TORTIOUS LIABILITY FOR GREENHOUSE GAS EMISSIONS? CLIMATE CHANGE, CAUSATION AND PUBLIC POLICY CONSIDERATIONS

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The purpose of this paper is to assess the potential legal issues in establishing liability for large-scale emitters of greenhouse gases, in Australia, for resulting harms caused from changes to the climate system. This paper assesses the legal principles and policy issues associated with potential negligence claims against industrial emitters in Australia such as large coal mines and coal-fired electricity plants. This paper identifies a range of significant obstacles in successfully bringing claims in negligence for climatic harms. These include issues in foreseeability, causation and the operation of public policy principles. It is concluded that the distribution of risk from climate change, and associated allocation of liability, is more appropriately addressed through consistent, national legislation rather than through the ad hoc adaptation of the common law.

I INTRODUCTION

Humans play a pivotal role in contributing to climate change through the burning of fossil fuels, the use of products that emit greenhouse gases and land-use changes such as urbanisation, deforestation and agricultural practices. Changes to our climate system are predicted to result in rising sea levels, rising temperature and higher incidences of severe storms.[1] Climate-related harm could include loss of homes, livestock and other property, damage to public infrastructure and to coastal settlements, impaired

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1 Intergovernmental Panel on Climate Change (IPCC), 'Climate Change 2007: The Physical Science Basis: Summary for Policy Makers, Contribution of Working Group I to the Fourth Assessment report of the Intergovernmental Panel on Climate Change' (IPCC Secretariat Geneva, 2007); IPCC, 'Climate Change 2001: Synthesis Report to the Third Assessment Report of the Intergovernmental Panel on Climate Change' (Cambridge University Press, 2001).

agricultural yields, loss of livelihoods and population displacement.[2] The human health impacts could involve thermal stress and heat-related deaths and illnesses, proliferation and geographical shifts of infectious diseases, impaired nutrition and other adverse mental and physical health risks.

Despite this growing evidence, many authorities and industries in Australia appear reluctant to undertake immediate action to reduce greenhouse gas emissions.[3] Accordingly, some climate-related harm is now inevitable. This leads to the question, on whom should the risk fall for climate harm? Is it the industry, the government or the private individual?[4]

The purpose of this paper is to assess the potential legal issues in establishing liability for large-scale emitters of greenhouse gases, in Australia, for resulting harms caused from changes to the climate system. This paper focuses on the likely role of the common law of torts in addressing resulting harms from climate change in Australia. It does so through an analysis of the potential scope of liability, and defences, for hypothetical negligence suits against coal mining projects and coal-fired power plants.[5] This paper identifies a range of significant obstacles in successfully bringing claims in negligence for climatic harms. These include issues in foreseeability, causation and the operation of public policy principles. Accordingly, this paper concludes that the prospects of success of such tortious actions are remote. It is submitted that the distribution of risk from climate change, and associated allocation of liability, would be more appropriately addressed through consistent, national legislation rather than through the ad hoc adaptation of the common law.

II THE RISK OF CLIMATE CHANGE AND THE ROLE OF TORTS

Climate Change is a global phenomenon and has resulted in international agreements to reduce global greenhouse gas emissions and minimise climate harms. A majority of the international community agreed to an international framework for reducing emissions through the *United Nations Framework Convention on Climate Change* (UNFCCC) and the *Kyoto Protocol*.[6] The overriding objective of the UNFCCC, of which Australia is a party, is to achieve the 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'.[7]

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2 Ibid.

3 Some States are beginning to implement State-based reduction targets, but these do not yet amount to a prohibition on greenhouse gas emissions. For example, the *Climate Change and Greenhouse Gas Emissions Reduction Act 2007* (SA).

4 Or in the words of Myles Allen: 'what might happen if it all goes horribly wrong?' Myles Allen, 'The Spectre of Liability: Part 1-Attribution' in Kenny Tang (ed), *The Finance of Climate Change: A Guide for Governments, Corporations and Investors* (2005) 367, 367.

5 Potential tortious actions in nuisance, and negligence actions for other climate-related losses relating to statutory functions and professional advice, will be the subject of future papers.

6 *United Nations Framework Convention on Climate Change*, opened for signature on 4 June 1992, 31 ILM 849 (entered into force on 21 March 1994). *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, opened for signature 16 March 1998, 37 ILM 22 (entered into force on 16 February 2005).

7 *United Nations Framework Convention on Climate Change*, opened for signature on 4 June 1992, 31 ILM 849, art 2 (entered into force on 21 March 1994).

Australia is also a party to the Kyoto Protocol. The newly elected government recently deposited the instrument of ratification of the Kyoto Protocol with the United Nations Climate Change Secretariat. Following formal ratification, Australia will be bound to comply with the obligations of the Kyoto Protocol.[8] This includes an obligation to reduce greenhouse gas emissions to 108 per cent of 1990 levels from 2008-2012.[9]

Both the UNFCCC and the Kyoto Protocol are silent on the allocation of responsibility for damage caused as a result of anthropogenic greenhouse gas emissions. This means that, at an international level, reparation of harm must be addressed through existing international law principles including the principle of State responsibility for transboundary harm.[10] At a national level, and in the absence of specific legislation regulating emissions and climate harm, the allocation of liability for losses must fall to be addressed by the common law.

The common law is a dynamic area of law that is able to adapt to the changing needs of society.[11] The principal goal of tort law has been described in many formats. One theoretical approach refers to tort law as corrective justice, another as maximising social welfare and a third as the distribution or allocation of the costs of risk-bearing.[12] From these three, the appropriate basis for liability for environment related torts appears to be based on considerations of sharing the risk of the broad social costs of climate change.[13]

Accordingly, in the emerging area of climate losses, the Courts must develop and adapt legal principles to identify wrongdoers, recognise the wrong done, allocate blame and distribute losses. However, it is debatable whether the common law of torts is able to adapt *sufficiently* to apply to the modern, global, environmental, problem of climate change which cuts across the public and private arenas.[14]

III THE HYPOTHETICAL CLIMATE SUIT

Tortious actions in negligence are most likely to be brought against large users of fossil fuels, suppliers of fossil fuels and the creators of products that utilise fossil fuels.[15] Actions may also be brought against governments, in their capacity as public authorities and where they own or control public works and infrastructure such as electricity utilities.

This paper focuses on a hypothetical scenario involving the long-term operation of a coal mine, coal-fired electricity plant or other large-scale industrial emitter of

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8 That is 90 days from the receipt of the Instrument of Ratification by the United Nations.

