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Issues in Climate Change Litigation

Jacqueline Peel*

Climate change is an urgent environmental problem yet many governments have struggled to develop an effective national regulatory response. Instead, environmental advocates have turned increasingly to courts for a solution, mounting ambitious climate change cases in countries such as Australia and the United States, as well as under international law. This article examines several cross-cutting issues that present challenges for potential litigants across the broad spectrum of climate change litigation. They include problems of proof, of dealing with cumulative and indirect impacts, and of establishing a significant contribution to global warming, as well as issues surrounding the respective roles of courts and legislatures in developing a regulatory response to the problem of climate change.

I. Introduction

As government efforts to address climate change flounder in many countries and at the international level, environmental advocates have increasingly turned to courts to fill the void in climate change governance. Litigation seeking climate change mitigation or adaptation has been initiated in a number of jurisdictions and encompasses a broad range of legal forms.¹ Action has been taken both against corporations emitting large amounts of greenhouse gases (GHG) to the atmosphere, and against governments for their failure to factor climate change into planning and development decision-making adequately.² Notwithstanding this diversity, there are a number of recurring issues or challenges that confront plaintiffs mounting climate-based claims in the courts. These issues are a reflection of the complexities of the problem of climate change, and the challenges it poses

for conventional legal forms and governance approaches.³

This article canvasses several common issues that arise across the broad spectrum of climate change litigation. They are illustrated by reference to case studies drawn from Australia and the United States (US) – two countries that have experienced a significant upsurge in climate change litigation in recent years. The issues discussed include the question of whether a single polluting facility can be held responsible for the global impacts of climate change; the capacity to assess cumulative and indirect (or downstream) effects in evaluating a project's climate change implications; and the difficulty of demonstrating a causal link between greenhouse gas emissions from a particular development and specific, localized impacts.⁴ The article also considers the challenges climate change litigation poses for judicial legitimacy if courts – rather than legislatures – are cast as a primary source of climate regulation and governance.

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1 Brian Preston, "Climate Change Litigation," 26 *Environmental & Planning Law Journal* (2009), 169. Specific causes of action for climate change litigation are further discussed in the article of Justice Brian Preston in this issue.

2 See generally William C.G. Burns and Hari M. Osofsky (eds), *Adjudicating Climate Change: State, National, and International Approaches* (New York: Cambridge University Press, 2009).

3 Lee Godden and Jacqueline Peel, *Environmental Law: Scientific, Policy and Regulatory Dimensions* (Melbourne: Oxford University Press, 2010), chapter 6.

4 Litigation in particular jurisdictions, e.g. the US, has raised a number of other, specific issues such standing and application of the political questions doctrine. As this paper is concerned with issues relevant for the broad spectrum of climate change litigation, these jurisdiction-specific issues will not be addressed here.

II. The “Drop in the Ocean” Problem

Climate change is the paradigmatic *global* environmental problem. Anthropogenic emissions of carbon dioxide and the other GHGs that give rise to atmospheric warming are produced in all countries by innumerable entities.⁵ In this sense no one country or entity can be said to be *the* cause of climate change. Nonetheless, some countries and corporations are more substantial contributors to atmospheric GHG emissions than others. For instance, Australia holds the dubious honour of being the largest per capita emitter of GHGs given the country’s dependence on coal-fired power generation.⁶ Likewise, one of Australia’s largest coal-fired power stations, the Hazelwood plant in the Latrobe Valley, contributes a huge proportion of the overall GHG emissions of the State of Victoria,⁷ and was identified in 2005 by the environmental group, WWF, as the most polluting of all power stations operating in the world’s major industrialized countries.⁸

The larger-than-average contribution to GHG emissions made by some countries, and companies, raises the issue of whether such entities can be held especially responsible for the resulting climate change impacts, even in cases where these effects will be felt globally.⁹ In the context of a tortious climate change claim, the answer to this question goes to the matter of proof of a causal link between the defendant’s actions and the alleged harm.¹⁰ It is also a key issue where public law challenges are brought pursuant to environmental assessment statutes since such legislation is often only triggered if projects have or are likely to have a “significant” impact on the environment.¹¹

A common defense mounted by defendants in climate change litigation is that the GHG emissions from a particular activity are but a “drop in the ocean” in global terms and hence cannot be said to cause climate change harm and/or have a significant environmental impact. For instance, in an Australian case involving a challenge to the environmental assessment for a proposed new coal mine at Anvil Hill in New South Wales, the significance of the estimated annual emissions from burning coal harvested from the mine was sought to be diminished by arguing that they would constitute only 0.04% of global GHG emissions.¹² A similar argument was made before the US Supreme Court in *Massachusetts v Environmental Protection Agency*, namely that the Agency’s failure to regulate GHG emissions from new motor vehicles would make an insignificant contribution to global warming injuries suffered by the state of Massachusetts.¹³ By casting the relevant basis for the assessment of harm as global, defendants seek to argue that GHG emissions are only a small (and by implication, insignificant) contributor to the broader problem of climate change.

