, the IPCC Fifth Assessment Reports reported as follows (Working Group II: Impacts, Adaptation, and Vulnerability):

Indigenous peoples in both Australia and New Zealand have higher than average exposure to climate change because of a heavy reliance on climate-sensitive primary industries and strong social connections to the natural environment, and face particular constraints to adaptation (*medium confidence*). Social status and representation, health, infrastructure and economic issues, and engagement with natural resource industries constrain adaptation and are only partly offset by intrinsic adaptive capacity (*high confidence*). Some proposed responses to climate change may provide economic opportunities, particularly in New Zealand related to forestry. Torres Strait communities are vulnerable even to small sea level rises (*high confidence*).

(Emphasis in original.)

897 In 2022, the IPCC Sixth Assessment Reports reported (Working Group II: Impacts, Adaptation and Vulnerability):

Changing climate conditions are expected to exacerbate many of the social, economic and health inequalities faced by Aboriginal and Torres Strait Islander Peoples in Australia and Māori in New Zealand (*high confidence*).

...

Climate-related impacts on Aboriginal and Torres Strait Islander Peoples, countries (traditional estates) and cultures have been observed across Australia and are pervasive, complex and compounding (*high confidence*), for example, the loss of biocultural diversity, nutritional changes through the availability of traditional foods and forced diet change, water security and loss of land and cultural resources through erosion and SLR [sea level rise].

(Emphasis in original. References omitted.)

898 Also in 2022, the Commonwealth Department of Climate Change, Energy, the Environment and Water reported in its *Annual Climate Change Statement 2022*:

First Nations people are disproportionately affected by climate change because of their relationship to the environment and to Country. Climate impacts can threaten

cultural knowledge, heritage and traditional practices, and potentially further displace First Nations people from their homes and affect their ability to access Country.

Climate change impacts such as sea level rises experienced in island communities ... could leave First Nations people with no choice but to migrate from some ancestral homelands ... The consequences for First Nations people facing this possibility, risking further dispossession and a loss of access to traditional lands, waters, and natural resources, can only be described as catastrophic. The loss of ancestral, spiritual, totemic and language connections to lands and associated areas has major implications for the human rights of affected peoples as well as their physical and mental wellbeing. Extreme events are also contributing to the damage of First Nations places and cultural sites.

899 As discussed earlier in the context of the applicable principles, the question of vulnerability, as part of the salient feature analysis, essentially involves a consideration of whether the plaintiff is unable to protect itself from the consequences of the defendant's want of reasonable care. Moreover, the question is not whether the plaintiff is vulnerable in a generalised sense, but rather whether the plaintiff is vulnerable to the particular types of harm alleged, for example personal injury or property damage. The Commonwealth submitted that, while it may be accepted that Torres Strait Islanders were vulnerable to the impacts of climate change in a generalised sense, the applicants had not demonstrated that they were vulnerable in the relevant sense because they had not demonstrated that they were vulnerable to any particular kind of compensable harm.

900 I do not accept that submission. It may perhaps be accepted that the applicants' submissions concerning vulnerability do not focus on the inability of Torres Strait Islanders to protect themselves from any particular types of harm. Moreover, as discussed later in the context of the damages element of the cause of action, the applicants' case that they suffered loss or damage is problematic. In particular, there does not appear to be any cogent evidence of any specific personal injury or personal property damage suffered by the applicants as a result of the Commonwealth's alleged breach of duty. The applicants' case (and the case advanced on behalf of the group members) ultimately focussed mostly on their allegation that climate change has caused, and continues to cause, harm to Torres Strait Islanders generally in the form of damage to their traditional lands or "country" (with which they have a particular spiritual connection), damage to their surrounding environment and ecosystems (upon which they depend), and an inability to pursue their traditional way of life and loss of fulfilment of Ailan Kastom. As discussed later, however, the Commonwealth submitted that loss of Ailan Kastom is not a recognised head of compensable damage.

901 The fact that the applicants may encounter difficulties in making out their case in respect of damage does not, however, mean that they have not demonstrated that they are relevantly unable to protect themselves from any harm they might suffer as a result of the Commonwealth's alleged want of care in setting emissions reduction targets. It is implicit in their submissions, and the evidence that they adduced, that the applicants allege they have suffered, and are likely to continue to suffer, personal injury and property damage, albeit in perhaps a unique respect, namely in the form of damage to their collective property, an inability to pursue their traditional way of life, and loss of fulfilment of Ailan Kastom. They also allege that they are effectively powerless in terms of protecting themselves from that harm. The fact that the applicants may ultimately have difficulties in establishing their case in that regard is essentially beside the point at this stage of the inquiry.

902 The Commonwealth also took issue with the applicants' contention that Torres Strait Islanders were uniquely vulnerable in terms of the harm they have suffered, and will continue to suffer, from climate change. The Commonwealth advanced several submissions in that regard. First, it submitted that not all Torres Strait Islanders live in the Torres Strait Islands and, in the case of those that do, not all of them live on low-lying islands that are particularly susceptible to inundation. Second, in respect of the applicants' submission that Torres Strait Islanders are uniquely vulnerable because of the damage that climate change causes to their connection to land and sea and their ability to practise Ailan Kastom, the Commonwealth reiterated its submission that loss of Ailan Kastom was not compensable damage under the law of negligence. Third, the Commonwealth submitted that the evidence indicated that some Torres Strait Islanders were able to take, and had taken, steps to protect themselves from property damage and personal injury from climate change. Fourth, the Commonwealth submitted, in effect, that Torres Strait Islanders were not uniquely vulnerable because there were many other Australians who resided in or near low-lying coastal areas that were potentially at risk of inundation as a result of rising sea levels.

903 Some of those submissions have some merit, though I do not consider that they detract in any material respect from the overall conclusion that Torres Strait Islanders were and are particularly vulnerable to the impacts of climate change. I would make the following observations concerning the Commonwealth's submissions.

904 First, it may be accepted that not all Torres Strait Islanders, as defined for the purposes of this proceeding, could be said to be particularly vulnerable to some of the impacts of climate

change. Some Torres Strait Islanders, for example, may have left the Torres Strait Islands and may live in places that are not particularly vulnerable to climate change. That said, the evidence tended to indicate that many Torres Strait Islanders who had left the Torres Strait Islands did so because of the impacts of climate change, including their inability to pursue their traditional way of life. Those Torres Strait Islanders also remain vulnerable to the loss of fulfilment of Ailan Kastom. It may also be accepted that some Torres Strait Islanders lived on islands, or parts of islands, that were not as susceptible to inundation as areas on low-lying islands, or low-lying areas adjacent to the coastline on some of the larger islands. It may therefore be accepted that not all Torres Strait Islanders could be said to be particularly vulnerable to the impacts of climate change.

905 Ultimately, however, little, if anything, turns on that fact. That is because those few Torres Strait Islanders who may not be particularly vulnerable to climate change are unlikely to be group members. Only Torres Strait Islanders who suffered loss and damage as a result of the Commonwealth's conduct are group members as defined. Moreover, the applicants themselves live on low-lying islands. The evidence also revealed that many other Torres Strait Islanders lived on low-lying islands or coastal areas in the Torres Strait. It follows that a significant number of Torres Strait Islanders could be said to be particularly vulnerable to the impacts of climate change. The fact that the applicants might have cast their net too widely, in terms of defining the class, is of little moment in the present context.

906 Second, in support of its submission that there was evidence which indicated that some Torres Strait Islanders were able to, and had, taken steps to protect themselves from property damage and personal injury from climate change, the Commonwealth relied on the fact that some houses on some islands, such as Boigu and Saibai, are raised on stilts. That measure may of course provide some degree of protection from some property damage that might be suffered by the fortunate occupants of those houses as a result of inundation from rising sea levels and extreme weather events.¹ It does not, however, protect the occupants of those houses from loss and damage they might suffer as a result of other impacts of climate change. Nor does it assist others who do not live in such homes. The Commonwealth also relied on the fact that one Torres Strait Islander, Mr Nona, had endeavoured to protect his campsite from storm tides by placing sandbags in front of his beachside camp. The evidence indicated, however, that Mr Nona's efforts in that regard were largely to no avail. One need only see a photograph of the sandbags in front of Mr Nona's camp to appreciate how fanciful it is for

the Commonwealth to rely on such evidence in support of its submission that Torres Strait Islanders were not relevantly vulnerable.



907 The desperate and mostly futile measures taken by other Torres Strait Islanders to protect themselves from the impacts of climate change include endeavouring to build barriers using palm fronds, tyres and building debris to protect against rising sea levels and other inundation events.

908 Satisfactory protection against rising sea levels and inundation resulting from extreme weather events on some islands requires the construction of major seawalls. Torres Strait Islanders plainly depend on the Commonwealth, in conjunction with other governing bodies, to provide that sort of effective infrastructure. The evidence in that regard is discussed later in the context of the applicants' alleged alternative duty of care. It suffices at this point to observe that it cannot seriously be said that Torres Strait Islanders have the means themselves

to protect themselves from the increasing impacts of climate change in any effective or meaningful sense. Nor could it be said to be reasonable for the Commonwealth to expect Torres Strait Islanders to protect themselves against the increasingly severe impacts of climate change that they contend they have suffered, and are continuing to suffer, as a result of the Commonwealth's alleged breach of its duty of care.

909 Third, the Commonwealth's submission that Torres Strait Islanders are not uniquely vulnerable because many other Australians live near the sea has no merit. In support of that submission, the Commonwealth relied on nothing more than statistics that indicated that: around 85% of the Australian population live in the coastal region; there were 711,000 addresses in Australia which were located within 3 kilometres of the shore and in areas below 6 metres in elevation; and between 157,000 and 247,600 individual residential buildings across all coastal States and Territories were potentially at risk of inundation if there was a rise in sea levels in the order of 1.1 metre, with the highest number of "at risk" residential buildings being located in New South Wales, with some of the more affected areas being in the Central Coast areas of New South Wales. In the absence of any other evidence, however, it could scarcely be inferred that the occupants of many of those seaside residences were as vulnerable as Torres Strait Islanders to the impacts of climate change. Could it seriously be suggested, for example, that residents of beachfront properties in Avoca or Terrigal on the Central Coast of New South Wales are as vulnerable as Torres Strait Islanders? Needless to say, it may readily be inferred that owners of beachfront properties in Avoca are unlikely to be as socially and economically disadvantaged as most Torres Strait Islanders, and are more likely to have the means by which to protect their properties from damage from the impacts of climate change than the average Torres Strait Islander.

910 Finally, as for the Commonwealth's submissions based on the contention that the loss of fulfilment of Ailan Kastom is not compensable, the question whether loss of fulfilment of Ailan Kastom is compensable under the law of negligence is discussed in detail later. It need only be noted at this stage that the Commonwealth appears to concede in its defence that some instances of the exercise of Ailan Kastom by Torres Strait Islanders are vulnerable to the current and projected impacts of climate change.

911 Overall, the evidence suggests that Torres Strait Islander communities are more vulnerable to the escalating impacts of climate change, and that Torres Strait Islanders are generally less likely to be able to protect themselves against those impacts, than the broader Australian

population. Indeed, they are among the most vulnerable and exposed communities in Australia, and among the least likely to be able to protect themselves against the escalating impacts of climate change.

912 That conclusion must, however, be qualified and tempered to some extent in the present context. That is because, as discussed earlier, the relevant issue in this context is whether Torres Strait Islanders are vulnerable to the harm that may flow from the Commonwealth's alleged negligence, not the harm that might flow from the impacts of climate change more generally. That harm is not the harm that Torres Strait Islanders may suffer from climate change generally, but the additional harm that they may suffer because of the Commonwealth's alleged breach of duty. As discussed in more detail later, particularly in the context of the elements of breach and causation, the additional or incremental impacts of climate change that have flowed, and are likely to continue to flow, from the Commonwealth's alleged failure to set and implement adequate emissions reduction targets are, on just about any view, very small, to the point of being effectively immeasurable.

Reliance and assumption of responsibility

913 As discussed earlier, a public authority may place itself in such a position as to create a self-imposed duty of care if it has adopted a practice concerning the safety or protection of its constituents, particularly if the constituents have come to rely on that protection. That will generally not be the case, however, where the duty is allegedly owed to a class of constituents and that class only relied upon the government in a general sense, or to the same extent as other constituents. In *Sharma*, for example, it was considered insufficient that the class (Australians under the age of 18 years) relied on the Minister to provide good governance and their reliance in that respect was no different to all other Australians: *Sharma* at [340] (Allsop CJ).

914 The evidence established that the Commonwealth was aware that the Torres Strait Islands had been impacted by, and were particularly vulnerable to, the impacts of climate change and had, at least to some extent, adopted a practice of funding certain projects to protect Torres Strait Islanders from those impacts. Those projects included, most significantly, the funding of seawalls on some of the Torres Strait Islands. The evidence in that regard is considered in detail in the context of the applicants' alternative adaptation duty of care. It is, however, doubtful that it could be said that the applicants or Torres Strait Islanders more broadly relied

on the Commonwealth in any way that was relevant to the alleged targets duty of care. The evidence did not go that far.

915 The difficulty for the applicants is that the evidence established no more than that Torres Strait Islanders may have relied on the Commonwealth in respect of the impacts of climate change in a very generalised respect. It did not establish that Torres Strait Islanders relied on the Commonwealth to set emissions reduction targets based on the best available science which would best protect them from the worse impacts of climate change, or that the Commonwealth had adopted any practice which could provide any reasonable basis for Torres Strait Islanders to rely on it in that regard. Torres Strait Islanders may well have relied on the Commonwealth to provide funding for some protective or adaptive infrastructure that would protect them from, or assist them to adapt to, the impacts of climate change. That, however, is a separate issue that may have some relevance to the alleged alternative adaptation duty of care. It has little relevance to the alleged duty of care currently under consideration.

916 To the extent that Torres Strait Islanders may have generally relied on the Commonwealth to protect them from the impacts of climate change that general reliance may have emanated from the terms of the Torres Strait Treaty, which, as discussed earlier, tended to suggest that the Commonwealth had assumed responsibility for the protection of their traditional way of life, as well as obligations under international law to preserve the marine environment in the Torres Strait. The Torres Strait Treaty was, however, entered into well before the impacts of climate change were fully known or understood. Not surprisingly, in those circumstances, it says nothing about protection against the impacts of climate change. Similarly, the generalised reliance may have emanated from statements made by the Commonwealth, through its representatives, which indicated that the Commonwealth was aware of and recognised that Torres Strait Islanders were particularly vulnerable to the impacts of climate change and were therefore deserving of protection. Those statements, however, gave Torres Strait Islanders no cause to rely on the Commonwealth when it came to setting emissions reduction targets.

Control

917 As discussed earlier, the factor of control is of particular importance in determining if a public authority owes its constituents, or a class of them, a duty of care. The central issue, in simple terms, is the extent to which the public authority is able to exercise any control in

respect of the relevant risk of harm. Did the public authority have the power and ability to do anything to eliminate or materially reduce the extent of that risk of harm?

918 Here, the relevant risk of harm is the risk that Torres Strait Islanders may suffer harm, in the form of personal injury, damage to property or (as claimed by the applicants) loss of fulfilment of Ailan Kastom, arising from the impacts of climate change. The relevant question is accordingly whether the Commonwealth has the power and ability to control or reduce the risk that Torres Strait Islanders will suffer harm from the impacts of climate change, particularly through the setting and implementation of greenhouse gas emissions reduction targets.

919 The parties' submissions in respect of control diverged significantly. The applicants, on the one hand, submitted that the Commonwealth had "extensive" control over the level of greenhouse gas emissions and therefore had control over the rate and severity of anthropomorphic climate change and its impacts, including in the Torres Strait. That control was said to essentially flow from the Commonwealth's power to set and implement emissions reduction targets. It followed, in the applicants' submission, that the Commonwealth had control over the risk of harm to Torres Strait Islanders.

920 The Commonwealth, on the other hand, submitted that it had no control over the risk of harm to Torres Strait Islanders from the impacts of climate change. That was essentially because, in the Commonwealth's submission, climate change is a global problem that requires a global solution. It is not a problem over which Australia alone has any, or any significant control. While Australia may have control over its own emissions reduction targets, it has no control over the emissions reduction targets set by other countries and Australia's targets alone are unlikely to have any impact on climate change or the risks posed by its impacts.

921 I do not accept the submissions of either party in their entirety. The better view is that, given its power to set emissions reduction targets and reduce Australia's greenhouse gas emissions, the Commonwealth is able to exercise some degree of control over the risk of harm to Torres Strait Islanders from the impacts of climate change. The extent of that control is, however, certainly not exclusive or extensive. Indeed, in a practical sense, it is very minimal.

922 The evidence established the following facts or circumstances relevant to the factor of control.

923 First, the Commonwealth has the power and ability to set national greenhouse gas emissions reduction targets and communicate NDCs to the UN Convention on Climate Change pursuant

to the Paris Agreement. Indeed, the Commonwealth effectively has the exclusive power to set and communicate NDCs on behalf of Australia. That power is effectively unconstrained, other than perhaps by Australia's international obligations as a party to the Paris Agreement. Those obligations were discussed earlier.

924 Second, the Commonwealth has both statutory and regulatory powers that can be exercised to both reduce its own emissions and exert some control or influence in respect of emissions from activities undertaken by others in Australia. The Commonwealth therefore has the ability to implement its emissions reduction targets or NDCs by taking steps to keep Australia's emissions within those targets.

925 Third, as noted earlier, Australia is a relatively high greenhouse gas emitting nation, particularly in per capita terms. According to Climate Watch, in 2015, 2017 and 2019, Australia ranked eighth globally in greenhouse gas emissions per capita, ninth globally in 2014, sixth globally in 2018, and tenth globally in 2016. Dr Canadell's evidence with respect to Australia's per capita emissions rankings differed slightly and were based on a different dataset. His evidence was nonetheless that Australia has ranked in the top ten globally for emissions per capita each year between 2014 and 2022. The CCA described Australia as a "high-emitting, highly developed country with a strong capacity to address climate change". Nevertheless, Australia's share of total annual global greenhouse gas emissions for the period between 2014 and 2019 was only approximately 1.2-1.3%. It follows that, even if the Commonwealth set and implemented aggressive emissions reduction targets, which in turn led to significant reductions in Australia's greenhouse gas emissions, those reduced emissions would have a fairly minimal impact on overall global emissions. Moreover, even if Australia significantly reduced its greenhouse gas emissions, the positive impact of those emissions reductions could be entirely overridden by increased emissions by other countries, particularly larger countries, which were unwilling or unable to set or implement strong emissions reduction targets.

926 Fourth, it might perhaps be accepted that, as stated by the CCA, strong and ambitious emissions reduction targets might influence some other countries to similarly set strong and ambitious emissions reduction targets. Conversely, weak targets set by Australia might operate as a disincentive to other countries, particularly less wealthy and less developed countries, to set strong and ambitious targets. That said, there was no direct evidence that the

targets that were set by Australia had in fact influenced the targets that were set by other countries.

927 In my view, the unfortunate reality is that, putting to one side for present purposes any protective or adaptation measures that might be implemented by the Commonwealth, and focussing instead on the setting of emissions reduction targets, the Commonwealth's ability to control, limit or reduce the harm that Torres Strait Islanders may suffer as a result of the impacts of climate change is very limited. That, of course, is not to say that, because Australia's emissions represent only a small proportion of global greenhouse gas emissions, Australia's emissions reduction targets are of little significance, or that Australia would be justified in setting weak and unambitious emissions reduction targets. As the UN Convention on Climate Change recognised, the existential threat posed by climate change makes it imperative that every country do as much as it can to reduce its greenhouse gas emissions. As a party to the Paris Agreement and as a prosperous, developed and responsible nation, Australia should plainly do its part. That, however, is a different issue. It does not alter the fact that, in reality, the Commonwealth's ability to set and implement emissions reduction targets gives it very minimal control over the risk of harm to Torres Strait Islanders from the impacts of climate change.

928 In *Sharma*, Allsop CJ concluded, albeit in the different factual context of that case, that the Minister's power in respect of the approval of extensions to coal mines did not translate into any real control in respect of the risk of harm to young Australians from climate change. His Honour said (at [334]-[337]):

It can be accepted that the Minister had, almost exclusive, control over any risk created by the approval of the extension of the mine: J[284]. But bearing in mind the nature of the harm as worldwide global climate catastrophe the control of the Minister of the harm is simply not present. The relevant concept of control is control over the harm, not control over the tiny increase in the risk.

The extent to which risk may be mitigated by countless others around the world and in particular by international agreement makes the concept of the Minister having relevant control non-existent, or extremely faint at best.

This makes the relationship between the Children and the Minister indirect and mediated by the intervening conduct of countless others around the world: cf *Graham Barclay Oysters* 211 CLR 540 at 599-600 [154] (Gummow and Hayne JJ).

929 Justice Wheelahan similarly concluded (at [838]) that the Minister's statutory power to approve or disapprove the coal mine extension in issue did not "equate to control over the risk of harm that the respondents allege so as to give rise to the recognition of a duty of care".

The same reasoning could be said to be applicable in the circumstances of this case. While Beach J in *Sharma* took a different view to Allsop CJ in respect of the factor of control, that view was based on the fact that the Minister's conduct involved a positive act which started a causal chain leading to hypothesised increased emissions, temperature increase and potential harm. The alleged negligence by the Commonwealth in this case involves a failure to act in a particular way, or an inadequate exercise of power.

930 The position of the Commonwealth in this case could also perhaps be likened in some respects to the position of the local council in *Graham Barclay Oysters*, the facts of which were discussed earlier. The council had some degree of control over some of the sources of pollution of the lake in which the oysters were grown. That control of "some aspect of a relevant physical environment" was, however, considered to be insufficient to find a duty of care in circumstances where the harm to the consumers resulted from the conduct of others who were beyond the council's control: *Graham Barclay Oysters* at [152] (Gummow and Hayne JJ). The relationship between the council and oyster consumers was indirect and "mediated by intervening conduct on the part of others": *Graham Barclay Oysters* at [153] (Gummow and Hayne JJ). While the council had various statutory powers in respect of activities within its borders, that in itself did not establish control over all risks of harm that might eventuate from the conduct of others: *Graham Barclay Oysters* at [153] (Gummow and Hayne JJ).

931 Here, the Commonwealth, through its ability to set greenhouse gas emissions reduction targets, and implement measures to endeavour to keep emissions below that target, exercised some degree of control in respect of size and impact of Australia's greenhouse gas emissions reduction targets. It may be accepted that the failure on the part of the Commonwealth to set higher targets based on the best available science meant that Australia's emissions were correspondingly higher, or most likely would have been higher, than would otherwise have been the case. Those additional emissions during the period following the setting of the emissions reduction target, however, were likely to have been but a tiny fraction of global greenhouse gas emissions during the same period. The relevant harm allegedly suffered by Torres Strait Islanders was ultimately the product of climate change caused by global warming which was in turn caused by accumulated global greenhouse gas emissions from countries all over the world over time. The ability of the Commonwealth to control one very small source of future global greenhouse gas emissions could not be said to give the

Commonwealth any significant or material control over the risk of harm, or the relevant harm suffered by Torres Strait Islanders as a result of climate change.

Coherence

932 Coherence was a particularly significant consideration in *Sharma*, essentially because the alleged duty of care was found to be inconsistent with the text, structure and context of the Act pursuant to which the Minister was empowered to approve the extension of coal mines. This case is distinguishable from *Sharma* as there is no analogous statutory scheme pursuant to which the Commonwealth was empowered to set and communicate greenhouse gas emissions reduction targets. In those circumstances, I do not consider coherence, or incoherence, to be a particularly significant consideration as part of the salient features analysis.

933 The Commonwealth submitted that recognition of the targets duty of care would be inconsistent or incoherent with the terms of s 10 of the Climate Change Act. In my view there is no force in that submission, mainly because the alleged duty of care concerns the setting or determination of Australia’s greenhouse gas emissions reduction targets and the Climate Change Act says nothing about how those targets were or are to be determined or set. The fact that one of the targets – the NDC update in 2022 – was, once determined, enshrined in the Climate Change Act is of little moment. The enactment of the Climate Change Act in 2022 can also have no real bearing on the existence of the alleged duty of care when the earlier greenhouse gas emissions reduction targets were set.

934 The Commonwealth also submitted that, at an international level, the recognition of the targets duty of care “would also appear to result in some incoherence” because the Paris Agreement acknowledges that the function of an NDC is to communicate an “intention to achieve” and that “national circumstance may also be considered in arriving [at] a contribution that is communicated in an NDC”. The posited targets duty was, in the Commonwealth’s submission, inconsistent with those aspects of the Paris Agreement.

935 I am unable to see any merit in that submission. As the Commonwealth emphasised in various other contexts, the Paris Agreement does not operate as a source of rights and obligations under Australian domestic law. I am unable to see why the recognition of a duty of care as a matter of Australian domestic law could be seen to be inconsistent with Australia’s international obligations under the Paris Agreement. In any event, the Paris Agreement does not prescribe the precise basis upon which individual countries must set their

NDCs, other than declaring that each country's NDC should "reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances": Art 4.3. I am unable to see how the recognition of the alleged targets duty could be said to be incoherent or inconsistent with that broad aspirational declaration.

Determinacy

936 The Commonwealth submitted that its potential liability under the posited targets duty of care was indeterminate for two reasons. First, it was said that the nature of the likely claims was indeterminate as a result of the "broad list of non-exhaustive impacts" of climate change. Second, it was said that the difficulty in ascertaining the likely claims was compounded by the "uncertain timescales" over which individual Torres Strait Islanders may suffer damage.

937 I reject those submissions. I am not persuaded that the Commonwealth's potential liability is indeterminate in any relevant respect. Both of the Commonwealth's arguments confuse the impacts of climate change with the compensable harm that may flow from it. The Commonwealth is not alleged to be liable for all the impacts of climate change that might manifest in years to come. It is only alleged to be liable in respect of property damage, personal injury and loss of fulfilment of Ailan Kastom (subject to the Commonwealth's argument that loss of fulfilment of Ailan Kastom is not compensable) that can be causally linked to the alleged breach of the duty of care. The fact that the impacts of climate change may be wide-ranging and may manifest many years into the future is irrelevant or immaterial in terms of determinacy. It will be for the applicants, and in due course other group members if the matter proceeds beyond the common question stage, to prove the loss and damage that they have suffered, as at the time of the hearing, as a result of the impacts of climate change insofar as those impacts can be causally linked to the Commonwealth's breach of duty.

938 As discussed later, the loss or damage said to have been suffered by the applicants is far from indeterminate. Indeed, ultimately it comes down to the question of whether loss of fulfilment of Ailan Kastom is compensable or not under the law of negligence. The applicants have not sought to prove any specific property damage or personal injury. If loss of fulfilment of Ailan Kastom is found to be a compensable loss, the fact that the loss may be difficult to quantify does not mean that it is indeterminate.

939 The problems of indeterminacy that were highlighted in *Sharma* do not arise in this case. There is an ascertainable and not particularly large class of potential claimants. The class of potential claimants in *Sharma* extended to most of the Australian population, and the alleged harm included harm that might occur many years into the future. In this case, the class of claimants is limited to Torres Strait Islanders, as defined in the pleading, who had suffered damage as a result of the Commonwealth's alleged breach of duty. Census data indicated that, as at 2021, 82,054 people living in Australia identified as either a Torres Strait Islander or Aboriginal and Torres Strait Islander. That is the upper limit of potential claimants, though the actual number of potential claimants would be likely to be significantly lower than that given that only those Torres Strait Islanders who claim to have suffered loss or damage – property loss, personal injury or loss of fulfilment of Ailan Kastom – as a result of the Commonwealth's alleged breach of duty fall within the group member definition.