9 *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, opened for signature 16 March 1998, 37 ILM 22, art 3 and Annex A (entered into force on 16 February 2005).

10 See R Verheyen, *Climate Change Damage and International Law: Prevention Duties and State Responsibility* (Martinus Nijhoff Publishers, Volume 54, 2005).

11 Karen Morrow, 'Nuisance and Environmental Protection' in John Lowry and Rod Edmunds (eds), *Environmental Protection and the Common Law* (2000) 139, 139. *Perre v Apand Pty Ltd* (1999) 198 CLR 180, [92] (McHugh J).

12 G Williams and B A Hepple, *Foundations of the Law of Tort* (Butterworths, 2nd ed, 1984) 197, 201.

13 Morrow, above n 11, 157.

14 Ibid.

15 J Smith and D Shearman, *Climate Change Litigation: Analysing the Law, Scientific Evidence and Impacts on the Environment, Health and Property* (Presidian Legal Publications, 2006) 17.

greenhouse gases in Australia. Such entities could be either publicly or privately owned. Accordingly, it is against this factual background that the following tortious principles are considered:

- the existence of a duty of care owed by the defendant to the plaintiff;
- a breach by the defendant of the standard of care; and
- damage to the plaintiff caused by the defendant's breach of the duty.

IV DUTY OF CARE OF EMITTERS OF GREENHOUSE GASES

A *Duty of Care and Physical Harm*

The type of harm suffered has implications for the finding that a duty of care is owed. Potential climate related harm, following greenhouse gas emissions, includes physical property damage from heat, wind, floods and sea level rises.

Where greenhouse gas emissions have caused property damage, personal injury and consequential loss then it is necessary to determine whether the relationship between the parties falls within one of the recognised relationships giving rise to a duty of care.[16]

The foundation for the establishment of a duty of care is found in the so-called 'neighbour principle' as espoused in *Donoghue v Stevenson*:[17]

> you must take reasonable care to avoid acts or omissions which you can reasonably foresee would be likely to injure your neighbour. Who then, in law is my neighbour? The answer seems to be – persons who are so closely and directly affected by my act that I ought reasonably to have them in contemplation as being so affected when I am directing my mind to the acts or omissions which are called into question.

The establishment of a neighbour relationship between the emitter and the plaintiff requires a number of elements including that the plaintiff be 'so closely and directly affected' that the emitter ought reasonably to have them in contemplation as being so affected. Proximity was explained by Deane J in the following manner:

> [proximity] involves the notion of nearness or closeness and embraces physical proximity (in the sense of space and time) between the person or property of the plaintiff and the person or property of the defendant, circumstantial proximity such as an overriding relationship of employer and employee or of a professional man and his client and causal proximity in the sense of the closeness or directness of the relationship between the particular act or cause of action and the injury sustained.[18]

The application of this principle to an industrial plant and local residents affected by emissions appears quite valid. However, the impacts of climate change go beyond the local community and extend to the regional, national and the global. As the nexus between the emitter and the plaintiff expands, the likelihood of the Court finding a duty of care becomes more and more uncertain.

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16 *Spartan Steel & Alloys Ltd v Martin & Co* [1973] 1 QB 27.
17 *Donoghue v Stevenson* [1932] AC 562, 580 (Lord Atkin).
18 *Jaensch v Coffey* (1984) 155 CLR 549, 584.

B *Duty of Care and Pure Economic Loss*

In addition, where harms relating to climate change involve only a risk of physical damage, or property devaluation, then no physical harm will be involved and this will be pure economic loss. This could occur in circumstances of negligent misrepresentation of the risks of property flooding, negligent performance of services in omitting to address climate risks, defective goods and property damage.

Where the harm caused by the emitting industry results in pure economic loss then recovery will be permitted only in limited circumstances:[19]

> In my opinion it is still right to say that as a general rule damages are not recoverable for economic loss which is not consequential upon injury to the plaintiff's person or property. The fact that the loss was foreseeable is not enough to make it recoverable. However, there are exceptional cases in which the defendant has knowledge or means of knowledge that the plaintiff individually, and not merely as a member of an unascertained class, will be likely to suffer economic loss as a consequence of his negligence, and owes the plaintiff a duty to take care not to cause him such damage by his negligent act.[20]

This will require the establishment of a novel duty of care by the Court. The Court now applies an *incremental* approach to the establishment of a novel duty of care, that is, 'the law should develop novel categories of negligence incrementally and by analogy with the established categories'.[21] This multi-factorial approach looks to a range of legal and policy principles including the defendant's control of the circumstances giving rise to the harm and the vulnerability of the plaintiff in terms of their inability to protect themselves from that harm.[22]

The concept of vulnerability was discussed in *Woolcock Street Investments v CDG Property Ltd* as*:*

> "vulnerability", in this context, is not to be understood as meaning only that the plaintiff was likely to suffer damage if reasonable care was not taken. Rather, "vulnerability" is to be understood as a reference to the plaintiff's inability to protect itself from the consequences of a defendant's want of reasonable care, either entirely or at least in a way which would cast the consequences of loss on the defendant.[23]

With respect to greenhouse gas emissions, the emitter has control of the nature and amount of greenhouse gases produced and emitted by its industrial activities. The avoidance of harm from climate change is outside the control of the plaintiff and, as individuals, they are unable to prevent the occurrence of climate change.[24] Moreover,

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19 *Perre v Apand Pty Ltd* (1999) 198 CLR 180.

20 *Caltex Oil (Aust) Pty Ltd v The Dredge "Willemstad"* (1976) 136 CLR 529, 555.

21 *Sutherland Shire Council v Heyman* (1985) 157 CLR 424, 481 (Brennan J).

22 *Sullivan v Moody* (2001) 183 ALR 404, [48]-[9]; *Rogers v Whitaker* (1992) 175 CLR 479; *Bryan v Maloney* (1995) 182 CLR 609; *Hill v Van Erp* (1997) 188 CLR 159; *Woolcock Street Investments Pty Ltd v CDG Pty Ltd* (2004) 216 CLR 515; *Esanda Finance Corporation v Peat Marwick Hungerfords* (1997) 188 CLR 241. See, also, J Stapleton, 'The Golden Thread at the Heart of Tort Law: Protection of the Vulnerable' (2003) 24 *Australian Bar Review* 41.

23 *Woolcock Street Investments Pty Ltd v CDG Pty Ltd* (2004) 216 CLR 515, [23] (Gleeson CJ, Gummow, Hayne and Heydon JJ).