Although the emission of GHGs gives rise to global environmental effects, it does not necessarily follow that the only, or even the most appropriate, scale for assessment of impacts and regulation of the problem is a global one. Climate change has local as well as more widespread effects, and some environments may suffer more than others as a result of their special vulnerability. As Hari Osofsky has argued, climate change is thus a “multiscalar” regulatory problem capable of simultaneously engaging more than one level of governance (local, state, national, regional, international).¹⁴ In her

5 Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007 Synthesis Report: Summary for Policy-makers* (Geneva: IPCC, 2007), at 5.

6 See Maplecroft, *Climate Change Risk Report 2009/2010* (United Kingdom: Maplecroft, 2009) calculating Australia’s average output of 20.58 tons of carbon dioxide per year, compared to 19.78 in the US.

7 Green Energy Markets, “Fast-tracking Victoria’s Clean Energy Future to Replace Hazelwood Power Station”, Report for Environment Victoria, May 2010, available on the Internet at <www.environmentvictoria.org.au/library/fast-tracking-victoria’s-clean-energy-future-replace-hazelwood-power-station> (last accessed on 4 March 2011).

8 WWF-Australia, “Hazelwood tops international list of dirty power stations”, 13 July 2005, available on the Internet at <www.wwf.org.au/news/n223> (last accessed on 28 March 2011).

9 This issue is complicated by the lack of a standard approach in assessing causation across the case law: see further Chris

McGrath, “Regulating Greenhouse Gas Emissions from Australian Coal Mines” in Wayne Gumley and Trevor Daya-Winterbottom (eds), *Climate Change Law: Comparative, Contractual and Regulatory Considerations* (Sydney: Thomson Reuters, 2009) 217, at 226–7.

10 Preston, “Climate Change Litigation”, supra, note 1, at 445.

11 For a discussion of relevant Australian and overseas environmental assessment schemes that incorporate such a requirement see Ian Thomas and Mandy Elliott, *Environmental Impact Assessment in Australia: Theory and Practice*, 5th ed. (Sydney: Federation Press, 2009), chapters 5 and 6.

12 *Anvil Hill Project Watch Association v Minister for the Environment and Water Resources* (2007) 159 LGERA 8, at 15.

13 *Massachusetts v EPA* 549 U.S. 497, 127 S.Ct. 1438, at 1457.

14 Hari M. Osofsky, “Is Climate Change ‘International’? Litigation’s Diagonal Regulatory Role”, 49(3) *Virginia Journal of International Law* (2009), 585, at 587.

work, Osofsky discusses how climate change litigation has become a site for contestation over the appropriate scale of climate change regulation with “... antiregulatory parties attempt[ing] to scale up the problem with variations on arguments that climate change is an international problem happening over too long a time period, while those wanting greater regulation try to scale the problem of climate change back down to state or local levels and the present time.”¹⁵

In this context, she argues against “valorization of the ‘international’ in the climate change debate” as this neglects opportunities to address climate change impacts operating at other, sub-international scales.¹⁶

Overcoming the “drop in the ocean” problem in climate change litigation requires courts to embrace climate change as a “multiscalar” environmental problem with particular, local impacts as well as global ones. What might seem too small an impact in global terms could thereby be found to be a measurable and significant impact in the context of a local or regional environment. This was the approach taken by Justice Pain of the New South Wales (NSW) Land and Environment Court (LEC) in the *Anvil Hill* case mentioned earlier. Her Honour reasoned that the state of NSW was the most appropriate context for assessing the climate change impacts of the proposed mine given that the governing legislation was a state statute. Accordingly, she ruled:

“... 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 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 environ-

ment, to require assessment of that GHG contribution of the coal when burnt in an environmental assessment under Pt 3A.”¹⁷

Explicit targets for the reduction of greenhouse gas emissions that are set out in state or national legislation may also be of assistance to courts seeking a defensible basis for scaling down an assessment of the significance of a project’s climate change contribution. In the US state of California, for example, emissions reduction targets set by the state’s *Global Warming Solutions Act 2006*¹⁸ have provided the basis for an aggressive program by the Attorney-General to ensure GHG emissions are factored into the planning activities of cities and counties, notwithstanding the ostensibly local nature of these processes.¹⁹

III. The “Death by a Thousand Cuts” Problem

The “drop in the ocean” problem arises in climate change litigation not only as a result of the failure to recognize climate change as a multiscalar phenomenon, but also due to the single-entity focus of traditional regulatory and governance approaches. Under land-use or planning law, for instance, a project and its environmental effects will conventionally be assessed in a self-contained manner, independent of other projects or existing facilities with which the present proponent has no involvement. This allows a proponent to claim that a particular project makes only a small or insignificant contribution to global climate change. However, this approach denies the complex nature of the climate change problem as one that arises because of the *cumulative* effect over time and space of numerous emissions of GHGs from a range of sources.

