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The extent to which Environmental Courts are responding to climate change by adopting a precautionary approach.

Simon R. Molesworth AM, QC

Overview

1. After examining the more recent decisions of "Environmental Courts" in Australia, in this paper I make the observation that Climate Change is increasingly emerging as a relevant consideration in land use and development cases and that in response Environmental Courts are tending to adopt a precautionary approach in their judgments. I use the term "environmental courts" for convenience as a reference to either courts or tribunals having the jurisdiction to determine reviews and/or appeals from administrative decision-makers and/or to conduct judicial review. Depending upon the country, state, or territory, the relevant parliament has generally chosen to create either a specialist tribunal or a specialist court to hear environmental matters, but essentially the jurisdictional responsibility is the same.

2. With respect to the term "Climate Change", for the purposes of this paper I am referring to global warming that is accepted by the IPCC (the UN's Intergovernmental Panel on Climate Change) as occurring and which is

increasingly being characterised by aberrant extreme weather events. Depending upon the part of the globe one is observing, the changing climate conditions can be manifested by: extremes of drought; of flood; of cyclonic storms; of rising sea levels or of drying river systems; apart from extremes of temperature – either increasingly low or increasingly high. In short, most climate scientists observe and agree that concurrently around the globe, most apparent in recent years but trending over decades, we are increasingly experiencing changing weather conditions which are undermining the sustainability of our natural environment and which are challenging the social traditions or normality of human occupation as we have known it. The majority of climate scientists accept that the Climate Change we are experiencing has an anthropogenic connection – human induced or exacerbated due to the extreme and continuous emission of Greenhouse gases from "modern" human society. Whether or not mankind is fully responsible or alternatively is simply (but rather seriously) exacerbating natural climate change (which is occurring and has always occurred) is in my opinion a pedantic argumentative distraction: the incontrovertible truth of the matter would seem to be that the unrestrained emission of Greenhouse gases by human processes is harmful and one consequence of that harm is to have an adverse impact on climatic processes to the detriment of life as we have known it. If this anthropogenic influence is coinciding with natural and adverse Climate Change, then it is simply so much the worse.

3. It is a fair observation of some of the case law of Australian Environment Courts involving matters which have required the implications of Climate Change to be examined, that, in the absence of legislative prescription, the

decisions, certainly the earlier decisions, reflected the range of scientific and community opinion. Some judges, such as Justice Paul Stein[1] of the NSW Land and Environment Court, were in the vanguard, acknowledging that the broad context of legislative and policy reform was relevant and so held that there was a basis for a more bold approach to environmental protection, whereas other judges were uncomfortable to accept any influence other than that precisely placed before them in evidence. Accordingly, one can find decisions in a number of jurisdictions where Climate Change was held to be an issue beyond the evidence before the court and to be a matter more appropriately the subject of policy determination of government. Judgments of such a character are now rare, reflecting the fact that both science and community opinion have moved on, as indeed has the legislative framework which such decisions must now interpret.

4. The most important influence on more recent Court decisions is the legislative and policy reform that has now commenced in most jurisdictions. The context within which such decisions are now made has very significantly changed in these jurisdictions, leaving little scope for such issues to be avoided. Environmental policies, both statutory and advisory, and town and regional planning schemes frequently now contain references to Climate Change as a fact. The principles of

[1] The editors of "Climate Law in Australia" (Bonyhady, Tim & Christoff, Peter, Federation Press, 2007) commented at p.11 with respect to Stein, J's decision in *Leatch V Shoalhaven Council*, (1993) 81 LGERA 270, that: "*His characteristically bold decision in Leatch involved the precautionary principle which had begun to occupy an increasing place in international agreements and domestic policy documents but had little place in Australian legislation. Despite having no clear statutory mandate to do so, Justice Stein not only became the first judge in the common law world to incorporate the precautionary principle in a substantial way into his reasoning but also became the first judge to make the precautionary principle the basis on which he stopped a development proceeding".*

sustainability have been incorporated in to legislation in all Australian jurisdictions[2] with the result that courts now have parameters mandated which hitherto did not exist. In particular, the requirement to adopt a cautious approach to environmental decision-making by considering the precautionary principle, has had a very significant influence on some of the most recent decisions of Environmental Courts. Whereas in the past a more conservative approach might have been preferred by some judges, ruling strictly in accordance with weight of evidence produced in a particular case, and preferring to avoid assuming judicial knowledge of aspects of Climate Change, nowadays the judicial exercise in this field is more constrained. With the imperatives of Government imposed policies, reflecting a recognition of Climate Change and the need to focus on it in decision making, Courts now find themselves accepting that they should have judicial knowledge of the basics of Climate Change and that proposals before them give rise to the necessity to consider ramifications in the context of the principles of sustainability, including in particular the precautionary principle.

5. Looking to the future one can predict with confidence the following scenario. First, in all jurisdictions governments will have progressively adopted interventionist policies in both the environmental regulatory regime, for instance with respect to water management policies, and in the planning regulatory regime, for instance with respect to planning policies

[2] An example is the Victorian Environment Protection Act 1970 which was amended in 2001 by the insertion in to the Act of "the principles of environment protection" which now appear in section 1B to 1L of the Act. Section 1A provides: *(1) The purpose of this Act it to create a legislative framework for the protection of the environment in Victoria having regard to the principles of environment protection. (2) The principles of environment protection are set out in section 1B to 1L. (3) It is the intention of Parliament that in the administration of this Act regard should be given to the principles of environment protection".* Amongst the eleven principles set out, one finds the precautionary principle in section 1C and the principle of intergeneration equity in section 1D

relating to coastal areas, low-lying riverine regions, and in high-risk bushfire prone districts, which will require the implications of Climate Change to be considered while making land use and development decisions and resource extraction decisions.