24 Ibid.

as severe weather events, coastal erosion, landslides and floods increase in vulnerable areas the insurance sector is increasingly denying coverage for these climate change related risks.[25]

However, in considering whether to establish a novel duty, the Court will also take into account public policy principles. Public policy issues present a significant obstacle for any tortious action based on harm from climate change. Climate change is a global phenomenon and occurs as a result of natural processes as well as historic and continuing anthropogenic emissions. The establishment of a duty of care for harm caused by climate change as a result of the contribution of the particular emissions of the defendant could be regarded as the imposition of an unreasonable social burden. The Court may determine that holding these individual emitters responsible for the *cumulative* global and historic emissions of our industrialised society is an unreasonable shift of responsibility and has the potential to result in the imposition of indeterminate liability on emitters.[26] As part of its considerations, the Court will balance the interests of the community with concerns that the identification of a duty of care could result in a flood of claims before the Courts alleging breach. As the harms from climate change become more and more apparent in Australia, concerns about the flood of claims become all the more legitimate in the eyes of the law.

C *Duty of Care and Public Authorities*

Claims may potentially be bought against public authorities in circumstances where they own or control the emitting plants such as electricity producers.

Section 35 of the *Civil Liability Act 2003* (Qld) states the following principles will apply in determining whether a duty of care exists in relation to a public authority:

> (a) the functions required to be exercised by the authority are limited by the financial and other resources that are reasonably available to the authority for the purpose of exercising the functions;
> (b) the general allocation of financial or other resources by the authority is not open to challenge;
> (c) the functions required to be exercised by the authority are to be decided by reference to the broad range of its activities (and not merely by reference to the matter to which the proceeding relates);
> (d) the authority may rely on evidence of its compliance with its general procedures and any applicable standards for the exercise of its functions as evidence of the proper exercise of its functions in the matter to which the proceeding relates.[27]

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25 Andrew Dlugolecki and Mojdeh Keykhah, 'Climate Change and the Insurance Sector: Its Role in Adaptation and Mitigation' in Kathryn Begg, Frans Van Der Woerd and David L Levy (eds), *The Business of Climate Change: Corporate Responses to Kyoto* (2005) 147; RF&C Investments, 'In the Front Line: The Insurance Industry's Response to Climate Change' (Reo Research, 2007) 8; Evan Mills, 'From Risk to Opportunity: 2007, Insurer Responses to Climate Change' (CERES, 2007).

26 *Cole v South Tweed Heads Rugby League Football Club Ltd* (2004) 207 ALR 52.

27 Similar provisions have been adopted in s 42 of the *Civil Liability Act 2002* (NSW); s 38 of the *Civil Liability Act 2002* (Tas); s 110 of the *Civil Law (Wrongs) Act 2002* (ACT); and s 5W of the *Civil Liability Act 2002* (WA). Section 83 of the *Wrongs Act 1958* (Vic) is similar but excludes (b). R Douglas, G Mullins and S Grant, *The Annotated Civil Liability Act 2003 (QLD)* (LexisNexis Butterworths, 2004) 35.5.

Accordingly, public authorities are able to rely on evidence of limited financial and other resources in defending findings of a duty, or breach of that duty, by the Court. The onerous financial burden of accounting for climate change will heavily influence the consideration of reasonableness, by the Court, when considering the existence of a duty of care regarding global impacts from climate change.

V BREACH OF THE DUTY OF CARE AND GREENHOUSE GAS EMISSIONS

A *Standard of Care and Emissions*

Once a duty of care has been found to have been owed, the Court must consider what is the relevant standard of care and if it has been breached. The standard of care is determined, as a question of law, through the application of an objective standard of the 'reasonable person'.[28] This was described by Mason J in *Wyong Shire Council v Shirt*:[29]

> in deciding whether there has been a breach of the duty of care the tribunal of fact must first ask itself whether a reasonable man in the defendant's position would have foreseen that his conduct involved a risk of injury to the plaintiff or to a class of persons including the plaintiff. If the answer be in the affirmative, it is then for the tribunal of fact to determine what a reasonable man would do by way of response to the risk. The *perception of the reasonable man's response calls for a consideration of the magnitude of the risk and the degree of the probability of its occurrence, along with the expense, difficulty and inconvenience of taking alleviating action* and any other conflicting responsibilities which the defendant may have. It is only when these matters are balanced out that the tribunal of fact can confidently assert what is the standard of response to be ascribed to the reasonable man placed in the defendant's position.[30] (emphasis added)

Accordingly, in setting the appropriate standard of care the Court will determine the magnitude of the risk of climate change, the probability of that risk actually occurring and the relative expense of requiring the defendant to take steps to alleviate that risk.

B *Calculus of Breach of Duty and Climate Harm*

The relevance of the ability to take precautions against a risk of harm is now articulated in section 9 of the *Civil Liability Act 2003* (Qld) as:

> (1) A person does not breach a duty to take precautions against a risk of harm unless—
> (a) the risk was foreseeable (that is, it is a risk of which the person knew or ought reasonably to have known); and
> (b) the risk was not insignificant; and
> (c) in the circumstances, a reasonable person in the position of the person would have taken the precautions.[31]

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28 *Glasgow Corporation v Muir* [1943] AC 448, 454.

29 *Wyong Shire Council v Shirt* (1980) 146 CLR 40.

30 Ibid 47-8 (Mason J).

31 Similar provisions to s 9 have been enacted in s 43 *Civil Law (Wrongs) Act 2002* (ACT); s 5B *Civil Liability Act 2002* (NSW); s 32 *Civil Liability Act 2002* (SA); s 11 *Civil Liability Act 2002* (Tas); s 48 *Wrongs Act 1958* (Vic); s 5B *Civil Liability Act 2002* (WA). Douglas, Mullins and Grant, above n 27, 9.7.

Foreseeability of the risk has been described by the Court as 'a risk of injury which is remote in the sense that it is extremely unlikely to occur may nevertheless constitute a foreseeable risk. A risk which is not far-fetched or fanciful is real and therefore foreseeable'.[32]

Under the tort law reforms, this common law test of foreseeability has been altered to apply to risks that are 'not insignificant'.[33] This was discussed in *Drinkwater v Howarth*,[34] as 'a risk which is much more than far-fetched or fanciful may not differ materially from a risk which is not insignificant…if the plaintiff was clearly at risk, then it cannot be said that the risk was insignificant. It was a clear risk'.[35]

So the question is, was the risk of climate change 'not insignificant' at the time of the emission of the greenhouse gases?