The difficulties encountered by law in dealing with cumulative environmental effects are not unique to the area of climate change regulation. In the field of biodiversity protection, environmentalists have termed the issue “death by a thousand cuts” given that cutting down a single tree (or a small area of forest) will generally not enliven environmental legal controls even though this act exacerbates the wider problem of deforestation and habitat degradation. The recommended strategy to overcome this problem is to employ a process of cumulative impact assessments whereby the envi-

¹⁵ *Ibid.*, at 590.

¹⁶ *Ibid.*, at 587–588.

¹⁷ *Gray v Minister for Planning and Others* (2006) 152 LGERA 258, at 288.

¹⁸ 2006 Cal. Legis. Serv 488 (West) (codified at *Cal. Health and Safety Code* § 38500-99 (West 2006 & Supp 2007)). The Act is more commonly known as Assembly Bill 32 or AB-32. It mandates a return to 2000 GHG emission levels by 2010, a return to 1990 levels by 2020 and an 80% reduction from 1990 levels by 2050.

¹⁹ Matthew Vespa, “Thinking Globally, Acting Locally: The Role of Local Government in Minimizing Greenhouse Gas Emissions from New Development”, 44 *Idaho Law Review* (2008), 589.

ronmental effects of a particular action are evaluated in the context of similar actions, past or ongoing, that also contribute to overall environmental degradation. In the climate change context, this would involve assessing the impacts of the greenhouse emissions of a particular activity in light of how they might contribute to and/or exacerbate the problem of global warming.

Some jurisdictions have embraced cumulative impact assessments under their environmental statutes.²⁰ For instance, the US *National Environmental Policy Act*,²¹ as well as state-based mirror legislation such as the *California Environmental Quality Act*,²² allow for a conclusion of significant environmental effect in cases where a project's environmental impacts are "individually limited but cumulatively considerable."²³ Just as often, however, legislative formulations of "significant" impact are left undefined, leaving open the question of whether they encompass the consideration of cumulative impacts.

In Australian environmental legislation, unelaborated requirements for a finding of significant effect/impact in order to trigger environmental assessment requirements for a project have yielded differing judgments as to the relevance of cumulative impact assessment. In the *Anvil Hill* case before the NSW LEC, Justice Pain held that a requirement for cumulative impact assessment was inherent in the relevant NSW legislation's reference to principles of "ecologically sustainable development" such as the principle of inter-generational equity and the precautionary principle.²⁴ In a later iteration of the case, this time brought pursuant to the federal environmental impact assessment legislation – the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) – the Federal Court rejected the applicant's contention that the likelihood of the new coal mine having a "significant impact" on matters protected by the Act should have been assessed "having regard to its context not only in the total Australian and global emissions of greenhouse gases but in comparison to other actions that might reasonably be assessed under the EPBC Act."²⁵ Justice Stone ruled that the legislation contained no requirement limiting assessment "to a comparison with other, hypothetical, proposed actions." Moreover, her Honour commented

"I have difficulty in conceiving how one would go about assessing a proposed action in the context of hypothetical/potential actions."²⁶

The judge's remarks suggest that cumulative impact assessment will only be feasible where effects are assessed relative to existing (as opposed to potential or future) contributions to the problem of greenhouse emissions and climate change.

The US Supreme Court decision in *Massachusetts v EPA* suggests another way around the "death by a thousand cuts" problem in climate change litigation. The EPA argued before the Supreme Court that there was no realistic possibility that regulation of new vehicle emissions would mitigate global climate change and remedy the petitioners' injuries as any reductions achieved would be offset by emissions in other parts of the world, particularly China and India. However, a majority of the Court rejected that argument noting that it "rests on the erroneous assumption that a small incremental step, because it is incremental, can never be attacked in a federal judicial forum."²⁷ Increases in emissions abroad did not diminish the fact that "[a] reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere."²⁸ This statement by the Court appears to acknowledge the cumulative nature of the global climate change problem and thus the fact that no single regulatory action can solve the problem in one step.²⁹

IV. The Problem of Proof

Perhaps the most difficult challenge confronting plaintiffs in climate change litigation is the problem of demonstrating that the emission of GHGs to

20 See, e.g., the *Climate Change Act 2010* (Victoria), s.14(4).

21 42 U.S.C. §§ 4321–4370 (2000).