6. Secondly, in all jurisdictions, in the context of the heightened awareness of the Climate Change, it will be well nigh impossible for any Environmental Court not to accept that it must have judicial knowledge of the basic IPCC propositions regarding the progressive implications of Climate Change, even if there are debates "around the fringes" regarding (a) the precise extent to which anthropogenic contributions are aggravating or worsening the changes which are so evident and (b) the temporal rate of global deterioration.

7. Thirdly, with the combination of these first two factors in my scenario, it is beyond debate to predict that when Environmental Courts are tasked, in matters which come before them, to consider proposals with Climate Change implications it is inevitable that the Courts will responsibly adopt a precautionary approach erring on the side of requiring adaptive measures to lessen the possible adverse ramifications of deteriorating Climate Change scenarios. Depending upon the jurisdiction involved and the extent to which parliament within those jurisdictions has chosen to remove flexibility and adopt instead a more restrictive regime, it necessarily follows that decisions of the Courts will reflect the legislative and policy imperatives which more than likely will increasingly call for a precautionary approach.

The shift in approach amongst the Environment Courts

8. Some sixteen years ago, in Greenpeace Australia Limited v Redbank Power Company Pty Limited[3], Justice Pearlman, then Chief Judge of the NSW Land and Environment Court, held that the implications of Climate Change was not a matter for her Court to decide saying that it was: *"... of course, a matter of government policy .. to take in to account the competing economic and environmental issues raised by the enhanced Greenhouse effect ....."* and so the learned judge concluded that: "*....it was not for the Court to impose ... a prohibition on the mine"*[4].

9. Expressing similar sentiments, a Division of the Victorian Civil and Administrative Appeals Tribunal ("VCAT") in the 2001 case of *Thackeray v Shire of South Gippsland*[5], when dealing with a wind farm proposal in which opponents to the renewable energy proposal called evidence from an economist who supposedly felt he had the expertise to dismiss the Greenhouse effect phenomenon, decided it was not its task to weigh up the competing evidence. The Tribunal simply stated in its determination, without elaboration: "*We do not believe that this Tribunal is the appropriate forum to decide about the existence or otherwise of the greenhouse effect"*[6].

10. Although there do not exist examples across all the Australian jurisdictions as to how the Environment Courts responded to Climate Change issues over an extended period of years, simply because there were few if any relevant cases in which the issues arose in some jurisdictions, it is probably accurate to presume that similar responses to

[3] (1994) 86 LGERA 143
[4] At page 153.
[5] [2001] VCAT 739
[6] At pages 12-13.

such issues would have prevailed elsewhere prior to the development Climate Change science and the emergence of the growing and greater concern amongst the community at large.

11. Just three years later the tide had started to turn with the 2004 decision of VCAT in *Australian Conservation Foundation v Latrobe City Council*[7] in which the adequacy of an assessment panel's review of an environmental impact assessment statement in relation to the Hazelwood brown coal power station's proposal to extend its operation life by twenty-one years with the development of an additional coal field. In the face of a ministerial direction to the assessment panel to exclude from its consideration the environmental impact of additional greenhouse gases generated by the power station from burning brown coal for an additional 21 years, Morris, J, the then VCAT President, held that the environmental impacts of greenhouse gas emissions were relevant and therefore the panel should have considered the issue. Confirming that the objectives of the Victorian *Planning and Environment Act 1987* relating to "*maintaining ecological processes*" and balancing "*the present and future interests of all Victorians*" were taken to indicate the importance of intergenerational effects, such as the consequences of burning brown coal over the longer term[8].

12. Dealing with a similar case two years later in 2006 Justice Pain of the NSW Land and Environment Court reached a similar conclusion in *Gray v The Minister for Planning and Ors*[9] when considering a challenge to the

[7] (2004) 140 LGERA 100
[8] Ibid, at [109]
[9] [2006] NSWLEC 720

environmental assessment of a proposal to build a large new coal mine. Her Honour made the following pertinent findings:

> *"100 I consider there is a sufficiently proximate link between the mining of a very substantial reserve of thermal coal in NSW, the only purpose of which is for use as fuel in power stations, and the emission of greenhouse gases (GHG) which contribute to climate change/global warming, which is impacting now and likely to continue to do so on the Australian and consequently NSW environment, to require assessment of that GHG contribution of the coal when burnt in an environmental assessment under Part 3A"*
>
> *134 The precautionary principle is part of the bundle of ESD principles identified in s6(2) of the Planning & Environment Assessment Act such as intergenerational equity and the conservation of biological diversity and ecological integrity. While not all of these were relied on by the Applicant I observe that there is a clear connection between climate change / global warming resulting in possibly permanent climatic change and the conservation of biological diversity and ecological integrity which are likely to be impacted upon. I have referred earlier to the principle of intergenerational equity [par.122] and observe that the approach to environmental assessment required by the application of* ***the precautionary principle*** *requires knowledge of impacts which are cumulative, on going and long term. In the context of climate change / global warming there is a considerable overlap between the environmental assessment requirements to enable these two aspects of ESD to be adequately dealt with".*

13. It is fair to surmise that as at 2010, observations or decisions such as the earliest ones I have cited from NSW and Victoria are unlikely to be repeated in any jurisdiction in Australia. Although the debates may still be alive as to the severity of Climate Change or as to the extent to which anthropogenic conduct (eg the emission of greenhouse gases) are causing or contributing to Climate Change, there is repeated confirmation by the Environment Courts in all jurisdictions that the issues should not be ignored and that an appropriate response is needed to be determined in

accordance with ESD principles. There is, nevertheless, considerable variation between the Courts in the differing jurisdictions as to extent to which the Courts and Tribunals should pro-actively develop the law in this area as distinct from being led by and strictly responding to emerging and evolving government policy.