940 I am not persuaded that there are likely to be any difficulties in ascertaining the nature or extent of the Commonwealth's potential liability for property damage or personal injury suffered by group members.

Findings flowing from the relationship and salient feature analysis

941 Having considered the evidence as a whole concerning the relationship between the Commonwealth and Torres Strait Islanders, including through the lens of those salient features which are relevant or pertinent having regard to the circumstances and nature of the alleged duty of care, I am not persuaded that the relationship is such that it is appropriate to impute or impose the alleged targets duty of care. That is the case even putting to one side my earlier finding that it is not, in any event, appropriate to impute or impose the targets duty given that it involves matters of high or core government policy or politics.

942 As discussed in detail earlier, I reject the Commonwealth's submission to the effect that the relationship between the Commonwealth and Torres Strait Islanders was or is essentially no more than a relationship between the governing and the governed. I would not, however, go so far as to characterise the relationship between the Commonwealth and Torres Strait Islanders as one involving special obligations of protection on the part of the Commonwealth, at least insofar as those protection obligations might be said to include obligations to protect against the impact of climate change over and above any such obligations that the Commonwealth could be said to owe all Australians.

- 943 Torres Strait Islanders comprise a relatively small, discreet and unique group of indigenous Australians, most of whom reside in a remote region of Australia in which their ancestors have resided for thousands of years. They have a deep and spiritual connection with their land and surrounding environment. Those characteristics and features relevantly distinguish Torres Strait Islanders from the broader Australian populace and provide part of the broader social context in which their relationship with the Commonwealth must be considered.
- 944 Another distinguishing feature which forms part of the broader social context of the relationship is that Torres Strait Islanders are generally more socially and economically disadvantaged than much of the Australian populace. More significantly, they are, and were recognised by the Commonwealth to be, more vulnerable to the impacts of climate change than most other communities in Australia, particularly as they mostly inhabit coastal areas and low-lying islands in a tropical region which is particularly vulnerable to sea level rises and inundation due to extreme weather and sea level events. Their relative socio-economic disadvantage also means that Torres Strait Islanders are generally less able to protect themselves from the more serious impacts of climate change and more likely to rely on the Commonwealth to protect them from climate change.
- 945 It should be emphasised, however, that the fact that Torres Strait Islanders are vulnerable to the impacts of climate does not mean that Torres Strait Islanders can be said to be vulnerable to the harm that may result from any want of care on the part of the Commonwealth in setting emissions reduction targets. Similarly, the fact that Torres Strait Islanders can be said to rely on the Commonwealth, in a generalised sense, to protect them from climate change, does not mean that they can be said to rely on the Commonwealth to protect them from harm from the impacts of climate change by the setting of emissions reduction targets in accordance with the best available science. I am not persuaded that Torres Strait Islanders can be said to be vulnerable, or to rely on the Commonwealth, in the more specific sense relevant to the alleged targets duty of care.
- 946 The distinguishing features, such as vulnerability and reliance, that tend to suggest that the nature of the relationship between the Commonwealth and Torres Strait Islanders is one in which the Commonwealth has some protection obligations towards Torres Strait Islanders in relation to the impacts of climate change, must also be considered within the broader context that climate change is a global problem with global impacts which require global solutions. Its causes are also global, in the sense that it is the product of global warming which in turn is

largely the product of anthropogenic greenhouse gas emissions that have emanated from, and continue to emanate from, countries all over the world. One particularly significant manifestation of the global nature of the causes of and threats posed by climate change is that, while Australia can and undoubtedly should play a role in the global response to climate change by significantly reducing the greenhouse gas emissions for which it is responsible, it cannot alone halt or even mitigate the ongoing harm caused by climate change in any material respect. It cannot, in other words, itself exert any material control over climate change and its adverse impacts on its citizens.

947 As the authorities discussed earlier recognise, control is a salient feature which is of particular significance when it comes to considering whether a government or public authority owes a duty of care to some or all of those for whom they have governmental or public responsibilities or obligations. If a government or public authority has little or no material control over the relevant risk of harm to a class of its citizens, that generally tells strongly against the imposition on the government or public authority of a duty of care in respect of that risk of harm. The absence of control is a particularly significant salient feature in the circumstances of this case.

948 As discussed in detail earlier, while the Commonwealth may have control over the setting of emissions reduction targets for Australia, the unfortunate reality is that the Commonwealth's ability to set and implement emissions reduction targets gives it very minimal control over the risk of harm to Torres Strait Islanders from the impacts of climate change. While Australia is a relatively large greenhouse gas emitter, particularly in per capita terms, its annual emissions nevertheless make up only a very small fraction of global greenhouse gas emissions. While the Commonwealth can, by setting emissions reduction targets, take steps to reduce Australia's emissions, it cannot be said to have any relevant control over or in respect of the amount of greenhouse gases emitted by other countries around the world, all of which contribute to global warming, climate change and the harm caused by climate change, including to Torres Strait Islanders.

949 The very minimal control that Australia has over the risk of harm to Torres Strait Islanders from the impacts of climate change tells strongly against the imposition of the alleged primary targets duty of care. It effectively outweighs those salient features of the relationship between the Commonwealth and Torres Strait Islanders which tend to weigh in favour of the existence of the targets duty of care, including the relative vulnerability of Torres Strait

Islanders to the impacts of climate change and their reliance, albeit in a generalised sense, on the Commonwealth to protect them from those impacts. The absence of any relevant control was considered to be a compelling consideration telling against the recognition of a duty of care in very similar circumstances in *Sharma*. In my view, it effectively compels the conclusion in this case that the alleged targets duty of care should not be imposed on the Commonwealth.

Have any relevantly analogous duties of care been recognised?

950 As noted earlier, the recognition of novel duties of care should proceed incrementally and by analogy with existing categories of duty. The applicants relied on several cases in which public authorities had been found to owe duties of care to prevent or protect against natural disasters or events, such as floods, fires or landslides. The applicants submitted that those duties of care were analogous to the targets duty of care they alleged the Commonwealth owed to Torres Strait Islanders.

951 I do not propose to consider the cases relied on by the applicants in that regard in detail. In my view they provide limited, if any, assistance in determining whether the Commonwealth owed Torres Strait Islanders the targets duty of care. It may readily be accepted that in some circumstances, public authorities may be held to owe duties of care to take reasonable steps protect others from harm arising from natural disasters or events. Each case, however, must be considered having regard to its own facts and circumstances.

952 As discussed in detail earlier, whether a public authority owes such a duty of care will depend on the totality of the relationship between the public authority and those to whom the duty is said to be owed. Features of the relationship that may be of particular significance may include: the powers and responsibilities of the public authority; the nature of the risk of harm and its foreseeability; and the extent to which the public authority had control over the risk of harm and the steps that the public authority was able to take reduce or mitigate the risk of harm. Each of the cases upon which the applicants relied involved facts and circumstances which distinguish them to some extent from this case. They therefore provide limited assistance to the applicants.

953 In *Rodriguez & Sons Pty Ltd v Queensland Bulk Water Supply Authority trading as Seqwater (No 22)* [2019] NSWSC 1657, a statutory authority which owned dams near Brisbane was found to owe a duty to take reasonable care in the conduct of flood operations at those dams to avoid damage to land in the vicinity of Brisbane from inundation by flood waters.

Importantly, the court held (at [86]) that the statutory authority was able to exercise of control over the release of water at one of the dams which corresponded to a “significant but not complete level of control over the risk of flooding from the Brisbane River breaking its banks”. That finding clearly distinguishes the case from this case. For the reasons given earlier, the Commonwealth did not have any significant control over the relevant risk of harm to Torres Strait Islanders.

954 In *Vernon Knights Associates v Cornwall Council* [2014] Env. L.R. 6, a council that owned and maintained certain roads was found to owe a duty of care to owners of land adjacent to those roads to avoid damage caused by flooding due to heavy rain. That case is not relevantly analogous to this case. The duty of care that was found to have been owed by the council was of a kind that was well recognised, being the duty that a landowner owes neighbouring landowners to prevent occurrences on their land from causing damage to the neighbouring property. The nature of the relationship between a landowner and their neighbours is materially different to and more proximate than the relationship between the Commonwealth and Torres Strait Islanders in this case.

955 In *High Country Outfitters Inc v Pitt Meadows (City)* [2012] BCJ No 1859; 2012 BCPC 308, a city authority was held to owe a duty of care to protect certain properties that were highly vulnerable to flooding. Those properties would not have been habitable but for a network of dykes that were maintained by the city authority. In those circumstances, the authority conceded that it “stood in a position of legal proximity” to the landowner and therefore owed it a duty of care: see [20]. Given that concession and the obviously different nature of the relationship between the parties, it could scarcely be said that the facts and circumstances of that case were analogous to those in this case. It provides little assistance.

956 The same can be said in respect of the judgment in *Electro Optic Systems Pty Ltd v State of New South Wales; West v State of New South Wales* (2012) 273 FLR 304; [2012] ACTSC 184. The applicants relied on an obiter observation by the trial judge (at [381]) that the Australian Capital Territory “owed a duty of care at common law to take reasonable steps to protect persons and property in the Territory from loss or damage by fire”. It is apparent, however, that the trial judge’s reasons for so finding were the same as those given for finding that New South Wales owed a similar duty of care, a finding that was overturned on appeal: *Electro Optic Systems* at [283]-[357].

957 In *Smaill v Buller District Council* [1998] 1 NZLR 190, a local council was found to have owed a duty of care, when granting a building permit which permitted building on land which was prone to rockfalls, to take steps to safeguard persons or property and warn the permit holder of the risk of harm. The court found (at 213) that “proximity and reliance” had been established, a finding which was in part based on the statutory context and background. The facts and circumstances of that case are obviously significantly different to the facts and circumstances of this case and provide little guidance or assistance.

958 The same can be said in respect of the decision in *La Sucrierie Casselman Inc v Cambridge (Township)* [2000] OJ No 4650. That case also concerned the grant by a council of a building permit in respect of land that was known to be prone to landslides. The court found that there was a sufficiently close relationship between the parties to support the imposition of a duty of care. That finding was based in part on the council’s statutory powers in respect of the grant of building permits. The different factual and legal context in which that case was decided means that it provides little assistance in considering whether the Commonwealth owed Torres Strait Islanders the alleged targets duty of care.

959 I am therefore not persuaded that any of the supposedly analogous cases relied on by the applicants provide any material support for the imposition of the alleged novel duty of care.

European case law in respect of duties to reduce greenhouse gas emissions

960 The applicants also relied on several decisions of European courts in which it was held, in broad terms, that a nation state (or in one case, a public company) had breached certain statutory provisions by failing to reduce greenhouse gas emissions. I again do not propose to consider those cases in any detail. As interesting as they may be, they provide little, if any, guidance or assistance in determining the issues in this case. They certainly create no precedent: *Neilson v Overseas Projects Corp (Vic) Ltd* (2005) 223 CLR 331 at [115] (Gummow and Hayne JJ).

961 The European decisions relied on by the applicants are all from civil law systems that are very different to the legal system in Australia. The applicants also sought to rely on the judgments without properly proving the law of the countries concerned. The relevance of the judgments cannot be properly considered in the absence of the relevant legal context.. Foreign law is a question of fact that must be proved by expert evidence. The applicants did not adduce any such evidence. While some of the statutory provisions considered in these cases, and some of the decisions, use language, or employ concepts, that appear to be similar

to the language and concepts in respect of the Australian common law of negligence, little, if any, real relevance to this case can be gleaned from the decisions in the absence of any evidence concerning the law of the jurisdictions in which the decisions were made.

962 The applicants referred to two decisions of the Hague District Court in the Netherlands. Both concerned what were found to be breaches of Article 6:162 of the *Dutch Civil Code*. Article 6:162(1) provided that a “person who commits a tortious act (unlawful act) against another person that can be attributed to him, must repair the damage that this other person has suffered as a result”. A “tortious act” is broadly defined in Art 6:162(2) as including “an act or omission in violation of a duty imposed by law or of what according to unwritten law has to be regarded as proper social conduct”.

963 In *Urgenda Foundation v the State of the Netherlands* (2015) ECLI:NL:RBDHA:20155555:7196, Urgenda Foundation, an environmental group, alleged that the State had contravened, or would contravene, Art 6:162 if it failed to reduce or have reduced the annual greenhouse gas emissions in the Netherlands either by 40%, or at least 25%, compared to 1990, by the end of 2020, or by at least 40% compared to 1990, by the end of 2030. The District Court of The Hague found as follows (at [4.83]):

Due to the severity of the consequences of climate change and the great risk of hazardous climate change occurring – without mitigating measures – the court concludes that the State has a duty of care to take mitigation measures. The circumstance that the Dutch contribution to the present global greenhouse gas emissions is currently small does not affect this. Now that at least the 450 scenario is required to prevent hazardous climate change, the Netherlands must take reduction measures in support of this scenario

964 The court’s finding that the State had a duty of care appeared to depend on the “jurisprudence on the doctrine of hazardous negligence” which was said to bear “a resemblance to the theme of hazardous climate change”: at [4.54]. The source and nature of the doctrine of hazardous negligence, however, is somewhat unclear. The court, however, did (at [4.63]) state that in determining the scope of the duty of care of the State, the court will take account of: the nature and extent of the damage ensuing from climate change; the knowledge and foreseeability of this damage; the chance that hazardous climate change will occur; the nature of the acts (or omissions) of the State; the onerousness of taking precautionary measures; and the discretion of the State to execute its public duties – with due regard for the public-law principles.

965 The court concluded (at [4.93]) that the State had “acted negligently and therefore unlawfully towards Urgenda by starting from a reduction target for 2020 of less than 25% compared to the year 1990”.

966 Subsequent appeals to the Court of Appeal and Supreme Court of the Netherlands did not address the District Court’s findings concerning the State’s contravention of Art 6:162, but rather determined the case on the basis of provisions in the European Convention of Human Rights. The applicants nevertheless submitted that the first instance decision remained a “useful illustration of the ways in which concepts of negligence (however geographically varied) can result in the affixing of liability for failures to respond to the risks of climate change”. In my view, however, the usefulness of the illustration is significantly undermined or limited by the fact that there is no basis for finding that the concepts of duty of care and negligence that informed the District Court of The Hague’s decision have any relevant resemblance to the Australian common law of negligence.

967 Much the same can be said about the decision of the District Court of The Hague in *Milieudefensie v Royal Dutch Shell* [2021] ECLI:NL:RBDHA:2021:5339. In that case, another environmental group, Milieudefensie, alleged that Royal Dutch **Shell**, a public company, breached Art 6:612 because its business operations which resulted in CO₂ emissions constituted an “illegal act” towards Milieudefensie. The court concluded that Shell had an obligation to reduce its CO₂ emissions by net 45% by the end of 2030 relative to 2019 levels. That obligation was (at [4.4.1]) said to derive from the “unwritten standard of care” in Art 6:162 which “means that acting in conflict with what is generally accepted according to unwritten law is unlawful”. It would appear, therefore, that Shell’s contravention of Art 6:162 was based not on any “duty imposed by law”, but was rather based on “what according to unwritten law has to be regarded as proper social conduct”.

968 This decision provides little assistance given that it is entirely unclear whether the “unwritten law” in the Netherlands about what may be regarded as “proper social conduct” bears any resemblance to the Australian common law concept of a duty of care.

969 The applicants also referred to decisions by courts in Belgium and France.

970 In *VZW Klimaatzaak v Kingdom of Belgium & Others* [2021] 2015/4585/A, the Court of First Instance of Brussels held that the State and various other public authorities breached Articles 1382 and 1383 of the *Belgian Civil Code* by, in summary, failing to adopt appropriate

measures to prevent dangerous global warming and its consequences. Articles 1382 and 1383 respectively provide that “any act whatever of many which cause damage to another obliges him by whose fault it occurred to make reparation” and “each one is liable for the damage which he causes not only by his own act but also by his *negligence or imprudence*” (emphasis added). The court found (at p 79) that the State defendants were “fully aware of the certain risk of dangerous climate change for the country’s population” and that (at p 83) “in pursuing their climate policy” the defendants had not behaved “as normally prudent and diligent authorities”.

971 On appeal, the Court of Appeal in Brussels essentially upheld the first instance finding that the State parties had contravened Arts 1382 and 1383 of the Belgian Civil Code: *VZW Klimaatzaak v Kingdom of Belgium & Others* [2023] 2021/AR/15gs 2022/AR/737 2022/AR/891. The Court of Appeal noted (at [219]) that liability under Arts 1382 and 1383 required the “simultaneous fulfilment of three conditions: the existence of fault, the existence of damage and the existence of a causal link between the two”. The element of fault was defined (at [220]) as “‘any violation of a legal or regulatory norm imposing or prohibiting a certain behavior’ or ‘any breach of the standard of care’, the latter being ‘violated when one does not behave as a normally far-sighted and diligent person finding himself in identical circumstances’”.

972 The Court of Appeal further observed (at [225]) that an administrative authority will “commit fault” under Art 1383 “when it adopts a course of conduct which either amounts to an error of conduct to be assessed according to the criterion of the normally careful and prudent authority, placed in the same conditions, or, subject to an invincible error or other cause of justification, violates a norm of national law or an international treaty which requires this authority to abstain or to act in a specific manner”. The Court of Appeal concluded, among other things, that (at [241]):

It could therefore be expected of a normally prudent and diligent State (or federated entity) that, between 2013 and 2020, it would initially set itself a GHG emissions reduction target of 25% below 1990 levels by 2020, and that in 2018, following the Paris Agreement, this target would be revised upwards, taking into account the fact that, to avoid global warming of more than 1.5°C, it should have been raised to at least -30% by 2020.

973 The emissions reduction targets set by the Belgian State were in effect found not to be those that a normally prudent and diligent State would have set.

974 This case again provides limited assistance, particularly in respect of the question whether the Commonwealth owed Torres Strait Islanders the alleged targets duty of care. Liability under the relevant Belgian statutory provisions did not appear to require the existence of any duty of care. Indeed, the concept of fault appeared to assume the existence of such a duty of care. In short, the Belgian law considered in this case does not appear to be sufficiently similar or analogous to the Australian common law of negligence to provide any relevant assistance in this matter.

975 The final decision of a European Court relied on by the applicants, the decision of the Administrative Court of Paris in *Notre Affaire à Tous v France* [2021] No 1904967, 1904968, 1904972, 1904976/4-1 need only be addressed briefly. The court found the State had contravened Article 1246 of the *French Civil Code*, which provides that “[a]ny person responsible for ecological damage is obliged to remedy it”, essentially because it was found to have taken insufficient measures to reduce greenhouse gas emissions. The applicants correctly acknowledged that the terms of the statutory provision in issue in that case were such that the question of liability was far removed from the Australian context. While the applicants submitted that the French court’s analysis nevertheless “demonstrates the ways in which precise assessment of particular state actions and policies can lead law affixing liability for the effects of climate change”, that does not relevantly assist in determining whether, having regard to the common law of Australia, the Commonwealth owes Torres Strait Islanders the alleged targets duty of care.

976 I am not persuaded that any of the European cases relied on by the applicants supports the imposition of the novel duty of care alleged by them. The applicants failed to demonstrate that the statutory law considered in those cases was relevantly analogous to the common law of negligence in Australia as it presently stands.

Conclusion in respect of duty of care

977 The Commonwealth did not and does not owe Torres Strait Islanders the alleged duty of care concerning the setting of emissions reduction targets. For the reasons given in detail earlier, that duty of care cannot or should not be imposed or imputed because it would be both inappropriate and impractical for the Court to pass judgment on the reasonableness of the Commonwealth’s actions concerning the setting of emissions reduction targets. That is because they involve issues of high or core government policy and political judgment which

properly fall within the province of the elected representatives and executive government of the day, not the judicial arm of government.

978 In any event, upon close analysis, the nature and salient features of the relationship between the Commonwealth and Torres Strait Islanders do not support the imposition of the targets duty of care. That is mainly because the Commonwealth's ability to set emissions reduction targets does not give it any materially relevant control in respect of the risk of harm to Torres Strait Islanders from the impacts of climate change. Climate change is a global problem with global causes which require global solutions. While Australia can, and undoubtedly should, play a part in that global solution, it does not follow that the Commonwealth owes any Australian citizens, even classes of Australian citizens who are particularly vulnerable to the impacts of climate change, a duty of care when it comes to the setting of emissions reduction targets.

Did the Commonwealth breach any duty of care it owed in respect of the setting of targets?

979 Given my finding that the Commonwealth did not owe Torres Strait Islanders the targets duty of care, it is strictly unnecessary to consider whether the Commonwealth breached any such duty. It is nevertheless prudent to address that question, if only because there may be an appeal and the Full Court might reach a different view concerning the existence of a duty of care.

980 The applicable principles in determining whether a duty of care has been breached were discussed at length earlier in these reasons. In short summary, the breach element of the cause of action in negligence requires the Court to consider what precautions were reasonably required of the respondent – the standard of care - and whether the conduct of the respondent fell below that standard.

981 The standard of care is determined by reference to two questions. The first question is whether a reasonable person in the respondent's position would have foreseen that any carelessness on the part of the respondent of the kind alleged by the applicant might result in the applicant (or a class of persons including the applicant) suffering harm. The risk of harm must be real and not fanciful. The second question is what a reasonable person in the respondent's position would have done in response to that risk of harm. The considerations relevant to determining what a reasonable person in the respondent's position would have done in response to the risk of harm include: the probability of the harm being suffered; the

seriousness or magnitude of that harm; the expense involved in taking steps to avoid the risk of harm; the difficulty and inconvenience of taking action which would alleviate the risk of harm; the social utility of the activity that gave rise to the risk of harm; and whether the respondent had any competing or countervailing responsibilities to others.

Was the risk of harm to Torres Strait Islanders reasonably foreseeable?

982 It is important to be clear about the question that must be asked and answered in determining whether the relevant risk of harm to Torres Strait Islanders was reasonably foreseeable. The relevant question is whether a reasonable person in the Commonwealth's position would have foreseen that carelessness on the part of the Commonwealth in setting its greenhouse gas emissions reduction targets might result in Torres Strait Islanders suffering harm of some kind. The question is *not* whether a reasonable person in the Commonwealth's position would have foreseen that there was a risk that Torres Strait Islanders might suffer harm as a result of climate change if the increase in global average temperature is not able to be stabilised at around 1.5°C above pre-industrial levels by about 2050. The focus must be on the foreseeability of harm as a result of carelessness on the part of the Commonwealth in fixing its emissions reduction targets, not the failure of the global community to achieve the scientifically accepted imperative of stabilising the increase in global average temperature.

983 The Commonwealth submitted that it was not reasonably foreseeable that any breach by the Commonwealth of its duty of care in respect of the setting of emissions targets would cause or materially contribute to the applicants and Torres Strait Islanders suffering any harm arising from the impacts of climate change. Its submissions in that respect were essentially the same as the submissions that it advanced in respect of reasonable foreseeability at the duty of care stage. In short, the Commonwealth submitted that it was not reasonably foreseeable that any failure by it to set appropriate greenhouse gas emissions reduction targets would materially contribute to any harm suffered by Torres Strait Islanders from the impacts of climate change. That was said to be the case because Australia's greenhouse gas emissions make up only a tiny proportion of global annual greenhouse gas emissions, and it could not reasonably be foreseen that a tiny incremental increase in greenhouse gas emissions globally would cause any particular impacts on the Torres Strait Islands.

984 I reject that submission essentially for the same reasons as those given earlier in the context of considering whether the Commonwealth owed Torres Strait Islanders a duty of care in respect of the setting of emissions reduction targets. I accept that the "lens is narrower" (cf

Sharma at [417], Beach J) when considering reasonable foreseeability at the breach stage than it is when considering reasonable foreseeability at the duty stage. At the breach stage, it is necessary, among other things, to focus on the type of carelessness alleged against the Commonwealth, which in essence is a failure to set appropriate greenhouse gas emissions reduction targets, or more specifically a failure to have regard to the best available science when setting those targets. Even accepting the slightly more stringent test, I consider that, armed with the knowledge it possessed concerning the best available science and the particular vulnerability of Torres Strait Islanders to the impacts of climate change, it was reasonably foreseeable that any failure by the Commonwealth to set appropriate emissions reduction targets *might* materially contribute to the harm suffered by Torres Strait Islanders from the impacts of climate change.

985 I am satisfied that the risk that carelessness on the part of the Commonwealth in setting its emissions reduction targets might materially contribute to the harm suffered by Torres Strait Islanders from the impacts of climate change was real and could not be said to be far-fetched or fanciful. That is the case even though, as discussed in more detail later in the context of causation, it might not be scientifically possible to measure or calculate the impact that any additional emissions that might result from an inadequate emissions reduction target set by the Commonwealth might have on climate change and its impacts on the Torres Strait Islands. Even though the contribution of the additional greenhouse gas emissions flowing from the alleged carelessness on the part of the Commonwealth might have been miniscule, relatively speaking, the best available science nevertheless indicated that any additional emissions would contribute to global warming and ultimately to climate change impacts such as rising sea level and extreme sea level events. Given the particular vulnerability of the Torres Strait Islanders to such impacts of climate change, I am not persuaded that it can be said that the risk that the additional emissions might materially contribute to the harm suffered by Torres Strait Islanders was far-fetched or fanciful.

What was a reasonable response to the risk of harm?

986 The relevant question, in broad terms, is what a reasonable person in the Commonwealth's position would have done in response to the risk that carelessness on its part in respect of the setting of emissions reduction targets might materially contribute to the harm suffered by Torres Strait Islanders as a result of the impacts of climate change. The answer to that question hinges on various considerations, including: the probability that Torres Strait

Islanders might suffer that harm; the seriousness or magnitude of the harm that they might suffer; the expense, difficulty and inconvenience of taking steps to alleviate the risk of harm which, in the unique circumstances of this case, would include the expense, difficulty and inconvenience that might be experienced if a target consistent with the best available science were to be imposed; and whether the Commonwealth has other countervailing responsibilities when setting emissions reduction targets. The task for the Court is to address and weigh up the relevant considerations and determine the response to the risk of harm which would be reasonable and appropriate in all the circumstances.

987 I will briefly address the various relevant considerations and what the evidence established about them shortly. Before doing so, however, it is worthwhile noting that the critical question, ultimately, is whether a reasonable person in the Commonwealth's position – which the parties agreed was, in these circumstances, a reasonable “developed international state actor” – would have taken the steps that the applicants allege the Commonwealth should have taken when setting its emissions reduction targets. Those steps – the alleged standard of care – were discussed at some length earlier. In essence, they involved: first, the identification of a target, having regard to the best available science, which would prevent or minimise the current and projected impacts of climate change in the Torres Strait Islands (defined in the pleading as the “Best Available Science Target”); and second, the implementation of such measures as were necessary to reduce Australia's greenhouse gas emissions consistent with that target. The applicants' case mainly focussed on the first of those two steps. The second step cannot be ignored, however, because it assists in determining what is involved in the first step.

