

ARE OUR LAWS RESPONDING TO THE CHALLENGES POSED TO OUR COASTS BY CLIMATE CHANGE?

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Scientific evidence is indicating that there are significant climate change impacts ahead for coastal communities. The potential impacts include sea level rises, increased coastal flooding and storm surges, increased coastline erosion and the destruction of property.¹ Recent studies have demonstrated that some climate change impacts are now unavoidable. This means that even if greenhouse gas emissions are significantly reduced today, temperature increases and sea level rise are almost certain to occur over the next 50 years due to the time-lag effect of climate change.² Indeed, the Intergovernmental Panel on Climate Change ('IPCC') has published studies confirming that a measurable increase in temperature and sea level rise is already occurring.³ Therefore, there is a clear need for adaptation measures to be put in place to ameliorate these imminent impacts on coastal communities. This is especially pertinent in Australia, where 85 per cent of our population lives on the coast.

Despite the urgent need for adaptation action, the primary focus of climate change law and policy thus far has been on the need for mitigation and binding emissions targets to achieve large cuts in greenhouse gas emissions.⁴ Although mitigation is of course essential to minimise future impacts and limit temperature increases, it is clear that adaptation measures must also be implemented to ensure that the unavoidable impacts of climate change are addressed. However, as will

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1 See IPCC, *Working Group II Report: Impacts, Adaptation and Vulnerability – Chapter 6: Coastal Systems and Low-Lying Areas* (2007) <<http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter6.pdf>> at 15 August 2008.

2 Tom Wigley, 'The Climate Change Commitment' (2005) 307 *Science* 1766; Gerald Meehl et al 'How Much More Global Warming and Sea Level Rise?' (2005) 307 *Science* 1769.

3 See IPCC, *Assessment of Observed Changes and Responses in Natural and Managed Systems* (2007) <<http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter1.pdf>> at 15 August 2008. This report found that physical and biological systems on all continents and in most oceans are already being affected by recent climate changes, particularly regional temperature increases.

4 Examples include the recent Federal Government proposals for an emissions trading scheme, mandatory renewable energy targets and legislated emissions targets.

be seen in this paper, very few laws currently address coastal climate change impacts. The lack of an overarching legal framework means that the potential impacts of climate change on coastal populations and land uses are often ignored, or addressed in a piecemeal or ad hoc manner. The lassitude of action by the legislature stands in stark contrast to the innovative approach to climate change adopted by courts around Australia. It has become clear that despite the legislative vacuum, Australian courts are taking a leading role in ensuring that decision-makers consider climate change impacts in a judicial review context.

Court decisions relating to climate change have fallen into two categories. The first category of court cases relates to decisions made by government decision-makers concerning new developments, such as power stations and new coal mines that would produce significant greenhouse gas emissions.⁵ These cases have been brought to ensure that governments take steps to mitigate climate change impacts. Court decisions in these cases have established that the contribution of new developments to climate change must be considered by decision-makers.⁶ This category of litigation might be deemed 'mitigation' cases.

The second category of court actions has only gained prominence recently. These cases involve challenges to decisions on the basis that the decision-maker did not consider the potential impacts of climate change on proposed developments in vulnerable coastal areas. This is the reverse situation from the first category of cases because, rather than looking at a development's potential contribution to climate change, this category of cases looks at the potential impacts of climate change on proposed developments. Two of these cases, *Walker v Minister for Planning*⁷ decided by the New South Wales Land and Environment Court, and *Northcape Properties Pty Ltd v District Council of Yorke Peninsula*⁸ heard in the South Australian Supreme Court, have emphasised the need to consider the climate change impacts on our coasts when approving new developments. This category of cases could be called 'adaptation' cases.