Current day examples of Environment Court responses to Climate Change

14. In this paper, in order to illustrate how Climate Change considerations are now being approached, I will provide examples of case law in two different categories: firstly, in the resource allocation area dealing with licensing of groundwater extraction; and secondly, with respect to the land use planning area dealing with coastal development proposals In both instances, Climate Change is a very real consideration with the legislature in many jurisdictions increasingly intervening by the promulgation of interventionist legislation or policy reform, with the result that almost invariably the precautionary principle is considered as a matter of course as part of the decision-making process.

15. First, with respect to the licensing of groundwater extraction, it is apparent that many of the conclusions reached by the hydrogeologists involve a degree of uncertainty and are not made on the basis of perfect knowledge. Invariably the initial decision-maker and thereafter courts and tribunals are often faced with much uncertainty in matters concerning groundwater allocation. Be that as may, in a country such as Australia, being the driest inhabited continent, the equitable and sustainable allocation of groundwater resources (as indeed is the management of all

water resources) is a critical issue very directly impacted upon by Climate Change.

16. In Victoria, VCAT is charged with the review jurisdiction with respect to groundwater licences. There has been a veritable spate of decisions over the last couple of years involving disappointed applicants appealing against tough decisions by the licensing authority (more often characterised by refusal rather than by grant). The authority's decisions are in response to the Victorian State Government's determination to adopt stringent water conservation policies reflecting the acceptance of the science that Southeast Australia is "drying up" under current Climate Change scenarios. In one instructive decision, *Castle v Southern Rural Water*[10], VCAT set out the nature of its task in assessing groundwater applications under section 51 of the Water Act.

17. The considerations which are required to be taken in to account when considering groundwater licence applications, which involve a comprehensive check list of sustainable conservation principles, are set out in section 40(1)(b) to (m) of the Victorian *Water Act 1989*[11]. VCAT in its *Castle* decision observed:

> *Relative importance of various considerations:*
>
> *45. The various considerations listed in section 40(1)(b)-(n) inclusive does not indicate their rank in order of importance. In any particular case some of these considerations may be relevant while others are not. Furthermore, some may be relevant but of little*

[10] [2008] VCAT 2440.

[11] For instance, amongst the matters to be taken in to account are: "*the need to protect the environment, including the riverine and riparian environment*" section 40(1)(g); "*the conservation policy of the government*" section 40(1)(i); "*government policies concerning the preferred allocation or use of water resources*" section 40(1)(j).

importance while others may be of considerable importance. Furthermore, the relative importance of various considerations may vary from case to case. …

46. *It may be that, in a particular case, some of the considerations weigh in favour of granting a licence while others indicate against granting a licence. In those circumstances it is necessary to weigh things up and to evaluate the importance of various considerations. It is certainly not a situation where every consideration has to be in favour before a licence is granted, nor is it true that every consideration has to be adverse before a licence is refused. Nevertheless the grant of a licence must become unlikely in circumstances where a consideration, or several considerations, are judged to be both relevant and important where they indicate against the grant of the licence.*

47. *Furthermore, there will frequently be uncertainties in relation to the relevant considerations. This is a field where uncertainty is common … However, significant uncertainty about considerations that are both relevant and important must also weight heavily against the granting of a licence.*

The uncertainty of hydro-geological assessments

48. *We are well aware that hydro-geology is a complex, difficult and inexact science. The assessing of groundwater resources, and the predicting of groundwater resource behaviour is subject to a range of influences that are themselves uncertain. It is an exercise where the relevant data is frequently absent or insufficient and where scientific certainty is frequently unattainable.*

49. *Some parameters are more ascertainable than others. The hydraulic parameters of an aquifer, its hydraulic conductivity, its thickness and even its storage capacity may be relatively ascertainable. Human factors such as when, where, how and to what extent groundwater is extracted from an aquifer may also be ascertainable. There are other influences such as rainfall, subsequent aquifer recharge and long term climate variations that are beyond human control, measurement or prediction and yet are relevant influences on the extent and usability of a groundwater resource.*

> *50. The groundwater assessment is notably complex compared with the assessment and management of water in a river storage where surface flow of water can be readily discerned and more easily monitored.*
>
> *51. The level of uncertainty in relation to fundamental hydro-geological parameters requires a cautious approach until sufficient information is available to make a reasonable and informed assessment of aquifer behaviour.*
>
> *52. …*
>
> *53. … The inherent uncertainties must be borne in mind as indicators of caution. The degree of uncertainty will vary from case to case. The need for good, relevant and meaningful data is obvious; and such data should be obtained as appropriate and where possible. The assessment and evaluation of such data, and the forming of decisions in relation to it, calls for good judgment based on knowledge and experience. Even then, the exercise of such judgment will need to allow for the significant degree of uncertainty that may remain. …*

18. The case of the *Niebieski Zamek Pty Ltd v Southern Rural Water*[12] is consistent with the VCAT's approach in *Castle.* In the *Niebieski Zamek* decision the Tribunal accepted[13] Counsel's submission that the statutory scheme is such that a decision to grant a licence to take and use groundwater should not be made unless such a decision can be made with a high degree of confidence that the conservation/long term sustainability of a groundwater resource will be ensured.