22 *California Public Resources Code* §§ 21000–21177 (Deer. 2008).

23 *Ibid.*, at §§ 21083(b)(2).

24 *Gray v Minister for Planning*, *supra*, note 17, at 293–4, 296. Note, however, that the judge's approach concerning the need for a mandatory consideration of ESD principles under Pt. 3A of the *Environmental Planning and Assessment Act 1979* (NSW) has been questioned in subsequent case law: *Minister for Planning v Walker and Others* (2008) 161 LGERA 423.

25 *Anvil Hill Project Watch Association v Minister for the Environment and Water Resources*, *supra*, note 12, at 19.

26 *Ibid.*

27 127 S Ct. 1438, at 1457.

28 *Ibid.*, at 1458.

29 See also *ibid.*, at 1457.

the atmosphere by a particular activity or facility will give rise to specific impacts on a local area or population. This problem of proof arises across the spectrum of climate change litigation, whether based in tortious, public law or international causes of action. In a tortious context, for example, there is generally the need to demonstrate a causal nexus between the defendant's conduct and the injuries claimed by the plaintiff.³⁰ In a public law or international action, issues of proof of harm might form part of a court's analysis of standing questions or go to the merits of a claim that GHG emissions from a certain entity or entities will have a significant impact on a particular environment.³¹ An assessment of whether Massachusetts had the requisite standing to bring its case against the EPA was the context for the Supreme Court considering the question of "causation" in *Massachusetts v EPA*, given the EPA's contention that standing was an insuperable jurisdictional obstacle because of the widespread harm inflicted by GHG emissions.³²

A large part of the problem of proof faced by plaintiffs in climate change cases stems from gaps or uncertainties in relevant climate science. The casting of climate change as a "global" problem has fostered the development of scientific and legal institutions addressing the problem at the international level with less attention paid, until recently, as to how climate change might manifest at the local level. The result is that major scientific studies of climate change and its impacts – such as the assessment reports issued by the Inter-governmental Panel on Climate Change – are biased towards the ascertainment of global, or at best, regional, patterns of climate change impacts. Much more difficult to predict on the basis of current data are specific local impacts.

30 Preston, "Climate Change Litigation", supra, note 1, at 445.

31 For an analysis of these questions in the context of international litigation see, Christoph Schwarte and Ruth Byrne, "International Climate Change Litigation and the Negotiation Process" (Working Paper for the Foundation for International Environmental Law and Development, first draft published in October 2010), available on the Internet at <www.field.org.uk/files/FIELD_cclit_long_Oct.pdf> (last accessed on 4 March 2011).

32 Supra, note 27, at 1453.

33 Ibid., at 1469.

34 Ibid., at 1456.

35 42 U.S.C.A. § 7521(a)(1).

36 Supra, note 13, at 1462.

If courts facing such questions were to demand a strong showing of scientific evidence to support the link between a given activity and specific, localised impacts it would place significant obstacles in the way of successful climate change litigation. Scientific uncertainties in the available evidence regarding the localised impacts of global warming are easily exploitable by defendants seeking to deny that their GHG emissions can be linked to global warming or specific climate change impacts. The dissenting judgment in *Massachusetts v EPA* of Chief Justice Roberts (with whom Justices Scalia, Thomas and Alito agreed), demonstrated the potential power of "uncertainty" arguments in climate change litigation. The judgment criticised the petitioners' failure to trace their alleged injuries back through a "complex web" of causal arguments to the amount of global GHG emissions that might have been limited with EPA standards. Accordingly, the dissenting justices concluded:

"In light of the bit-part domestic new motor vehicle greenhouse gas emissions have played in what petitioners describe as a 150-year global phenomenon, and the myriad additional factors bearing on petitioners' alleged injury ... the connection is far too speculative to establish causation."³³

Fortunately for many climate litigants, a number of courts and tribunals in climate law cases have not demanded rigorous step-by-step proof of causal chains between greenhouse emissions and particular climate change impacts in order to uphold claims. The *Massachusetts v EPA* decision is a case in point with the majority of the Supreme Court finding there was an adequate link between GHG emissions from the US transportation sector and injuries to Massachusetts caused by sea level rise and coastal erosion to found the state's claim to standing.³⁴ On the merits of Massachusetts' claim that the EPA was required to regulate emissions of GHGs from motor vehicles pursuant to §202(a)(1) of the *Clean Air Act*,³⁵ the majority of the Supreme Court was of the view that EPA could only refuse to do so "if it determines that greenhouse gases do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do so."³⁶ Importantly the Court suggested that the EPA could not avoid its statutory obligation "because of some residual