This article analyses these 'adaptation' decisions to highlight the progressive stance taken by some elements of the judiciary in response to climate change risks in the vulnerable coastal zone. Thereafter, this article will examine the current statutory planning framework in NSW to highlight the lack of legislative

5 The first case to raise such issues was *Greenpeace Australia Limited v Redbank Power Company Pty Ltd and Singleton Council* (1994) 86 LGERA 143, where the Court imposed conditions upon a coal-fired power station in NSW requiring it to mitigate the effects of greenhouse gas emissions by the planting of sinks, the limitation of fuel sources for the station to tailings from particular mines, and the monitoring of and reporting on stack emissions. See also *Australian Conservation Foundation v Latrobe City Council* (2004) 140 LGERA 100; *Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc v Minister for the Environment & Heritage* (2006) 232 ALR 510; *Gray v Minister for Planning* (2006) 152 LGERA 258; *Anvil Hill Project Watch Association Inc v Minister for the Environment and Water Resources* [2007] FCA 1480; and *Re Xstrata Coal Queensland Pty Ltd & Ors* [2007] QLRT 33, where merits review was used to object to a mining lease before the Land and Resources Tribunal.

6 See, eg, *Australian Conservation Foundation v Latrobe City Council* (2004) 140 LGERA 100; *Gray v Minister for Planning* (2006) 152 LGERA 258.

7 [2007] NSWLEC 741 ('Walker').

8 [2008] SASC 57 ('Northcape').

response to impending climate change impacts in the coastal zone. The article concludes with recommendations for law reform.

I ADAPTATION CASES

A *Walker*

In *Walker*, Biscoe J of the NSW Land and Environment Court held that a concept plan approval for residential development and an aged care facility on flood-prone land was invalid on the grounds that the Minister for Planning had failed to consider whether the existing flood risk in the area would be aggravated by climate change. The judgment contains a comprehensive review of Australian and overseas cases dealing with climate change issues and highlighted the potentially serious effects of climate change upon coastal development.

Walker related to a controversial site north of Wollongong known as Sandon Point which is comprised of mostly vacant coastal land. The area had been the subject of considerable litigation in the past relating to indigenous cultural heritage.⁹ The site was known to be highly flood-prone. The proponents in this case, Stockland Development and Anglican Retirement Villages, sought concept plan approval for subdivision of the western part of the site into approximately 180 residential dwelling allotments, three super-lots for future apartment or townhouse development, 200 to 250 seniors living units and a residential aged care facility.

Stockland Development and Anglican Retirement Villages lodged a concept plan proposal under part 3A of the *Environmental Planning and Assessment Act 1979* (NSW) ('EPAA'). Part 3A of the Act was introduced in 2005 to streamline development processes for major projects, including by making the Minister for Planning the sole consent authority.¹⁰ A concept plan only need describe the proposed development in 'broad brush' terms. Detailed information about the development is not needed.¹¹ A concept plan approval is taken to indicate 'in-principle' approval of a proposed project, which the proponent can rely on prior to drawing up more detailed plans.¹²

An important issue to be resolved in connection with the concept plan was the treatment of three watercourses on the site, which were prone to flooding. The proponent wanted to construct relatively narrow and straight stream corridors that would maximise the developable area. The then Department of Environment and Conservation ('DEC') argued in its submission that wider creek corridors should be provided to reduce flooding risk and preserve ecological values. A number of expert reports were prepared on the subject of flooding risk, including two by the

9 See, eg, *Carriage v Stockland Development Pty Ltd (No 4)* [2004] NSWLEC 553.

10 Major projects are projects that are, in the opinion of the Minister, of 'regional or state significance' or 'essential for economic, environmental or social reasons': EPAA s 75C.

11 See EPAA s 75M.

12 When determining whether to approve a concept plan, the Minister must decide what further assessment is required before final approval is given. Final project applications for stages or elements of the concept plan may be determined by the Minister or by the local council: EPAA s 75P.

proponent and an independent report commissioned by the DEC. However, none of the reports specifically considered whether the flood risk would be exacerbated by climate change.

The Minister eventually approved the concept plan subject to conditions that modified the creek corridors proposed by the proponent, but not to the full width recommended by the DEC. Neither the Minister nor the Director-General of Planning made any reference to the effects of climate change.

The applicant alleged that the Minister, when granting concept plan approval had failed to consider the principles of ecologically sustainable development ('ESD') because he had not considered whether the flood risk on the site would be exacerbated by climate change. ESD is described in section 6(2) of the *Protection of the Environment Administration Act 1991* (NSW) as a goal to be achieved through the application of a number of principles, including the 'precautionary principle' and the 'principle of intergenerational equity'.

In *Walker*, the applicant needed to show that the principles of ESD were a mandatory, relevant consideration for the Minister in exercising his power to grant concept plan approval. Since ESD is not explicitly a head of consideration under part 3A of the *EPAA*, the applicant argued that such a mandatory consideration should be implied.