The UNFCCC, of which Australia is a party, was adopted in 1992.[36] The preambles to the UNFCCC clearly state that the parties to the UNFCCC are concerned about the impact of increased emissions on global warming and climate change:

> *concerned* that human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the Earth's surface and atmosphere and may adversely affect natural ecosystems and humankind.[37]

On the basis of this international agreement, it could be legitimately argued that the risk of injury from climate change resulting from human emissions of greenhouse gases was a real, foreseeable risk and 'not insignificant' risk as of 1992. In contrast, it was not until 2007 that the Australian Federal government officially acknowledged that the science linking greenhouse gas emissions and global warming was convincing 'over time, the scientific evidence that the climate is warming has become quite compelling and the link between emissions of greenhouse gases from human activity and higher temperatures is also convincing'.[38]

In any event, the publication of the *Fourth Assessment Report on Climate Change of the Intergovernmental Panel on Climate Change*, in February 2007, made it abundantly clear that climate change was occurring, that the effects of climate change were of an adverse or harmful nature and that greenhouse gas emissions were contributors to that occurrence.[39]

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32 *Wyong Shire Council v Shirt* (1980) 146 CLR 40, 48 (Mason J).

33 Cf s 48(3)(a) of the *Wrongs Act 1958* (Vic), which states that this term includes, but is not limited to, acts that are far-fetched or fanciful.

34 *Drinkwater v Howarth* [2006] NSWCA 222.

35 Ibid [16] and [19].

36 *United Nations Framework Convention on Climate Change*, opened for signature on 4 June 1992, 31 ILM 849 (entered into force on 21 March 1994). This was signed by Australia on 4 June 1992 and ratified on 30 December 1992.

37 Ibid Preamble.

38 Prime Minister John Howard, *Address to the Melbourne Press Club* (2007) eGov monitor <http://www.egovmonitor.com/node/13024> at 8 January 2008.

39 IPCC, 'Climate Change 2007', above n 1.

In relation to climate warming, the IPCC Report concludes that '*warming of the climate system is unequivocal*, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global mean sea level'.[40]

The IPCC Report identifies a clear link between temperature increases and greenhouse gas emissions and concludes that 'most of the observed increase in globally average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic greenhouse gas concentrations'.[41]

The assessment concludes that continued emissions at or above current rates will, very likely, cause further warming and induce larger changes in the climate system than those observed during the 20th century.[42]

Accordingly, at the time of release of this report with its increased scientific certainty, knowledge of the probability of harm from unabated greenhouse gas emissions could be concluded to have entered the public arena.

An analogy may be drawn with medical negligence cases where knowledge of the risk of harm has developed over time. In *H v Royal Alexandra Hospital for Children*,[43] there was no general knowledge of the risk of contracting HIV via blood transfusions until the first documented case in 1983. Justice Badgery-Parker found that, upon publication of the reported case, the hospital ought to have been aware of the risk 'the first Australian case of AIDS was published in April 1983. I have no difficulty in concluding that reasonably informed physicians, scientists and blood transfusion services in this country ought to have been well aware by at latest April 1983 that there was a real risk'.[44]

A similar argument could be run in relation to the release of the IPCC report in February 2007.

The IPCC assessment reports address climate change impacts predominantly at a global level. It could be argued that the specific harm experienced by the plaintiff was not itself reasonably foreseeable because those localised impacts were not predicted by the IPCC. However, this argument becomes weaker as Australian studies on likely climatic impacts, at a regional level, become publicly available.[45]

Additionally, the argument could be raised by defendants that, because of the global, cumulative relationship between greenhouse gas emissions and climate change, the

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40 Ibid 4.

41 Ibid 8. 'Very likely', in this quote, refers to a scientific certainty of above 90%.

42 Ibid 10.

43 *H v Royal Alexandra Hospital for Children* (1990) Aust Torts Reports 81-000.

44 Ibid 529.

45 For example, CSIRO and Australia Bureau of Meteorology, 'Climate Change in Australia: Technical Report 2007' (CSIRO, 2007); RSJ (Bob) Beeton et al, *Australia State of the Environment 2006: Independent Report to the Australian Government Minister for the Environment and Heritage, Department of the Environment and Heritage, Canberra* (2006) Australian Government, Department of the Environment, Water, Heritage and the Arts <http://www.environment.gov.au/soe/2006/index.html> at 8 January 2008.

harm would have occurred regardless of the care taken by the defendant. The IPCC Report concludes that past and future emissions will continue to contribute to warming and sea level rises for *more than a millennium* to come due to the large timescales required to remove the gases from the atmosphere.[46] Carbon dioxide, for example, will stay in the atmosphere for up to 100 years.[47]

In determining whether there has been a breach of duty, the Court will undertake an assessment of, amongst other matters, the reasonableness of the precautions undertaken by the defendant. The matters to be considered are articulated in section 9(2) of the *Civil Liability Act* 2003 (Qld) as:

> In deciding whether a reasonable person would have taken precautions against a risk of harm, the court is to consider the following (among other relevant things)—
> (a) the probability that the harm would occur if care were not taken;
> (b) the likely seriousness of the harm;
> (c) the burden of taking precautions to avoid the risk of harm;
> (d) the social utility of the activity that creates the risk of harm.

The level of probability of the harm occurring will vary according to the nature of the plaintiff and the point in time of the assessment. The probability and likely seriousness of the risk of harm will be assessed at the time of injury to the plaintiff.[48] In terms of the seriousness of the harm, the Court will take into account the gravity of the harm in terms of the global impacts from greenhouse gas emissions and predicted changes to the climate system.

In terms of the burden of taking practical precautions with respect to the nature of the risk, this is detailed in section 10 of the *Civil Liability Act 2003* (Qld):

> (a) the burden of taking precautions to avoid a risk of harm includes the burden of taking precautions to avoid similar risks of harm for which the person may be responsible; and
> (b) the fact that a risk of harm could have been avoided by doing something in a different way does not of itself give rise to or affect liability for the way in which the thing was done.[49]

The Court will assess the reasonableness of the acts taken by the defendant. In *Graham Barclay Oysters Pty Ltd v Ryan,*[50] the distributor of oysters was sued in negligence after the plaintiff contracted hepatitis from oysters which had been grown in contaminated water. Justice McHugh considered the reasonableness of the acts of the defendant and commented:

> no doubt the magnitude of the risk, if it eventuated, was high. But so are the magnitudes of many risks that reasonable people run because the alternative is too costly or too inconvenient. The magnitude of the risk of being involved in a motor car accident is very high, and the risk could be minimised, if not eliminated, by no car ever travelling at more

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46 IPCC, 'Climate Change 2007', above n 1, 13.