uncertainty” surrounding various features of climate change.³⁷

The Supreme Court’s reasoning in the *Massachusetts v EPA* case is reminiscent of a decision-making approach based upon the precautionary principle; an environmental precept which is a key element of the environmental law of a number of countries and the European Union,³⁸ though not (explicitly) that of the US.³⁹ The principle also features prominently in international legal instruments such as the *Rio Declaration on Environment and Development* (where it forms principle 15),⁴⁰ and the *United Nations Framework Convention on Climate Change* (which names as one of its guiding principles that “Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects”).⁴¹ The precautionary principle is enlivened in conditions of scientific uncertainty over potentially serious environmental harms.⁴² Its essential function is to avoid situations where regulatory or decision-making actions are postponed because threats are uncertain, but where it is later discovered that environmental damage was in fact occurring. In the context of climate change litigation, application of the precautionary principle or adoption of a precautionary decision-making approach could help to alleviate difficulties created by gaps in scientific knowledge concerning the specific impacts of climate change. It might do so by allowing a court to accept more general evidence of climate change impacts (e.g. global predictions of sea level rise) as probative of the likelihood of specific

climate change-induced injury at a particular locality (e.g. increased coastal erosion along a state coastline). Alternatively, a precautionary decision-making approach might lead to a presumption of harmful impact despite uncertainties in the available scientific evidence (sometimes designated a “reversal of the onus of proof” approach).⁴³

Application of the precautionary principle as a response to the “problem of proof” raised in climate change litigation has been a feature of a number of the Australian climate change cases.⁴⁴ For instance, in the *Anvil Hill* case, Justice Pain of the LEC referred to the precautionary principle (as an element of ecologically sustainable development (ESD), the “encouragement” of which was one of the objects of the relevant legislation)⁴⁵ as a relevant matter shaping the environmental assessment for the coal mine at issue. Justice Pain concluded that the failure to consider the downstream emissions of the project (i.e. those that would arise when the harvested coal was burned in power generation) demonstrated a failure to take into account principles of ESD such as the precautionary principle.⁴⁶ To take proper account of the precautionary principle at the stage of environmental assessment of the project (as opposed to approval), Pain J found there was a need to:

“... [Put] sufficient information before the Minister to enable his consideration of all relevant matters so that if there is serious or irreversible environmental damage from climate change/global warming and there is scientific uncertainty about the impact he can determine if

37 *Ibid.*, at 1463. The Court distinguished this from a situation where “the scientific uncertainty is so profound that it precludes EPA from making a reasoned judgment as to whether greenhouse gases contribute to global warming.”

38 Nicolas de Sadeleer, “The Precautionary Principle in EC Health and Environmental Law” 12(2) *European Law Journal* (2006), 139.

39 But see Jonathan B. Wiener, “Whose Precaution After All? A Comment on the Comparison and Evolution of Risk Regulatory Systems” 13 *Duke Journal of Comparative and International Law* (2003), 207.

40 Rio Declaration on Environment and Development, Rio de Janeiro, 12 August 1992, Annex 1, UN Doc. A/CONF.151/26 (Vol.1), 31 *International Legal Materials* (1992) 874, principle 15.

41 United Nations Framework Convention on Climate Change, Rio de Janeiro, 9 May 1992, in force 24 March 1994, 1771 United Nations Treaty Series 164, Art. 3.3.

42 For instance, Principle 15 of the *Rio Declaration* (supra, note 40) provides “Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason

for postponing cost-effective measures to prevent environmental degradation.” Principle 15 is often regarded as articulating the accepted international definition of the precautionary principle, although many different versions exist in international legal instruments.

43 See, e.g., *Telstra v Hornsby Shire Council* (2006) 146 LGERA 10, at 42–43. However, the terminology “reversal of the onus of proof” can be misleading as it is not always those opposing a project or activity leading to increased GHG emissions that bear the burden of proof. In planning disputes the burden of proof may instead rest with a development proponent to demonstrate that the proposed development will not have significant environmental impacts.

44 In Australia, the precautionary principle is a well-established element of domestic environmental law. The formulation of the precautionary principle used generally derives from the *Rio Declaration* definition. See further Godden and Peel, *Environmental Law*, supra, note 3, at 239–263.

45 *Environmental Planning and Assessment Act 1979* (New South Wales), s.5(a)(vii).

46 *Gray v Minister for Planning*, supra, note 17, at 296–7.

there are measures he should consider to prevent environmental degradation in relation to this project.”⁴⁷

Her Honour held, moreover, 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.”⁴⁸

The *Anvil Hill* case illustrates how application of the precautionary principle in the context of environmental assessment of a project with the potential to contribute to climate change might help to broaden out the range of information put before a decision-maker by ensuring that information on possible impacts is not excluded due to scientific uncertainty. Nonetheless, the judgment stressed that this would not predetermine how the precautionary principle was later applied on the basis of such information at the stage of project approval (in fact the NSW government subsequently approved the Anvil Hill mine).