988 As has already been noted, the applicants contended that a reasonable developed international state actor in the Commonwealth's position would have identified an emissions reduction target, having regard to the best available science, which would prevent or minimise the current and projected impacts of climate change in the Torres Strait Islands. The process of identifying that target (the “Best Available Science Target”), itself involved the following steps (expressed in simple terms) having regard to the best available science: first, identifying the current and projected impacts of climate change in the Torres Strait Islands; second, identifying the risk, scope and severity of the current and projected impacts of climate change in the Torres Strait Islands; third, identifying the global temperature limit necessary to prevent or minimise many of the most dangerous current and projected impacts of climate change to small and low-lying islands, such as the Torres Strait Islands; and fourth,

identifying the best available science target reflecting the global temperature limit determined in the third step. As will be seen, the lynchpin of the applicants' case in respect of breach was that the best available science had indicated that, in order to minimise many of the most dangerous projected impacts of climate change, including in the Torres Strait Islands, it was necessary to limit the increase of the global average temperature to 1.5°C above pre-industrial levels.

989 Having identified the Best Available Science Target, the applicants' posited standard of care then required the implementation of "such measures as are necessary to reduce Australia's [greenhouse gas] emissions consistent with" that target. That is an important element of the posited standard of care because it essentially means that, on the applicants' case, a reasonable developed state actor in the Commonwealth's position would not only be required to identify a Best Available Science Target. It would also be required to set that target and implement policies to ensure that emissions were reduced in line with that target. What it also tends to suggest is that the emissions reduction target that the reasonable developed state actor in the Commonwealth's position was required to set and meet was based solely on the best available science and did not have regard to any other factors or considerations. The applicants' contentions in respect of the Commonwealth's breach of the standard of care were also largely premised on the contention that the targets that were set by the Commonwealth were not consistent with the best available science because they were not consistent with Australia remaining within its share of the scientifically calculated CO₂ budget which would need to be met to keep global average temperature increase to 1.5°C.

990 The Commonwealth submitted, in essence, that a reasonable developed international state actor would not have taken the steps involved in the applicants' posited standard of care, particularly because a reasonable developed international state actor would not necessarily make decisions in respect of its emissions reduction targets having regard only to the best available science. Rather, it would have regard to various other relevant factors and considerations, including: the macroeconomic impact and cost of significantly reducing greenhouse gas emissions; the impact upon employment, wages and the standard of living in the nation as a whole; the views of "stakeholders" including business, community, environmental and indigenous stakeholders; and the impacts of the chosen target on foreign relations and trading partners. I consider there to be considerable force in that submission, though before explaining why that is so, I should briefly address the other factors in the so-called "negligence calculus".

The probability and magnitude of harm to Torres Strait Islanders

991 The Commonwealth admitted that, from at least 2011, it knew that the Torres Strait Islanders had already been harmed by some impacts of climate change and that there was a high probability that they would be further harmed in the future by impacts of climate change, including in particular sea level rise and oceanic warming. Indeed, the Commonwealth accepted that the probability of Torres Strait Islanders being harmed by the impacts of climate change in the future was high given that past greenhouse gas emissions would in any event continue to warm the planet. The Commonwealth also conceded that climate change poses significant risks for all people, including Torres Strait Islanders. It submitted, however, that it could not predict with any certainty how the impacts of climate change would “manifest locally” in the Torres Strait Islands because it was very difficult to scientifically model those future impacts. Perhaps more significantly, the Commonwealth submitted that the magnitude of harm that Torres Strait Islanders might suffer from any breach of duty by it in respect of the setting of emissions reduction targets was “imperceptibly small”.

992 I do not consider those submissions to be particularly persuasive or deserving of much weight. As discussed in detail earlier, there could be no doubt that the Torres Strait Islands and Torres Strait Islanders were particularly vulnerable to the impacts of climate change and that the Commonwealth knew that to be the case. The Commonwealth knew that Torres Strait Islanders had been harmed by the impacts of climate change in the past, including from rising sea levels and more frequent and intense extreme sea level events. It also knew that Torres Strait Islanders were likely to continue to suffer that harm in the future and, more significantly, that the magnitude and frequency of that harm was likely to increase and intensify as global temperatures increased. It was also aware that the best available science indicated that the average global temperature would continue to rise if urgent and significant steps, including steps taken by it, were not taken to reduce global greenhouse gas emissions.

993 I do not consider it to be of much significance that the Commonwealth may not have been able to model or project the precise harm that Torres Strait Islanders were likely to suffer if the Commonwealth did not perform or fulfil its role or part in reducing global emissions by setting appropriate emissions reduction targets. It may be accepted that the scientific evidence adduced in this case may have tended to indicate that the increased emissions that were likely to result from the setting of inadequate emissions reduction targets by the Commonwealth were likely to have only a very small direct effect on climate change and its impacts in the Torres Strait Islands. I am nevertheless not persuaded that the magnitude or

gravity of that harm could necessarily be said to be so miniscule or insignificant as to be irrelevant to the consideration of the reasonable response and the appropriate standard of care.

994 I should also add that it can be inferred from the evidence as a whole that there was a real risk that the failure of wealthy and advanced countries like Australia to take steps to set appropriate greenhouse gas emissions reduction targets was likely to have implications in respect of the emissions reduction targets set by other countries. Other countries were less likely to set appropriate targets based on the best available science if prosperous developed countries like Australia did not, particularly as Australia was a relatively large emitter of greenhouse gases. In my view, the Commonwealth's focus on the precise measurement of the impacts of climate change that might flow from carelessness on its part in setting emissions reduction targets was, at least in the present context, overly narrow and restrictive.

995 In all the circumstances, I would conclude that, in assessing the appropriate response and standard of care, the risk of harm to Torres Strait Islanders flowing from any carelessness by the Commonwealth in setting its emissions reduction targets was of some significance. I am also not persuaded that the potential magnitude of that harm was so minuscule that it could be disregarded or ignored, as the Commonwealth effectively submitted. That said, I would not describe either the extent of the risk of harm that might be suffered by Torres Strait Islanders specifically as a result of carelessness on the part of the Commonwealth in setting its emissions reduction targets (as opposed to the risk of the harm likely to be suffered by Torres Strait Islanders as a result of climate change more generally) as substantial. Nor would I describe the magnitude of the harm that might directly flow from any such carelessness on the part of the Commonwealth in setting its emissions reduction targets as very serious, even though I would readily describe the harm that is likely to be suffered by Torres Strait Islanders as a result of climate change in the future as very serious.

Expense, difficulty and inconvenience

996 It is generally accepted in the authorities that, in the case of public authorities, questions of resource allocation and diversion, along with financial considerations and budgetary imperatives, may fall for consideration when determining what should have been done to alleviate the risk of harm and discharge a duty of care: *Brodie v Singleton Shire Council* (2001) 206 CLR 512 at [104] (Gaudron, McHugh and Gummow JJ); *Pyrenees Shire Council* at [183] (Gummow J). In the somewhat unique circumstances of this case, the relevant considerations in this regard revolve around the economic, resource and social implications

that might flow from setting an emissions reduction target that the best available science indicated was necessary for Australia to play its part in stabilising global temperature increases to 1.5°C above pre-industrial levels. Accepting, for present purposes, that setting such a target would prevent or minimise some of the more serious or extreme impacts of climate change on the Torres Strait Islands in the future, it must also be accepted that the setting and implementation of that target would also have broader social and economic implications and impacts.

997 At a macroeconomic level, the setting and implementation of emissions reduction targets undoubtedly had implications for and impacts on Australia's economy, including its Gross Domestic Product (GDP). The evidence indicated that, perhaps not surprisingly, the Commonwealth had commissioned economic modelling for the purposes of setting its emissions target in 2015. That economic modelling indicated that an emissions reduction target of 26% below 2005 levels by 2030 would reduce Australia's GDP by 0.2-0.3%, whereas a 45% target would reduce GDP by 0.5% to 0.7%. It is therefore tolerably clear that, while setting emissions reduction targets at the sorts of levels that the best available science indicated were necessary for Australia to play its part in minimising or reducing some of the more serious impacts of climate change on communities such as those in the Torres Strait Islands, setting those targets might also have had a significant and potentially adverse impact on Australia's economy.

998 I say "might" in this context because economic modelling released or referred to in conjunction with the setting of new and significantly higher emissions reduction targets in 2022 indicated that those emissions reductions would in fact have a positive impact on GDP. That perhaps reveals that the outcomes of economic modelling commissioned in the context of government policy often depends on the inputs and assumptions upon which the modelling is based. Cynics might say that governments can tailor the inputs and assumptions to produce economic modelling that supports their preferred policy. Be that as it may, in any event, I consider that there is considerable force in the argument that, in determining the appropriate response to the risk that Torres Strait Islanders might suffer harm from carelessness in the setting of emissions reduction targets, a developed international state actor in the position of the Commonwealth might reasonably have regard to the potential impacts of higher reduction emissions targets on the national economy.

- 999 Another factor which a reasonable developed international state actor in the Commonwealth's position might reasonably be expected to consider in determining the appropriate response to the risk of harm caused by climate change if appropriate emissions reductions targets were not set is the feasibility and social and economic cost of implementing higher emissions reductions targets. There would be little point in setting a high emissions reduction target to minimise the risk of climate change related harm to vulnerable communities like those in the Torres Strait Islands if the implementation of that target was not feasible or able to be met, or if the social and economic costs of implementing measures and policies to ensure that emissions were reduced in line with that target were unacceptable or prohibitive.
- 1000 There was evidence which indicated that the Commonwealth commissioned economic research concerning the feasibility and cost of emissions abatement for the purposes of setting its emissions reduction target in 2015. The research analysed the potential of reducing emissions in six sectors of the Australian economy, being the power, forestry, industry, building, agriculture and transport industries. That research indicated that a cut of emissions by 15% by 2030 was feasible under the then current policy settings, but that the total cost of implementing all emissions reduction "opportunities" by 2020 was \$10.6 billion. I should perhaps again observe in this context that economic research commissioned and released in the context of the setting of new emissions reduction targets in 2022 painted a significantly different and rosier picture of the economic cost of the proposed emissions reduction target. That research appears to have taken into account various economic policies that were to be implemented in conjunction with the new emissions reduction target, including, for example, significant investment in renewable energy. In any event, whichever way one looks at it, it would not in all the circumstances be unreasonable for a developed state actor in the Commonwealth's position to have regard of the feasibility and economic and social cost of setting an emissions reduction target in line with the best available science.
- 1001 There are perhaps other factors that might also be considered under the rubric of the expense, difficulty and inconvenience of setting an emissions reduction targets based on the best available science. Accepting again that the setting of high emissions reduction targets having regard to the best available science would be likely to reduce the risk of harm from climate change likely to be suffered by vulnerable communities like those in the Torres Strait Islands, it must also be accepted that the setting of high emissions reduction targets might have adverse economic and social implications for other communities in Australia. For example,

the setting and implementation of high emissions reduction targets might reasonably be expected to have adverse impacts on certain industries, such as the coal, gas, mining, energy and some manufacturing industries, as well as the communities that depend on people working in those industries. It would in my opinion be reasonable in some circumstances for a developed state actor in the Commonwealth's position to have regard to those types of implications in determining the appropriate response, including the setting of emissions reduction targets, to the risk of harm likely to be suffered by communities in the Torres Strait Islands from climate change.

1002 I should emphasise that I am not suggesting that a reasonable developed international state actor in the position of the Commonwealth would, in addressing the risk posed by the impacts of climate change, particularly on vulnerable communities such as those in the Torres Strait Islands, be likely to ignore or entirely disregard the best available science when setting emissions reduction targets. Indeed, I find it difficult to accept that any reasonable developed state actor would ignore or disregard the best available science when setting emissions reduction targets. Nor am I suggesting that the risks posed to vulnerable communities like those in the Torres Strait Islands could reasonably be ignored or entirely disregarded in the face of broader economic or social concerns. Rather, the point is that the reasonable response to the risk of harm to particular communities from climate change may not be one which focusses entirely on what the best available science says about the emissions reduction target that would minimise the risk of that harm. In my view, it could not be said to be unreasonable for a developed state actor in the Commonwealth's position to have regard to other implications and impacts which might flow from the setting of a particular emissions reduction target, including macro and micro economic impacts and the overall feasibility of the implementation of the proposed target.

1003 That is perhaps a convenient segue to the next important element of the "negligence calculus", which is the presence of competing or countervailing responsibilities.

Competing or countervailing responsibilities

1004 A democratically elected government like Australia has responsibilities to all its citizens, including when making important policy decisions such as the setting of greenhouse gas emissions reduction targets in accordance with its international obligations. It might reasonably be expected that, in determining the appropriate emissions reduction target, a reasonable developed international state actor in the position of the Commonwealth would

have regard to what the best available science said about the target, or range of targets, that would stabilise the increase in global average temperature and thereby avoid some of the worst impacts of climate change. It might also be expected that a reasonable developed international state actor would have regard to the risk of harm, and the magnitude of the harm, that was likely to be suffered by communities that were particularly vulnerable to the risks of climate change. It does not follow, however, that in responding to the risks posed by climate change, a reasonable developed state actor in the Commonwealth's position would be likely to focus solely or entirely on the best available science, or focus entirely on the risks faced by particular communities, even those communities that were particularly vulnerable to climate change.

1005 As has already been observed, the setting and implementation of emissions reduction targets by the Commonwealth undoubtedly have implications and effects that extend well beyond the positive impacts that reduced emissions may have in addressing the worsening impacts of climate change. While it may be accepted that aggressive or ambitious emissions reduction targets, which pay full regard to the best available science, are likely to go some considerable way towards addressing the risks posed by climate change particularly to vulnerable communities, like those in the Torres Strait Islands, they are equally likely to have broader implications and impacts on the Australian economy, as well as economic and social impacts on other communities.

1006 The need to consider the broader economic, social and even political implications of emissions reduction targets is no doubt one of the reasons why views almost invariably differ about the appropriate governmental response to climate change and the setting of emissions reduction targets. It is, and continues to be, a hotly contested area of government policy and decision-making. One need only compare the report of the Taskforce which was published in the context of setting by the Commonwealth of its emissions reduction target in 2015 with the policy document published by the new Commonwealth Government in respect of its setting of its far more ambitious emissions reduction target in 2022. As discussed earlier, the climate science barely rated a mention in the Taskforce's report in respect of the target, whereas the 2022 policy document referred at some length to the climate science. That said, even the 2022 policy document made it abundantly clear that, in setting the new emissions reduction target, the Commonwealth had regard not only to what it called the "scientific imperatives", but also the "economic imperatives" and "national and international imperatives". Indeed,

the more ambitious emissions reduction target was said to be “squarely focussed on the economic interests of Australian families and businesses”.

1007 The fact that government decisions in relation to emissions reduction targets are likely to include not only scientific considerations, but also economic, social and even political considerations, was discussed at length earlier in the context of the appropriateness of imposing on the Commonwealth the applicants’ posited targets duty and standard of care. For the reasons given there, I found that it would be inappropriate to impose the posited duty of care because, among other things, it would inevitably throw up for consideration at the breach stage matters that are core policy questions unsuitable in their nature and character for judicial determination. Those policy questions would include the extent to which the Commonwealth was required or reasonably expected to set emissions reduction targets by reference to, or solely by reference to, the best available science and whether, and to what extent, it would be reasonable for the Commonwealth to have regard to other considerations, such as budgetary, economic, social and political considerations, in setting emissions reduction targets.

1008 I remain of the view that it would, in all the circumstances, be inappropriate to impose the posited duty of care on the Commonwealth. If that duty of care were to be imposed, however, it would seem to me that, in considering the appropriate standard of care – the response that a reasonable developed state actor in the Commonwealth’s position would adopt, when setting emissions reduction targets, to address the risk that vulnerable communities, like those in the Torres Strait Islands, would be harmed by climate change – it would be relevant to have regard not only to the best available science and the interests of Torres Strait Islanders, but also other countervailing and potentially conflicting governmental responsibilities. As has already been observed, those countervailing responsibilities might include broader economic considerations and the economic and social impact that aggressive emissions reduction targets, set solely by reference to the best available science, might have on other people, entities and communities in Australia. The relative weight to be given to those broader economic and social factors and considerations would ultimately be a matter for the elected government of the day to decide.

1009 While I would accept that a reasonable developed international state actor in the Commonwealth’s position would, or would be likely to, give careful and earnest consideration and weight to the best available science in relation to climate change, I do not

accept that it would only have regard to the best available science. I do not accept that a reasonable developed international state actor in the Commonwealth's position, acting reasonably, would necessarily set (and implement policies to meet) a "Best Available Science Target" which reflected, or was consistent with, a global temperature limit that the best available science indicated was necessary to prevent or minimise the impacts of climate change on certain communities. Other competing and countervailing governmental responsibilities may well reasonably justify a different target.

The applicants' posited standard of care is not appropriate

1010 If, contrary to my earlier finding, the Commonwealth owed Torres Strait Islanders the alleged targets duty of care, I am not persuaded that, to meet or discharge that duty of care, the Commonwealth was required to exercise the standard of care alleged by the applicants (at 3FASOC [82]). I am, in short, not persuaded that, in order to meet the targets duty of care, the Commonwealth was required to identify (and set) a target, having regard to the best available science, which would prevent or minimise the current and projected impacts of climate change in the Torres Strait Islands and then implement measures necessary to reduce Australia's greenhouse gas emissions consistent with that target. While an appropriate standard of care might have required the Commonwealth to give real and genuine consideration to the best available science, and perhaps even identify a target that the best available science indicated would likely prevent or minimise the harm that vulnerable communities might suffer as a result of the worse impacts of climate change, I am not persuaded that the standard of care effectively required the Commonwealth to set that best available science target and then implement measures to reduce Australia's greenhouse gas emissions consistent with that target.

1011 The fundamental problem with the applicants posited standard of care is that it would effectively require the Commonwealth to have regard *only* to the best available science when setting its greenhouse gas emissions reduction targets. It would effectively require the Commonwealth to set emissions reduction targets based solely on what the best available science indicated would be consistent with achieving the global temperature limit which would be necessary to prevent or minimise many of the most dangerous impacts of climate change to small and low-lying islands, such as those in the Torres Strait. The standard makes no provision for the Commonwealth to have regard to any other factors and considerations when setting emissions reduction targets, including factors such as the expense,

inconvenience or difficulties that may be encountered in implementing measures to reduce emissions in line with the targets, or other competing or countervailing responsibilities that the Commonwealth might have. The Commonwealth would effectively fail to meet that standard of care if it set emissions reduction targets which materially differed from that best available science target.

1012 The applicants appeared at times to submit that they did not allege that the best available science was the sole consideration to which the Commonwealth could have regard when setting its emissions reduction targets. It did not, however, indicate what other factors and considerations the Commonwealth could reasonably take into account when setting its emissions reduction targets, or what weight the Commonwealth could reasonably give to those other considerations. I am also unable to see how that submission can sit with the applicants' pleaded standard of care which, as discussed earlier, makes no provision for the Commonwealth to have regard to any factors and considerations other than the best available science when setting its emissions reduction targets. Rather, the posited standard required the Commonwealth to identify a "Best Available Science Target" and then implement such measures as were necessary to reduce Australia's greenhouse gas emissions consistent with that target. Moreover, the applicants' case in respect of the breach of the alleged duty of care was based entirely on the allegation that the emissions reduction targets set by the Commonwealth in 2015, 2020, 2021 and 2022 did not satisfy or meet the standard of care because they were not consistent with the Best Available Science Target. That was said to be because they were not consistent with Australia remaining within its share of the scientifically calculated carbon budget which would need to be met to keep global average temperature increase to 1.5°C.

1013 The difficulties with the applicants' case in respect of the standard of care they alleged the Commonwealth was required to exercise when setting its emissions reduction targets are essentially the same difficulties that were discussed at length earlier in the context of the applicants' posited targets duty of care. If, as the applicants ultimately appeared to concede, the Commonwealth was able to have regard to factors and considerations other than the best available science when setting its emissions reduction targets, questions inevitably arise in respect of the other factors and considerations that the Commonwealth could reasonably take into account, and the weight that the Commonwealth could reasonably give to those other

factors and considerations. As Allsop CJ said in *Sharma* (at [7]), those questions are “core policy questions unsuitable in their nature and character for judicial determination”.

Did the Commonwealth fail to exercise the posited standard of care?

1014 It is again strictly unnecessary for me to answer this question given my finding that, if the Commonwealth owed Torres Strait Islanders the posited targets duty of care, the Commonwealth was not required to exercise the standard of care as pleaded by the applicants. I will, however, proceed to briefly address this question for more abundant caution given the possibility that the applicants might appeal my findings concerning the duty and standard of care. I have, in any event, addressed and determined most of the factual issues relevant to this question earlier in these reasons.

1015 The applicants alleged that the Commonwealth breached the targets duty of care when it set its emission reduction targets (and communicated its NDCs pursuant to the Paris Agreement) in 2015, 2020, 2021 and 2022. It is necessary to address each of those allegations separately, though as will be seen, the findings in relation to the targets set in 2020 and 2021 largely flow from the findings concerning the target set in 2015. I will address those allegations on the basis that (contrary to my finding) the applicable standard of care was the standard of care pleaded by the applicants.

The setting of the emissions target in 2015

1016 The applicants’ case that the Commonwealth breached the targets duty of care (and failed to exercise the standard of care) when it set its emissions reduction target in 2015 was mainly based on the evidence of Professor Meinshausen to the effect that the greenhouse gas emissions reduction targets that were set by Australia in 2015 and 2022 were not consistent with Australia remaining within the remaining cumulative greenhouse gas emission allocations which, according to his calculations, would be consistent with a CO₂ budget which would limit global temperature increase to 1.5 °C above pre-industrial levels. The applicants also relied on the reports published by the CCA in 2014 and 2015 and submitted that the Taskforce’s final report and the evidence of Ms Pearce and Ms Gardiner indicated, if anything, that the Commonwealth failed to engage with, or give any real or genuine consideration to, the best available science when it set its emissions reduction target of 26 to 28% below 2005 levels by 2030.

1017 I considered Professor Meinshausen’s evidence at length earlier in these reasons. For the reasons given earlier, I accept Professor Meinshausen’s evidence and reject the Commonwealth’s criticisms of it. Professor Meinshausen’s evidence supported the proposition that the Commonwealth’s 2015 emissions reduction target was not consistent with, or based on, the best available science. Achieving that target would, at best, have seen Australia exhausting its share of the CO₂ budget necessary to limit global temperature increases to 1.5°C by 2030.

1018 I also considered and made findings concerning the Taskforce’s final report and the evidence of Ms Pearce and Ms Gardiner earlier in these reasons. For the reasons given earlier, that evidence indicated that the Commonwealth did not engage with, or give real or genuine consideration to, the best available science when it set its emissions reduction target in 2015. To the extent that climate science was considered at all by the Commonwealth, it was only considered in a very crude or cursory manner, or as a mere background or contextual consideration. There is certainly nothing to suggest that the Commonwealth paid any attention to what the best available science said about the emissions reductions that Australia would have to achieve for its emissions to be consistent with a CO₂ budget which would limit global temperature increase to 1.5°C above pre-industrial levels. The evidence also indicated that the Taskforce and the government did not meaningfully engage with the CCA’s 2014 and 2015 reports and the recommendations therein, which were based on the best available science. Indeed, it is tolerably clear that those reports were either ignored or entirely disregarded.

1019 Many of the Commonwealth’s submissions were directed to the general proposition that the target set by the Commonwealth was reasonable. It submitted, for example, that the target was reasonable in light of the “various factors and competing duties and considerations that are required to be balanced in determining an NDC”. It also submitted that the target was “within the range of targets adopted by other developed international state actors at the time”. Those submissions, however, are essentially beside the point and largely ignore the standard of care pleaded by the applicants, which focusses entirely on the best available science. Save for that, the Commonwealth’s submissions relied on its criticisms of Professor Meinshausen’s evidence and scientific analysis which, as already noted, I reject.

1020 In all the circumstances I would conclude that, if the applicable standard of care required the Commonwealth to set its 2015 emissions reduction target by reference to, and consistently

with, the best available science at the time, it failed to exercise that standard of care and thereby breached its duty of care to Torres Strait Islanders.

The target “update” in 2020

- 1021 The Commonwealth’s update of its emissions reduction target in December 2020 was not so much an update as a reaffirmation of the target it set in 2015, which was a target of reducing greenhouse gas emissions by 26 to 28% below 2005 levels by 2030. The evidence concerning the Commonwealth’s decision to reaffirm its initial target was essentially limited to documentary evidence in the form of a Ministerial Submission and some evidence from Ms Gardiner which added little to that documentary record.
- 1022 The applicants’ case was that the evidence of Professor Meinshausen again supported the inference that the Commonwealth’s decision in 2020 to reaffirm the target that was set in 2015 was not consistent with, or was made without any real or genuine regard to, the best available science. I accept that submission. That inference was further supported by the evidence, such as it was, concerning the basis upon which that decision was made. That evidence, which was discussed earlier in these reasons, essentially indicated that the Commonwealth government at the time decided to reaffirm the 2015 target simply because it considered that it had an electoral mandate to do so. The evidence gives no indication whatsoever that the Commonwealth had regard to the best available science when it decided to reaffirm the existing target. Indeed, the fact that the Commonwealth paid no attention to the best available science is readily apparent from the fact that the Ministerial Submission in respect of the decision made no reference to the IPCC’s recently published Special Report on Global Warming of 1.5°C. It certainly did not indicate that an option for the government was to revise the first NDC in light of the IPCC’s findings in that report, as might be expected if the Commonwealth had been at all interested in the most recent and most reliable science on the topic.
- 1023 The Commonwealth’s submissions concerning the target update in 2020 were broadly the same as the submissions it made in respect of the 2015 target. I do not accept those submissions essentially for the same reasons as those given in respect of the 2015 target.
- 1024 I would, in all the circumstances, again conclude that, if the applicable standard of care required the Commonwealth to set its “updated” emissions reduction target in 2020 by reference to, and consistently with, the best available science at the time, it failed to exercise

or discharge that standard of care and thereby breached the targets duty of care it owed to Torres Strait Islanders.

The target update in 2021

1025 As discussed earlier, in 2021 the Commonwealth again reaffirmed the target it had set in 2015 of reducing Australia’s greenhouse gas emissions by 26 to 28% below 2005 levels by 2030. This time, however, the Commonwealth added or adopted an additional target of net zero emissions by 2050.

1026 The applicants’ case that the Commonwealth failed to have regard to the best available science when it made that decision was again mainly based on the evidence of Professor Meinshausen. I again accept that the evidence of Professor Meinshausen supports the inference that the Commonwealth failed to engage with, or give any real or genuine consideration to the best available science when it reaffirmed the target it first set in 2015.

1027 As discussed at length earlier in these reasons, Professor Meinshausen’s evidence also supports the inference that the addition of the target of net zero emissions by 2050 was not genuinely or realistically based on the best available science. That is because the target set in 2015 and reaffirmed in 2020 would have seen Australia relevantly exhaust its relevant allocation of remaining cumulative greenhouse gas emissions by or before 2030. It would follow that there was no possible or realistically achievable pathway to net zero emissions by 2050. The available inference is that that the addition of the net zero target for 2050 was essentially irrelevant and amounted to little more than window dressing to deflect growing criticism of the inadequate 2030 target.

1028 The other evidence in respect of the target update in 2021 essentially comprised the communication of that target to the UNFCCC and Ms Pearce’s evidence. That evidence was discussed earlier. That evidence provides no real support for the proposition that the Commonwealth had regard to the best available science when it decided to reaffirm the target set in 2015 in respect of emissions by 2030. Indeed, the evidence again tended to indicate that the Commonwealth government at the time decided not to change that target because it considered it had an electoral mandate to do so. As for the addition of the target of net zero emissions by 2050, Ms Pearce’s evidence, if anything, tended to support the inference that the addition of that target was a matter of mere window dressing.