The applicant relied on the decision in *Gray v the Minister for Planning & Ors*,¹³ a case concerning the approval of a coalmine under part 3A. In that case, Pain J held that a decision by the Director-General of Planning ('D-G') to exhibit an environmental assessment was invalid on the grounds that the D-G had failed to consider the principles of ESD. Failure to consider ESD in that case was demonstrated by the fact that the assessment had no details of the emissions that would be produced from the burning of coal.¹⁴ Her Honour reviewed several decisions in the Land and Environment Court that had discussed the centrality of ESD principles to environmental decision-making, coming to the conclusion that ESD was a matter that had to be considered in all decisions made under the *EPAA*.¹⁵

Justice Biscoe treated the question rather differently. His Honour distinguished previous cases regarding development applications lodged under part 4 of the *EPAA* which said that ESD was a relevant consideration, because those cases hinged upon the fact that the 'public interest' was an express head of consideration under part 4, and ESD was held to be an element of the public interest.¹⁶ Instead, Biscoe J found that clause 8B of the *Environmental Planning and Assessment Regulation 2000* (NSW) required the report of the D-G to consider 'any aspect of the public interest that the Director-General considers to be relevant to the project'.¹⁷ Because it was established in the case law that the public interest included the principles of ESD, this meant that the D-G had to

13 (2006) 152 LGERA 258.

14 *Walker* [2007] NSWLEC 741, [126]–[135].

15 *Ibid* [109]–[114].

16 *Ibid* [151].

17 *Ibid* [152].

form an opinion about what aspects of ESD were relevant to the project and ensure that these matters were addressed in his report to the Minister.¹⁸ His Honour found that the D-G had committed a legal error by failing to consider whether climate change related flood risk was a relevant matter that needed to be considered in the assessment report and that the final decision to approve the concept plan was therefore invalid.¹⁹

His Honour observed:

Climate change presents a risk to the survival of the human race and other species. Consequently, it is a deadly serious issue. It has been increasingly under public scrutiny for some years. No doubt that is because of global scientific support for the existence and risks of climate change and its anthropogenic causes. Climate change flood risk is, *prima facie*, a risk that is potentially relevant to a flood constrained, coastal plain development such as the subject project.²⁰

The applicant also challenged the concept plan approval on the grounds of failure to consider the impacts on endangered ecological communities, uncertainty and failure to consider the recommendations of a Commission of Inquiry. These claims were not upheld.²¹ The decision is currently on appeal to the Court of Appeal, where the Minister is challenging that ESD is a mandatory relevant consideration and also the finding that he failed to consider climate change impacts.

B *Northcape*

In *Northcape*,²² the South Australian Supreme Court found that climate change was a sufficient basis to support the refusal of a coastal development application. The case related to a development consent on Yorke Peninsula for the subdivision of land into 80 allotments. The council rejected the application in June 2006. Northcape appealed against the council's decision to the Environment, Resources and Development Court of South Australia. The Environmental, Resources and Development Court upheld the decision and refused the appeal in September 2007, whereby Northcape appealed to the Supreme Court.

One of the key issues in the case related to whether the Commissioner had erred in rejecting the development proposal because it offended the council's Development Plan for coastal reserves and planning of development near the coast. Relevantly, the council's Development Plan contained several objectives that focused on coastal protection and hazards including:

- 1: To retain, protect or enhance the natural coastal environment of South Australia.

18 Ibid [154].

19 Ibid [161].

20 Ibid.

21 Ibid [168]–[203].

22 [2008] SASC 57.

- 2: To promote development which recognises and allows for hazards to coastal development such as inundation by storm tides or combined storm tides and stormwater, coastal erosion and sand drift; including an allowance for changes in sea level due to natural subsidence and predicted climate change during the first 100 years of the development.
- 11: To encourage development that is located and designed to allow for changes in sea level due to natural subsidence and probable climate change during the first 100 years of the development. This change to be based on the historic and currently observed rate of sea level rise for South Australia with an allowance for the nationally agreed most-likely predicted additional rise due to global climate change.²³

The objectives were explained in detail in the Plan as follows:

Development a considerable distance from the coast (mainland or island) can affect all these areas if it influences the environment, general character and amenity of the coastal area or interferes with coastal processes such as erosion, tide and storm flooding or sand drift, for these reasons the following objectives are for the control of any development which could affect coastal areas, or could itself be affected by coastal processes, and, as such, may be applicable beyond, as well as within, the boundaries of any designated coastal zone.