47 The other greenhouse gases have both longer and shorter life spans.

48 *Roe v Minister of Health* [1954] 2 QB 66.

49 Similar provisions have been enacted in: s 44 *Civil Law (Wrongs) Act 2002* (ACT); s 5C *Civil Liability Act 2002* (NSW); ss 11 and 12 *Civil Liability Act 2002* (Tas); s 49 *Wrongs Act 1958* (Vic); s 5B(2); *Civil Liability Act 2002* (WA). Douglas, Mullins and Grant, above n 27, 10.3.

50 *Graham Barclay Oysters Pty Ltd v Ryan* (2002) 211 CLR 540, [111].

> than 10 km per hour. But few would contend that travelling at 10 km per hour was the only reasonable response to the risk of a motor car accident.[51]

A similar analysis could be applied in relation to the magnitude of risk of climate change and the reasonableness of requiring industries to avoid *all* (or most) greenhouse gas emissions. A balance needs to be identified between the risk and the reasonable steps that could be taken to minimise emissions. This could include use of 'clean coal' technologies or carbon capture and storage (CCS), the generation or purchase of offset credits through sequestration and renewable energy projects or modification to plants to utilise alternative fuel sources.[52]

The Court will look to the expense, difficulty and convenience of the taking of those practical precautions in the context of the gravity of the harm.[53] The fact that the defendant does not possess the resources to implement the reasonable precautions is not itself a sufficient defence.[54] The Court could take into account the ability of the defendant to pass the costs of these initiatives on to consumers and the ultimate cost implications for the community. The Court will also consider the social utility of the activity giving rise to the harm.[55] In a modern context, it would be possible to raise the argument that there is an *essential* community need for continued energy supply in order for our society to function.

In considering whether there has been a breach of duty, the Court will take into account any relevant statutory or customary standards. Whether there is statutory authorisation for the harmful act will be a relevant factor. For example, if legislation prescribed the amount of greenhouse gas emissions that may lawfully be emitted into the atmosphere then this would be factored into the consideration of the reasonableness of the conduct. It is possible that the future Federal emissions trading system would encompass such an authorisation. Current environmental protection legislation in Australia regulates 'environmental harm' and 'pollution' in such terms that could reasonably be applied to restrict greenhouse gas emissions.[56] However, environmental protection authorities are not currently enforcing those provisions in relation to greenhouse gases and, as a general rule, those authorisations do not prohibit or restrict greenhouse gas emissions.

Customary standards will also be a relevant consideration for the Court. Industries worldwide have *historically* emitted unabated greenhouse gases since the time of the industrial revolution. Customarily, there have been no limits or restrictions on those emissions from industrial activities. However, this is but one factor for the Court to

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51 Ibid.

52 See N Durrant, 'Emissions Trading, Offsets and Other Mitigation Options for the Australian Coal Industry' (2007) 24(5) *Environmental Planning and Law Journal* 361.

53 *Caledonian Collieries Ltd v Speirs* (1957) 97 CLR 202; *Romeo v Conservation Commission (NT)* (1998) 192 CLR 431; *Wyong Shire Council v Shirt* (1980) 146 CLR 40.

54 *PQ v Australian Red Cross Society* [1992] 1 VR 19; *Apex Holiday Centre (Inc) v Lynn* [2005] WASCA 58.

55 This has traditionally been applied in cases involving the police, ambulance and other social services in terms of the community good. For example, *Daborn v Bath Tramways Motor Co Ltd* [1946] 2 All ER 333; *Watt v Hertfordshire County Council* [1954] 2 All ER 368.

56 See D E Fisher, 'The Statutory Relevance of Greenhouse Gas Emissions in Environmental Regulation' (2007) 24(3) *Environmental and Planning Law Journal* 210.

take into consideration and will not necessarily operate to prevent a finding of breach of duty.

VI BREACH OF DUTY AND DAMAGE IN CLIMATE SUITS

In deciding whether a breach of duty caused the particular damage the Court will consider:

- whether the breach of duty was a necessary condition of the occurrence of the harm **(factual causation)**;
- whether it is appropriate for the scope of the liability of the person in breach to extend to the harm **(scope of liability)**.[57]

A *Establishing Factual Causation in Climate Suits*

Attribution of responsibility under the law of torts is based on causation as a limiting force.[58] To be liable in negligence there must be a causal connection between the defendant's breach of duty and the harm suffered by the plaintiff.[59] However, climate change represents a unique challenge for the establishment of causation and it is unlike any other form of environmental pollution or toxic tort.[60]

1 *Causation and the Climate System*

The Earth's climate system is described by the IPCC as follows:

> an interactive system consisting of five major components: the atmosphere, the hydrosphere, the cryosphere, the land surface and the biosphere, forced or influenced by various external forcing mechanisms, the most important of which is the Sun…the direct effect of human activities on the climate system is [also] considered an external forcing…Many physical, chemical and biological interaction processes occur among the various components of the climate system on a wide range of space and time scales, making the system extremely complex.[61]

The IPCC was established in 1988 to assess existing scientific information in order to understand the scientific basis of risk of human-induced climate change and its potential impacts.[62] The reports of the IPCC predict that the effects of climate change will include increases in temperature, sea-level rises, precipitation changes and increased incidences of droughts, floods and other extreme weather events.[63]

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57 Section 9 *Civil Liability Act 2003* (Qld).

58 Robert G Lee, 'From the Individual to the Environmental: Tort Law in Turbulence' in John Lowry and Rod Edmunds (eds), *Environmental Protection and the Common Law* (2000) 77, 78.

59 Section 11(1)(a) *Civil Liability Act 2003* (Qld).

60 For example, emissions from the exhausts of cars and deterioration in air quality have a clear temporal and spatial link. There are analogies to be drawn between causation issues in climate litigation and those already experienced in tobacco and toxic tort suits. However, the evidentiary links in climate litigation are significantly more complex. Lee, above n 58, 81.