1029 I would therefore again conclude that, if the applicable standard of care required the Commonwealth to set its “updated” emissions reduction target in 2021 by reference to, and consistently with, the best available science at the time, it failed to exercise or discharge that standard of care and thereby breached the targets duty of care it owed to Torres Strait Islanders.

The target update in 2022

1030 The target update in 2022, which followed a change in government, was a real update in the sense that it involved a significant increase in the existing target. The new target was to reduce Australia’s greenhouse gas emissions by 43% below 2005 levels by 2030.

1031 The applicants’ case that, in setting this new target, the Commonwealth failed to have regard to the best available science was based entirely on Professor Meinshausen’s evidence. For the reasons given at length earlier, I do not accept that Professor Meinshausen’s evidence alone supports the inference that the Commonwealth failed to have regard to the best available science when it set this target. The upshot of Professor Meinshausen’s evidence was that under the new target it was theoretically possible, but highly unlikely, that Australia would or could remain within its allocation of remaining cumulative greenhouse gas emissions for 2050 if the grandfathering methodology for determining CO₂ budgets was employed. I accept that evidence, though I am nevertheless not persuaded that the significantly strengthened target which was set in 2022 was so low that it could be said to be inconsistent or incompatible with the best available science. Unlike the earlier targets, it was at least capable of realistically contributing towards limiting the increase in the global average temperature to 1.5°C above pre-industrial levels.

1032 The documentary evidence concerning the decision to set the new target in 2022 also tended to support the inference that the Commonwealth genuinely considered and engaged with the best available science. That evidence, which included the policy document that revealed the new target and the Commonwealth’s communication of the updated target to the UNFCCC, referred to, among other things, the Paris Agreement and the objective of setting of emissions reduction targets that were consistent with the objective of pursuing efforts to limit the increase in global average temperature to 1.5°C above pre-industrial levels. This indicated that the target had been set with that objective in mind.

1033 It follows that, if the applicable standard of care required the Commonwealth to set its “updated” emissions reduction target in 2022 by reference to, and consistently with, the best

available science at the time, I do not accept that the Commonwealth failed to exercise that standard of care and thereby breached its duty of care when it set the 2022 target.

An ongoing breach of duty?

1034 The applicants alleged that the Commonwealth's breach of its duty of care was ongoing. They did not, however, actively press or advance any separate submissions in respect of that allegation. I should nevertheless make it clear that, for all the reasons that have been given, including in respect of the setting of the target in 2022, I reject the allegation that there is any ongoing breach by the Commonwealth of any duty of care that it may owe Torres Strait Islanders in respect of the setting of greenhouse gas emissions reduction targets.

Conclusion in respect of the alleged breaches of duty

1035 Even if the Commonwealth owed Torres Strait Islanders a duty of care in respect of the setting of emissions reduction targets as alleged by the applicants, I am not satisfied that the standard of care that the Commonwealth was required to exercise was as alleged by the applicants. If, however, contrary to that finding, that was the appropriate standard of care, I would accept that the Commonwealth did not exercise that standard of care when it set its emissions reduction targets in 2015, 2020 and 2021. I would, however, find that the Commonwealth did exercise or discharge that standard of care when it came to setting the emissions reduction target in 2022. I also reject the applicants' contention that there is any ongoing breach of the targets duty of care.

Did any breach of the duty of care in respect of the setting of targets cause the applicants to suffer any compensable damage?

1036 Two critical questions arise if, contrary to the findings I have made in relation to the existence of the targets duty of care and the applicants posited standard of care, the Commonwealth breached the duty of care it owed to Torres Strait Islanders when it set its greenhouse gas emissions reduction targets. The first issue is whether that breach, or those breaches, caused the applicants to suffer any loss or damage. The second issue is whether any such loss or damage was compensable. There are, in my view, several difficulties with the applicants' case in respect of both of those issues. Some of those difficulties are fundamental.

1037 I should again emphasise that it is strictly unnecessary to address these issues given the findings that have been made in respect of the duty and standard of care. I will nevertheless

briefly address and make findings in respect of causation and damage given the possibility of an appeal in respect of those findings.

Causation

- 1038 The applicable principles in respect of causation were considered in detail earlier in these reasons. The applicants effectively conceded that they were not able to establish causation based on the “but for” test. They contended, however, that this was an exceptional case where causation could be established on the basis of the *Bonnington Castings* line of authority. That was said to be the case because, in short, there were multiple factors that cumulatively caused the harm suffered by the applicants and Torres Strait Islanders and the Commonwealth’s breach of duty materially contributed to that harm.
- 1039 The steps in the chain of causation that, on the applicants’ case, led to or culminated in the conclusion that the Commonwealth materially contributed to the loss or damage suffered by them and Torres Strait Islanders as a result of climate change were referred to earlier in the outline of the applicants’ case. It is, however, useful to provide some brief elaboration in respect of those steps and to outline the Commonwealth’s response to them.
- 1040 The first step in the chain of causation is that there is a near-linear relationship between increased global emissions of greenhouse gases and global temperature increases. The Commonwealth did not dispute this step. It is, in any event, clearly established by the climate science discussed in detail earlier.
- 1041 The second step is that, at relevant timescales, a tonne of CO₂ or CO₂ equivalent greenhouse gases contributes to global temperature increases in the same way no matter where in the world, or by whom, it was emitted. This step was again established by the climate science and was not disputed by the Commonwealth.
- 1042 The third step, which was again established by the climate science and not disputed by the Commonwealth, is that the increase in global temperature (or global warming) is caused by the cumulative effect of global greenhouse gas emissions.
- 1043 The fourth step is that climate change and the impacts of climate change, including the impacts experienced in the Torres Strait Islands, are caused by global temperature increase. The Commonwealth admitted that global temperature increase caused various impacts of climate change and did not dispute, as a broad proposition, that the Torres Strait Islands had experienced some of those impacts.

- 1044 The fifth step, which as will be explained shortly was contentious to some extent, is that it essentially follows from the first four steps that emissions from Australia are *a cause* of climate change and its impacts in the Torres Strait Islands, in the sense that emissions from Australia have contributed to the cumulative effect of global greenhouse gas emissions, and therefore contributed to global temperature increase and climate change.
- 1045 The sixth step, which was disputed by the Commonwealth for the reasons explained later, is that, if the Commonwealth had not breached its duty of care in respect of the setting of appropriate emissions reduction targets based on the best available science, Australia's greenhouse gas emissions would have decreased, which in turn would have lessened Australia's causal contribution to the impacts of climate change in the Torres Strait Islands.
- 1046 The seventh and critical step, is that the Commonwealth's breach of its duty of care in respect of the setting of greenhouse gas emissions reduction targets causally contributed to the impacts of climate change in the Torres Strait Islands in a material respect. In other words, the Commonwealth's breach of duty materially contributed to the harm suffered by Torres Strait Islanders from the impacts of climate change. This was perhaps the main point of contention. As discussed in more detail later, the Commonwealth submitted that, even if it could be said that the Commonwealth's breach of the targets duty contributed to the harm suffered as a result of the impacts of climate change in the Torres Strait Islands, which the Commonwealth disputed, the evidence was incapable of establishing that the contribution was material.
- 1047 The applicants ultimately conceded that there was a necessary eighth step in the relevant chain of causation, which is that the impacts of climate change in the Torres Strait Islands caused the loss or damage that the applicants claimed they and Torres Strait Islanders had suffered since the alleged breach or breaches of duty by the Commonwealth. This step was also contentious.
- 1048 The Commonwealth contended that there were several flaws and evidentiary gaps in the chain of causation advanced by the applicants. The Commonwealth's main contentions may be summarised as follows.
- 1049 First, the Commonwealth contended that the evidence did not establish that there was any necessary causal connection between the setting of allegedly inadequate emissions reduction targets by the Commonwealth and increased greenhouse gas emissions. This was essentially

a challenge to the sixth step in the chain. In the Commonwealth's submission, even if it breached the targets duty and the emissions reduction targets were lower than they would have been if they had been based on the best available science, it cannot be assumed or inferred that the lower targets would have led to higher greenhouse gas emissions in Australia. Or, to put this issue in the terms of the sixth causative step, the Commonwealth's contention was that it cannot be assumed or inferred from the evidence that, if the Commonwealth had not breached its duty of care in respect of the setting of appropriate emissions reduction targets based on the best available science, Australia's greenhouse gas emissions would have decreased or been lower than they were.

1050 Second, the Commonwealth contended that, even if it could be concluded that the setting of inadequate emissions reduction targets by the Commonwealth necessarily resulted in increased greenhouse gas emissions, the Commonwealth contended that any such increase in emissions did not relevantly contribute to the harm caused by the impacts of climate change in the Torres Strait Islands. Rather, any increase in emissions at most contributed to the increase in global temperature which in turn increased the *risk* that the Torres Strait Islands would experience some of the impacts of climate change. In the Commonwealth's submission, that would put the applicants' case in respect of causation into the *Fairchild* line of authority, as opposed to the *Bonnington Castings* line of authority. The *Fairchild* line of authority has not been approved or accepted in Australia.

1051 Third, the Commonwealth contended that, even if it could be assumed or inferred that the setting of inadequate targets would necessarily lead to increased greenhouse gas emissions, and that the increase in emissions would in turn cause an increase in global temperature, it cannot be inferred that any resulting increase in global temperature would necessarily have contributed to the impacts of climate change in the Torres Strait Islands specifically. That was said to be the case mainly because the effects of climate change can vary regionally or geographically and therefore an increase in global temperature would not necessarily translate to further impacts of climate change in any particular region.

1052 Fourth, the Commonwealth submitted that, even if each of the other three problems could be overcome, it cannot be concluded from the evidence that any contribution to the impacts of climate change in the Torres Strait Islands resulting from the Commonwealth's breach of duty was a material contribution. In the Commonwealth's submission, based mainly on the

evidence of Dr Canadell and Professor Pitman, any such contribution was immeasurable and infinitesimal and therefore not material.

1053 I will address each of those contentions in turn. As will be seen, there is some merit in each of them.

Would the setting of a high emissions reduction target result in a reduction in emissions?

1054 The first issue is, in essence, whether the applicants had demonstrated that there was a causal link between the setting of a high emissions reduction target and a reduction in emissions, or the setting of a low emissions reduction target and the emission of more greenhouse gases than would have been the case if a higher target had been set. The applicants submitted, in effect, that the existence of such a causal link could be inferred. The Court should, in the applicants' submission, find that the Commonwealth had a suite of powers that were capable of being exercised to meet emissions reduction targets. More significantly, the Court could infer not only that those powers would be exercised by the Commonwealth if a higher target had been set, but that they would be effective in reducing Australia's greenhouse gas emissions. Those inferences were said to be supported by the fact that the emissions reduction targets set by the Commonwealth pursuant to its international obligations – the NDCs it communicated pursuant to the Paris Agreement – reflected the outcomes of decisions made by the Commonwealth Government to guide the future conduct of the Commonwealth having regard to its assessment of the risks posed by continued greenhouse gas emissions. They were not, so it was submitted, "mere 'targets' disconnected from real-world consequences". Rather, they represented "the goals that determine the Commonwealth's plans of action to comply with its obligations under the Paris Agreement, and the outcome of its assessments of the risks of climate change".

1055 It may readily be accepted that the Commonwealth had available to it various powers that could be exercised in an endeavour to reduce greenhouse gas emissions in Australia for the purpose of meeting its emissions reduction targets. Indeed, the Commonwealth admitted that it had the "power or ability to take steps to reduce or minimise its own [greenhouse gas] emissions within operational and budgetary constraints" and that "a number of statutes and regulations confer powers on Commonwealth agencies or Ministers which, depending on the circumstances of a particular case, may be lawfully exercised so as to reduce or minimise [greenhouse gas] emissions from activities undertaken by other entities in Australia". There was, however, little, if any, evidence concerning the actual exercise of those powers, the

circumstances in which they could or would be exercised, or their effectiveness in reducing emissions in the short term.

1056 There was, for example, no evidence that those powers could or would be able to be exercised within a short space of time after the setting of an emissions reduction target, or that the exercise of those powers would be able to successfully achieve a lowering of emissions in accordance with the target in the short term. There was, in other words, no evidence capable of supporting the inference that the exercise of the powers would necessarily be effective in bringing emissions down in line with a new emissions reduction target in the short term, particularly if an ambitious target, considerably higher than previous targets, was set. Indeed, such evidence as there was on this topic tended to suggest that there was likely to be a lag between the setting of a higher emissions reduction target and the actual reduction of emissions. Professor Meinshausen, for example, gave the following evidence after referring to the UNEP Gap Report and noting the distinction between the climate policies implemented by countries and the NDC targets that underpinned them:

Q: And so, going back to your previous answer, that the world isn't heading towards 1.5 degrees, is that because, having regard to all of the NDCs of – currently in to the world, many countries are not doing enough to meet that target, no individual country is responsible for it?

A: Well, there are – there are two points to this; (a) there's, of course, always a sequential nature of target setting and then putting policies in place to meet these targets. Very few countries put the policies in place and then announce the targets. You might be one exception because it's a very inert apparatus. So they put out the target and all the policies that go with the target in one go. But that is not the case for individual nation states mostly where you announce a target and then you have the policy process to reach that target. **So therefore there's always going to be a lag between what the ambition of the target is versus what is the ambition of the policies to reach the target and it is quite logical that the policies currently in place don't get us to the emission levels where the targets get us and the targets of the countries – the emission targets, even if they are fully fulfilled don't get us yet to the Paris Agreement target of pursuing best efforts for one and a half degrees.**

Q: So that's to say even the targets, if they were fully filled, don't get us there and we're behind that because the policies are behind the targets?

A: Yes, correct. But also that what we discussed before, there is a ratcheting up mechanism in the Paris Agreement. So even if the targets don't get us yet to one and a half degrees, there is a vision within the Paris Agreement that these targets get stronger and stronger over time and hopefully that will get us closer and closer to what the ultimate goal is of pursuing best efforts to reach 1.5.

(Emphasis added.)

1057 Professor Meinshausen’s evidence was that “ratcheting up” was a term used under the Paris Agreement which referred to the process whereby the country parties to the agreement were in effect expected to increase their NDCs over time. Professor Meinshausen also explained that, having set their emissions reduction targets or NDCs, country parties to the Paris Agreement were not obliged or even expected to meet those targets by implementing policies that reduced their emissions in a “straight-line” path in accordance with those targets. They could, for example, reduce emissions very modestly in the years immediately following the setting of the target and then sharply decrease emissions at a later point in time.

1058 There was also some statistical evidence which tended to suggest that the setting of a higher or more ambitious target did not necessarily mean that policy measures put in place to meet that target would succeed. As has already been noted, in 2022 the Commonwealth set an emissions reduction target of reducing emissions to 43% below 2005 levels by 2030. There was, however, evidence which indicated that in December 2022 it was projected that the Commonwealth would not meet that target. The emissions projection as at that date was summarised as follows:

Under the baseline scenario, Australia is projected to achieve a 32% reduction on 2005 levels in 2030. This equates to 5% above Australia’s 2021-2030 emissions budget. Under a ‘with additional measures’ scenario, which incorporates some but not all measures that are now being implemented under the Government’s Powering Australia Plan, Australia is projected to achieve a 40% reduction on 2005 levels in 2030. This is 1% above the 2021-2030 emissions budget.

1059 The document which reported that projection also noted that the target which had been set by the Commonwealth in 2022 “sets a floor, not a ceiling, on Australia’s ambition”. That points to another flaw in this step in the applicants’ chain of causation and the inferences which they maintain are available from the evidence. That flaw is that, even if the Commonwealth set a very modest emissions reduction target which was not based on the best available science, it does not necessarily follow that emissions would only be reduced at a modest level in line with that target. Rather, emissions could in fact fall beyond that target, perhaps as a result of actions taken by other entities or persons despite the modest target. There was some evidence that tended to support that possibility. As discussed earlier, in 2015 the Commonwealth set what was generally regarded by those familiar with climate science to be a very modest target of a 26 to 28% reduction in greenhouse gas emissions below 2005 levels by 2030. In October 2021, however, the Commonwealth projected that Australia’s reduction of emissions would exceed that target. It summarised its projection in the following terms:

Under a Technology Investment Roadmap-aligned scenario, Australia could overachieve on its 2030 target by 7 to 9 percentage points, achieving a 35% reduction on 2005 levels in Paris budget accounting terms or a 38% point-in-time reduction on 2005 levels.

- 1060 It is unnecessary to detail the assumptions upon which that projection was based, or to examine what was involved in the “Technology Investment Roadmap-aligned scenario”. Even if one were to view that projection with some scepticism, it nevertheless demonstrates the point that it cannot necessarily be inferred that a low emissions reduction target will necessarily result in low or modest emissions reductions, or will result in more emissions than would be the case if a higher and more ambitious target had been set.
- 1061 There is a further flaw in the applicants’ reasoning concerning this step in the chain of causation that should briefly be addressed. Even if it is accepted, as I have effectively found, that the targets set by the Commonwealth in 2015, 2020 and 2021 were significantly lower than the targets that would have been set if the Commonwealth had set its targets solely by reference to the best available science, on my findings that situation was effectively corrected in 2022 when the Commonwealth set a significantly higher target which was at least to some extent based on the best available science. It follows that there was a very narrow window during which the postulated chain of causation operated, particularly in respect of the alleged breaches of duty in 2020 and 2021. The comparatively low targets set or reaffirmed in 2020 and 2021 were only operative for a very short space of time. If it is accepted that there was likely to be some lag between the setting of emissions reduction targets and the actual reduction of emissions following the implementation of policies to reduce emissions in line with those targets, it seems at best unlikely that Australia’s emissions between 2020 and 2021 were any higher than they would have been if more ambitious policies had been set in 2020 and 2021.
- 1062 In all the circumstances, I am not persuaded that the evidence is capable of supporting the applicants’ contention that there was a necessary causal link between the setting of a high emissions reduction target and a reduction in emissions, or the setting of a low emissions reduction target and the emission of more greenhouse gases than would have been the case if a higher target had been set.

Did any increase in emissions arising from the Commonwealth's breach contribute to any harm suffered by the applicants, or merely contribute to the risk of harm?

1063 This is a difficult but nevertheless critical question. If any increased emissions that flowed from the Commonwealth setting a low emissions reduction target in breach of the targets duty of care did no more than contribute to the risk of harm that the applicants and Torres Strait Islanders might suffer as a result of the impacts of climate change, the applicants' case in respect of causation must fail. That is because it would at best fall within the *Fairchild* line of authority which, as discussed earlier, does not at present form part of the common law of Australia.

1064 The Commonwealth's contention that any additional emissions that may have flowed from the targets set by the Commonwealth (assuming that those targets were lower than they would have been if the Commonwealth had not breached the targets duty of care) at most contributed to an increased *risk* that the applicants and Torres Strait Islanders would be harmed by impacts of climate change finds some support in the reasoning of both Beach J and Wheelahan J in *Sharma*. While *obiter dicta*, that reasoning is nevertheless persuasive authority which supports the Commonwealth's argument.

1065 As discussed in detail earlier, the alleged breach of duty in *Sharma* involved the approval of an extension of a coal mine. The extension of the coal mine would almost certainly result in increased CO₂ emissions. In addressing causation, both Beach J and Wheelahan J concluded that the increased emissions resulting from the extension approval gave rise at best to a *Fairchild* scenario, as opposed to a *Bonnington Castings* scenario, because the additional emissions would not necessarily contribute to any prospective harm to the group members. Rather the increased emissions would at most contribute to an increased risk of harm.

1066 Justice Beach reasoned that (at [436]):

The CO₂ molecules themselves do not directly cause or contribute to harm. It is rather their effect on increased temperature, which temperature ultimately causes the harm.

1067 His Honour also observed (at [437]) that “many players contribute to the total CO₂ emissions ... but it is the temperature that is then directly produced from the combined CO₂ emissions, not the harm”.

1068 Justice Wheelahan similarly reasoned (at [882]) that the additional emissions resulting from the extended coal mine “would at most amount to a contribution to an increased risk of harm,

but not a risk of contribution to the harm itself” and that the “claimed foreseeable injuries [to the group members] would not be caused by any effect on the human body or mind by the accumulation of CO₂ itself, but by consequential events such as bushfires, heats, droughts, cyclones, floods and other weather events”.

1069 The applicants pointed out that the observations of Beach J and Wheelahan J in *Sharma* were *obiter dicta*. That is obviously correct, though first instance judges should generally give considerable weight to an intermediate appellate court’s seriously considered *dicta*: *Farah Constructions Pty Ltd v Say-Dee Pty Ltd* (2007) 230 CLR 89 at [135] (Gleeson CJ, Gummow, Callinan, Heydon and Crennan JJ).

1070 Perhaps more significantly, the applicants submitted that the scenario that was considered in *Sharma* is distinguishable from the circumstances of this case because in *Sharma* it was not alleged that the group members had in fact suffered any harm as a result of the Minister’s alleged breach of duty. That is because no additional emissions had been released into the atmosphere at the time the case was heard and determined. The applicants submitted that it was hardly surprising, in those circumstances, that the most that could be said was that the Minister’s alleged breach of duty contributed to the risk of harm.

1071 It may readily be accepted that the facts and circumstances of *Sharma* were different to and relevantly distinguishable from the facts and circumstances of this case. That said, the reasoning of both Beach J and Wheelahan J does not appear to hinge on the fact that the harm to the group members had not yet eventuated. The central point in their reasoning was that any increase in CO₂ emissions which resulted from the extension of the coal mine could not be said to *directly* contribute to any harm that might be suffered by the group members. The most that could be said was that increased CO₂ emissions led to increased temperature that *might* lead to climate events that *might* harm the group members. It was on that basis that it was said that the increased CO₂ emissions led only to a contribution to the risk of harm.

1072 I accept that I must give considerable weight to the seriously considered *obiter dicta* of Beach J and Wheelahan J in *Sharma* in respect of causation. I do not doubt that their Honours’ analysis and reasoning was applicable and correct having regard to the particular circumstances under consideration in that case, which involved at best the risk that the group members might suffer harm at some point in the future. I am not, however, entirely persuaded that their Honours’ reasoning is necessarily applicable to the circumstances of this case, where the applicants allege that the additional emissions that they claim would have

resulted from the Commonwealth's breaches of duty had in fact exacerbated the impacts of climate change in the Torres Strait Islands and thereby caused them to suffer harm.

1073 In particular, I am not persuaded that the fact that the increased emissions cannot be said to have directly contributed to the harm suffered by the applicants, but can only be said to have contributed to the harm indirectly as a result of a chain of other events, such as flooding or inundation, necessarily means that the increased emissions only contributed to a risk of harm. The point of distinction in *Fairchild* was not so much that the contribution to harm was indirect, but that it was not possible to determine which of several parties was responsible for the fibres that in fact caused the plaintiff's medical condition.

1074 I am also not entirely persuaded that the fact that the alleged contribution of the increased emissions to the harm suffered by Torres Strait Islanders was indirect, in the sense that it involved further causative steps, necessarily means that the increased emissions only contributed to a risk of harm. That is particularly so in circumstances where the expert evidence indicated that there was not only a near-linear relationship between increased emissions and global temperature increases, but also a near-linear (or approximate) relationship between increased global temperature and many of the impacts of climate change. It would be different if the evidence indicated no more than that there was a mere risk that increased emissions would increase global temperature, or a mere risk that increased global temperature would result in climate change and impacts such as rising sea level and an increase in the frequency and size of extreme sea level events and inundation.

1075 That said, I am not entirely satisfied that the chain of causation from increased emissions to the harm allegedly suffered by the applicants and Torres Strait Islanders as a result of the impacts of climate change is as simple or direct as the applicants would have it. The difficulty and complexity in the applicants' case in respect of causation arises essentially because they allege that the Commonwealth's breach of duty contributed to the harm they suffered as a result of climate change and the impacts of climate change in a very general sense. They allege that various impacts of climate change have occurred in the Torres Strait Islands, including, for example, "sea level rise, with consequential impacts including flooding and coastal erosion" and "increase in the frequency, size and/or intensity of extreme weather events such as terrestrial and marine heatwaves, severe storms, and flooding". They do not, however, identify any particular climate change related event or events that in fact caused them harm. Subject to some very minor exceptions discussed later, the applicants do not, for

example, identify or adduce evidence in respect of any particular flooding or inundation occurrence or event, or any particular heatwave or severe storm, that caused them any identified harm. That makes it particularly difficult to determine if any increased emissions arising from any breach of duty by the Commonwealth can be said have contributed to any harm they suffered as a result of climate change. That difficulty or complexity becomes even more acute in the context of the next two issues, which concern whether the alleged breaches by the Commonwealth can be said to have contributed to the harm caused by the impacts of climate change in the Torres Strait Islands specifically, and if so whether that contribution can be said to have been material.

1076 Given the other findings I have made in respect of causation, I do not consider it necessary to reach a final or definitive conclusion as to whether the circumstances of this case fall within the *Bonnington Castings* scenario, or the *Fairchild* scenario. Nor, given the other difficulties and complexities that I have identified, do I think it is possible to reach a definitive conclusion in that regard. If I was required to do so, however, I would incline towards the view that the applicants' case was at least capable of falling within the *Bonnington Castle* principle.

Did any increase in emissions arising from the Commonwealth's breach contribute to any harm caused by the impacts of climate change on the Torres Strait Islands?

1077 This question can be dealt with fairly briefly, though it overlaps to some extent with the next question concerning the extent that any breach by the Commonwealth contributed to the harm suffered by the applicants and Torres Strait Islanders.

1078 The Commonwealth submitted, based on Professor Pitman's evidence, that it was "impossible to know whether the very small incremental contribution to global temperature increase referable to the Commonwealth's alleged breaches of duty had any impact at all on the Torres Strait Islands". That was said to be because "the effects of climate change vary geographically, so, although it may be accepted that any additional [greenhouse gas] emissions caused by the Commonwealth's alleged breach incrementally contributed to global temperature increase, it cannot be known if that tiny incremental increase contributed to the manifestation of climate impacts in a particular region, such as the Torres Strait Islands". It followed, so the Commonwealth submitted, that the applicants had not established any causal link between the greenhouse gas emissions that would have been avoided had the

Commonwealth not breached the targets duty and the impacts of climate change on the Torres Strait Islands specifically.

1079 I do not entirely accept that submission, though I accept that it may have some force in the context of the next question, which concerns the extent to which any breach of duty by the Commonwealth could be said to have had an effect on the impacts of climate change on the Torres Strait Islands. As was noted earlier in these reasons when discussing the evidence of Dr Canadell and Professor Pitman, it may be accepted that it is not possible, using current regional climate models, to precisely measure or quantify the climate change impacts of the exceedingly small temperature increases calculated by Dr Canadell. It may therefore be accepted that it is not possible to measure or quantify the precise extent to which Commonwealth's alleged breach incrementally contributed to the impacts of climate change on the Torres Strait Islands. It does not, however, necessarily follow from the fact the impact cannot be scientifically measured that there was no such impact.

1080 I accept the evidence of both Professor Karoly and Professor Meinshausen to the effect that, as a matter of climate science, every greenhouse gas emission contributes to global warming and associated climate impacts. The quantification or ability to measure the precise extent of the contribution is another matter. As Professor Meinshausen put it:

It would be a misinterpretation to assume that the scientific consensus is that emissions below a certain threshold have zero effect, or that impacts are only caused above a certain threshold of emissions. There is a threshold below which we cannot detect or robustly separate out the effect of individual underlying causes to a particular climate impact because of limits to our modelling and observations, but this limit of our scientific capability should not be used to justify an assumption that there is no effect (particularly given that basic physics tells us the exact opposite: there will always be some effect).