19. An acceptance that a conservative approach is appropriate in the licensing of groundwater was also inherent in VCAT's decision in *Cox & Others v*

[12] [2001] VCAT 822
[13] At paragraphs [32] and [33]

Southern Rural Water Authority[14]. In that case, the lack of hydrogeological certainty was acknowledged by the Tribunal and all experts in the case. The Tribunal adopted a cautious approach in that case in approaching the question of the potential effect of proposed extractions on downstream aquifers which were exhibiting signs of stress. The Tribunal observed at [39]:

> *"39. We accept that uncertainty appears to be part and parcel of any assessment of groundwater resources. In the decision to grant or refuse a licence application, uncertainty about parameters that are not fundamental to the issue of granting a licence may be seen in a different light to those that are fundamental to that decision. Within the decision making process the level of uncertainty about certain parameters deemed to be of importance and the consequences of 'getting it wrong' are likely to influence the ultimate decision.*

20. A South Australian example of judicial acceptance of the uncertainties of scientific opinion with respect to an acquifer in an unsustainable state requiring a cautious response with respect to an application for further utilisation is *Lindner & Whetstone v Regional Council of Goyder & Ors*[15], a judgment of Her Honour Judge Cole and Commissioner Botting of the Environment Resources and Development Court of South Australia.

> *"8. Rarely, if ever, can a scientific opinion be expressed with absolute certainty.....The question of whether water use in any catchment is sustainable is, by its nature, one in relation to which the answer may change from time to time. The subject matter of the question is, after all, a large, imperfectly understood natural system affected by, amongst other things, the weather and the activities of numerous people, flora and fauna...*
>
> *10. Sulan, J noted some of the anecdotal evidence adduced before us concerning the decline in surface and ground water levels in Burra Creek*

[14] [2009] VCAT 1001 (18 May 2009).
[15] [2006] SAERDC 67

catchment over the last 20 years. ... None of the evidence was contradicted..... Sulan, J. expressed some concern that we did not examine the "rationale behind those indicators and other factors such as climate change, climate variability and water extraction..." It may well be that the decline in surface and ground water levels is partly the result of extractions by other users and climate change. That is the reality against which the proposal must be judged.

19. ...One of the practical difficulties in protecting natural watercourses arises from the time which may elapse between the commencement of the excessive usage of water and the manifestation of any observable effects of that excessive usage. The complexity of the environment and its changeable nature make the investigation of the cause of detrimental effects (which may themselves change according to the conditions) a difficult undertaking. A user may therefore cause a detrimental effect, perhaps over a significant period of time, without intending to.

The Court then referred to the South Australian *Development Act 1993* under which SA development plans are required to be created having regard to sustainable development principles. With respect to the development proposal for a feedlot (which also included the ground water extraction component) which was before the Court, it observed:

31. ...Ecologically sustainable development is a concept which involves a number of elements, among them the precautionary principle and the principle of integration, which seeks mutual respect and reciprocity between economic and environmental considerations. A comprehensive exploration of the concept of ecologically sustainable development was undertaken by the NSW Land and Environment Court in Telstra Corporation Limited v Hornsby Shire Council [2006] NSWLEC 133.

"35. Bearing in mind all the provisions of the Development Act and the Natural Resources Management Act and all the evidence in this matter, it is our view that the proposed development would contravene Objective 40, in that, instead of protecting the Burra Creek catchment from overuse, it would expose the catchment to a

significant risk of overuse and consequent harm. .... Objective 40 requires a relevant authority, and this court, when assessing a proposed development, to assess the risk to an affected watercourse that is a water resource likely to be impacted upon by the development. The scientific certainty of overuse is not required to trigger its applicability.

"37. .... On our assessment of the evidence, there is a significant risk that the proposed feedlot would exceed the capability of the land to sustain it, having regard to the extent and manner of its use of underground water.

"38. ... On the basis ... of the evidence, the proposal has significant potential to have a seriously adverse impact upon existing land uses in the locality by means of its likely impact upon the availability of ground water and its potential to damage underground water systems..... .. In this assessment, as in any planning assessment, we are predicting likely future impacts which can rarely be predicted with absolute certainty. A planning assessment is, to some extent, an assessment of risk".

21. It is apparent that Climate Change considerations are increasingly being referenced in relevant government environmental policies in many Australian jurisdictions and, with environmental sustainability principles being similarly inserted in legislation, especially in New South Wales and Victoria, such considerations are thereby mandated as matters to be taken in to account by decision-makers. Nowhere is this more apparent than with resource management dealing with water resources and with the planning regime with respect to coastal developments. It is anticipated that following the handing down of the final report of the Victorian Bushfire Royal Commission (which has been examining the causes and necessary responses to the devastating 2009 bushfires in Victoria) there will be a raft of recommended planning law and policy reforms to follow

which will similarly focus on measures which will more stringently focus on Climate Change issues in fire prone areas of Victoria.