61 IPCC, 'Climate Change 2001', above n 1, 1.1.2.

62 IPCC < http://www.ipcc.ch/about/index.htm> at 8 January 2008.

63 IPCC, 'Climate Change 2007', above n 1.

The IPCC *Fourth Assessment Report* identifies a *clear link* between temperature increases and greenhouse gas emissions and concludes that 'most of the observed increase in globally average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic greenhouse gas concentrations'.[64]

The Courts have traditionally applied the common sense and experience test encompassing the 'but for' test.[65] That is, whether the plaintiff's damage would have occurred 'but for' the defendant's act or omissions in combination with value judgments of the Court and the infusion of policy considerations.[66] This civil standard of proof requires the plaintiff to demonstrate, on the balance of probabilities, that the defendant's acts or omissions *caused* the damage suffered.[67] There must be a 'more probable inference in favour of what is alleged' not just a possibility.[68]

The action will fail if non-negligent causes of the harm are equally probable on the facts.[69] In the case of *Barnett v Chelsea*,[70] the plaintiff alleged negligence in the hospital care of her husband after he had consumed arsenic tea. The plaintiff failed to establish a causal link between the breach of the duty of care and her husband's death as the Court found that her husband would have died regardless of the care he received.[71]

A simple cause and effect approach is problematic in the case of harm from climate change as expressed by the IPCC:

> many processes and interactions in the climate system are non-linear. That means that there is no simple proportional relation between cause and effect. A complex, non-linear system may display what is technically called chaotic behaviour. This means that the behaviour of the system is critically dependent on very small changes of the initial conditions. This does not imply, however, that the behaviour of non-linear chaotic systems is entirely unpredictable.[72]

Accordingly, it is inevitable that some level of scientific uncertainty will prevail.[73] As commented by Brown:

> even if predictions about future temperature increase could be made with acceptable levels of certainty, predicting the consequences of specific temperature increase on ecological systems requires confrontation with many additional issues that are plagued by

64 Ibid 8. Very likely, in this context, refers to above 99% scientific certainty.
65 This is reflected in s 11(1)(b) and s 11(4) of the *Civil Liability Act 2003* (Qld).
66 *March v E & M H Stramare Pty Ltd* (1991) 171 CLR 506, 516 (Mason CJ).
67 *Barnett v Chelsea and Kensington Hospital Management Committee* [1969] 1 QB 428.
68 *TNT Management Pty Ltd v Brooks* (1979) 23 ALR 345, 349 (Gibbs J); *Seltsam Pty Ltd v McGuiness* (2000) 49 NSWLR 262, 275 (Spigelman J); *St George Club Ltd v Hines* (1961) 35 ALJR 106, 107.
69 *Chisholm v State Transport Authority* (1987) 46 SASR 148; *Tubemakers of Australia Ltd v Fernandez* (1976) 50 ALJR 720, 724 (Mason J).
70 *Barnett v Chelsea and Kensington Hospital Management Committee* [1969] 1 QB 428.
71 Ibid.
72 IPCC, 'Climate Change 2001', above n 1, 1.2.2.
73 J Peel, *The Precautionary Principle in Practice: Environmental Decision-Making and Scientific Uncertainty* (The Federation Press, 2005) 36.

> scientific uncertainty. The science of ecology is much too soft to predict ecosystem-wide responses to stress with certainty.[74]

The IPCC is regarded as an example of the emergence of 'post-normal science', that is, a scientific approach with relaxed scientific thresholds which embodies the precautionary principle and utilises an extended peer community.[75] Accordingly, this adoption of a post-normal approach to scientific assessment has repercussions for the ability of plaintiffs to establish a persuasive causative link. There is, of course, no strict requirement to meet the scientific standard of proof in the establishment of judicial causation.[76] In the determination of causation, the Court will adopt a common sense approach.[77] Nevertheless, it is difficult to identify, on the balance of probabilities, that the greenhouse gas emissions of the defendant caused the harm suffered in the presence of such scientific doubt. As concluded by Allen 'for the vast majority of damaging weather events, we will never be able to prove beyond reasonable doubt that "but for" human influence on climate, that event would never have occurred'.[78]

Climate change is a global phenomenon and is the result of historic emissions from human society. Current greenhouse gas emissions will contribute to the overall cumulative atmospheric concentrations. It will therefore be problematic to prove that a particular defendant was responsible for the *actual* emissions which caused climate change and the local environmental effects, which in turn caused the particular harm to the plaintiff.[79] Accordingly, the spatial and temporal scales between the release of emissions, the resulting climate changes and the resulting harm or loss are inherently *unpredictable*. As explained by the IPCC:

> when variations in the external forcing occur, the response time of the various components of the climate system is very different. With regard to the atmosphere, the response time of the troposphere is relatively short, from days to weeks, whereas the stratosphere comes into equilibrium on a time-scale of typically a few months. Due to their large heat capacity, the oceans have a much longer response time, typically decades but up to centuries or millennia…Therefore the system may respond to variations in external forcing on a wide range of space- and time-scales.[80]

There is a complex series of processes, responses and feedbacks that occur in the climate system following the cumulative radiative forcing of the greenhouse gases. In addition, some *natural* climate variability will continue to occur. There will be

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74 Donald A Brown, 'The Precautionary Principle as a Guide to Environmental Impact Analysis: Lessons Learned from Global Warming' in Joel A Tickner (ed), *Precaution, Environmental Science, and Preventive Public Policy* (2003) 141, 145.

75 J Ravetz, 'The Post-Normal Science of Precaution' (2004) 36 *Futures* 347; T Saloranta, 'Post-Normal Science and the Global Climate Change Issue' (2001) 50 *Climatic Change* 395; S Funtowicz and J Ravetz, 'Science for the Post-Normal Age' (1993) 25 *Futures* 739.

76 Although, probabilistic evidence has been adopted in some medical cases; see, R Goldberg, *Causation and Risk in the Law of Torts: Scientific Evidence and Medicinal Product Liability* (Hart Publishing, 1999) .

77 *Laferriere v Lawson* [1991] 1 SCR 541, [159]; *Halverson v Dobler* [2006] NSWSC 1307, [176] (McClellan CJ).

78 Myles Allen, 'The Spectre of Liability: Part 2-Implications' in Kenny Tang (ed), *The Finance of Climate Change: A Guide for Governments, Corporations and Investors* (2005) 381, 381.

79 See E Penalver, 'Acts of God or Toxic Torts? Applying Tort Principles to the Problem of Climate Change' (1998) 38(Fall) *Natural Resources Journal* 563, 579-82.

80 IPCC, 'Climate Change 2001', above n 1, 1.2.2.

difficulty in distinguishing between natural climate variability and human induced climatic changes. Moreover, the argument may persist that due to the cumulative global nature of emissions the harm would have occurred *regardless* of the contributions of the defendant.