1081 As noted earlier in these reasons, Professor Meinshausen also went on to say that “scientifically speaking, there is no question that any greenhouse gas emission causes radiative forcing, and – in aggregate – they then cause global-mean warming with various regional climate impacts, that might or might not be smaller or larger in magnitude than natural variability or our capability to directly measure the temperature change on site.” He added that in his view the question was “not whether one has the technical instruments to measure the effect of a certain emission amongst natural variability in a certain region, but rather whether the overall observed climate change can (in part) be attributed to anthropogenically induced climate change and then how to (proportionally) attribute that change to emitters of greenhouse gases.” I accept that evidence.

1082 I acknowledge that Professor Pitman expressed a contrary view and suggested that Professor Meinshausen’s opinion, to which reference has just been made, was a “philosophical argument, not a scientific argument”. Professor Pitman’s evidence on that point was as follows:

At least in science, I think the scientific method requires either observed evidence or empirical evidence or modelling evidence in support of a statement one might make. The fact that you cannot observe something – in the language here, there’s a threshold below which we cannot detect or robustly separate an impact. If you can’t detect it or demonstrate what is causing something, I’m not sure science can help you unpack that story.

1083 I do not accept Professor Pitman’s suggestion that Professor Meinshausen was advancing a philosophical argument, rather than a scientific argument. I am unable to see how Professor Meinshausen’s opinion could be said to be based on philosophy or philosophical reasoning. Rather, his opinion was essentially based on the fact that, as he put it, “there is no scientific doubt that every greenhouse gas emission contributes to global warming”. To my mind, the disagreement between Professor Pitman and Professor Meinshausen is not so much about whether it can be said, as a matter of science, that the emission of a quantity of greenhouse gas has had a climate change impact in a region if that impact cannot be modelled or measured. The real dispute appears to me to concern what can be said, as a matter of science, about the extent or degree of that impact. In terms relevant to this case, the question is whether it can be said that an impact that is so small that it cannot be scientifically modelled or measured is a material impact. It is to that issue that attention must now be directed.

Can it be concluded from the evidence that any contribution to the impacts of climate change on the Torres Strait Islands resulting from the Commonwealth’s breach was material?

1084 There was ultimately no real dispute between Professor Meinshausen, Dr Canadell and Professor Pitman as to the size of any temperature increase that would have been avoided if Australia’s emissions had been reduced in accordance with Professor Meinshausen’s calculations (based on Australia’s share of the remaining cumulative greenhouse gas emissions which would be consistent with a CO₂ budget to limit global temperature increase to 1.5°C above pre-industrial levels). The consensus was, in effect, that any avoided temperature increase would have been extremely small such that it could not be measured by any existing scientific instrument. It must effectively follow that, even putting to one side Professor Pitman’s views concerning regional climate change models and the regional or geographical variations in the impacts of climate change, it would not be possible to scientifically measure or model any climate change impacts that such a small temperature

variation would have in any particular region, including the Torres Strait Islands. The overall effect of Professor Pitman's evidence was also that any such impacts could not be scientifically observed. I accept that evidence. The critical question is whether, in light of that finding, any such climate change impacts in the Torres Strait Islands could be said to be material for the purposes of the *Bonnington Castings* principle. In my opinion that question must be answered in the negative.

- 1085 As discussed earlier in these reasons, a respondent's negligent act can only be found to have materially contributed to the applicant's loss if it played some part in that loss. There must be a point where it can be said that the part played by the respondent's negligent act in contributing to the applicant's loss is so small or insignificant that it cannot be said to be a material contribution. It is difficult to see how a contribution that is so small that it cannot be scientifically modelled, measured or observed could sensibly be said to be material in that sense. How, it may be asked rhetorically, can it be concluded that a negligent act played a part in causing a loss if the part it played is so small that it cannot be measured or observed?
- 1086 The question of causation must be approached with a modicum of common sense, including when it comes to applying the *Bonnington Castings* principle. I am unable to see how, as a matter of common sense, it could be concluded that any climate change impacts in the Torres Strait Islands that flowed from any breach of the targets duty by the Commonwealth could, as a matter of common sense, be found to have played a part in any actual harm suffered by Torres Strait Islanders in circumstances where those climate change impacts are so small that they cannot be measured or observed.
- 1087 It is important to emphasise that the question here is whether any additional greenhouse gas emissions which may have resulted from the Commonwealth's breach can be said to have *materially* contributed to the harm suffered by Torres Strait Islanders from the impacts of climate change in recent times. The question is not whether Australia's greenhouse gas emissions as a whole contributed to the harm suffered by Torres Strait Islanders. It may be accepted that Australia's contribution to global greenhouse gas emissions in recent times has been significant and certainly cannot be described as being *de minimis* or trivial. That, however, is beside the point in relation to the question under consideration, which only concerns the impact of Australia's emissions that resulted from the Commonwealth's alleged breach of duty.

1088 Likewise, the question is not simply whether Torres Strait Islanders have been harmed by climate change in recent times, or even whether the harm that Torres Strait Islanders have suffered as a result of climate change in recent times has increased in terms of frequency or severity. The evidence, discussed in detail earlier, suggests that to be the case. The critical question is whether it can be concluded that the Commonwealth's alleged breach of duty materially contributed to any of that harm. In my view, the evidence does not support that conclusion.

1089 It is necessary to briefly address two additional submissions that were advanced by the applicants in support of their contention that the Commonwealth's alleged breach of duty materially contributed to the harm they have suffered from the impacts of climate change.

1090 The first submission was, in effect, that if Australia's contribution to climate change is found not to have materially contributed to any harm suffered by Torres Strait Islanders as a result of the impacts of climate change, the "upshot would be that no nation could bear responsibility for the impacts of climate change". I reject that submission. It suffers the vice referred to earlier, that is, it focusses on Australia's greenhouse gas emissions and contribution to climate change generally, instead of focussing on whether any emissions resulting from the Commonwealth's alleged breach of the targets duty materially contributed to the harm suffered by the applicants. The submission also appears to be based on a broad notion of responsibility, as opposed to legal responsibility in tort having regard to the common law of Australia.

1091 The second submission was that "the degree of impact caused by the Commonwealth's breaches is increased because of the negative influence of the Commonwealth's emissions ambition of other countries". I reject that submission. It was based on the evidence of Ms Pearce to the effect that Australia's actions in respect of climate change could influence the actions of other nations. While it may be accepted, as a general proposition, that Australia's actions in respect of climate change, including in respect of the setting of emissions reduction targets, might well influence the actions of other nations, there was no evidence that the emissions reduction targets set by the Commonwealth had in fact had any impact on the targets set by other nations, let alone any evidence concerning the nature or extent of that impact. There was certainly no evidence that the Commonwealth's breach of duty in fact caused any other countries to set lower emissions reduction targets or to emit more greenhouse gases.

1092 I should finally emphasise one further point lest it be thought by some that my finding in respect of causation somehow excuses or justifies the Commonwealth's actions, in its capacity as a developed state party to the Paris Agreement, in setting the emissions reduction targets in 2015, 2020 and 2021 without any apparent regard to the best available science. Like the other parties to the Paris Agreement, Australia was obliged, as a matter of international law, to undertake rapid reduction of its greenhouse gas emissions in accordance with the best available science in order to achieve the long-term temperature goal. The long-term temperature goal was to hold the increase in global temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. It is difficult to see how the targets set by Australia in 2015, 2020 and 2021 could possibly be seen to have satisfied that obligation, or been consistent with the long-term temperature goal.

1093 The finding that has been made in respect of causation is simply a product of the fact that any additional emissions that Australians may have emitted as a result of the low and unambitious emissions reduction targets in 2015, 2020 and 2021 would not, over a short period, and considered in complete isolation, have had a material impact on climate change and its impacts in one small part of Australia. The finding is not intended to and does not in any way excuse or justify the Commonwealth's setting of those low and unambitious emissions reduction targets. If every nation state took the approach that the Commonwealth took in relation to the setting of its targets in 2015, 2020 and 2021, the inevitable result would be that climate change would continue at its current rate, or perhaps even accelerate, with potentially catastrophic results. That point was eloquently made by Professor Meinshausen when he was pressed in cross-examination about the material impact of the increased global temperature flowing from the low emissions reduction targets set by Australia. His evidence was as follows:

Q: Can I ask you this: if one thinks of these two situations, one is the actually amount of emissions that Australia contributed to the world in addition to all the other emissions that have already been done in the world and were done by other countries in the world up until 2023 and then the other scenario is Australia had followed the target that you said should have been followed or you indicated would have been consistent with the – the equity target in 2014, which is to say, to get to net zero by 2024. So assume those two amounts. And – Dr Canadell has estimated that difference to lead to an amount of global warming of about, I think, 0.0009 degrees. Would you accept that, as between those two amounts of greenhouse gas emissions, you can't say there would have been any material difference in the impacts of climate change in the Torres Strait as between those two scenarios?

A: Again, whether you can measure it, that material difference, etcetera. But of course there will be some, even if so minimal effect but maybe we don't have the tools to measure it and we have – we have not the tools to measure that 0.0009 degrees difference with our measurement capabilities. But, again, it comes back to the question, the overall anthropogenic climate change effect, which we can very well observe in the Torres Strait in terms of sea level and other effects, can we attribute that to anthropogenic emissions? Yes, we can. Can – do we know where these anthropogenic emissions proportionally come from? Yes, we do know. And therefore you can make that causal linkage. And this is what I'm also referring to as the question of establishing a scientific causal linkage between the emission and effects in the Torres Strait Islands is very clear and established and is not hinging upon measuring a single tonne's effect. That is, again, very different and I – it's not very different but it's distinct from the question is there responsibility with coming with the single emissions. I'm just talking here about the scientific causal, cause and effect relationship.

Q: Sorry, and I'm trying to ask, in that scenario I gave you, looking at real world impacts, so people feeling hotter, people – waves being different, temperature being different, can you tell that there are material differences as a result of a global increase in temperature, that's what the linear formula is; if there's a certain amount of emissions, there's a global increase in temperature of, say, 0.0009 degrees, can you tell that there will be any material impacts in the Torres Strait as a result of that?

A: I think your question exactly highlights the tragedy of the commons where every single contributor's effect is very, very, very, very small and probably can't individually be detected. Yet, overall, in terms, we cause a problem. And it's the same – like, the taxpayer say, "Is the Australian Federal Government detecting in its day-to-day business whether I pay taxes or not?" "No, they wouldn't notice so why should I pay taxes." "Is there additional wear and tear on the roads and I drive around?" "No, there isn't. So why should I be subjected to any tax that is causing that?" So it's always the – I think there is a fundamental problem of tragedy of the commons, environmental, global problems. And Australia was at the forefront of arguing for an effective environmental solution under, for example, the Montreal Protocol. You can't establish the difference in UV radiation that we are hit here by any single spray can that is used in the world. But that does not mean that we said, "But the spray can don't do any damage to the ozone layer." Of course it does accumulatedly, even though if every single spray can with CFC-11 contributed a very small amount. So the causal linkage we establish in science by basic first principle, laboratory experiments, physical theories and then the observations.

1094 Professor Meinshausen's reasoning concerning the "tragedy of the commons" is, with respect, unassailable. If every nation state approached the setting of their emissions reduction targets by simply asking whether, if they set a low reduction target, anyone would really notice the climate change impact of the resulting extra emissions, considered over a short period and in isolation from the emissions of all other nations, the planet would effectively be doomed because there would be no effective global action to reduce greenhouse gas emissions and slow the rate of global warming. That, however, does not alter the conclusion that, for the

purposes of the Australian common law of negligence, it cannot be concluded that any breach of the targets duty of care by the Commonwealth materially contributed in the short term to any harm suffered by Torres Strait Islanders from the impacts of climate change.

Causation by materially contributing to the risk of harm occurring (Fairchild)

1095 The applicants correctly accepted that the principles enunciated in *Fairchild* do not form part of the common law of Australia. They nevertheless “formally” submitted that causation in this case with respect to future harm can alternatively be provided by evidence that the Commonwealth’s breaches materially increased the risk of harm to the applicants because those breaches contributed to the risk that tipping points would be triggered which would cause “more catastrophic harm than if no tipping points were triggered”. By only advancing that submission formally, the applicants essentially acknowledged, correctly, that it was not open to me as a single judge to adopt or apply the *Fairchild* principle. That would be a matter for the High Court, as Allsop CJ pointed out in *Sharma* at [326].

1096 Given the formal nature of the applicants’ submissions in respect of the application of the *Fairchild* principle to the facts of this case, I do not propose to consider this issue in any detail. The climate science in respect of tipping points was discussed at length earlier. It may be accepted that if global greenhouse gas emissions continue at their current rate, there is a real risk that the key tipping points will be triggered. That would have dramatic and potentially catastrophic implications for the Earth generally, and for the Torres Strait specifically. I have considerable difficulty accepting, however, that any additional emissions that resulted from the Commonwealth’s alleged breach of duty could be found to have materially contributed to the risk that the key tipping points would be triggered. That is so for essentially the same reasons just given in respect of causation and the application of the *Bonnington Castings* principle. For that, and perhaps several other reasons, I consider that this case is, or is unlikely to be seen to be, an appropriate vehicle in which to determine whether the common law of tort in Australia should be developed in such a way as to encompass the *Fairchild* principle. That issue, however, will be for others to consider and determine.

Conclusion in respect of causation

1097 I am not satisfied that any breach or breaches of the targets duty by the Commonwealth in respect of the setting of its emissions reduction targets relevantly caused the applicants and

Torres Strait Islanders to suffer any harm as a result of the impacts of climate change, or materially contributed to any such harm.

Property damage

1098 Given the possibility of an appeal, I should briefly address whether the applicants have established that they have suffered any property damage as a result of the Commonwealth's alleged breach or breaches of duty. There is no common question concerning the damage to the personal property of any other Torres Strait Islanders. The common questions concerning loss or damage suffered by Torres Strait Islanders other than the applicants are confined to allegations relating to the collective loss of fulfilment of Ailan Kastom. That issue is considered later.

1099 There was, it must be said, a paucity of evidence concerning any property damage suffered by the applicants as a result of the impacts of climate change in the period after the alleged breach or breaches of the targets duty of care. Moreover, no real attempt was made to quantify any such damage. Any damage to the applicants' property that may have resulted from any breach of the targets duty appears to have been very minimal indeed.

1100 As for Mr Pabai Pabai, he described in his evidence some damage that was caused to his house as a result of a flood on Boigu in 2007. That damage occurred before any possible breach or breaches of the targets duty by the Commonwealth and is therefore of no relevance in this context. Mr Pabai Pabai also described how his garden was "wrecked" as a result of a flood in about mid-2022, though it is difficult to see how any loss or damage resulting from that event could be quantified in circumstances where there was little, if any, evidence about the nature of his garden or the cost, or likely cost, of replacing it. The photograph of Mr Pabai Pabai's garden that was in evidence would suggest that his garden had regrown, though his evidence suggested that he was no longer able to grow taro and cassava in his garden. He could only grow coconuts and bananas. Mr Pabai Pabai also said that he was no longer able to grow anything in his "family gardens", though the evidence did not indicate that he owned the property on which those gardens were located. Finally, Mr Pabai Pabai described in his evidence how his campsite on the other side of the island had been eroded and a "structure" had been pushed over. It was, however, somewhat unclear when that damage had occurred. There was, in any event, no evidence that Mr Pabai Pabai owned the land on which his campsite was located. As for the structure, it would appear from a

photograph of that structure that it was, on any view, a very modest or makeshift structure and there was no evidence of the cost, or likely cost, of reinstating it.

1101 It follows that the most that could be said concerning any property damage suffered by Mr Pabai Pabai as a result of any breach of duty by the Commonwealth is that any such damage was at most minimal. The cost of repairing or reinstating it was not addressed in the evidence.

1102 Much the same can be said concerning property damage suffered by Mr Kabai. In his evidence, Mr Kabai described a flood which caused some damage to his washing machine and tools. That flood, however, occurred in 2012, before any alleged breach of the targets duty by the Commonwealth. Mr Kabai also referred to an incident in February 2020 when a king tide caused some inundation in his house which “affected” his washing machine and tools. The extent to which his washing machine and tools were affected by that event remained unclear. Even if it could be concluded that the Commonwealth’s alleged breach of duty materially contributed to the 2020 inundation event described by Mr Kabai, the loss or damage to his property caused by that event appears to have been very minor. There was certainly no evidence that was capable of quantifying that loss. Finally, Mr Kabai referred to a bad flood which occurred on the island in 2018, however he did not suggest that any of his property was damaged by that flood.

Personal injury

1103 The applicants conceded that they had not adduced any “clear” evidence that they had suffered any personal injury as a result of the Commonwealth’s alleged breach of of the targets duty.

Ailan Kastom

1104 The applicants’ case in respect of loss and damage ultimately focussed on the allegation that they and other Torres Strait Islanders had collectively suffered a loss of fulfilment of Ailan Kastom arising from the damage to, or degradation of, the common or communal land and marine environment of the Torres Strait Islands. That in turn has caused (and continues to cause) Torres Strait Islanders to suffer harm in the form of loss of fulfilment of Ailan Kastom. The applicants’ case was that the Commonwealth’s breach of duty had materially contributed to that loss or harm.

1105 The applicants’ case in respect of the loss of fulfilment of Ailan Kastom raises at least two questions. The first question concerns exactly what is included in or encompassed by the

notion of loss of fulfilment of Ailan Kastom in the particular circumstances of this case. The second and more fundamental question is whether loss of fulfilment of Ailan Kastom is compensable under the common law of tort in Australia. As will be seen, the complicating or confounding circumstance in this case is that, for reasons that it is unnecessary to explain, the applicants made it clear that their claim in relation to loss of fulfilment of Ailan Kastom did not include any claim in respect of any loss of or harm to any native title rights held by Torres Strait Islanders.

What exactly is encompassed by loss of fulfilment of Ailan Kastom?

1106 The evidence concerning Ailan Kastom that was given by Torres Strait Islanders was discussed in some detail earlier in these reasons. It is, however, necessary to be clear about what is included in or encompassed by Ailan Kastom and, perhaps more importantly, what exactly is encompassed by the notion of loss of fulfilment of Ailan Kastom in the particular circumstances of this case.

1107 The applicants' case was that Torres Strait Islanders have a "distinctive customary culture, known as Ailan Kastom, which creates a unique spiritual and physical connection with the Torres Strait Islands and surrounding waters": 3FASOC [54(d)]. They alleged that (3FASOC at [55]):

Ailan Kastom is the body of customs, traditions, observances and beliefs of Torres Strait Islanders generally, or of a particular community or group of Torres Strait Islanders. It includes, among other things:

- (a) connection to the marine and terrestrial environment, including as part of cultural ceremony;
- (b) participating in cultural ceremony;
- (c) use of plants and animals for food, medicine and cultural ceremony;
- (d) burying Torres Strait Islanders in local cemeteries and performing mourning rituals;
- (e) visiting sacred sites, including on uninhabited islands; and
- (f) dugong and marine turtle hunting, and other marine hunting and fishing.

1108 They also alleged that "[c]onnection to sea country and marine hunting is integral to Ailan Kastom in the Torres Strait Islands" and that "[m]arine hunting and fishing, and sourcing other food, in the Torres Strait Islands is an important food source for Torres Strait Islanders": 3FASOC [56(a) and (b)].

1109 A potential difficulty arises, however, because the applicants also allege that “Torres Strait Islanders have rights and interests possessed under traditional laws and customs, recognised by the common law of Australia, which create a unique connection with the land and waters of the Torres Strait Islands”: 3FASOC [62A]. The particulars to that allegation include both a reference to s 223(1) of the Native Title Act and the paragraphs of the pleading, identified earlier, which essentially define the concept of Ailan Kastom.

1110 Subsection 223(1) of the Native Title Act defines “native title” and “native title rights and interests” in the following terms:

223 Native title

- (1) The expression *native title* or *native title rights and interests* means the communal, group or individual rights and interests of Aboriginal peoples or Torres Strait Islanders in relation to land or waters, where:
- (a) the rights and interests are possessed under the traditional laws acknowledged, and the traditional customs observed, by the Aboriginal peoples or Torres Strait Islanders; and
 - (b) the Aboriginal peoples or Torres Strait Islanders, by those laws and customs, have a connection with the land or waters; and
 - (c) the rights and interests are recognised by the common law of Australia.

1111 Subsection 223(2) provides that “rights and interests” in s 223(1) includes “hunting, gathering, or fishing, rights and interests”.

1112 It can readily be seen that there is a degree of overlap, if not equivalence, between the applicants’ pleaded meaning of Ailan Kastom and the statutory meaning of native title and native title rights and interests under the Native Title Act. That may not in and of itself have presented a difficulty were it not for the fact that, for reasons it is unnecessary to detail, the applicants withdrew and disclaimed any claim that they and Torres Strait Islander group members may have had for loss or damage relating to any of their native title rights. Their pleadings were amended accordingly.

1113 In *Mabo (No 2)*, it was “decided that certain rights and interests relating to land, and rooted in traditional law and custom, survived the Crown’s acquisition of sovereignty and radical title in Australia” and that “it was this native title that was then ‘recognised and protected’ in accordance with the Native Title Act”: *Yorta Yorta Aboriginal Community v State of Victoria* (2002) 214 CLR 422 at [75] (Gleeson CJ, Gummow and Hayne JJ). It is apparent that the language of s 233 of the Native Title Act is drawn from what was said in *Mabo (No 2)* about

native title rights: see *Western Australia v Ward* (2002) 213 CLR 1 at [16] (Gleeson CJ, Gaudron, Gummow and Hayne JJ). Native title holders are in certain circumstances entitled to compensation under the Native Title Act for any loss, diminution, impairment or other effect of an act on their native title rights and interests. It was also recognised in *Mabo (No 2)* that in some circumstances the common law can be invoked where native title rights have been infringed: *Mabo (No 2)* at 61 (Brennan J); see also *Fejo v Northern Territory* (1998) 195 CLR 96 at [22] (Gleeson CJ, Gaudron, McHugh, Gummow, Hayne and Callinan JJ).

1114 As has already been noted, however, the applicants' claim to be entitled to compensation for loss of fulfilment of Ailan Kastom must be assessed separately and without reference to any native title rights or interests that they may have under the Native Title Act.

1115 The applicants provided the following particulars of what it contended was encompassed by the notion of loss of fulfilment of Ailan Kastom (3FASOC [86(b)]):

Cultural sites that the Applicants attend as part of their cultural and spiritual practices have been impacted by erosion and inundation, such as cemeteries and sacred places.

The Applicants have been unable to participate in or have had to modify some traditional cultural practices and rituals due to the erosion and inundation of cultural sites and sacred places.

The Applicants' personal and community gardens where they practiced traditional gardening have been inundated and contaminated by salt from inundation and groundwater.

The Applicants' ability to practice traditional hunting and fishing has been impacted by changes to the migratory patterns and populations of local marine, terrestrial and bird life.

The Applicants' ability to teach and practice traditional culture has been impacted due to changes to the seasonal calendar, weather, and land and marine environments.

1116 In their submissions, the applicants contended that the loss of fulfilment of Ailan Kastom also extended to the:

... severance of connection to land that will be erased or irrevocably damaged by climate change impacts such as erosion and tidal inundation, loss or alteration of sacred sites, loss of culturally important biodiversity, increasing heat and other environmental changes that make it harder to gather in community, loss associated with the changing of weather and climate patterns and the alteration of seasons.

1117 The loss of fulfilment of Ailan Kastom was also said to include: the inability to pass traditional knowledge onto the younger generation; the inability to fulfil obligations to protect cultural sites; the inability, or reduced ability, to engage in cultural practices such as crabbing and canoeing in the waterways in some of the islands; and the loss of identity.

1118 As can be seen, the alleged loss of fulfilment of Ailan Kastom is very wide-ranging and includes some very abstract and intangible elements.

1119 The evidence of Torres Strait Islanders, which touched on their claims relating to loss of fulfilment of Ailan Kastom, was discussed at some length earlier in these reasons.

Is loss of fulfilment of Ailan Kastom a compensable loss under the law of negligence?

1120 The applicants appeared to concede that loss of fulfilment of culture, customs, traditions and beliefs was not a currently recognised head of damages under the law of negligence. They also appeared to acknowledge that loss of fulfilment of culture, customs, traditions and beliefs had not expressly been found to fall within any existing head of damages under the law of negligence. They submitted, however, that the Court can and should either recognise a new and distinct head of damages which includes such losses, or should recognise that loss of fulfilment of Ailan Kastom falls within an existing head of damages by analogy with losses that have been found to be compensable under that existing head. In the applicants' submission, the Court should "proceed by analogy" and find that Ailan Kastom is an interest that can and should be recognised as capable of protection by law.

1121 The applicants relied on several cases which they submitted were sufficiently analogous to provide a basis for the Court to find that Ailan Kastom was an interest that was capable of protection by law. Those cases included: *Northern Territory of Australia v Griffiths* (2019) 269 CLR 1 (**Timber Creek**); *Roberts v Devereaux* (unreported, Supreme Court of the Northern Territory 22 April 1982); *Napaluma v Baker* (1982) 29 SASR 192; *Dixon v Davies* (1982) 17 NTR 31; *Weston v Woodroffe* (1985) 36 NTR 34; *Milpururru v Indofurn Pty Ltd* (1994) 54 FCR 240; *Namala v Northern Territory* (1996) 131 FLR 468; *Cubillo v Commonwealth of Australia (No 2)* (2000) 103 FCR 1; *Trevorrow v South Australia (No 5)* (2007) 98 SASR 136; *Smith v Fonterra Cooperative Group Limited & Ors* (2024) NZSC 5 and *Santos N A Barossa Pty Ltd v Tipakalippa* (2022) 296 FCR 124.

1122 It is both unnecessary and undesirable to consider in detail the cases relied on by the applicants, particularly given the dispositive findings that I have already made in respect of the alleged duty of care, breach and causation. Ultimately, I do not consider that the cases relied on by the applicants provide much support for the proposition that loss of fulfilment of Ailan Kastom is compensable under the Australian common law of negligence.

- 1123 In *Timber Creek*, the High Court was concerned with compensation for the loss, diminution, impairment or other effect of an act on native title rights and interests under the Native Title Act. The observations made by members of the Court must therefore be considered and understood in that particular statutory context. As has already been noted, the applicants' claim that they and other Torres Strait Islanders are entitled to compensation for loss of fulfilment of Ailan Kastom must be considered separately from, and without any regard to, any claim that they may have had in respect of the loss, diminution, impairment or other effect of an act on their native title rights and interests.
- 1124 Most of the other cases relied on by the applicants, including *Devereaux*, *Napaluma*, *Dixon*, *Weston*, *Mulladad*, *Namala* and *Trevorrow* are cases where the defendant's tortious acts had been found to have caused the plaintiff to suffer personal injury. The court in each case assessed the plaintiff's damages for personal injury as including an award for loss of enjoyment of life, pain and suffering, or loss of amenities, which reflected the plaintiff's inability to participate in, or fully participate in, certain cultural practices. The significant point of distinction between those cases and this case is that the award of damages referable to the loss of fulfilment of culture, customs, traditions in those cases were a component of the assessed damages for personal injury caused by the defendant's tortious conduct.
- 1125 In this case, however, the applicants do not claim to have suffered any personal injury. Moreover, they do not claim that their entitlement, or the entitlement of any other Torres Strait Islanders, to damages for loss of fulfilment of Ailan Kastom arises as a result of any personal injury caused by the Commonwealth's alleged negligence. They do not, and cannot, contend that they are entitled to an award of damages for pain and suffering, or loss of amenities, or loss of enjoyment of life, which are all recognised heads or categories of damages for personal injury. The applicants also do not contend that their entitlement to an award of damages for loss of fulfilment of Ailan Kastom flows from any loss or damage to their personal property. None of the personal injury cases relied on by the applicants are analogous to this case, or provide any support for the proposition that a plaintiff is entitled to an award of damages for loss of fulfilment of cultural practices where that loss does not arise from, or is not connected to, any personal injury or property damage caused by the defendant's negligence.