A more robust application of a precautionary decision-making approach in climate change litigation is evident in case law of the Victorian Civil and Administrative Tribunal (VCAT), which has powers to conduct a review of local government decision-making on the merits.⁴⁹ A good example is provided by the case of *Gippsland Coastal Board v South Gippsland SC & Ors (No 2) (Gippsland Coastal Board case)* determined by VCAT in 2008.⁵⁰ In this case VCAT overturned a local government’s approval for residential developments in a low-lying coastal region, relying – amongst other factors – on the likelihood of inundation of the land and proposed dwellings due to sea-level rise induced by climate change. In reaching its decision VCAT used a precautionary decision-making approach despite the absence of a specific requirement to consider

the precautionary principle in the governing legislation.

In the *Gippsland Coastal Board* case, VCAT noted the general scientific 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.”⁵¹ According to the Tribunal there thus existed “a reasonably foreseeable risk of inundation” to the land and proposed dwellings that was judged to be unacceptable.⁵² This threat was considered an adequate basis for invocation of the precautionary principle notwithstanding the Tribunal’s acceptance that there was a degree of scientific uncertainty as to the level of projected sea level rise along the area of coast at issue. VCAT also emphasized that for effective risk assessment, it was not acceptable to rely upon historical data and previous flood model predictions in assessing future climate change-induced risks. Consequently, the Tribunal stated:

“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 serious harm.”⁵³

Subsequently, a precautionary approach to assessing the risk of sea level rise and inundation in coastal areas has become an accepted part of Victorian planning law and practice.⁵⁴

V. The “How Many Links in the Chain?” Problem

In litigation, the problem of proving a causal connection between a particular activity and impacts produced through climate change generally becomes more difficult the more steps there are in a putative causal chain. Domestic GHG emissions from a substantial industry sector, such as transportation, that contribute to global warming, as well as well-characterized impacts like sea level rise, sit at one less problematic end of this spectrum. At

47 *Ibid.*, at 295.

48 *Ibid.*, at 296.

49 *Victorian Civil and Administrative Tribunal Act 1998* (Victoria 53/1998), s. 51.

50 [2008] VCAT 1545. This decision is unreported but can be found on the Austlii free case law database, available on the Internet at <www.austlii.edu.au> (last accessed on 28 March 2011).

51 *Ibid.*, at s. 40.

52 *Ibid.*, at s. 45 and 48.

53 *Ibid.*, at s. 42.

the other end are more complex claims that seek to attribute liability for what are often referred to as indirect or downstream emissions. Indirect emissions are those that arise not from the targeted activity itself, but from subsequent, related activities, which may take place in another part of the world. A pertinent example is coal mining and other fossil fuel production: the majority of GHG emissions related to such activities do not occur at the extraction stage but further downstream when the fuels are used for energy production. In Australia, which exports a large proportion of mined fossil fuel resources overseas, this raises a further complicating factor. For instance, can a coal producer in Australia be held liable for the GHG emissions produced and resultant impacts on climate caused when coal harvested is burned in coal-fired power stations in China?

Such a claim was attempted by environmental groups in the case of *Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc v Minister for the Environment and Heritage* decided in 2006 by the Australian Federal Court.⁵⁵ This case was brought pursuant to the federal environmental impact assessment legislation – the EPBC Act. A requirement for the environmental assessment and approval of projects under the EPBC Act is only triggered in the event of the likelihood of significant impacts on “matters of national environmental significance” which do not include considerations of climate change/global warming. Given this limitation in the legislation, the case brought by environmental groups challenging the Minister’s decision not to apply the EPBC Act to proposals for two new Queensland coal mines sought to construct the following causal chain:

- Burning of the coal harvested from the mines would produce significant quantities of GHGs, contributing to the problem of global warming.
- Global warming will lead to changes in ocean temperatures and acidification of marine environments.
- Such changes will have substantial adverse effects on areas protected under the EPBC Act such as world heritage listed areas.
- In particular, climate change will adversely affect the ecosystems of the Great Barrier Reef by contributing to coral bleaching and species loss.

In climate change cases, such as the *Wildlife Whitsunday* example, success is heavily dependent

on the extent to which courts are prepared to accept an argument that the impacts or effects of a particular activity extend to its indirect consequences as well as its direct and immediate environmental impacts. In addressing a complex and integrated environmental problem such as climate change, there are sound reasons favoring an assessment approach that encompasses indirect impacts.⁵⁶ In particular, the capacity to evaluate indirect impacts facilitates reconciliation between the conventional focus of legal governance systems on discrete projects (or, in an international context, activities within the jurisdiction or control of a state) with the inherent interconnectedness of ecosystems.⁵⁷ This in turn facilitates a more holistic, whole-of-life-cycle approach to examining the sustainability of particular industrial activities in a climate change-constrained world.