Much of the coast is subjected to the forces of waves, tides and sea-currents, particularly during storms. 'Soft' coasts develop a balance between the sea and the land which changes with the seasons, a so called dynamic equilibrium. For example, beach and sand dunes built-up during months of relative calm will be eroded during stormy seasons, only to be built-up again after the storms have passed. As well, wave action and currents are continually moving sand along the shore, often resulting in a net drift of material in one direction.

Development can either directly or indirectly, interfere with these processes for example by changing surface and groundwater flows, and result in permanent loss of beach and dunes.²⁴

Expert evidence was called by both parties before the Environmental, Resources and Development Court, and the Court accepted the evidence of the council's expert, Mr Patterson, who suggested that over the next 100 years the coast will shift 35–40 metres inland, making it highly likely the development will be impacted by coastal erosion.²⁵ On the basis of the evidence, the Commissioner concluded:

When all of the evidence is examined it is reasonable to conclude that the coastline is in a receding phase. It is probably oscillating but the evidence about erosion and sea level rise suggests that it is in a long term phase of moving inland. Mr Patterson's evidence about the extent to which it is receding and, as a consequence, the erosion and sea level rise buffer that should be provided is the most reliable. I accept that over the next 100 years the coastline (when measured from the high water mark) will shift inland by 35–40 metres.

²³ *Northcape* [2008] SASC 57, [13].

²⁴ *Ibid.*

²⁵ *Ibid* [17], [22].

If the terms of the Plan were to be read such that it is necessary only to keep the high-water mark clear of the proposed allotments, an erosion buffer of that depth might be sufficient. The high water mark would intrude near to or within part of the reserve (Lot 80) if it recedes a distance of 40 metres. However, to position new development in relation to the likely future high water mark would be to ignore other provisions of the Plan.²⁶

Justice DeBelle found the Commissioner correctly interpreted the development proposal as ‘no small risk’ in respect of coastal hazards. His Honour also found that the Commissioner correctly interpreted the purposes of the Development Plan and the expert evidence as outlined above. In particular his Honour concluded:

This proposal offends so many of the goals and objectives of the Development Plan that development consent must be refused. The proposal is on any view an attempt to develop the land to the greatest extent possible without due regard to the ecological sensitivity of the area and the need to preserve natural features.²⁷

Accordingly, the development application was refused.

II ADAPTATION LEGISLATION IN NSW

The difference between the two decisions examined is that in *Northcape*, the council had implemented stronger laws allowing it to readily refuse inappropriate coastal developments. This made the Court’s role simpler as it did not have to exercise creative licence (such as in *Walker*) to implant mandatory climate change considerations, since these were already required by council regulations. This illustrates the need for clear and robust laws as the primary means of ensuring that climate change impacts in the coastal zone are addressed in a meaningful manner.

Despite this identified need for clear adaptation laws, an examination of the current statutory framework in Australia reveals that there are currently few pieces of legislation that relate to, or even mention, climate change issues. Recently, the Environmental Defender’s Office (NSW) was commissioned by the Sydney Coastal Councils Group (‘SCCG’) to conduct an audit of legislation to determine the current responsibilities of coastal councils in relation to climate change risks.²⁸ The report (‘SCCG Report’) analysed federal, state (NSW) and local legislative instruments to identify instruments that contained the words ‘climate change’, ‘sea level rise’ and ‘greenhouse’ and then determined the responsibilities these instruments placed on decision-makers. The SCCG Report found that of the 137 relevant legislative instruments examined, only 16 contained the terms of interest. Of these, three were Commonwealth Acts, four

26 Ibid [17].

27 Ibid [28].

28 NSW Environmental Defender’s Office, *Coastal Councils and Planning for Climate Change: An Assessment of Australian and NSW Legislation and Government Policy Provisions Relating to Climate Change Relevant to Regional and Metropolitan Coastal Councils* (2008). A copy of this report can be obtained by emailing info@sydneycoastalcouncils.com.au.

were NSW Acts, one was a NSW Regulation and eight were Local Environmental Plans ('LEP') created under the *EPAA*.