22. Returning to water management, as an instance of the legislative approach which will increasingly become common across many jurisdictions, the Victorian *Water Act* directs that government environmental policies be considered by resource allocation authorities. In Victoria those government policies are rapidly evolving, reflecting a greater acceptance of the relevant environmental science and the necessity to adopt best practice safeguards in response. When considered, it becomes apparent that a number of those policies now directly accept the reality of Climate Change and seek to incorporate the consideration of its implications in to decision making. As just one instance, the key Victorian Government policy document, **Our Water Our Future**, notes[16] as a preamble before specifying desirable actions:

> *"The CSIRO[17] predicts that water resources will be reduced through hotter weather and increasing evaporation, compounded by lower rainfall especially in winter and spring. More widespread and longer-term changes could come about as a result of greenhouse effect or other climate change".*

23. The Tribunal's decision in *Gippsland Coastal Board v South Gippsland Shire Council*[18] accepted that Climate Change has a fundamental effect on the manner in which predictions based on previous years of data can be viewed in the context of coastal processes. In that case the Tribunal

[16] At page 34
[17] The CSIRO is the Australian Government's senior scientific research organisation
[18] [2008] VCAT 1545]

considered the impact of Climate Change on rising sea levels and the coastal environment. The Tribunal stated[19]:

> *"40….we have had regard to the broader picture that there is a general consensus that some level of climate change will result in extreme weather conditions beyond the historical record that planners and others rely on in assessing future potential impacts. It is, in our view, no longer sufficient to rely only on what has gone before to assess what may happen again in the context of coastal processes, sea levels, or for that matter inundation from coastal or inland storm events.*
>
> *42 We accept that there is growing evidence of sea level rises and risks of coastal inundation. While we acknowledge that there is uncertainty as to the magnitude of the sea level rise, it is evident that the consequences of such rises in level will be complex due to the dynamic nature of the coastal environment. Put plainly, rising sea levels are to be expected. The range of impacts may well be beyond the predictive capability of current assessment techniques. In the face of such evidence, a course of action is warranted to prevent irreversible or severe harm.*
>
> *47 The relevance of climate change to the planning decision making process is still in an evolutionary phase. Each case concerning the possible impacts of climate change will turn on its own facts and circumstances.*
>
> *48 In the present case, we have* ***applied the precautionary principle****. We consider the increases in the severity of storm events coupled with rising sea levels create a reasonably foreseeable risk of inundation of the subject land and the proposed dwellings, which is unacceptable".*

24. Since the 2008 *Gippsland Coastal Board* case, the Victorian Government policy framework are significantly evolved by the adoption of a General Practice Note in December 2008 titled "*Managing Coastal Hazards and the Coastal Impacts of Climate Change"* and then the incorporation in to all the State's planning schemes, via Amendment VC52[20], mandatory provisions

[19] At paragraph 40
[20] Planning Scheme Amendment VC 52 came in to operation on 18 December 2008

which are required to be taken in to account in all coastal planning. Indicative of my prediction of the likely course following all such government-led approaches to reform in response to Climate Change, in all subsequent decisions of VCAT there has been a consistent recognition of the significance of Climate Change together with a consistent acceptance that the precautionary principle must be applied in circumstances where proposals give rise to such concerns. Consequently, there is no doubt in my opinion that this is the future scenario with respect to all Australia's Environmental Courts: governments will progressively adopt policies setting out the appropriate response to Climate Change mandating that identified factors be considered and that identified approaches be adopted. One such approach will be the necessity to adopt a cautionary approach by applying the precautionary principle to the decision-making process.

25. As an instance of an approach which we are likely to see becoming common in Australia, most probably world wide, it is instructive to consider the terms of Clause 15 of the State Planning Policy Framework in Victoria, adopted as I've said in December 2008:

> *"15.08-1 Objective*
>
> *…..*
>
> *To ensure sustainable use of natural coastal resources*
>
> *..*
>
> *To plan for and manage the potential coastal impacts of climate change*
>
> *15.08-2 Strategies*
>
> *….*

Managing coastal hazards and coastal impacts of climate change

Planning to manage coastal hazards and the coastal impacts of climate change should:

- *Plan for sea level rise of not less than 0.8 metres by 2100, and allow for the combined effects of tides, storm surges, coastal processes and local conditions such as topography and geology when assessing risks and coastal impacts associated with climate change.*

- *Apply the precautionary principle to planning and management decision-making when considering the risks associated with climate change.*

- *Ensure that new development is located and designed to take account of the impacts of climate chamge on coastal hazards such as the combined effects of storm tides, river flooding, coastal erosion and sand drift.*

- *Ensure that land subject to coastal hazards are identified and appropriately managed to ensure that future development is not at risk.*

- *Avoid development in identified coastal hazard areas susceptible to inundation (both river and coastal), erosion, landslip/landslide, acid sulphate soils, wildfire and geotechnical risk".*

26. As I've said earlier, the decisions of VCAT which followed these policy reforms are instructive of my predicted trend in Court decisions First, in *Myers v South Gippsland Shire Council*[21] the Tribunal concluded:

> *"31 The Practice Note advances the precautionary approach in coastal decision making. The site is adjacent to low lying areas susceptible to coastal hazards. It is clear that the impact of climate change has not been considered by any party in this matter including the responsible authority. Regard has not been had to clause 1508 of the Planning Scheme, the recent Victorian Coastal Strategy or the General Practice Note".*

[21] [2009] VCAT 1022, 22 June 2009

32 I am not satisfied that I have adequate information before me to assess the impact of the future subdivision and consequent development of the land. Before deciding whether to approve the subdivision, the permit applicant must prepare a coastal hazard vulnerability assessment".