That said, the inclusion of liability for the indirect contribution of an activity to climate change-related harms is not without problems. The principal issue that arises is how far the causal chain can be stretched or, put another way, what degree of connection is necessary to sustain a link between an activity and particular climate change impacts. Judicial statements on this question of nexus in a variety of legal contexts have been uniformly vague, generally requiring a “sufficient” link but stopping short of one which is merely speculative or hypothetical.⁵⁸ Where issues of scientific uncertainty arise, drawing that line can be a very difficult exercise indeed, with the result that some courts have been able to find a sufficient nexus (as in the *Anvil Hill* coal mine case)⁵⁹ while others have been more skeptical (as in the *Wildlife Whitsunday* decision).⁶⁰

54 Elisa de Wit and Rachael Webb, “Planning for Coastal Climate Change in Victoria”, 27 *Environmental & Planning Law Journal* (2010), 23.

55 (2006) 232 ALR 510.

56 See, e.g., *Victoria Climate Change Act 2010*, supra, note 20.

57 Godden and Peel, *Environmental Law*, supra, note 3, at 300.

58 The seminal case in Australia is *Minister for Environment & Heritage v Queensland Conservation Council* (2004) 139 FCR 24.

59 *Gray v Minister for Planning*, supra, note 17, at 288. See also *Australian Conservation Foundation v Latrobe City Council* (2004) 140 LGERA 100, at 109.

60 Supra, note 55, at 524.

VI. Challenge to Judicial Legitimacy

Climate change litigation raises a plethora of decision-making challenges that encompass issues of how to respond to scientific uncertainty, how to resolve issues of global versus local responsibility for the problem of global warming, and how far to go in reforming conventional legal governance approaches in responding to situations of cumulative, long-term and often indirect environmental impacts. The lack of a clear path to follow in resolving such issues means that climate cases often present a legitimacy minefield for the judiciary. This is particularly so in common law countries where judicial rulings constitute an authoritative source of law that can play an influential role in shaping legal practice. In the absence of strong government action to address climate change, rulings in climate change litigation may serve as a *de facto* source of national climate policy with very real impacts on the regulatory landscape. To take one prominent example, following the ruling of the US Supreme Court in *Massachusetts v EPA*, the Environmental Protection Agency (EPA) finalised an endangerment finding that carbon dioxide, along with five other GHGs, is a pollutant that threatens public health and welfare.⁶¹ This finding paves the way for the introduction of federal regulation of GHG emissions from sources such as automobiles.

In common law countries, debates over the extent of judicial law-making authority are familiar territory in legal theory. There is no consensus view as to the appropriateness of an approach that favors strict legalism and deference to the legislative role of elected governments, as opposed to activism in judicial decision-making to fill gaps in the law. Nev-

ertheless, it is fair to say that decisions towards the “activist” end of the judicial decision-making spectrum tend to generate more concern over the legitimacy of generally unelected members of the judiciary to create new laws and shape regulatory policy.⁶² This issue is of particular importance in the area of climate change litigation given the nature of the cases involved. The lack of specific climate change laws in many jurisdictions means that most climate change litigation is not concerned with enforcement so much as forcing regulatory activity, for instance, to address emissions from a particular sector or to expand environmental assessment practices.⁶³ Indeed, many climate change cases serve a strategic function, brought as test cases to explore the capacity of environmental laws to extend to the new threat of climate change impacts.⁶⁴ For instance, the Climate Action Network Australia, which has been behind or supported much of the climate change litigation brought in Australia, sees legal action as “a powerful and effective tool in the campaign for climate protection.”⁶⁵

In this context, judicial decisions that extend or reinterpret existing laws to cover climate change impacts and liability for GHG emissions are often viewed as a form of climate change regulation and governance. This enhanced role of litigation in the climate change sphere may explain the strong media and community reaction to many climate change cases that have often included challenges to the legitimacy of the judges making these decisions. Vitriolic and highly personal attacks on Justice Pain followed the issue of the *Anvil Hill* decision, with some claiming that it spelled the end of the coal-mining sector in Australia.⁶⁶ This example illus-

61 EPA, “Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act; Final Rule”, 74(239) Federal Register (15 December 2009), 66496.