The SCCG Report found that the legislation identified placed no direct obligations on decision-makers in relation to coastal adaptation.²⁹ Indeed, none of the Commonwealth and NSW Acts refer to climate change impacts in the coastal zone at all.³⁰ Significantly, the *Coastal Protection Act 1979* (NSW) ('CPA'), which is the principal piece of legislation that applies to the NSW coastal zone, does not mention climate change or sea level rise in any of its provisions.³¹ This is despite the fact that one of the stated aims of the Act is to provide for the protection of the coastal environment of the State 'for the benefit of both present and future generations'.³² Indeed, the CPA contains no prescriptive requirements on decision-makers to conduct adaptation activities or to refuse developments subject to increased risks due to climate change. This is a severe impediment to early adaptation action in the vulnerable coastal zone. Similarly, the *EPAA*, which is the central piece of legislation regulating development in NSW, does not contain any terms that refer to 'climate change', 'greenhouse', or 'sea level rise' even though appropriate development processes are crucial to achieving a robust adaptation framework for NSW. However, as mentioned above, eight LEPs – subordinate legal instruments created under the *EPAA* – contained the terms 'climate change', 'greenhouse', and 'sea level rise'. Five of these LEPs contained provisions directly relevant to climate change impacts in the coastal zone. The provisions identified in these five LEPs fell into two categories:

- provisions found in objects clauses; and
- provisions setting out mandatory matters for consideration for decision-makers in their determination of development applications.

These will be discussed in turn.

29 However, there are several government policies that provide the capacity to address climate change impacts. These include the 'NSW Coastal Policy 1997', which requires the implementation of appropriate planning mechanisms that incorporate sea level change scenarios set by the Intergovernmental Panel on Climate Change. See NSW Department of Planning, *NSW Coastal Policy 1997: A Sustainable Future for the New South Wales Coast* (1997) <<http://www.planning.nsw.gov.au/plansforaction/pdf/CPPARTA.pdf>> at 15 August 2008. This policy is a mandatory relevant consideration for councils when considering development applications in the coastal zone. See *Environmental Planning and Assessment Regulation* (2000) (NSW) reg 92.

30 These are: *Environment Protection and Biodiversity Conservation Act 1999* (Cth); *Renewable Energy (Electricity) Act 2000* (Cth); *National Greenhouse and Energy Reporting Act 2007* (Cth); *Electricity Supply Act 1995* (NSW); *Energy and Utilities Administration Act 1987* (NSW); *Threatened Species Conservation Act 1995* (NSW); *Water Management Act 2000* (NSW).

31 The CPA contains provisions relating to the use and supervision of the coastal zone, the carrying out of development within the coastal zone and the preparation of Coastal Zone Management Plans.

32 See CPA s 3.

A Objects Clauses

Objects clauses are found in most pieces of legislation. However, objects clauses are not clearly enforceable, especially where there are no provisions requiring consideration of the objects or where the various objects are not prioritised. Objects clauses are usually considered aspirational, not prescriptive.³³ For example, clause 5.5 of the Standard Instrument-Principal Local Environmental Plan (which provides a mandatory state-wide template LEP) lists as one of its objects to ‘recognise and accommodate coastal processes and climate change’. However, other objects include to ‘provide opportunities for pedestrian public access to and along the coastal foreshore’ and to ‘protect amenity and scenic quality’. There is no priority attributed to the particular objects, nor any particular weight allocated to them. The SCCG Report found that references such as this place minimal, or no, obligations on local councils to address climate changes impacts in the coastal zone. This is because there are no provisions in these LEPs that direct councils to have regard to the objects when making decisions, such as when assessing development applications in the coastal zone. The SCCG Report concluded that objects clauses are merely guiding principles that will not assist in mandating adaptation action unless other prescriptive provisions require it.