27. In *Ronchi & Anor v Wellington Shire Council*[22] the Tribunal determined:

"18 The consideration of climate change is elevated by the Scheme in a way that places a much more significant onus on permit applicantsto respond to it in design. Similarly, there is an onus on decision makers to take climate change into account. …..

19 I also do not agree that an acceptance by the owners of the potential risk is a responsible way forward. Decision making is directed by Clause 15.08 to take a precautionary approach and that means making decisions that minimise adverse impacts to current and future generations. …"

28. In *Owen v Casey City Council*[23] the Tribunal made the following pertinent observations:

*9 The Tribunal's decisions in **Myers** and **Ronchi** have drawn attention to the Scheme's obligation to consider and assess risks arising from inundation from ocean waters and/or river catchments with an expectation of impacts from processes such as sea level rise, varied tide ranges and storm surges. Even though the Intergovernmental Panel on Climate Change may identify an upper limit of sea level rise of 0.8 metre by 2100, Clause 15.08 of the Scheme refers to a sea level rise of "not less than 0.8 mete by 2100". The level in the Scheme is that to be adopted for our purposes at this time.*

14 …. Coastal hazard vulnerability assessments will become more routine in the planning process. They are likely to be one measure in a suite of planning responses to climate change. Assessment models can be expected to be refined over time and, as indicated by the Victorian Coastal Strategy and General Practice Note, State policy may be reviewed as more scientific data becomes available. ….. In the meantime, and even though

[22] [2009] VCAT 1206, 16 July 2009
[23] [2009] VCAT 1946, 25 September 2009

the form of an assessment may still be embryonic, it is necessary to proceed on the best available information".

29. In *Myers v South Gippsland Shire Council (No.2)*[24] the Tribunal now had before it the coastal hazard vulnerability assessment report it required to be prepared in *Myers (No.1)* . With the necessary information before it, it determined the proposal as follows:

> *"8 Since the interim decision of June 2009, the policy framework has not changed. The precautionary approach of the policy documents Victorian Coastal Strategy 2008, Ministerial Direction No.13 Managing Coastal Hazards and Coastal Impacts of Climate Change and the General Practice Note December 2008 remain.*
>
> *9 Combined, the breadth of documents addressing climate change that are now available as background information or policies, identify that one thing is for certain, the issue of climate change and the impact on coastal communities is an issue that can no longer be ignored. As decision makers we can no longer leave the issue to the next generation to sort out. We concur with the view expressed by Member Martin in Seifet v Colac-Otway Shire Council*[25]*: "Common sense tells us that, following this approach, the Tribunal should not approve coastal developments that are likely to be unduly threatened by future flooding and/or coastal inundation, creating a mess to be dealt with by future generations".*
>
> *30 … However, State policy requires that we consider climate change impacts and we have evidence before us stating that without any mitigation works, it is quite foreseeable that there will be no dune, no road and therefore no access to the site and the site will be inundated by storm surges. Policy directs us to consider the need for long term planning for the future consequences of climate change, rising sea levels and storm surges. ……. at some point a line in the sand needs to be drawn as there is a cumulative effect of single subdivisions (or development proposals) on our environment.*
>
> *31 ….. It follows from all that we have set out here that to grant a permit in these circumstances would consent to a poor planning outcome*

[24] [2009] VCAT 2414, 19 November 2009
[25] [2009] VCAT 1453, 27 July 2009

> *that would unnecessarily burden future generations… 32 The current policy platform requires a precautionary approach when considering the impact of climate change".*

30. Finally, in *Cooke & Ors v Greater Geelong City Council*[26] the Tribunal stated:

> *"63 As detailed above, it is policy that the precautionary principle be adopted in decision making when considering the impacts of climate change. The Practice Note defines this precautionary approach as: "The precautionary approach is an accepted principle in coastal decision making. It requires decision makers to act having regard to the best available science, knowledge and understanding of the consequences of decisions and in the context of increasing uncertainty, to make decisions that minimise adverse impacts on current and future generations and the environment".*

31. In summary, it can be concluded that the reality of Climate Change has been embraced throughout Australia, as illustrated by the examples I have cited from the environmental and planning courts in NSW, South Australia, Victoria and Queensland. All have sought to incorporate ESD principles in to their judgements, in particular the essential requirement to apply the precautionary principle.