- 1126 The *obiter* observations of O’Laughlin J in *Cubillo* also do not assist the applicants. Those observations were essentially based on his Honour’s consideration of *Napaluma*, *Dixon*, *Weston* and *Milpurrruru*.
- 1127 The decision in *Milpurrruru* also does not provide any real assistance to the applicants. It was a case which concerned the award of damages, including “additional damages”, arising from a breach of copyright under the *Copyright Act 1968* (Cth). That Act provided that additional damages could be awarded having regard to “all other relevant matters”. The additional damages awarded to the applicant included a component referable to “cultural damage” resulting from “the pirating of cultural heritage”. The decision in *Milpurrruru* is again distinguishable from this case because the award for “cultural damages” was a component of a recognised statutory head of damage for breach of copyright.
- 1128 The applicants did not make any detailed submissions in respect of either *Smith v Fonterra* or *Tipakalippa*. The court in *Smith v Fonterra* was considering an appeal from a decision striking out a claim in tort. The court’s general observations about the role that “tikanga” (Māori customs and traditional values) may play in various types of cases in New Zealand (Aotearoa) provides no real support for the applicants’ contentions. The same can be said about the observations of Kenny and Mortimer JJ in *Tipakalippa*, a case which concerned judicial review of a decision made under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).
- 1129 It seems to me that the parties’ submissions in respect of this issue at times confused the separate concepts of actionable “damage” and “damages”. As Gleeson CJ pointed out in *Cattanach v Melchior* (2003) 215 CLR 1 at [23]:

In an action for the tort of negligence, there is a distinction between the “damage” said to have been suffered by a plaintiff, and the “damages” awarded as compensation for each item or aspect of that damage, usually as a single sum. Damage is “loss or harm occurring in fact”. **Such loss or harm will involve an interference with a right or interest recognised as capable of protection by law.**

(Footnotes omitted, emphasis added.)

- 1130 Recognised categories of actionable damage include physical injury, property damage, and in some circumstances pure economic loss. Loss or harm caused to a person’s property, or their person (that is, physical injury) involves an interference with “a right or interest recognised as capable of protection by law”. As the cases referred to earlier indicate, the award of damages to compensate a person for personal injury may include damages for pain and suffering, or

loss of amenities, or loss of enjoyment of life. Those cases also indicate that a person may be compensated for their inability to fully participate in or enjoy various cultural practices under those recognised heads of damages.

1131 The critical question here, however, is whether loss of fulfilment of Ailan Kastom is a separate form of actionable damage. As the passage from Gleeson CJ's judgment in *Cattanach* indicated, the answer to that question hinges on whether loss of fulfilment of Ailan Kastom can be said to be a "right or interest recognised as capable of protection by law". None of the cases relied on by the applicants establish, or provide any support for the proposition, that loss of fulfilment of Ailan Kastom is such a right or interest. I was not taken to any case which establishes that the participation in, or enjoyment or observance of, any of the sorts of customs, traditions, observances and beliefs that fall within the meaning of Ailan Kastom constitutes or comprises a right or interest that is recognised as capable of protection by law. While I have some considerable sympathy for the applicants' contention that Ailan Kastom should be recognised as capable of protection by law, I do not consider that it is open to me, sitting as a single judge of this Court, to recognise, apparently for the first time, that participation in, or enjoyment or observance of, customs, traditions, observances and beliefs, can constitute or comprise rights or interests capable of protection by law.

1132 Accordingly, I decline to find that fulfilment of Ailan Kastom is a right or interest the loss or harm to which is compensable under the Australian common law of negligence.

Future loss and damage

1133 I do not intend to address the issue of future loss or damage caused by any ongoing breach of the targets duty given the findings that have already been made. The applicants did not, in any event, address this issue in any meaningful way in their submissions.

Conclusion in respect of causation and damage

1134 I am not satisfied that any breach of the targets duty of care by the Commonwealth caused the applicants or Torres Strait Islanders to suffer any loss or damage. While the applicants may have suffered some minor property damage, I am not satisfied that any such loss was relevantly caused by any such breach of duty by the Commonwealth. The applicants did not allege that they had suffered any physical injury. As for the applicants' claims concerning the loss of fulfilment of Ailan Kastom, I decline to find that fulfilment of Ailan Kastom is a right or interest the loss or harm to which is compensable under the Australian common law

of negligence. I am also not satisfied that there is any risk of future loss or damage caused by any ongoing breach of the targets duty of care.

Conclusion in respect of the applicants' primary or targets duty case

1135 The applicants have failed to make out their case against the Commonwealth based on the alleged targets duty of care. Indeed, the applicants have failed to prove any of the essential elements of their case. I am not satisfied that the Commonwealth owed Torres Strait Islanders the targets duty of care. Even if the Commonwealth was subject to that duty of care, I am not satisfied that the standard of care that the Commonwealth was required to exercise was as alleged by the applicants. Nor am I satisfied that any breach of the alleged targets duty caused the applicants to suffer any compensable loss or damage, or materially contributed to any compensable loss or damage suffered by them. Finally, I am not persuaded that, on the current state of authority, loss of fulfilment of Ailan Kastom is a right or interest the loss or harm to which is compensable under the Australian common law of negligence.

THE APPLICANTS' ALTERNATIVE OR ADAPTATION CASE

1136 As has already been noted, the applicants' alternative or adaptation case, in short summary, was that the Commonwealth owed a duty of care to Torres Strait Islanders to take reasonable care to protect them against loss and damage caused by marine inundation and erosion. That duty of care will generally be referred to in these reasons as the **alternative duty of care** or **alternative duty**. The alternative duty of care was said to require the Commonwealth to lead, coordinate and establish a coherent plan for the provision of funding for the protection of Torres Strait Islanders from the adverse effects of sea level rise, inundation and erosion through the construction of seawalls. The applicants alleged that the Commonwealth breached that duty of care because it failed to take any, or any reasonable, steps to provide predictable funding to complete all planned seawall projects, or to lead, coordinate and establish a coherent plan in respect of the construction of seawalls, on Saibai, Boigu, Poruma, Iama, Masig and Warraber islands. That breach of duty was alleged to have caused Torres Strait Islanders to suffer loss and damage arising from damage to or degradation of the land and marine environment on those islands.

1137 The Commonwealth contested virtually every element of the applicants' alternative or adaptation case. It denied that it owed Torres Strait Islanders any duty of care relating to the funding of seawalls in the Torres Strait Islands, denied that it breached any such duty even if

one was owed, and denied that the applicants had established that they had suffered any compensable loss or damage as a result of any such breach.

The applicants' case as ultimately pleaded and particularised

1138 It would not be unfair to say that the applicants' alternative or adaptation case as originally pleaded was quite broad and devoid of appropriate particularisation. As the case progressed and the applicants were pressed for further particulars, their case narrowed significantly. It is, in those circumstances, important to be precise about the scope of the applicants' case as ultimately pleaded and particularised.

1139 The final iteration of the applicants' pleading defined the alternative duty of care in the following terms (3FASOC [81A]):

Alternatively ... the Commonwealth owes a duty to Torres Strait Islanders, including the Applicants and the Group Members, to take reasonable care to avoid causing:

- (a) property damage;
- (b) loss of fulfilment of Ailan Kastom; and/or
- (c) [deleted]
- (d) injury, disease or death,

arising from a failure to implement, or adequately implement, adaptation measures to prevent or minimise the Current and Projected Impacts of Climate Change in the Torres Strait Islands (**Alternative Duty of Care**).

1140 While the alleged duty of care was pleaded in terms which in effect required the Commonwealth to implement reasonable "adaptation measures to prevent or minimise the Current and Projected Impacts of Climate Change in the Torres Strait Islands", as will be seen, the applicants' case in respect of the standard of care that the Commonwealth was required to meet to discharge the duty of care, as finally pleaded and particularised, effectively confined the scope of the duty of care to one which concerned the provision of funding for seawalls. Moreover, the agreed common question concerning the alternative duty of care (question 5) was couched in terms of the Commonwealth being required to take reasonable care to protect Torres Strait Islanders against "marine inundation and erosion", not the alleged Current and Projected Impacts of Climate Change in the Torres Strait Islands.

1141 The standard of care that the Commonwealth was allegedly required to exercise to discharge the alternative duty of care was pleaded and particularised as follows (3FASOC [82A]):

At all material times since at least 2014, the Commonwealth's Alternative Duty of

Care required it to take reasonable steps to implement adaptation measures to prevent or minimise the Current and Projected Impacts of Climate Change in the Torres Strait Islands including but not limited to:

- (a) providing adequate infrastructure to protect the Torres Strait Islands from the impacts of sea level rise, storm surges and flooding, such as seawalls;
- (b) providing adequate infrastructure to protect Torres Strait Islanders in the Torres Strait Islands from the impacts of heatwaves, such as air conditioning and adequate insulation; and
- (c) implementing such other measures as are reasonably necessary to protect:
 - (i) the land and marine environment of the Torres Strait Islands;
 - (ii) the cultural and customary rights, including the right to fulfilment of *Ailan Kastom*, of Torres Strait Islanders, including the Applicants and the Group Members; and
 - (iii) the health and safety of Torres Strait Islanders, including the Applicants and the Group Members,

from the Current and Projected Impacts of Climate Change in the Torres Strait Islands.

Particulars

In relation to subparagraph (c)(iii), the measures reasonably necessary to protect the health and safety of Torres Strait Islanders include:

- (i) securing existing supplies of drinking water and/or making new supplies available;
- (ii) securing traditional food sources and/or making alternative food sources available;
- (iii) increased monitoring, prevention and treatment of vector-borne diseases, heatstroke, respiratory conditions and mental health impacts among Torres Strait Islanders;
- (iv) installing early warning systems and local weather stations across the region to provide communities with warning about extreme weather events;
- (v) securing the existing supply of electricity to each island by upgrading generators and grids, including to cope with peak periods of demand, and increasing the deployment of renewable energy; and
- (vi) securing landfill sites and wastewater treatment plants from saltwater intrusion, storm surge and rising sea levels.

Further particulars may be provided.

1142 As can be seen, the standard of care was couched in extremely broad terms. The Commonwealth was allegedly required to “take reasonable steps to implement adaptation measures to prevent or minimise the Current and Projected Impacts of Climate Change in the Torres Strait Islands”. The “adaptation measures” were not confined in any way, but were

said to include the provision of “adequate infrastructure” to protect Torres Strait Islanders from not only the “impacts of sea level rise, storm surges and flooding”, but also from the “impacts of heatwaves”. The Commonwealth was also allegedly required to implement “such other measures as [were] reasonably necessary” to not only protect the land and marine environment of the Torres Strait Islands, but also protect the “cultural and customary rights” and “health and safety” of Torres Strait Islanders.

1143 Given the extreme breadth and generality of their case, the applicants were directed to provide further particulars. The particulars that were ultimately provided by the applicants effectively confined their case in respect of the standard of care to the allegation that the Commonwealth was required to take the following five steps.

1144 First, provide adequate funding as required to complete Seawalls Project Stage 1 as scoped.

1145 Second, provide additional funding as required to complete Seawalls Project Stage 2 as scoped.

1146 Third, pay approved funding for Seawalls Project Stage 1 without delay.

1147 Fourth, pay approved funding for Seawalls Project Stage 2 without delay.

1148 Fifth, lead and implement effective inundation protection measures.

1149 After further argument, the fifth step was narrowed to one which required the Commonwealth to do something more than take a “passive approach” which simply involved providing funding for the Seawalls Project. The “effective inundation protection measures” that the Commonwealth was required to “lead and implement” were also confined to seawalls (including wave return walls and bunds).

1150 In short, the applicants’ case was effectively confined to one in which it was alleged that, to discharge the alternative duty of care, the Commonwealth was required to provide and pay “adequate funding” to complete the Seawalls Projects “without delay”, though there remained the rather vague and amorphous allegation that the Commonwealth was also required take something more than a passive approach in respect of the funding of the Seawalls Project. Ultimately, the applicants’ case in respect of the alleged standard of care was reflected or encapsulated in agreed common question six, which was as follows:

If the answer to question 5 [the alleged alternative duty of care] is ‘yes’, did or does such duty of care require the Commonwealth to take reasonable steps to:

- (a) provide access to predictable funding, including additional funding as required, that was sufficient to construct seawalls on the Torres Strait Islands;
- (b) lead and coordinate and establish a coherent plan for the provision of funding for the protection of the Torres Strait Islanders from the adverse effects of sea level rise, inundation and erosion through the construction of seawalls?

as part of the Seawalls Project Stage 1 and Stage 2 on Saibai, Boigu, Poruma, Iama, Masig and Warraber (the Seawalls Projects).

1151 The applicants' final submissions broadly addressed their case in terms of common question six. To be clear, the applicants must be taken to have abandoned any allegation in respect of the alleged standard of care that in substance extended beyond the five particulars and the terms of common question six.

Did the Commonwealth owe a duty of care in respect of the funding of the Seawalls Project?

1152 The applicable principles in respect of the law of negligence and the imposition of duties of care were discussed in detail earlier in these reasons. Before addressing the so-called salient features analysis, it is necessary to again address the threshold question of whether it is inappropriate or impractical to impose the alleged duty of care on the Commonwealth because it involves matters of core or high government policy or policymaking, or matters involving political judgment.

Did the funding of the Seawalls Project involve matters of high or core government policy?

1153 It is necessary to approach the question whether the alternative duty of care involves matters of high or core government policy having regard not only to the terms of the alleged duty of care, but also having regard to the alleged standard of care. That is because the duty of care is framed in very broad and general terms. The question, expressed in simple terms, is whether decisions made and conduct engaged in by the Commonwealth in respect of the funding of the Seawalls Project involve matters of high or core government policy such that it would be inappropriate or impractical for the Court to pass judgment in respect of the reasonableness or otherwise of those decisions and that conduct.

1154 In my opinion, it would be inappropriate and impractical to impose the alternative alleged duty of care on the Commonwealth for at least two reasons. First, the imposition of the alternative duty of care would inevitably require the Court to pass judgment in respect of the reasonableness of high-level policy choices and decisions concerning the respective roles and responsibilities of the three tiers of government in respect of climate change adaptation measures. Second, the imposition of the alternative duty of care would require the Court to

pass judgment in respect of the reasonableness or otherwise of decisions and action taken by the Commonwealth in respect of the manner in which it allocates its budget and the manner in which it provides funding for infrastructure projects.

1155 The applicants' case relied heavily on the COAG Principles – the document which set out in broad terms the “principles for the management of climate-change risks, and roles and responsibilities for adapting to climate change within the three tiers of government: Commonwealth, State and Territory and Local”. The applicants submitted that the alleged alternative duty of care “simply seeks to impose reasonable and appropriate obligations on the [Commonwealth] to implement and administer (with reasonable care) the policy decisions to which it has already committed itself”. Those “policy decisions”, it appears, were policy decisions made in or pursuant to the COAG Principles.

1156 The applicants' case appeared to be based on the proposition or premise that under, or by virtue of, the COAG Principles, the Commonwealth had agreed with the States and Territories to take a “leadership role”, or to “lead and coordinate”, the funding of climate change adaptation, and had thereby assumed responsibility for the funding of projects like the Seawalls Project. In my view, however, the applicants' submissions in that regard involve a misreading or misconstruction of the COAG Principles and in any event simply highlight the policy or political nature of the conduct which they seek to impugn.

1157 The COAG Principles were referred earlier in these reasons. The applicants rely on the fact that the principles or policies encapsulated in that document include that “the Commonwealth will need to take a leadership role in positioning Australia to adapt to climate change impacts that may affect national prosperity or security” and that the Commonwealth will “provide leadership on national adaptation reform”. That is not to say, however, that the Commonwealth had agreed with the States and Territories that it would take a leadership role in, or has assumed responsibility for, funding adaptation infrastructure projects like the Seawalls Project. The statements in the document that refer to the Commonwealth taking a leadership role do not relate to the funding of projects and, in any event, are limited to adaptation “positioning” or “reform” in respect of matters that “may affect national prosperity or security”. It is difficult to see that the funding of an infrastructure project like the Seawalls Project involves a matter that may affect national prosperity or security.

1158 The COAG Principles also indicate that both Local and State Governments have a significant role to play in respect of climate change adaptation measures. Local governments, for

example, are said to be “on the frontline in dealing with the impacts of climate change” and to have a “critical role to play in ensuring that particular local circumstances are adequately considered in the overall adaptation response”. Local governments are also required under the COAG Principles to “[c]ontribute appropriate resources to prepare, prevent, respond and recover from detrimental climatic impacts”. The role of State and Territory governments is said to include working with the Commonwealth to “identify and implement priorities to improve adaptive capacity and strengthen climate resilience in vulnerable communities” and support Local Government to “facilitate building resilience and adaptive capacity in the local community and to ensure that policies and regulations are consistent with State Government adaptation approaches”.

1159 I am not persuaded that the Commonwealth’s role and responsibilities in respect of climate change adaptation under the COAG Principles is as clear or straightforward as the applicants would have it. Indeed, as was stated in the Torres Strait Climate Change Strategy, which was published by the TSRA in conjunction with the TSIRC, the “jurisdictional and administrative arrangements over the Torres Strait environment are extremely complex, involving two countries, Local, Queensland and Commonwealth governments and multiple agencies”.

1160 In any event, what is abundantly clear is that the COAG Principles comprise or include high-level government policy statements. The fact that the applicants’ case concerning the alleged alternative duty of care hinges on contestable interpretations and applications of statements made in the COAG Principles points to the unsuitability or impracticality of imposing the alternative duty of care on the Commonwealth.

1161 The question of how the responsibility for adaptation to climate change is divided and shared by the three tiers of government in Australia is inherently political. It would be inappropriate and impractical to impose a duty of care which would require the Court to wade into that complex policy area and pass judgment on what one tier of government, namely the Commonwealth, was or was not reasonably required to do as compared to the other tiers of government. Adapting what Gleeson CJ said in *Graham Barclay Oysters* in respect of the regulation of the oyster industry in New South Wales to the circumstances of this case, the proposition that the Commonwealth had a legal duty of care, owed to Torres Strait Islanders, obliging it to take a leadership role in the funding of adaptation, “takes the debate into the area of political judgment”. By what criterion can the Court determine the reasonableness of the Commonwealth’s decisions in respect of the funding of the TSIRC’s infrastructure project

having regard to the complex policy considerations underlying the allocation of roles and responsibilities concerning climate change adaptation between the three tiers of government?

1162 The posited alternative duty of care would, if imposed, also inevitably require the Court to consider and pass judgment, at the breach stage, in relation to the reasonableness of the Commonwealth's decision-making and processes in respect of the appropriation of public monies and the budgetary allocation of its available resources. The applicants' contentions in respect of the breach of the alternative duty of care include, for example, criticisms of the fact that the TSIRC's application for funding for the Seawalls Project was assessed pursuant to the funding processes and competitive grant guidelines under the Regional Development Australia Fund. They contended, among other things, that the Commonwealth breached the alternative duty of care in assessing the TSIRC's funding application pursuant to the competitive and allegedly "unpredictable" Regional Development Australia Fund because the Commonwealth's leadership role in respect of the funding of adaptation infrastructure in the Torres Strait Islands required it to "establish non-competitive and predictable funds/grants".

1163 The Commonwealth Government's decisions concerning the appropriation of public money were not at large. They are governed by legislation and rules made thereunder. One of the lawful means by which money could be appropriated by the Commonwealth was by way of grants. At the time that the TSIRC applied for funding from the Commonwealth for the Seawalls Project, the administration of grants was subject to the *Financial Management Act 1997* (Cth), the *Financial Management and Accountability Regulations 1997* (Cth) and the Commonwealth Grant Guidelines made under those regulations. The general effect of the regulations and guidelines was that a Minister was not permitted to approve a grant without first receiving advice about the merits of the proposed grant, that funding arrangements could only be entered into after a funding proposal was approved, and that funding proposals could only be approved if the approver was satisfied that the proposed use of the money was "efficient, effective and ethical" and "not inconsistent with the policies of the Commonwealth".

1164 To the extent that the applicants contended that the Commonwealth should have provided funding otherwise than through a grants or other budgetary process sanctioned by law, it is unclear precisely how it is said that the Commonwealth should have provided that funding. As for the applicants' apparent contention that it was inappropriate to subject the TSIRC's funding application to a competitive process, putting to one side the fact that it was the

TSIRC that decided to apply for funding through a competitive grant scheme, the Commonwealth's decision to initially subject the funding application to a competitive process was undoubtedly a policy or political decision. As Gleeson CJ observed in *Graham Barclay Oysters* (at [6]), decisions as to "setting priorities in the allocation of public funds between competing claims on scarce resources, are essentially political". Questions about the reasonableness of political decisions of that nature are generally inappropriate for judicial resolution.

1165 I am, in all the circumstances, not persuaded that it would be appropriate to impose the alternative duty of care on the Commonwealth because it would inevitably require the Court to pass judgment on the reasonableness of core policy or political decisions involving the respective roles of the different tiers of government and the allocation of public resources.

Relationship and salient features analysis

1166 Given the possibility of an appeal, I will undertake the salient features analysis in respect of the postulated alternative duty of care despite my finding that it would, in any event, be inappropriate to impose the alternative duty of care on the Commonwealth considering the inherently policy or political nature of its subject matter. The relevant principles in respect of the salient features analysis were discussed earlier. Most of the relevant salient features were also discussed earlier in the context of the alleged targets duty of care, though some of what was said there must be reconsidered or reassessed in the context of the postulated alternative duty of care.

The relationship between the Commonwealth and Torres Strait Islanders

1167 The nature of the relationship between the Commonwealth and Torres Strait Islanders was considered in the context of the targets duty of care. It is unnecessary to repeat or reassess what was said there. It suffices to reiterate that I do not accept the Commonwealth's submission that the relationship was relevantly no more than a relationship between "the governing and the governed": cf *Sharma* at [232] (Allsop CJ). That said, I also would not go so far as to accept, as the applicants submitted, that the Commonwealth had a "special protective relationship" with Torres Strait Islanders: cf *Sharma* at [677] (Beach J). I would, however, accept that Torres Strait Islanders are a distinct group of indigenous Australians who are particularly disadvantaged and vulnerable to the impacts of climate change. Their vulnerability and relative disadvantage in that respect is part of the broader social context within which their relationship with the Commonwealth should be considered.

Reasonable foreseeability

1168 The relevant question in respect of reasonable foreseeability at this stage is whether it was reasonably foreseeable that there was a real and not fanciful possibility that careless conduct on the part of the Commonwealth in respect of the funding of the Seawalls Project *might* cause or materially contribute to harm suffered by Torres Strait Islanders arising from the impacts of climate change. I am satisfied that the answer to that question is “yes” given that the Commonwealth was well aware that Torres Strait Islanders were particularly vulnerable to the impacts of climate change, including inundation and flooding. It may also be inferred that the Commonwealth was aware that it was unlikely that the Seawalls Project could be satisfactorily completed in a timely fashion if it did not play a significant role in the funding of the project.

1169 I am satisfied that it was reasonably foreseeable that there was possibility that careless conduct on the part of the Commonwealth in respect of the funding of the Seawalls Project might cause or materially contribute to harm suffered by Torres Strait Islanders arising from the impacts of climate change.

Vulnerability and knowledge of risk

1170 This issue has effectively already been addressed. I am satisfied that the Commonwealth knew that Torres Strait Islanders were particularly vulnerable to the impacts of climate change, including inundation and flooding as a result of extreme sea level events and storms. It may also be inferred that the Commonwealth knew that there was a risk that Torres Strait Islanders might suffer harm from climate change related flooding and inundation if seawalls (in the broad sense) were not constructed in a timely fashion on Saibai, Boigu, Poruma, Iama, Warraber and Masig. It was also aware that the timely construction of seawalls on those islands was to a certain extent dependent on the timely provision of funding by it.

1171 There are, however, two points that should be made in this context.

1172 First, while it may be accepted that Torres Strait Islanders were, to the Commonwealth’s knowledge, vulnerable to the impacts of climate change generally, consideration must also be given to whether Torres Strait Islanders were vulnerable to any harm that might be suffered if the Commonwealth breached the postulated alternative duty of care. The relevant question in that regard is whether Torres Strait Islanders were vulnerable to harm if the Commonwealth was careless and failed to provide adequate funding, or failed to take a leading role in the

provision of funding for the construction of seawalls. The Commonwealth submitted that Torres Strait Islanders were not vulnerable in that respect because they could protect themselves by building their own seawalls, albeit not engineered seawalls, or could seek funding for the construction of seawalls from other sources. The submission that Torres Strait Islanders were able to build seawalls themselves was considered and rejected earlier in the context of the applicants primary or targets case. It is in my view fanciful to suggest that Torres Strait Islanders were able to satisfactorily protect themselves from the impacts of climate change by building seawalls without appropriate government funding. There is, however, some merit in the submission that Torres Strait Islanders were able to seek funding from the other tiers of government and had done so in the past. That issue is discussed in more detail later in the context of the salient feature concerning control.

1173 Second, while Torres Strait Islanders were particularly vulnerable to the impacts of climate change, so too were other Australian regions and communities. The risks posed by the impacts of climate change are not limited to flooding and inundation on low-lying islands such as those in the Torres Strait. The impacts of climate change include the risk of flooding and inundation in other parts of Australia due to rising sea levels and the frequency and intensity of heavy precipitation events. They also include the increase in frequency, size and intensity of other extreme weather events, such as heatwaves, droughts and bushfires. Other regions and communities in Australia are known to be particularly vulnerable to those impacts. The point to be made in this context is that the Commonwealth's knowledge of the vulnerability of Torres Strait Islanders must be balanced against its inferential knowledge that there were other communities in Australia that were also particularly vulnerable to other impacts of climate change. It may also be inferred that, while the Commonwealth was aware that it had some responsibilities in respect of the funding of the Seawall Project in the Torres Strait Islands, those funding responsibilities had to be considered and balanced against the Commonwealth's funding responsibilities and priorities in respect of climate change adaptation measures in other regions and communities in Australia.

Reliance and assumption of responsibility

1174 The relevant question in this context is not so much whether Torres Strait Islanders relied on the Commonwealth to protect them from the impacts of climate change in a general sense, or whether the Commonwealth assumed general responsibility for protecting Torres Strait Islanders from the impacts of climate change. Rather, the relevant question is whether Torres

Strait Islanders relied on the Commonwealth to not only provide adequate and predictable funding, but to also lead and coordinate the funding for the construction of seawalls, and whether the Commonwealth assumed responsibility in that regard.