B Mandatory Matters for Consideration

Several of the LEP provisions identified in the SCCG Report require that potential climate change impacts are considered when making decisions on development applications in the coastal zone. For example, under the Standard LEP, consent must not be granted to development on land that is wholly or partly within the coastal zone, unless the consent authority has considered:

- (f) The effect of coastal processes and coastal hazards and potential impacts, including sea level rise:
 - (i) on the proposed development, and
 - (ii) arising from the development, and
- (g) the cumulative impacts of the proposed development and other development on the coastal catchment.³⁴

However, although this provision requires the consideration of coastal processes due to climate change, there is no express requirement to prohibit

33 However, objects clauses can be important, as they are often used by the courts in interpreting statutory obligations, especially where provisions are ambiguous or seemingly inconsistent. This requirement is found in the *Interpretation Act 1987* (NSW) s 33:

In the interpretation of a provision of an Act or statutory rule, a construction that would promote the purpose or object underlying the Act or statutory rule (whether or not that purpose or object is expressly stated in the Act or statutory rule or, in the case of a statutory rule, in the Act under which the rule was made) shall be preferred to a construction that would not promote that purpose or object.

34 NSW Government Department of Planning, *Standard Instrument (Local Environmental Plans) Order 2005* (2005) 30 <http://www.planning.nsw.gov.au/planning_reforms/p/s05-474-35-d04.pdf> at 15 August 2008.

development that will be subject to potentially significant climate change impacts, nor any compulsory conditions that must be attached to any development consent. This provision merely ensures that climate change impacts are taken into account when assessing a development application. Since coastal processes are only one of a number of mandatory considerations the decision-maker must take into account, it is open to the decision-maker to determine what weight should be attributed to particular matters. As was held by the High Court in *Minister for Aboriginal Affairs v Peko-Wallsend Ltd*:

In the absence of any statutory indication of the weight to be given to various considerations, it is generally for the decision-maker and not the court to determine the appropriate weight to be given to the matters which are required to be taken into account in exercising the statutory power.³⁵

The courts will therefore not intrude on the ‘balancing act’ carried out by decision-makers in reaching their decisions.³⁶ As a result, the SCCG Report concludes that the identified provisions do not prescribe any adaptation action or require that ‘climate friendly’ decisions are to be made.³⁷

III RECOMMENDATIONS FOR REFORM

This paper has shown that at present there are no laws that specifically deal with protecting coastal communities from climate change impacts. As a result, the legislature should follow the proactive approach adopted by the judiciary in cases such as *Walker* and *Northcape* by enacting appropriate laws that facilitate adaptation. Indeed, although judicial innovation is most welcome, a reliance on the judiciary as the primary vehicle for adaptation action is insufficient.

Litigation is inappropriate as the primary adaptation avenue for three reasons. First, the courts operate in the context of the legislative scheme which limits their ability to ensure that adaptation is facilitated. Second, judicial development of the law by the judiciary is ad hoc, as it depends on appeals being brought to the court. Finally, courts at this stage are only considering climate change impacts in the context of new developments and have not yet started considering the complex issues associated with the impacts of climate change on existing developments. Hence there is an identified need for the legislature to implement laws that adopt an integrated and precautionary planning approach in order to ameliorate the inevitable impacts of climate change on our coasts. In NSW, for example, amendments need to be made to the *CPA*, which is the overarching legislation applying to the vulnerable coastal zone. Stronger laws and more clearly defined responsibilities will greatly assist decision-makers who are

35 (1986) 162 CLR 24, 41.

36 If mandatory matters are not considered at all then this may provide a basis for establishing a legal error, which may lead to the Land and Environment Court setting aside a development consent, or deeming it void on the basis of a failure to take into account a relevant consideration. See, eg, *Parramatta City Council v Hale* (1982) 47 LGRA 319.

37 However, note that manifestly unreasonable decisions will not be protected even where councils can show that they considered all relevant matters. See, eg, *Associated Provincial Picture Houses Ltd v Wednesbury Corporation* [1948] 1 KB 223.

currently unsure how to proceed in tackling climate change. For example, state intervention will aid local councils in determining when and how to conduct adaptation activities in the coastal zone.

There are a myriad of potential adaptation activities that the law should prescribe as mandatory. Robust laws could include planned retreat policies in especially vulnerable areas, buffer zones in local planning policies, restrictive zoning, setbacks, resilience building measures (such as dune re-vegetation), early warning systems and emergency response plans. Requiring such measures to be undertaken through the use of legally enforceable legislation will go a long way to ensuring that a precautionary approach to coastal climate change impacts is taken throughout Australia.