2 *Increase in the Risk of Harm from Climate Change*

In certain cases involving negligence and harm to health, the Court has moved away from the strict application of civil proof. In an attempt to bridge the evidentiary gap from lack of knowledge the Courts have instead applied the test of whether, on the balance of probabilities, the defendant's negligence *materially contributed* to the *risk* of the damage occurring.[81]

One of the primary decisions in this area is *McGhee v National Coal Board.*[82] In that case, an employee was exposed to abrasive brick dust, no washing facilities were provided, and he developed dermatitis. The Court held that the employer was liable in negligence where his breach of duty had caused, or *materially contributed to,* the injury suffered notwithstanding that there were other factors which had contributed to the injury:

> first, it is a sound principle that where a person has, by breach of a duty of care, created a risk, and injury occurs within the area of that risk, the loss should be borne by him unless he shows that it had some other cause. Secondly…one may ask, why should a man who is able to show that his employer should have taken certain precautions…and who in fact sustains exactly that injury…have to assume the burden of proving more: namely, that it was the addition to the risk, caused by the breach of duty, which caused or materially contributed to the injury? In many cases…this is impossible to prove, just because honest medical opinion cannot segregate the causes of an illness between compound causes. And if one asks which of the parties…should suffer from this inherent evidential difficulty, the answer as a matter of policy or justice should be that it is the creator of the risk who…must be taken to have foreseen the possibility of damage, who should bear its consequences.[83]

Similarly, in the United Kingdom case of *Fairchild v Glenhaven Funeral Services Ltd*,[84] the House of Lords permitted the evidentiary gap to be overcome for an employee who suffered mesothelioma. Mesothelioma and anthropogenic climate change can be characterised in similar terms as they are triggered by cumulative impacts. Mesothelioma has been described by one expert as 'cumulative in that the longer the exposure and the heavier the exposure the greater the dose of asbestos which enters the lung and therefore the greater the chance of fibres getting into the periphery of the lung where they would generate mesothelioma'.[85]

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81 *McGhee v National Coal Board* [1972] 3 All ER 1008; *Bonnington Castings Ltd v Wardlaw* [1956] AC 613; *Fairchild v Glenhaven Funeral Services Ltd* [2003] 1 AC 32.

82 *McGhee v National Coal Board* [1972] 3 All ER 1008.

83 Ibid 1012; *McGhee v National Coal Board* [1973] 1 WLR 1, 6 (Lord Wilberforce); cf *Wilsher v Essex Health Authority* [1988] AC 1074.

84 *Fairchild v Glenhaven Funeral Services Ltd* [2003] 1 AC 32.

85 Evidence of Dr Joseph in Scott (DDT 48/90) quoted in *Wallaby Grip (BAE) Pty Ltd (in liq) v Macleay Area Health Service* (1998) 17 NSWCCR 355 (CA).

Under the state of medical knowledge at the time, onset of the disease could not be attributed exclusively to one of several successive employers, all equally careless. The Court in *Fairchild v Glenhaven Funeral Services Ltd* held that, in certain special circumstances, the Court could depart from the usual 'but for' test of causal connection and treat a lesser degree of causal connection as sufficient, namely that the defendant's breach of duty had materially contributed to causing the claimant's disease by materially *increasing the risk* of the disease being contracted.[86]

It might be possible for plaintiffs to bring sufficient evidence to demonstrate that the large-scale fossil fuel user *materially increased* the risk of climatic impacts, with resulting harm, by their greenhouse gas contributions. However, the Australian Courts are yet to embrace the United Kingdom approach to exceptional cases.

In special cases in Australia it must be shown, as a minimum, that on the balance of probabilities the defendant *materially contributed* to the injury suffered.[87] The distinction between increase in risk and material contribution was discussed in *Seltsam Pty Ltd v McGuiness*:[88]

> the issue in the present case is *whether an increased risk did cause or materially contribute to the injury* actually suffered…There is a tension between the suggestion that any increased risk is sufficient to constitute a 'material contribution', and the clear line of authority that a mere possibility is not sufficient to establish causation for legal purposes…The reconciliation between the two kinds of reference is to be found in the fact that…the actual risk had materialised. The 'possibility' or 'risk' that X might cause Y had in fact eventuated, not in the sense that X happed and Y also happed, but that it was undisputed that Y had happened because of X.[89] (emphasis added)

Assuming that the traditional standard of proof would apply to climate torts in Australia, the establishment of a causative link between the harm suffered and the identifiable increased risk by the defendant will be highly problematic. Grossman notes that these difficulties in establishing causation may be lessened where the plaintiff is the government:

> when states bring tort claims, the plaintiffs have almost infinite lifespans and cover large amounts of territory, allowing for an aggregation of effects over both space and time…The aggregation of harms makes it easier to rule out confounding factors…aggregation allows plaintiffs to better establish that some present harms from climate change exist in the broader geographic and temporal range.[90]

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86 *Fairchild v Glenhaven Funeral Services Ltd* [2003] 1 AC 32. This test will not apply where there are any number of noxious agents which may equally probably have caused the harm or damage; *Wilsher v Essex Area Health Authority* [1988] AC 1074; *Fairchild v Glenhaven Funeral Services Ltd* [2003] 1 AC 32, [22] (Lord Bingham).

87 *Orica Limited and Anor v CGU Insurance Limited* [2003] NSWCA 331, [90] (Spigelman CJ); *Bendix Mintex Pty Ltd v Barnes* (1997) 42 NSWLR 307, 312–20 (Mason P); *Wallaby Grip (BAE) Pty Ltd (in liq) v Macleay Area Health Service* (1998) 17 NSWCCR 355 (CA).

88 *Seltsam Pty Ltd v McGuiness* (2000) 49 NSWLR 262.

89 Ibid 280 (Spigelman CJ).

90 D A Grossman, 'Warming Up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation' (2003) 28 *Colombia Journal of Environmental Law* 1, 24-5.