1175 I would accept that Torres Strait Islanders relied to some extent on the Commonwealth to provide funding for the construction of seawalls on the islands that were most prone to inundation and erosion. I would also accept that the Commonwealth assumed some responsibility for the provision of such funding. Indeed, as has already been discussed, it ultimately provided significant funding for the Seawalls Project. I am, however, unable to accept that the evidence established that Torres Strait Islanders relied on the Commonwealth to lead and coordinate the funding of the Seawalls Project, or that the Commonwealth assumed responsibility for leading and coordinating the funding of that project. Nor am I persuaded that the evidence established that Torres Strait Islanders were “wholly reliant” on the Commonwealth to provide funding for the construction of seawalls, as the applicants effectively submitted, or that the Commonwealth assumed responsibility for leading and coordinating the funding of the Seawalls Project, or for leading and implementing that project more generally.

1176 As for reliance, the evidence established that the TSIRC also sought and obtained funding from the Queensland Government in respect of the Seawalls Project. It could hardly be said to have been wholly reliant on the Commonwealth to fund the project. As for the assumption of responsibility, while the Commonwealth ultimately provided all the funding it was asked to provide in respect of the Seawalls Project, it does not follow that it assumed responsibility for leading and coordinating the funding of the project, or leading and coordinating the implementation of the project. The funding of the project was equally assumed by the Queensland Government, and responsibility for the implementation of the project was essentially assumed by various parties, including the TSIRC, the Queensland Government and the TSRA. The evidence did not establish that the Commonwealth assumed responsibility for leading or coordinating the funding or implementation of the project.

Control

1177 As discussed earlier, the salient feature of control involves consideration of the extent to which the party who is said to owe the duty of care can exercise control in respect of the relevant risk of harm. The relevant risk of harm to consider in this context is harm that Torres Strait Islanders may suffer from any flooding or inundation that may occur if the

Commonwealth was careless in respect of the funding and implementation of projects involving the construction of seawalls on certain islands in the Torres Strait. To what extent can it be said that the Commonwealth had the power and ability to control or reduce the risk that Torres Strait Islanders would or might suffer that harm?

1178 The applicants' submissions tended to focus on the broad power that the Commonwealth possesses to pass legislation and establish bodies to protect indigenous Australians, including Torres Strait Islanders. The applicants submitted that the Commonwealth had passed legislation under s 51(xxvi) of the Constitution, including the Native Title Act and the *Aboriginal and Torres Strait Islanders Act 2005* (Cth), and had established bodies such as the TSRA and the NIAA, the functions of which included the implementation and monitoring of policies for Torres Strait Islanders. The applicants also pointed to the fact that the Commonwealth had in fact provided funding for the Seawalls Project in response to the TSIRC's application or request.

1179 There could be little doubt that the Commonwealth had the legislative and executive power and ability to, relevantly, provide, lead and coordinate the funding for infrastructure projects like the Seawalls Project. That, however, is not the end of the relevant analysis. The complicating factor is that, as discussed at length earlier in these reasons, governance in the Torres Strait Islands is split or shared between the three tiers of government: the Commonwealth (including through bodies such as the TSRA), the Queensland Government (as the Torres Strait Islands form part of the territory of the State of Queensland) and local government, specifically the TSIRC. The three tiers of government had different, though complementary, roles and responsibilities in respect of climate change adaptation measures, including measures to protect against the impacts of climate change. Those different roles and responsibilities were outlined in the COAG Principles. As the TSRA stated in its published Torres Strait Climate Change Strategy, the "jurisdictional and administrative arrangements over the Torres Strait environment are extremely complex, involving two countries, Local, Queensland and Commonwealth governments and multiple agencies."

1180 I am, in those circumstances, not persuaded that the Commonwealth could be said to have had a significant or special measure of control over the relevant risk of harm simply because it had the legislative and executive power that enabled it to take measures to protect Torres Strait Islanders generally. The Commonwealth's power and ability to implement and fund climate change adaptation measures, including the funding and construction of seawalls on

islands in the Torres Strait, must be considered in light of the intergovernmental agreements and policies in respect of the division and sharing of roles and responsibilities in respect of climate change adaptation. While the Commonwealth could exercise some control in respect of the relevant risk of harm, the same could be said in respect of the Queensland Government and the TSIRC. Specifically, while the Commonwealth had the power and ability to lead and coordinate the funding of projects like the Seawalls Project, so too did the Queensland Government. As for the implementation of such projects, the evidence suggested that the TSIRC had the main responsibility for implementing the Seawalls Project.

Determinacy

1181 The Commonwealth submitted that recognition of the alternative duty of care would give rise to a risk that the Commonwealth's liability would be indeterminate because it would follow that the Commonwealth would owe similar duties of care to other communities across the country who are vulnerable to the impacts of climate change. I do not accept that submission. The notion of indeterminacy in this particular context is concerned with issues such as whether the nature of the harm arising from a breach of the posited duty of care would not be able to be ascertained, or whether the number of persons who may be harmed could not be ascertained, or the time over which the harm may be suffered would be uncertain. Those issues are separate and distinct from the question whether similar duties of care may hypothetically be owed to others. In any event, I do not accept that it would follow from the recognition of the alternative duty of care that the Commonwealth would necessarily or inevitably owe similar duties of care to other communities.

Findings flowing from the relationship and salient features analysis

1182 I am ultimately not persuaded that the relationship between the Commonwealth and Torres Strait Islanders exhibits the elements that would justify the imposition of the postulated alternative duty of care, even putting to one side the inappropriateness of imposing that duty given that it would involve the Court determining the reasonableness of matters of government policy and political judgment. It may be accepted that there is a protective element in the relationship given the particular disadvantage and vulnerability of Torres Strait Islanders to the impacts of climate change relative to the broader Australian populace. It may also be accepted that it was reasonably foreseeable that there was at least a possibility that careless conduct on the part of the Commonwealth in respect of the funding of the Seawalls Project might cause or materially contribute to harm to Torres Strait Islanders arising from

the impacts of climate change. I am not, however, persuaded that those features alone warrant the imposition of the alternative duty of care.

1183 The fundamental difficulty as I see it is that the Commonwealth did not alone bear the responsibility of implementing reasonable and appropriate climate adaptation measures to protect Torres Strait Islanders from the impacts of climate change. The roles and responsibilities in that regard were, as a matter of policy, and following intergovernmental consultation and agreement, shared by the three tiers of government as reflected in the COAG Principles and the TSRA's Torres Strait Climate Change Strategy. Each of the tiers of government had a role to play. While it was envisaged that the Commonwealth would take a "leadership role" in respect of some aspects of Australia's adaptation to climate change, that leadership role tended to be in respect of high-level matters, such as "national adaptation reform" and "national adaptation priorities", as well as the protection of interests and assets of national significance.

1184 As has already been noted, the authorities recognise that the factor of control is generally of particular importance in considering whether it is appropriate to impose a duty of care on a public authority. While it may be accepted that the Commonwealth had some measure of control in relation to the funding and implementation of measures to protect Torres Strait Islanders from the impacts of climate change, such as the funding of the construction of seawalls, that element of control was shared with the other two tiers of government and was subject to complex jurisdictional and administrative arrangements between those tiers of government. In my view that tells strongly against the imposition of the posited alternative duty of care. I would also add, in this context, that while it might be accepted that Torres Strait Islanders relied on governments generally to fund and implement measures to protect them from climate change, the evidence did not indicate that they relied on the Commonwealth alone in that regard. I also do not accept that the evidence established that the Commonwealth assumed sole responsibility for the funding and implementation of climate change adaptation measures in the Torres Strait Islands.

1185 The inappropriateness of imposing the postulated alternative duty is also apparent when regard is had to the rather vague and amorphous terms in which the applicants ultimately couched the standard of care – what they alleged the Commonwealth was required to do to discharge the postulated duty of care. As noted earlier, the standard of care was initially framed in very broad and general terms. When pressed to provide some level of particularity,

the applicants' case ultimately came down to the allegation that, in order to discharge the duty of care, the Commonwealth was required to provide access to "predictable funding" which was sufficient to construct seawalls on the Torres Strait Islands, and to "lead and coordinate and establish a coherent plan for the provision of funding". Putting to one side the fact that the provision of "predictable funding" and the establishment of a "coherent plan" would almost inevitably involve political and policy decisions involving budgetary considerations and priorities, the imposition of a duty of care on a government which involves such vague and value-laden notions would, in my view, be inappropriate. Moreover, as will be seen, I am not in any event persuaded that, in order to meet or discharge the alleged alternative duty of care, the Commonwealth was required to exercise the standard of care ultimately posited by the applicants.

Conclusion

1186 The Commonwealth did not and does not owe Torres Strait Islanders the alternative duty of care concerning the funding of the construction of seawalls on some of the Torres Strait Islands. For the reasons given in detail earlier, that duty of care cannot or should not be imposed or imputed because it would be both inappropriate and impractical for the Court to pass judgment on the reasonableness of the Commonwealth's actions concerning the funding of seawalls because they involve issues of core government policy, including intergovernmental relations and budgetary concerns and priorities.

1187 In any event, I am not persuaded that the salient features of the relationship between the Commonwealth and Torres Strait Islanders support the imposition of the alleged alternative duty of care. That is mainly because the roles and responsibilities in respect of the funding of climate change adaptation measures, such as the construction of seawalls, are not borne by the Commonwealth alone. Rather, they are split and shared between the Commonwealth, the Queensland Government and local government, in particular the TSIRC, and are subject to complex jurisdictional and administrative arrangements between those tiers of government.

Did the Commonwealth breach any duty of care it owed in respect of the funding of the Seawalls Project?

1188 For the same reasons as those given in respect of the applicants' primary or targets case, I propose to briefly address the question whether the Commonwealth breached the alleged alternative duty despite my finding that the Commonwealth did not owe Torres Strait Islanders any such duty. I will again approach that question by first considering whether the

risk of harm from any relevant carelessness on the part of the Commonwealth was reasonably foreseeable. I will then address the standard of care and the negligence calculus before considering whether the Commonwealth failed to exercise the required standard of care.

Was the risk of harm to Torres Strait Islanders reasonably foreseeable?

1189 As discussed earlier, the relevant question in respect of reasonable foreseeability at the breach stage is, in essence, whether a reasonable person in the respondent's position would have foreseen that there was a risk that the applicant might suffer harm if the respondent was careless in the manner alleged by the applicant. The relevant question in respect of the alleged breach of the alternative duty of care is accordingly, in effect, whether a reasonable person in the Commonwealth's position would have foreseen that there was a risk that Torres Strait Islanders might suffer harm if it was careless in respect of the provision of properly planned and predictable funding for the construction of seawalls on some of the islands in the Torres Strait.

1190 The applicants' submissions tended to focus on the much broader question of whether there was a risk that Torres Strait Islanders might suffer harm in the future as a result of sea level rise and extreme weather events. They submitted, based mainly on the evidence of Mr Bettington, that there was a significant risk that Boigu, Saibai, Poruma and Warraber would experience inundation or flooding events in the future caused by climate change related sea level rise and extreme sea level events.

1191 The evidence of Mr Bettington, and the competing evidence of Dr Harper and Dr Barnes, was discussed at length earlier in these reasons. The evidence of Professor Church concerning climate change related sea level rise and extreme weather and sea level events was also considered in that context. It is unnecessary to revisit that evidence. For the reasons given earlier, the evidence as a whole established, in general terms, that the size and frequency of extreme sea level events and associated inundation and flooding in the Torres Strait Islands has increased in recent decades. That phenomenon can be linked to higher sea levels in the region that have resulted from global warming and climate change. The evidence also established that the frequency and size of extreme sea level events and extreme weather events in the Torres Strait are likely to continue to increase in the future.

1192 It follows that I accept the applicants' submission that there is a significant risk of marine inundation in the Torres Strait Islands as a result of sea level rise and extreme weather events. That does not, however, provide a complete answer to the relevant question of reasonable

foreseeability at this stage of the inquiry. The question is not whether there is a foreseeable risk of inundation in the Torres Strait Islands. Rather, the question in essence is whether there was, at the time of the alleged breach of duty, a risk that Torres Strait Islanders might suffer harm as a result of inundation or flooding if the Commonwealth was relevantly careless in respect of the funding of seawalls.

1193 Despite the somewhat errant focus of the applicants' submissions concerning reasonable foreseeability, I am satisfied that it was reasonably foreseeable that some Torres Strait Islanders might suffer harm from flooding and inundation on at least some of the islands in the Torres Strait if the Commonwealth was careless in its planning and provision of predictable funding for the construction of seawalls on those islands. As has already been noted, the evidence established that there was a risk of flooding and inundation on those islands. It may be inferred that there was also a foreseeable risk that, if the Commonwealth was careless in the approach that it took to the planning and provision of funding of the construction of seawalls on those islands, adequate seawalls might not be built on those islands, or at least not built in a timely fashion. It may also be inferred that, if adequate seawalls were not built, or not built in a timely fashion, on the islands in question, some residents on those islands might suffer damage to their property or person as a result of flooding or inundation that may have been prevented or minimised had seawalls been constructed at that time. In my view, that risk could not be said to be far-fetched or fanciful.

What was the reasonable response to the risk of harm?

1194 It is next necessary to consider what a reasonable actor in the position of the Commonwealth would have done in response to the risk that Torres Strait Islanders might suffer harm from flooding or inundation if it was careless in the approach it took in respect of the planning and provision of funding for the construction of seawalls. The answer to that question hinges on various considerations, such as the probability that the harm would be suffered, the seriousness of the risk and the magnitude of the potential harm, the expense, difficulty and inconvenience of alleviating the risk of harm, and the existence or otherwise of other countervailing responsibilities.

1195 The critical question, ultimately, is whether a reasonable actor in the Commonwealth's position would have taken the steps that the applicants allege the Commonwealth should reasonably have taken. As discussed earlier, those steps were, in summary, to provide access to predictable funding and to lead and coordinate and establish a coherent plan for the

provision of funding for the construction of seawalls on Saibai, Boigu, Poruma, Iama, Masig and Warraber. While that question may be shortly and succinctly stated, it is by no means easy to answer.

1196 The starting point is to consider and assess the probability, magnitude and gravity of the risk that Torres Strait Islanders on the islands in question would suffer harm if, as a result of funding issues, seawalls were not constructed in a timely fashion.

1197 The evidence suggested that the risk of Torres Strait Islanders suffering harm from inundation and flooding events if seawalls were not constructed in a timely fashion was greatest on Boigu and Saibai. In my view, the evidence indicated that there was a high probability that residents on those islands might suffer harm if seawalls were not constructed in a timely fashion. I doubt, however, that it could be said that the magnitude of the risk of harm was particularly significant. While there was some evidence that some residents had suffered some damage to their property as a result of flooding, that damage did not appear to be particularly serious. There was also no cogent evidence that any residents of those islands had suffered any serious personal injury as a result of any particular flooding or inundation events. Nor did the evidence support an inference that there was a significant risk that residents might suffer any serious personal injury as a result of flooding or inundation.

1198 I accept that the evidence indicated that there was a significant risk of damage to sacred sites and communal areas, such as cemeteries, on Boigu and Saibai, that were culturally and spiritually important to Torres Strait Islanders and their practice of Ailan Kastom. I would also readily accept that Torres Strait Islanders were deeply affected by that damage and were deeply concerned by the risk of further damage to those important areas. The weight to be given to that consideration must, however, be tempered to some extent by the fact that, for the reasons already given, I am not persuaded that harm constituted by the loss of fulfilment or the ability to practise Ailan Kastom is compensable under the law of negligence.

1199 The evidence concerning the probability and magnitude of the risk of harm from inundation and flooding on Poruma, Warraber, Iama and Masig is not so clear. Mr Bettington's evidence included evidence concerning the risk of future extreme water level events and inundation on Poruma and Warraber. There was, however, very little, if any, evidence concerning the risk of damage that residents of Poruma and Warraber faced at the time of the alleged breaches of duty, which was essentially the period during which the Seawalls Project was planned and implemented. The same can be said in respect of Iama and Masig. It is, in

those circumstances, difficult to accept that the risk of harm being suffered by residents of those islands due to flooding and inundation at the relevant time was high, or that the magnitude of that risk was serious or significant.

1200 Even if it were accepted that the risk of harm to residents of the relevant islands arising from flooding and inundation was high, and the magnitude of that risk was significant, the negligence calculus and the assessment of the appropriate standard of care becomes particularly difficult and complex when regard is had to the complex policy and administrative framework which governed climate change adaptation measures and the funding thereof, including in the Torres Strait Islands. The calculus becomes even more difficult when regard is had to the existence of competing or countervailing responsibilities and priorities.

1201 The reasonable response to the relevant risk of harm to Torres Strait Islanders from any breach of the alternative duty must be considered from the perspective of a reasonable actor in the Commonwealth's position. A reasonable actor in the Commonwealth's position would be a national government in a federation which has three tiers of government: national, state or provincial and local. The reasonable actor in the Commonwealth's position would also be a government which had competing and countervailing responsibilities and priorities and finite resources. The competing or countervailing responsibilities would include responding to the risks that other communities in the federation might face from the impacts of climate change. What precautions would a reasonable actor in the Commonwealth's position take to prevent or minimise the risk that one community within the federation might suffer as a result of the approach it took to the funding of particular climate change adaption measures, such as the construction of seawalls?

1202 In my view, a reasonable actor in the Commonwealth's position would, it may be inferred, engage with the other tiers of government to put in place an administrative framework within which the duties, roles and responsibilities in respect of climate change adaptation, including the planning and funding of measures to protect against the harmful impacts of climate change, would be divided up and shared among the separate tiers of government. It is, however, difficult to accept that the administrative framework would necessarily be one in which the national or federal government would be required to lead, coordinate and establish funding plans for all climate change adaptation measures, or any particular adaptation measures, in the federation. It might reasonably be expected that the framework would

provide that the other tiers of government might take a leading role in respect of the funding of some measures. A reasonable actor in the Commonwealth's position would also perhaps put in place a legal and administrative framework through which the funding of infrastructure projects, including projects relating to climate change adaptation, would be assessed and implemented. It is, however, difficult to accept that the funding framework would necessarily provide access to funding in respect of all adaptation measures or requests.

1203 The applicants' case as ultimately articulated appeared to accept or acknowledge that a reasonable actor in the Commonwealth's position would not have sole responsibility for funding or funding decisions in respect of climate change infrastructure projects such as the construction of seawalls. The applicants appeared to accept that funding and funding decisions in respect of such projects would involve all three tiers of government: local, state and national. They contended, however, that a reasonable actor in the Commonwealth's position would "lead and coordinate and establish a coherent plan for the provision of funding" and would "provide access to predictable funding" which was "sufficient to construct seawalls on the Torres Strait Islands".

1204 Herein lies the problem. The legal, policy and administrative framework that a reasonable actor in the Commonwealth's position – a national government in a federation – might reasonably and legitimately establish in respect of the implementation and funding of climate change adaptation measures would differ depending on many factors, including social, economic, political and policy considerations. A reasonable framework would not necessarily be one in which the federal government assumed responsibility for leading, coordinating or establishing plans in respect of the funding of all major infrastructure projects. Nor would it necessarily be one in which the federal government was responsible for providing access to "predictable" funding which was sufficient to complete particular climate change adaptation projects.

1205 As for responsibility for the establishment of funding plans, much would depend on the particular relationships between the different tiers of government, the nature and size of the infrastructure project in question and the amount of funding required for that project, and the extent to which the other tiers of government were responsible for the planning and implementation of the infrastructure project in respect of which funding was sought and required. As for the responsibility for the provision of access to predictable funding, again much would depend on the nature and size of the project and the funding that was required,

the resources or pool of money available to fund such projects, and the existence or otherwise of competing priorities and responsibilities. In some cases, it would not be unreasonable for the role or responsibilities of the national government to be essentially limited to considering and assessing funding requests by the other tiers of government and, if the funding requests comply with all relevant legal or administrative guidelines or requirements, providing the requested funding pursuant to those requests.

1206 The precise basis upon which the applicants contended that a reasonable actor in the position of the Commonwealth would have led, coordinated and established a “coherent plan” for the provision of funding, and would have provide access to “predictable” funding, was not entirely clear. As discussed earlier, hey appeared to rely on some general and high-level statements made in the COAG Principles, including that the Commonwealth would take a “leadership role in positioning Australia to adapt to climate change impacts that may affect national prosperity or security” and would lead “the national adaptation reform”, including by “working with States, Territories and Local Governments to establish national adaptation priorities to protect ... natural systems of national significance” and “consider[ing] the needs of vulnerable communities”.

1207 I do not, however, accept that those high-level statements provide a basis for the applicants’ posited standard of care. Nor does anything else in the COAG Principles indicate that the Commonwealth had assumed responsibility for taking a lead role in coordinating or establishing funding plans, or would provide access to predictable funding which was sufficient to complete all or any particular adaptation projects. Indeed, the COAG Principles do not specifically address the Commonwealth’s role and responsibilities in respect of funding climate change adaptation measures. Moreover, as discussed earlier, while the COAG Principles indicated that the Commonwealth was to take a “leadership role” in respect of some aspects of the adaptation to climate change impacts, that leadership role tended to be in respect of interests and assets of national significance.

1208 The applicants’ apparent reliance on the COAG Principles if anything highlights the inappropriateness of recognising both the alleged alternative duty of care and the applicants’ posited standard of care. The COG Principles reflected an agreement or arrangement between the three tiers of government in respect of the division, allocation and sharing of governmental roles and responsibilities in respect of climate change adaptation. Agreements and arrangements between the tiers of government in respect of such matters involve and

reflect matters of core or high government policy. As the authorities discussed earlier in these reasons clearly indicate, the imposition of a duty and standard of care that would impinge on, or require the Court to pass judgment on, such matters would be inappropriate. As Gleeson CJ observed in *Graham Barclay Oysters*, “[c]ourts have long recognised the inappropriateness of judicial resolution of complaints about the reasonableness of governmental conduct where such complaints are political in nature”. In my view, the allegation that the Commonwealth was required to lead, coordinate and establish a coherent plan for the funding of the construction of seawalls in the Torres Strait, or provide access to “predictable” funding is essentially political in nature.

1209 The applicants’ submissions concerning the posited standard of care and its alleged breach also highlighted the policy or political nature of the standard of care. The applicants submitted, for example, that the “coherent plan” that the Commonwealth was obliged to establish was one which, among other things, clearly identified the roles of both the Commonwealth and the Queensland Government in the funding of seawalls in the Torres Strait. Perhaps more significantly, the applicants submitted that the funding that was provided by the Commonwealth was “unpredictable” because, among other things, the Commonwealth funding program through which the TSIRC sought funding for the Seawalls Project was a competitive fund. The suggestion appeared to be that the standard of care required the Commonwealth to provide funding through an uncompetitive fund. The precise manner in which the Commonwealth provides funding for large infrastructure programs is plainly an issue of core or high government policy.

1210 I am not, in all the circumstances, persuaded that a reasonable actor in the Commonwealth’s position would, in response to the relevant foreseeable risk that Torres Strait Islanders might suffer harm if careless decisions or actions were taken in relation to the funding of the construction of seawalls, necessarily do what the applicants alleged the Commonwealth should have done: that is to “lead and coordinate and establish a coherent plan for the provision of funding” and would “provide access to predictable funding”. I am accordingly not persuaded that, to discharge the alternative duty of care, the Commonwealth was required to exercise the standard of care alleged by the applicants.

What was the appropriate standard of care and did the Commonwealth breach it?

1211 Having rejected the standard of care posited by the applicants, it is strictly unnecessary to consider what standard of care the Commonwealth should have been held to, or to consider

whether the Commonwealth breached that standard of care. I will nevertheless briefly address those issues and make some factual findings given the detailed submission that the parties advanced in respect of the alleged breach of duty and the possibility of an appeal. The following analysis is, however, subject to the caveat that I will refrain from passing any judgment in respect of what appear to be essentially policy or political considerations.

1212 The Commonwealth submitted that if it owed Torres Strait Islanders the alleged alternative duty of care, the standard of care to which it should be held could at its highest require it to do two things: first, consider whether to provide funding for the Seawalls Project, consistent with the legal and policy framework that applies in relation to the provision of Commonwealth funding; and second, provide funding up to the amount sought, if it considered it appropriate to do so. I would tend to agree that if the Commonwealth owed the alleged alternative duty of care to Torres Strait Islanders, the standard of care that the Commonwealth was required to meet to discharge that duty of care would have required it to do both of those things. I would, however, add that the appropriate standard of care would also have required it to consider requests for funding for the Seawalls Project, including by the TSIRC, without unreasonable delay. The appropriate standard of care would also have required the Commonwealth to provide funding pursuant to any approved funding requests without delay.

1213 As discussed in detail earlier in these reasons, the TSIRC requested the Commonwealth to provide funding for the Seawalls Project. The Commonwealth considered and assessed that request pursuant to the legal and policy framework that applied in respect of that funding request. It ultimately approved the request and provided all the requested funding. If the standard of care involved no more than taking the two steps identified in the Commonwealth's submissions, it could not be said that it failed to meet that standard of care. As already indicated, however, in my view the appropriate standard of care in effect required the Commonwealth to consider the funding request without unreasonable delay and, if approved, pay the funding without delay. Did the Commonwealth meet that standard of care?

1214 As discussed at length earlier in these reasons, there was a delay of about two and a half years between the TSIRC's funding request and the Commonwealth's provision of funding. In my view, the evidence indicated that the TSIRC's application for funding was not approached with the degree of urgency or haste that might reasonably have been expected given what was known about the risk of inundation and flooding in the Torres Strait Islands. For the reasons

given earlier, however, some of that delay was reasonably explained and some of the delay appeared to be the result of inaction on the part of the Queensland Government. I am not persuaded that the delay can be attributed solely to the Commonwealth.

1215 I should finally note that the applicants also submitted that the Commonwealth breached the alleged alternative duty of care because the funding that it provided was inadequate to construct all the seawalls that the Seawalls Project envisaged would be constructed on the six islands in question. As discussed earlier, that submission is somewhat confounding given that the Commonwealth provided all the funding that it was requested to provide. In any event, for the reasons given earlier, I reject the applicants' submission that the fact that the funds ultimately provided by the Commonwealth and Queensland Government were insufficient to complete the Seawalls Project was attributable to any carelessness or breach of duty on the part of the Commonwealth. The inadequacy of the funding appears to have been the product of cost overruns and the overall implementation of the project by the TSIRC and its contractors. I do not accept that the inadequacy of the funding that was provided by the Commonwealth and Queensland Governments can be attributed to any carelessness on the part of the Commonwealth. Nor do I accept that the standard of care that the Commonwealth had to meet required it to make up for any funding shortfalls that arose as a result of cost overruns or the overall implementation of the project by the TSIRC.

Conclusion in respect of breach of duty

1216 Even if the Commonwealth is found to have owed the alternative duty of care to Torres Strait Islanders, I am not satisfied that the standard of care referable to that duty of care was the standard of care posited by the applicants. Nor am I persuaded that the Commonwealth breached what I would consider to be the appropriate standard of care. Ultimately, the Commonwealth provided all the funding that it was requested to provide for the Seawalls Project. While there were delays in the funding process, those delays were not solely attributable to the Commonwealth and were not unreasonable in all the circumstances. Moreover, while there was a shortfall in the funding necessary to complete the project, I am not persuaded that the shortfall was caused by any carelessness or neglect on the part of the Commonwealth.

Did any breach of the duty of care in respect of the funding of the Seawalls Project cause the applicants to suffer any compensable damage?

1217 Given the findings that I have made concerning the alternative duty of care and breach, it is unnecessary to address whether the applicants proved that any breach of the alternative duty of care caused the applicants to suffer any compensable loss. It is, however, possible to address that issue shortly on the hypothetical basis that the applicants had made out their case in respect of duty and breach. The short answer is that I am not persuaded that the applicants would have made out their case in relation to causation and damage in any event.