62 It is noteworthy that the US courts have sometimes refused to exercise jurisdiction in climate change cases on the basis of the political questions doctrine, an element of the broader doctrine of the separation of powers: see *Kivalina v ExxonMobil* 663 F.Supp.2d 863 (NDCal 2009), at 882–883; *People of the State of California v General Motors* 2007 WL 2726871 (NDCal 2007) at 5–13; and *Connecticut v American Electric Power Co*, 406 F Supp 2d 265 (SDNY 2005) at 274. The latter decision was successfully appealed to the Court of Appeals which found that the political question doctrine did not apply and remanded the matter for further proceedings: *Connecticut v American Electric Power Co* 582 F 3d 309 (2nd Cir 2009). An appeal of that decision will now be heard by the Supreme Court.

63 The European Union (EU) is an exception in this regard as climate change litigation in this jurisdiction has been brought

mainly as a means of enforcing climate laws such as the rules of the EU emissions trading system: Navraj S. Ghaleigh, “Six Honest Serving Men’: Climate Change Litigation as Legal Mobilization and the Utility of Typologies”, 1 *Climate Law* (2010), 31, at 47–58.

64 Hari Osofsky argues climate change litigation serves a number of other purposes including shaping large and small-scale governmental decision-making, pressuring corporations to take action and reconfiguring the public discourse: Hari M. Osofsky, “The Continuing Importance of Climate Change Litigation”, 1 *Climate Law* (2010), 3, at 5.

65 Australian Climate Justice Program, “Enforcing Climate Change Law”, available on the Internet at <<http://www.cana.net.au/ACJP/>> (last accessed on 28 March 2011).

66 C. Merritt and M. Warren, “Activist Judge in Objection to Mine”, *The Australian*, 30 November 2006, at 6; T. Perinotto, “Court Ruling Spooks Developers”, *Australian Financial Review*, 1 December 2006, at 69.

trates the pressures faced by the judiciary in an environment where their decisions inevitably play a major role in shaping climate change governance.

To a certain extent, the challenge to judicial legitimacy presented by climate change litigation is an unavoidable one: courts will continue to be a focus of strategic legal action in the absence of legislation and, unlike governments, cannot decline to issue a decision. However, there may be situations where judicial innovation in a climate law case might be perceived as more appropriate and/or generate less problems of legitimacy than others. One suggestion in this regard is that courts (particularly tribunals with a capacity for merits review) are often seen as a suitable location for considering more localised climate change issues, such as the adequacy of measures to adapt to future climate change impacts. Government-set emissions reduction targets can also bolster the legitimacy of related judicial decision-making by giving a firmer basis for evaluations of the significance of a particular contribution to climate change. More generally, good judicial practice of clear reason-giving, grounding of decisions in the available evidence, reference to consensus scientific reports, and deference to policy judgments will assist in establishing the authority of a climate change judgment.

Of course, from a more positive perspective, climate change litigation also offers the judiciary opportunities to be innovators; leaders in legal development aimed at addressing an important and urgent environmental problem. In another context, a former justice of the NSW LEC once remarked that environmental judges need to be “bold spirits rather than timorous souls.”⁶⁷ Further, the commonality of issues raised in climate change litigation across many jurisdictions presents opportunities for transnational judicial dialogue and learning as courts look to case law from other countries to assess questions such as causation.⁶⁸ Despite the issues faced, it is clear that far-thinking judgments issued in climate change cases have already made a significant contribution to the development of climate change law and governance. Future development in this area will also rely on the willingness of courts to interpret the law boldly in order to respond to the challenges of climate change.

VII. Conclusion

The climate change cases to date in jurisdictions around the world illustrate the critical role that courts have played, and will most likely continue to play, in adapting the law and legal governance systems to deal with the complex problem of climate change. Climate change litigation – employed strategically as a response to inadequate government law-making and in an effort to prompt wider policy change – has seen courts emerge as “a critical forum in which the future of GHG emission regulation and responsibility are debated.”⁶⁹ Potentially, principles developed through litigation could serve as the basis for policy and legislative reforms to address climate change at the domestic and international levels.

However, as this paper has illustrated, climate change litigation presents a number of difficult issues and as a form of governance faces challenges related to its lack of comprehensiveness and overall legitimacy. There are also many questions raised by climate change litigation that cannot be addressed by courts: the establishment of strong incentives and measures for reducing GHG emissions as well as the reform of environmental assessment practices to promote flexibility and adaptive management require action by governments. Climate change litigation and courts will thus need to work in conjunction with strong legislation and far reaching changes to national, state and regional planning laws and policies in order to address the wider climate change problem.

67 Justice Paul L. Stein, “Are Decision-Makers Too Cautious with the Precautionary Principle?”, 17(6) *Environmental & Planning Law Journal* (2000), 3, at 3, discussing judicial development of the precautionary principle.

68 The US Supreme Court decision in *Massachusetts v EPA* has thus been referenced by judges in Australia deciding climate change cases such as *Anvil Hill*.

69 Osofsky, “The Continuing Importance of Climate Change Litigation”, *supra*, note 64, at 4.