32. In some recent decisions, primarily in NSW, the existence and potential effect of climate change as a serious global threat has been very fully expressed. In the 2009 case of *Aldous v Greater Taree City Council*[27] Biscoe J of the NSW Land and Environment Court refers to decisions dealing with proposed coastal developments including VCAT's decision in *Gippsland Coastal Board v South Gippsland Council*[28], the Queensland Court of Appeal decision upholding the Planning and Environment Court of Queensland

[26] [2010] VCAT 60, 20 January 2010
[27] [2009] NSWLEC 17
[28] [2008] VCAT 11545

in *Charles & Howard Pty Ltd v Redland Shire Council*[29] and the Supreme Court of South Australia's decision upholding a decision of the Environment, Resources and Development Court of South Australia in *Northcape Properties Pty Ltd v District Council of York Peninsula*[30], in the following terms[31]:

> *"35. The case law has developed against a background of well-known international and national governmental reports and agreements to which I referred in* Walker. *I would add the following observations. In 2006 the UK Stern Review Report on* The Economics of Climate Change, *relying heavily on the Intergovernmental Panel on Climate Change's (IPCC) Third Assessment Report of 2001, stated that climate change is a serious global threat demanding an urgent global response and that Australia is particularly vulnerable (pp x v and 147). Stern accepted that: 'Sea level rise will increase coastal flooding, raise costs of coastal protection, lead to loss of wetlands and coastal erosion, and increase saltwater intrusion into surface and groundwater ... The homes of tens of millions more people are likely to be affected by flooding from coastal storm surges with rising sea levels'*[32]*."*

33. This discussion follows the comprehensive analysis Biscoe J had made of the evolution of the environmental sustainability principles and climate change reports and cases in *Walker v Minister for Planning*[33]. The decision of Justice Biscoe in *Walker* is a veritable text book on the subject of ESD and in particular the evolution of judicial notice of Climate Change and the appropriate responses thereto by decision makers: as such this judgement deserves close attention. It is apparent that the existence of anthropogenic climate change is well established and the law well advanced in its consideration of such impacts particularly in NSW.

[29] [2007] QCA 200 and (2007) 159 LGERA 349
[30] [2008] SASC 57
[31] Paragraphs 34 & 35
[32] At page 90
[33] [2007] NSWLEC 741 at [81] – [143]

34. The South Australian *Northcape Properties* decision is an instance where the Court determined the case within the context of State development planning policy that now, like in Victoria, specifically requires the relevant planning authority to consider sea level rises in the first 100 year's of a development's life[34]. The proposed development in question, which had been rejected by the planning authority, had failed to take in to account the recession of the coastline under projected rising sea levels.

Precautionary approach and precautionary principle

35. As an instance of how legislative and policy reform is increasingly giving direction to decision makers, and on appeal/review the Courts, in Victoria the precautionary principle is embodied in the State Environment Protection Policy (Groundwaters of Victoria) ("Groundwater SEPP") and State Environment Protection Policy ("Waters of Victoria") which are required to be taken into account by VCAT both as government policy under sub-section 40(1)(j) of the *Water Act* and in accordance with section 305B of the *Water Act*. This principle is further substantially reflected in section 93 of the *Water Act* which sets out the sustainable management principles for water corporations and in the licensing authority's Guidelines for Surface and Groundwater Licencing. (The Victorian authority in this respect is Southern Rural Water).

36. The precautionary principle is set out in the Victorian Groundwater SEPP as follows:*"precautionary principle: where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation."*

[34] [2008] SASC 57 at [13] & [14]

37. With respect to the precautionary principle, Justice Osborn of the Victorian Supreme Court remarked in *Western Water v Rozen and Others*[35]:

> *"The fundamental thrust of this principle is well understood. In* (the NSW Land and Environment Court decision of) *Leatch v National Parks and Wildlife Service*[36] *Stein J said of it:*
>
> > *"The precautionary principle is a statement of common sense and has already been applied by decision makers in appropriate circumstances prior to the principle being spelt out. It is directed towards the prevention of serious or irreversible harm to the environment in situations of scientific uncertainty. Its premise is that where uncertainty exists concerning the nature or scope of environmental harm (whether this follows from policies, decisions or activities), decision makers should be cautious."*

38. This Victorian Supreme Court case makes it clear that this principle may be considered even where the legislation does not direct its application where it is apparent that it is consistent with the over-arching policy to do so. While the considerations will vary from case to case, the Victorian Supreme Court decision of Justice Forrest in *Environment East Gippsland v Vic Forests*[37] confirms that the principle will be given real weight by the Courts where risk is apparent. His Honour commented at paragraph 80 of that decision:

> *"I am not persuaded that the reference to precautionary principles is, at least on the analysis required for this application, simply a statement of objective or lofty principle."*

39. In 2006 in *Telstra Corporation v Hornsby Shire Council*[38] Preston CJ and Brown C, of the New South Wales Land and Environment Court

[35] [2008] VSC 382
[36] 81 LGERA 270, 281-282
[37] [2009] VSC 386
[38] [2006] NSWLEC 133

comprehensively examined the operation of the precautionary principle, and analysed the manner in which it applies.

> *Conditions precedent or thresholds to application of the precautionary principle*
>
> *128. The application of the precautionary principle and the concomitant need to take precautionary measures is triggered by the satisfaction of two conditions precedent or thresholds: a threat of serious or irreversible environmental damage and scientific uncertainty as to the environmental damage. These conditions or thresholds are cumulative. Once both of these conditions or thresholds are satisfied, a precautionary measure may be taken to avert the anticipated threat of environmental damage, but it should be proportionate: N de Sadeleer, Environmental Principles: From Political Slogans to Legal Rules, Oxford University Press, 2005 at p.155.*
>
> *Threat of serious or irreversible damage*
>
> *129. Two points need to be noted about the first condition precedent that there be a threat of serious or irreversible environmental damage. First, it is not necessary that serious or irreversible environmental damage has actually occurred – it is the threat of such damage that is required. Secondly, the environmental damage threatened must attain the threshold of being serious or irreversible.*
>
> *130. Threats to the environment that should be addressed include direct and indirect threats, secondary and long-term threats and the incremental or cumulative impacts of multiple or repeated actions or decisions. Where threats may interact or be interrelated (for example where action against one threat may exacerbate another threat) they should not be addressed in isolation: see "Guidelines for applying the precautionary principle to biodiversity conservation and natural resource management", R Cooney and B Dickson (eds) Biodiversity and the Precautionary Principle, Risk and Uncertainty in Conservation and Sustainable Use, Earthscan, 2005 at p. 302, Guidline 6.*
>
> *Scientific uncertainty*
>
> *140. The second condition precedent required to trigger the application of the precautionary principle and the necessity to take precautionary*

measures is that there be "a lack of full scientific certainty". The uncertainty is as to the nature and scope of the threat of environmental damage: Leatch v National Parks and Wildlife Services (1993) 81 LGERA 270 at 282.