Loss and damage allegedly suffered by the applicants

1218 The applicants' case in respect of loss or damage caused by the Commonwealth's breach of the alternative duty of care was based on the occurrence of various inundation or flooding events on Boigu, where Mr Pabai Pabai resided, and Saibai, where Mr Kabai resided. Some of those events, however, occurred before 2011, when the TSIRC applied for funding for the Seawalls Project. Given the limited scope of the applicants' case in respect of the breach of the alternative duty, it could not sensibly be said that any breach of that duty caused or contributed to any loss or damage suffered by the applicants as a result of inundation events which occurred before 2011. Similarly, it could not sensibly be said that any loss or damage suffered by the applicants as a result of inundation events which occurred after construction of the seawalls on Boigu and Saibai was completed could be attributed to any breach of the adaptation duty. The seawall on Saibai was completed in 2017 and the seawall on Boigu was completed in March 2022.

1219 The only flooding event on Saibai that occurred between 2011 and 2017 was one which apparently occurred in 2012. Mr Kabai's evidence in respect of that event was very vague and general. There was no evidence concerning the cause of the flooding. Even putting that difficulty to one side, it is difficult to see how any breach of the alternative duty by the Commonwealth could have caused or contributed to any loss or damage suffered by Mr Kabai as a result of that flooding event. Even if the Commonwealth had immediately agreed to provide all the funding requested by the TSIRC for the construction of a seawall, it is highly doubtful that the seawall could have been constructed by 2012. In any event, as discussed earlier in the context of the applicants' primary or targets case, the only evidence of any loss or damage suffered by Mr Kabai as a result of the 2012 flooding was unspecified and unquantified damage to Mr Kabai's washing machine and tools. Mr Kabai did not claim that he had suffered any personal injury as a result of that flooding.

1220 The evidence in respect of flooding or inundation events on Boigu that occurred between 2011 and March 2022 was even vaguer and more general than the evidence in respect of the flooding event on Saibai. Mr Pabai Pabai's evidence was:

Every few years, in about January and February, Boigu is inundated during king tides. This happens during monsoon season, and the tides can be many meters high. Depending on the height of the tides, and given how low and flat Boigu is, the sea water comes in and inundates the land. I have already described some of the impacts of that kind of inundation above.

1221 While this evidence tended to indicate that there were likely to have been at least some inundation events on Boigu between 2011 and 2022, there was no evidence that Mr Pabai Pabai suffered any personal injury or damage to any of his property as a result of any such events.

1222 I will address the applicants' claims concerning loss of fulfilment of Ailan Kastom along with the claims made on behalf of group members in relation to that species of harm.

Loss and damage allegedly suffered by group members – Ailan Kastom

1223 For the reasons given earlier in the context of targets duty of care, I am unable to accept, on the current state of authority, that fulfilment of Ailan Kastom is a right or interest the loss or harm to which is compensable under the Australian common law of negligence. It follows that the action for damages on behalf of group members for loss of fulfilment of Ailan Kastom must fail even if I were to find that any breach of the alternative duty of care by the Commonwealth caused group members to suffer that species of harm. In those circumstances, I need only deal with the antecedent issue of causation in very brief terms.

1224 The applicants' submissions only barely addressed the question of whether any breach of the alternative duty of care by the Commonwealth caused group members to collectively suffer loss of fulfilment of Ailan Kastom. They simply contended, in very general terms, that inundation and erosion on the islands in question had damaged various locations of cultural significance, such as cemeteries and lands on which traditional ceremonies are performed. They also contended, again in very general terms, that inundation and erosion events had resulted in group members being unable to carry on cultural practices such as fishing, camping and planting crops in their traditional land. I am, however, unable to accept that the evidence established any breach by the Commonwealth of the alternative duty relevantly caused group members to suffer harm of that type, or materially contributed to them suffering such harm.

- 1225 It may be accepted that the impacts of climate change in recent years have led many Torres Strait Islanders to experience a loss of fulfilment of Ailan Kastom. The evidence of Torres Strait Islanders concerning their experiences in that regard was discussed at length earlier in these reasons. The difficulty for the applicants, however, is that the evidence does not link the general experiences of Torres Strait Islanders in respect of loss of fulfilment of Ailan Kastom to any specific inundation or erosion events. It is, in those circumstances, difficult to see how it could possibly be concluded that any breach by the Commonwealth of the alternative duty materially contributed to the collective loss of fulfilment of Ailan Kastom suffered by Torres Strait Islanders.
- 1226 Only inundation or erosion events that occurred after 2011, when the TSIRC sought funding for the Seawalls Project, could be said to be attributable in some way to any breach of the alternative duty of care. The applicants' case was, in effect, that inundation events that occurred after that time would not have occurred, or would not have occurred to the same extent, had the Commonwealth properly funded the Seawalls Project and seawalls had been built on the islands in question. In the case of Saibai, Boigu and Poruma, only inundation events that occurred prior to the completion of the seawalls on those islands could be relevant. The seawall on Saibai was completed in 2017. The seawall on Boigu was completed in March 2022. The seawall on Poruma was completed in November 2022.
- 1227 In relation to Saibai, the evidence indicated that there was one inundation event which occurred between 2011 and 2017. That event occurred in 2012. It was referred to in the evidence of Mr Kabai. As has already been noted, it is difficult to see how that inundation event could be linked in any way to any breach of the alternative duty because it is highly unlikely that a seawall could have been constructed on Saibai by 2012 even if the Commonwealth had immediately approved the TSIRC's funding request. Mr Kabai also referred in his evidence to an inundation event on Saibai in 2018, however by that time the seawall had been completed. The applicants ultimately did not allege that any deficiencies in the constructed seawall were attributable to any breach of the alternative duty. The evidence of Mr Warusan and Ms Enosa concerning loss of fulfilment of Ailan Kastom was very general and did not link any such loss to any particular inundation events that occurred between 2011 and 2017.
- 1228 In relation to Boigu, while Mr Pabai Pabai's evidence indicated that there may have been some inundation events on Boigu between 2011 and 2022, as has already been noted, the

evidence concerning those events was very vague and general and did not link those events to any particular damage to locations of cultural significance, or to any specific inability to carry on cultural practices. Mr Fred Pabai's evidence did not assist. To the extent that his evidence concerned loss of fulfilment of Ailan Kastom, it did not link any such loss to any inundation event that occurred during the relevant period.

1229 In relation to Poruma and Warraber, the applicants relied on evidence about inundation events which occurred on Poruma and Warraber in January 2018, and another event on Warraber in January 2023. The evidence of Mr Billy and Mr Faid, however, did not go so far as to link those inundation events to any specific damage to locations of cultural significance on those islands, or to any inability to carry on cultural practices. Their evidence concerning loss of fulfilment of Ailan Kastom was expressed in very general terms and did not link their experiences in that regard to any specific inundation events.

1230 There was evidence and submissions concerning inundation events on Masig in 2016, January 2018 and March 2019 and inundation events on Lama in January 2018 and January 2023. There was, however, no evidence that those events had caused any damage to locations of cultural significance on those islands, or had prevented or inhibited any residents of those islands from engaging in any cultural practices.

1231 There are other difficulties with the applicants' case in respect of causation and breach of the alternative duty of care. Even if the evidence was capable of proving that any of the inundation events that occurred during the relevant periods on each of the islands had caused or contributed to any loss of fulfilment of Ailan Kastom suffered by the residents of the islands, the applicants' case in respect of causation is premised on the contention or assumption that the seawalls to be constructed under the Seawalls Project would have provided complete protection from those inundation events on all parts of the islands. The evidence did not, however, support that assumption or contention. The planned seawalls only protected parts of the islands in question. Moreover, Mr Bettington's evidence indicated that the seawalls were not designed to provide complete protection, but rather were designed to mitigate flooding by reducing the impacts of extreme events. It cannot be assumed or inferred that any damage that inundation events had caused to areas of cultural significance on the islands would not have occurred if the planned seawalls had been built in a timely fashion. It also cannot be assumed or inferred that the inability of some residents to carry on

some traditional practices as a result of any inundation events would not have occurred if the planned seawalls had been built in a timely fashion.

- 1232 In all the circumstances, I am not satisfied that the evidence was capable of supporting the applicants' case that any breach of the alternative duty by the Commonwealth relevantly caused any Torres Strait Islanders to experience any loss of fulfilment of Ailan Kastom.

Future loss and damage

- 1233 I do not intend to address the issue of future loss or damage caused by any ongoing breach of the alternative duty given the findings that have already been made. The applicants did not, in any event, address this issue in their submissions.

Conclusion in respect of causation and damage

- 1234 I am not satisfied that any breach of the alternative duty of care by the Commonwealth caused the applicants or Torres Strait Islanders to suffer any loss or damage. While the applicants may have suffered some minor property damage as a result of some flooding or inundation events, I am not satisfied that any such loss was relevantly caused by any such breach of duty by the Commonwealth. The applicants did not allege that they had suffered any physical injury. As for the applicants' claims concerning the loss of fulfilment of Ailan Kastom, I decline to find that fulfilment of Ailan Kastom is a right or interest the loss or harm to which is compensable under the Australian common law of negligence. Nor am I persuaded that any loss of fulfilment of Ailan Kastom suffered by Torres Strait Islanders was caused by any breach of the alternative duty in any event.

Conclusion in in respect of the applicants' alternative or adaptation duty case

- 1235 The applicants have failed to make out their case against the Commonwealth based on the alleged alternative duty of care. Indeed, the applicants have failed to prove any of the essential elements of their case. I am not satisfied that the Commonwealth owed Torres Strait Islanders the alternative duty of care. Even if the Commonwealth was subject to that duty of care, I am not satisfied that the Commonwealth breached that duty of care. Nor am I satisfied that any breach of the alternative duty caused the applicants to suffer any compensable loss or damage, or materially contributed to any compensable loss or damage suffered by them. Finally, I am not persuaded that, on the current state of authority, loss of fulfilment of Ailan Kastom is a right or interest the loss or harm to which is compensable under the Australian common law of negligence.

OTHER ISSUES IN RESPECT OF THE RELIEF SOUGHT BY THE APPLICANTS

1236 The relief sought by the applicants included damages, declaratory relief and injunctive relief.

1237 For the reasons that have already been given, the applicants have not made out their case in negligence against the Commonwealth, either in respect of the primary or targets case, or the alternative or adaptation case. It follows that the applicants are not entitled to any of the relief they sought. For more abundant caution, however I should also indicate that, for the brief reasons that follow, I would not have been inclined to grant the declaratory or injunctive relief even if the applicants had made out the elements of their case in negligence as alleged.

Declaratory relief

1238 The applicants sought the following two declarations

1. A declaration that the Commonwealth owes a duty of care to Torres Strait Islanders, including the Applicants and the Group Members, to take reasonable steps to:
 - a. protect Torres Strait Islanders; and/or
 - b. protect Torres Strait Islanders' traditional way of life, including taking steps to preserve Ailan Kastom; and/or
 - c. protect the marine environment in and around the Protected Zone, including the Torres Strait Islands;from the Current and Projected Impacts of Climate Change in the Torres Strait Islands (Duty of Care).

2. A declaration that the Commonwealth is in breach of the Duty of Care.

1239 Those declarations relate to the applicants' primary or targets case, not the alternative or adaptation case. In my view it would have been inappropriate to make either of those declarations even if I had found that the Commonwealth owed Torres Strait Islanders the alleged targets duty of care and had breached that duty. That is essentially because the declarations are expressed at such a high level of generality and abstraction as to be effectively meaningless and to lack any utility. It is also, at best, doubtful that it would be appropriate to make declarations concerning the existence of a duty of care and its breach in the absence of any finding that the breach caused the applicants to suffer any compensable loss or damage.

1240 It is uncontroversial that the Court's power to grant declaratory relief is broad. That said, it is equally well established that the Court will not make a declaration if there is no utility in doing so: *Ainsworth v Criminal Justice Commission* (1992) 175 CLR 564 at 582. There

would in my view be no utility in making declarations in the very general terms sought by the applicants. That is because it would be inappropriate and pointless to declare the existence of a duty of care in abstract terms divorced from the concrete facts of the case and without any reference to, for example, the nature and extent of the duty, the applicable standard of care, the circumstances in which the duty was breached and the harm that was suffered as a result of the breach: see *Sharma* at [763]-[773] (Wheelahan J) and the cases there cited, including in particular *Perrre v Apand Pty Ltd* (1999) 198 CLR 180 at [80] (McHugh J); *Modbury Triangle Shopping Centre Pty Ltd v Anzil* (2000) 205 CLR 254 at [14] (Gleeson CJ) and [103] (Hayne J); *Cole v South Tweed Heads Rugby league Football Club Ltd* (2004) 217 CLR 469 at [1] (Gleeson CJ).

- 1241 It would also be inappropriate to make declarations concerning the existence of a duty of care and its breach in circumstances where, as here, there has been no finding that the breach caused a party to suffer loss or damage, particularly given that the suffering of such loss or damage is an essential element of the cause of action in negligence: see *Dovuro Pty Ltd v Wilkins* (2003) 215 CLR 317 at [142]-[143] (Hayne and Callinan JJ, with whom Heydon J agreed at [177]); *Sharma* at [780]-[782] (Wheelahan J). As Brennan J stated in *John Pfeiffer Pty Ltd v Canny* (1981) 148 CLR 218 at 241-242, a “duty of care is a thing written on the wind unless damage is caused by the breach of that duty”. The situation is complicated where, as here, the proceeding is a representative proceeding and the claims of group members other than the applicants have not been finally determined. Declarations dealing with duty of care and breach in those circumstances may well be characterised as impermissible interlocutory declarations: see *Graham Barclay Oysters* at [128] (Gummow and Hayne JJ).

Injunctive relief

- 1242 The applicants sought the following injunctive relief in their originating application as amended:

An injunction requiring the Commonwealth to implement such measures as are necessary to:

- a. protect the land and marine environment of the Torres Strait Islands and the cultural and customary rights of the Torres Strait Islanders, including the Applicants and the Group Members, from GHG emissions into the Earth’s atmosphere;
- b. reduce Australia’s GHG emissions consistent with the Best Available Science Target; and

- c. otherwise avoid injury and harm to Torres Strait Islanders, including the Applicants and the Group Members, from GHG emissions into the Earth's atmosphere.

1243 In their written submissions, the applicants sought to vary or qualify the terms of the injunction by inserting the word “reasonable” before the word “measures” in the chapeau. That variation, if anything, highlights the fundamental difficulty with the terms of the injunction, which is that the Commonwealth would be left in the invidious position of not knowing precisely what it was required to do, or not do, to comply with the order. In *Naoumi v Dannawi* (2009) 75 NSWLR 216 at [36], McColl JA (with whom Beazley and Macfarlan JJA agreed) stated that an injunction granted in aid of legal or equitable rights “should indicate the conduct which is enjoined or commanded to be performed, so that the defendant knows what is expected of him or her as a matter of fact” and should not be framed in a way which would “leave the issues in the case open for determination on a contempt proceeding”: see also *Optus Networks Pty Ltd v City of Boroondara* [1997] 2 VR 318 at 336-337 (Charles JA). The injunction sought by the applicants clearly falls foul of that principle.

1244 I would have declined to grant the injunctive relief sought by the applicants even if I had found that they had made out their targets case against the Commonwealth.

ANSWERS TO THE COMMON QUESTIONS

1245 It remains to briefly summarise the findings that have been made in terms of the common questions. For the reasons that have been given above, the answers to the common questions are as follows.

Duty of care

1246 **Common question 1:** Has climate change had and does it continue to have any or all of the impacts described in paragraph [57] of the 3FASOC and the particulars thereto (the Current Impacts of Climate Change in the Torres Strait)?

Answer: Yes. See paragraphs [528], [522], [560]-[561], [566]-[567], [570], [581] and [713]-[714] above.

1247 **Common question 2:** Will climate change in the future have any of the impacts described in paragraph [59] of the 3FASOC and the particulars thereto (the Projected Impacts of Climate Change in the Torres Strait) if Global Temperature Increase exceeds the Global Temperature Limit?

Answer: Yes. See paragraphs [721], [723]-[726], [730], [735], [738], [740]-[741], [744], [746]-[752] and [759] above.

1248 **Common question 3:** At any relevant time, did or does the Commonwealth owe a duty of care to Torres Strait Islanders to take reasonable steps to:

- (a) protect Torres Strait Islanders; and/or
- (b) protect Torres Strait Islanders' traditional way of life, including taking steps to preserve Ailan Kastom; and/or
- (c) protect the marine environment;
- (d) from the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands?

Answer: No. See paragraphs [977]-[978] above

1249 **Common question 4:** If the answer to question 3 is 'yes', did or does any such duty of care require the Commonwealth to take reasonable steps to ensure that, having regard to the Best Available Science, it:

- (a) identifies the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands;
- (b) identifies the risk, scope and severity of the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands;
- (c) identifies the Global Temperature Limit necessary to prevent or minimise many of the most dangerous Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands;
- (d) identifies a Best Available Science Target reflecting the Global Temperature Limit identified at subparagraph (c) above to prevent or minimise the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands; and
- (e) implements such measures as are necessary to reduce Australia's GHG emissions consistent with a Best Available Science Target identified at subparagraph (d) above?

1250 **Answer:** Unnecessary to answer. If, however, the answer to 3 was 'yes', the answer to this question would be 'no'. See paragraph [1010] above.

Alternative duty of care

1251 **Common question 5:** At any relevant time, did or does the Commonwealth owe a duty of care to Torres Strait Islanders to take reasonable care to protect against marine inundation and erosion causing:

- (a) property damage;
- (b) loss of fulfilment of Ailan Kastom; and/or
- (c) injury, disease or death?

Answer: No. See paragraphs [1186]-[1187] above.

1252 **Common question 6:** If the answer to question 5 is ‘yes’, did or does such duty of care require the Commonwealth to take reasonable steps to:

- (a) provide access to predictable funding, including additional funding as required, that was sufficient to construct seawalls on the Torres Strait Islands;
- (b) lead and coordinate and establish a coherent plan for the provision of funding for the protection of the Torres Strait Islanders from the adverse effects of sea level rise, inundation and erosion through the construction of seawalls - as part of the Seawalls Project Stage 1 and Stage 2 on Saibai, Boigu, Poruma, Iama, Masig and Warraber (the Seawalls Projects).

(Note: seawalls includes bunds, wave return walls, geotextile bags and associated coastal protection infrastructure)

1253 **Answer:** Unnecessary to answer. If, however, the answer to 5 was ‘yes’, the answer to this question would be ‘no’.

Breach of duty of care

1254 **Common question 7:** If the answer to questions 3 and 4 is ‘yes’, did the Commonwealth breach the duty of care by failing to take any, or any reasonable steps to ensure that, having regard to the Best Available Science, it:

- (a) identified the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands;

- (b) identified the risk, scope and severity of the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands;
- (c) identified the Global Temperature Limit necessary to prevent or minimise many of the most dangerous Current Impacts of Climate Change in the Torres Strait Islands and Projected Impacts of Climate Change in the Torres Strait Islands;
- (d) identified a Best Available Science Target reflecting the Global Temperature Limit identified at subparagraph (c) above to prevent or minimise the Current Impacts of Climate Change in the Torres Strait Islands and the Projected Impacts of Climate Change in the Torres Strait Islands; and
- (e) implemented such measures as are necessary to reduce Australia's GHG emissions consistent with a Best Available Science Target identified at subparagraph (d) above; when:
 - (f) setting and maintaining Australia's 2030 Target;
 - (g) setting and maintaining Australia's Re-affirmed 2030 Target;
 - (h) setting and maintaining Australia's 2050 Target;
 - (i) setting and maintaining Australia's Updated 2030 Target?

Answer: Unnecessary to answer. If, however, the answer to 3 and 4 was 'yes', the answer to (f) would be 'yes', the answer to (g) would be 'yes' and the answer to (h) would be 'no'. See paragraphs [1020], [1024], [1029] and [1033] above.

1255 **Common question 8:** If the answer to question 7 is 'yes', is there an ongoing breach of the duty of care?

1256 **Answer:** Unnecessary to answer. If, however, the answer to 7 was 'yes', the answer to this question would be 'no'. See paragraphs [1034] above.

Breach of alternative duty of care

1257 **Common question 9:** If the answer to questions 5 and 6 is 'yes', did the Commonwealth breach the alternative duty of care by failing to take any, or any reasonable steps to:

- (a) provide predictable funding necessary to complete all planned seawalls projects;
- (b) lead and coordinate and establish a coherent plan for the provision of funding for the protection of the Torres Strait Islanders from the adverse effects of sea level rise,

inundation and erosion through the construction of seawalls; as part of the Seawalls Project Stage 1 and Stage 2 on Saibai, Boigu, Poruma, Iama, Masig and Warraber (the Seawalls Projects)?

1258 **Answer:** Unnecessary to answer. If, however, the answer to 5 and 6 was ‘yes’, the answer to this question would be ‘no’. See paragraph [1220] above.

1259 **Common question 10:** If the answer to question 9 is ‘yes’, is there an ongoing breach of the alternative duty of care?

1260 **Answer:** Unnecessary to answer.

Causation, loss, and damage

1261 **Common question 11:** If the answer to question 7 is ‘yes’, was the breach of the duty of care a cause of Torres Strait Islanders collectively suffering loss of fulfilment of Ailan Kastom arising from damage to or degradation of the land and marine environment of the Torres Strait Islands? (Note: this question does not address any specific claims of loss or damage that the applicants or any specific group member may have)

Answer: Unnecessary to answer. If, however, the answer to 7 was ‘yes’, the answer to this question would be ‘no’. See paragraph [1134] above.

1262 **Common question 12:** If the answer to 8 is ‘yes’, will the ongoing breach of the duty of care, if not restrained, continue to be a cause of Torres Strait Islanders collectively suffering loss of fulfilment of Ailan Kastom arising from damage to or degradation of the land and marine environment of the Torres Strait Islands? (Note: this question does not address any specific claims of any ongoing loss or damage that the applicants or any specific group member may have)

Answer: Unnecessary to answer.

1263 **Common question 13:** If the answer to question 9 is ‘yes’, was the breach of the alternative duty of care a cause of Torres Strait Islanders collectively suffering loss of fulfilment of Ailan Kastom arising from damage to or degradation of the land and marine environment of the Torres Strait Islands? (Note: this question does not address any specific claims of loss or damage that the applicants or any specific group member may have)

Answer: Unnecessary to answer. If, however, the answer to 9 was ‘yes’, the answer to this question would be ‘no’. See paragraph [1234] above.

1264 **Common question 14:** If the answer to question 10 is ‘yes’, will the ongoing breach of the alternative duty of care, if not restrained, continue to be a cause of Torres Strait Islanders collectively suffering loss of fulfilment of Ailan Kastom arising from damage to or degradation of the land and marine environment of the Torres Strait Islands?

Answer: Unnecessary to answer.

Relief

1265 **Common question 15:** What statutory law applies to the claims of the applicants and group members?

1266 **Answer:** The substantive law of the Australian Capital Territory applies to the applicants’ and group members’ claims relating to both the targets duty of care and the alternative duty of care. Those laws include the *Limitation Act 1985* (ACT). However, the *Civil Law (Wrongs) Act 2002* (ACT) does not apply to the Commonwealth. Accordingly, the common law applies to the applicants’ and group members’ negligence claims. See paragraphs [82]-[87] above.

1267 **Common question 16:** Is the loss of fulfilment of Ailan Kastom, arising from damage to or degradation of the land and marine environment of the Torres Strait Islands compensable under the law of negligence?

Answer: On the current state of authority, the answer to this question is ‘no’. See paragraphs [1131]-[1132], [1223], [1232] and [1234] above.

1268 **Common question 17:** Can the declaratory and injunctive relief sought by the applicants be granted and, if so, should it be granted?

Answer: No. See paragraphs [1240]-[1241] and [1243]-[1244] above.

CONCLUSIONS AND DISPOSITION

1269 The applicants have failed to make out a case in negligence against the Commonwealth, either on the basis of the alleged targets duty of care or the alternative duty of care. The common questions have also been answered in terms adverse to the applicants and the group members.

1270 In light of all the findings that have been made, a verdict for the Commonwealth should be entered in respect of the applicants' claims. Moreover, given those findings and the findings that have been made in respect of the common questions, the originating application as amended should also be dismissed. I will, however, hear from the parties further in relation to the precise terms of the orders that should be made to give effect to this judgment. It was also common ground that the question of costs should only be determined after the judgment was handed down. Accordingly, the only orders that will be made at this stage are orders directing the parties to provide the Court with either draft agreed or competing orders which give effect to this judgment and, if the latter, short submissions in respect of the proposed orders, including in respect of costs.

1271 I should finally reiterate and emphasise that the applicants' failure to make out their primary case in negligence against the Commonwealth was not primarily a result of their failure to make out the key factual allegations upon which their case was based. Indeed, I accepted many of those factual allegations.

1272 There could be no doubt that the Torres Strait Islands have been, and continue to be, ravaged by the impacts of human-induced climate change. The islands themselves have been, and continue to be, eroded and inundated by rising seas and increasingly severe extreme sea level and weather events. The delicate ecosystems on the islands and the surrounding seas have been damaged and, in some instances, destroyed by, among other things, the salination of tidal wetlands, the warming of the surrounding seas, the bleaching of coral reefs and ocean acidification. Once plentiful totemic marine animals, like dugong and turtles, are disappearing. Those and other changes wrought by the escalating impacts of global warming and climate change in the Torres Strait have had, and continue to have, a devastating impact on the traditional way of life of Torres Strait Islanders and their ability to practise Ailan Kastom, their unique and distinctive body of customs, traditions, observances and beliefs.

1273 I have also found that the Commonwealth's response to climate change and the threat it has posed, and continues to pose, to the Torres Strait Islands and their traditional inhabitants has, at least in some respects, been wanting. In particular, I have found that, when the Commonwealth identified and set Australia's greenhouse gas emissions reduction targets in 2015, 2020 and 2021, it failed to engage with or give any real or genuine consideration to what the best available science indicated was required for Australia to play its part in the global effort to moderate or reduce climate change and its impacts.

1274 The best available science was and is clear. To prevent the worst and most dangerous impacts of climate change, it was and is imperative for every country to take steps to reduce their greenhouse gas emissions so as to ensure that the increase in the global average temperature is held to well below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. Those critical objectives were enshrined in the Paris Agreement, to which Australia is a party. The evidence in this case indicated that the emissions reduction targets set by the Commonwealth in 2015, 2020 and 2021 were plainly not consistent with those objectives or its international obligations under the Paris Agreement.

1275 The applicants' primary case against the Commonwealth failed not so much because there was no merit in their factual allegations concerning the Commonwealth's emissions reduction targets. Rather, it failed because the law in Australia as it currently stands provides no real or effective avenue through which the applicants were able to pursue their claims. In particular, the common law of negligence in Australia was an unsuitable legal vehicle through which the applicants could obtain relief in respect of the type of governmental action or inaction which was in issue in this case, or relief in respect of their loss of fulfilment of Ailan Kastom. That will remain the case unless and until the law in Australia changes, either by the incremental development or expansion of the common law by appellate courts, or by the enactment of legislation. Until then, the only recourse that those in the position of the applicants and other Torres Strait Islanders have is recourse via the ballot box.

I certify that the preceding one thousand two hundred seventy-five (1275) numbered paragraphs are a true copy of the Reasons for Judgment of the Honourable Justice Wigney.

Associate:

Dated: 15 July 2025