40. In addressing the degree of scientific certainty required to involve the precautionary principle the Court in the *Telstra case* stated[39]:

> *148. de Sadeleer posits a threshold test of "reasonable scientific plausibility," or where a threat or risk of environmental damage is considered scientifically likely. de Sadeleer explains his test of reasonable scientific plausibility as follows:*
>
> > *'That condition would be fulfilled when empirical scientific data (as opposed to simple hypothesis, speculation, or intuition) make it reasonable to envisage a scenario, even if it does not enjoy unanimous scientific support.*
> >
> > *When is there 'reasonable scientific plausibility'? When risk begins to represent a minimum degree of certainty, supported by repeated experience. But a purely theoretical risk may also satisfy this condition, as soon as it becomes scientifically credible: that is, it arises from a hypothesis formulated with methodological rigour and wins the support of part of the scientific community, albeit a minority.*
> >
> > *The principle may consequently apply to all post-industrial risks for which a cause-and-effect relationship is not clearly established but where there is a 'reasonable scientific plausibility' that this relationship exists. This would be particularly appropriate for delayed pollution, which does not become apparent for some time and for which full scientific proof is difficult to assemble": N de Sadeleer,* Environmental Principles: From Political Slogans to Legal Rules, *Oxford University Press, 2005 at p. 160.*
>
> *See also A Deville and R Harding,* Applying the Precautionary Principle, *Federation Press, 1997 at p. 33.*

[39] At paragraph 148

41. The Court went on to explain that if the relevant preconditions are met the burden of proof shifts to the Applicant:

> *150. If each of the two conditions precedent or thresholds are satisfied – that is, there is a threat of serious or irreversible environmental damage and there is the requisite degree of scientific uncertainty – the precautionary principle will be activated. At this point, there is a shifting of an evidentiary burden of proof. A decision-maker must assume that the threat of serious or irreversible environmental damage is no longer uncertain but is a reality. The burden of showing that this threat does not in fact exist or is negligible effectively reverts to the proponent of the economic or other development plan, programme or project.*
>
> *151. The rationale for requiring this shift of the burden of proof is to ensure preventative anticipation; to act before scientific certainty of cause and effect is established. It may be too late, or too difficult and costly, to change a course of action once it is proven to be harmful. The preference is to prevent environmental damage, rather than remediate it. The benefit of the doubt is given to environmental protection when there is scientific uncertainty. To avoid environmental harm, it is better to err on the side of caution.*

42. As the Court observed in Telstra the precautionary principle involves preventative action

> *156. The precautionary principle permits the taking of preventative measures without having to wait until the reality and seriousness of the threats become fully known ...*

43. The degree of caution required was addressed by the Court at

> *161. The type and level of precautionary measures that will be appropriate will depend on the combined effect of the degree of seriousness and irreversibility of the threat and the degree of uncertainty. This involves assessment of risk in its usual formulation, namely the probability of the event occurring and the seriousness of the consequences should it occur. The more significant and the more uncertain the threat, the greater the degree of precaution required: ...*

> *162. Prudence would also suggest that some margin for error should be retained until all the consequences of the decision to proceed with the development plan, programme or project are known. This allows for potential errors in risk assessment and cost-benefit analysis. Potential errors are weighted in favour of environmental protection. Weighting the risk of error in favour of the environment is to safeguard ecological space or environmental room for manoeuvre: ...*

44. The precautionary principle requires that where a relevant threat exists, the lack of certainty as to exactly where the "tipping point" lies should not be used as a reason for postponing measures to prevent environmental degradation. The threat to the environment is not required to be certain and may in fact be remote to attract the operation of the precautionary principle. In *Western Water v Rozen and Anor*[40] Osborn J of the Victorian Supreme Court referred to the nature of the risk of harm to the environment noting:

> *"The statement in another context by Mason J in Wyong Shire Council v Shirt* (1980) 146 CLR 40 *that a risk though remote may nevertheless be real is apposite here. At p. 48 his Honour stated that "[a] risk which is not far-fetched or fanciful is real and therefore foreseeable."*

Concluding statement

45. Although this paper has only focussed on the decisions of some of the Environment Courts in Australia dealing with proposals which give rise to Climate Change considerations, I am of the opinion that the evident trends will be mirrored around the globe. Climate Change considerations are arising in environmental decision making in all jurisdictions and governments, to a lesser and greater extent, are adopting policy responses. It is in the context of those government-led policy responses, that the environmental court decisions the world over are being written; and almost inevitably the precautionary principle is embraced as both a common sense and responsible approach to ensuring that the interests of current and future generations are best protected.

[40] [2008] VSC 382