Plaintiffs may also benefit from the use of class actions where there are a number of actions with common issues of law or fact.[91] Although the joining of such actions would not lessen the burden of establishing causation, they could assist through the pooling of resources towards obtaining necessary scientific and factual evidence regarding the defendant's contribution to the harm suffered. Nevertheless, the probability of success of tortious actions for climate harm would be *enhanced* if Australian Courts were persuaded that climate change is an 'exceptional circumstance' meriting the relaxation of the strict 'but for' test and the adoption of the United Kingdom approach. For this to occur, the Court must be persuaded that there are good public policy reasons for the extension of liability under a less stringent causative approach.[92] In the absence of such judicial developments, the difficulties in establishing causation appear, at this point in time, *insurmountable.*

3 *Relevance of Environmental Principles*

It will be interesting to observe the judicial treatment of these unique claims in negligence as they emerge in Australia and, in particular, the potential role that established environmental law principles could play in traditional deliberations of causation. This includes the application of the concept of ecological sustainable development and the embedded principle of inter-generational equity and precautionary principle.[93]

Ecologically sustainable development (ESD) is described as, 'development which aims to meet the needs of Australians today, while conserving our ecosystems for the benefit of future generations'.[94] And 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'.[95]

The precautionary principle asserts that a lack of scientific certainty should not be used as a reason for not taking action to protect the environment.[96] This principle is designed to alleviate the acknowledged difficulties of obtaining full scientific certainty. The effect of this statutory principle is, inter alia, to lower the threshold at which decision-makers must acknowledge that a reasonable risk to the environment exists.[97] Accordingly, the precautionary principle has the potential to play a significant role in the adaptation of common law principles to these emergent environmental harms.

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91 See D Grave and K Adams, *Class Actions in Australia* (Lawbook Co, 2005); and John Taberner, *Class Actions and Climate Change* (2007) Freehills <www.freehills.com.au/publications/publications_6950.asp> at 8 January 2008.

92 Section 11(2) *Civil Liability Act 2003* (Qld). Similar provisions have been enacted in s 45 *Civil Law (Wrongs) Act 2002* (ACT); s 5D *Civil Liability Act 2002* (NSW); s 13 *Civil Liability Act 2002* (Tas); s 51 *Wrongs Act 1958* (Vic); s 5C *Civil Liability Act 2002* (WA); s 34(2) *Wrongs Act 1936* (SA).

93 See Ecologically Sustainable Development Steering Committee, Australian Government, *National Strategy for Ecologically Sustainable Development* (1992) Part 1; Australian Government, 'Intergovernmental Agreement on the Environment' (1992).

94 Ecologically Sustainable Development Steering Committee, above n 93.

95 Ibid.

96 David Freestone and Ellen Hey, 'Origins and Development of the Precautionary Principle' in David Freestone and Ellen Hey (eds), *The Precautionary Principle and International Law* (1996) 3, 13.

97 N De Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (Oxford University Press, 2002) 160.

The interaction of the precautionary principle with the common law standard of proof could operate to lower the threshold at which a risk of harm from greenhouse gas emissions becomes 'probable'.[98] However, until such time as the Court considers this issue, the interaction of these principles is largely conjecture. Moreover, even as the threshold for establishing a causative link decreases, the risk of the Court imposing indeterminate liability increases.[99] This policy issue may operate to persuade the Court that it is *not appropriate* to impose indeterminate *private* liability for these forms of global *public* harm.

B *Scope of Liability*

As part of its deliberations, the Court must also consider whether it is *appropriate* for the scope of the liability of the person in breach to extend to the harm caused.[100] This will include a consideration of intervening causes and public policy issues.

1 *Intervening Causes*

The Court must consider whether other causes have intervened to break the chain of causation; 'man must guard against normal phenomenon of nature not against unusual ones'.[101]

Defendants might raise the argument that climate change, and the resulting impacts, are 'out of the ordinary' and that *all ordinary precautions* have been taken against foreseeable harm. Alternatively, it could be submitted that more recent greenhouse gas emissions from other entities, following the emissions of the defendant, acted as *novus actus interveniens*.[102] In the context of significant emissions worldwide it might be argued that those other emissions were intervening events, breaking the chain of causation and that those emitters were in fact 'the last wrongdoers'.[103] The success of such arguments would depend upon the prevailing judicial attitude to the establishment of causation.

2 *Policy Considerations*

This paper has identified a number of potential policy issues that could operate to persuade the Court to not identify a duty of care. These policy considerations will also play an important role in the Court's decision as to whether the scope of liability for breach of that duty is appropriate.[104] These include considerations of the fairness of imposing the burden of liability relative to the fault of the defendant as well as:

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98 Peel, above n 73, 155.
99 *Perre v Apand Pty Ltd* (1999) 198 CLR 180, 221 (McHugh J).
100 Section 11(1)(b) *Civil Liability Act 2003* (Qld).
101 *Blyth v Birmingham Waterworks* (1856) 11 Exch; J Fleming, *The Law of Torts* (LBC Information Series, 9th ed, 1998) 249.
102 *Scott v Shepherd* (1773) 2 W Bl 892.
103 *Home Office v Dorset Yacht Company Ltd* [1970] AC 1004.
104 Considered in *Anns v London Borough of Merton* [1978] AC 728.

- the spectre of indeterminate liability;[105]
- floodgates concerns;[106]
- public/private issues: who can better avoid the loss and who should bear the risk for the public harm of climate change?
- the availability (or lack of) alternative remedies under common law and statute;
- the deliberate decision of legislature not to regulate or prohibit emissions. The Court will assess the respective roles of the Court and the Parliament.[107]

The combination of all of these policy considerations will weigh heavily in the Court's determination of whether it is appropriate to impose liability on the defendant. Overall, it is highly probable that the Court would conclude that it is *not* appropriate to impose liability for the emission of greenhouse gases and the resulting climate harm.

VII POTENTIAL DEFENCES TO CLIMATE SUITS

In defence of a tortious action, it could be argued that the plaintiff's own negligence or fault contributed to the injury or loss suffered where that damage was a reasonably foreseeable consequence of the of the plaintiff's fault.[108] The question to be asked is whether the plaintiff's conduct increased the risk of harm?[109] If found to have been contributory negligent, the Court will apportion liability and will reduce the award of damages based on the principle of what is just and equitable given the plaintiff's degree of fault or share in responsibility for the damage.[110] This could potentially result in a 100 per cent reduction in damages.[111]

Accordingly, in climate suits it could be argued that the loss or harm of the plaintiff was caused partly by the fault of the plaintiff. As noted by Grossman, we are *all* potentially responsible under tort law for our continued emissions of greenhouse gases.[112] This could be based on the plaintiff's own acts of emitting, or causing to be emitted, greenhouse gases through their consumption of goods and services thereby adding to the cumulative risk of adverse climate change. This submission is less persuasive where the plaintiff can show that they have taken steps to minimise or offset their own emissions.[113]

An alternative defence could be raised of *volenti non fit injuria* where the plaintiff can be shown to have freely accepted the risk of injury from climate change, through their consumption of goods and services, with the full knowledge of the risk that the emission

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105 For example, *Caltex Oil (Australia) Pty Ltd v The Dredge* '*Willemstad*' (1976) 136 CLR 529, 555.
106 For example, *Chester v Council of the Municipality of Waverley* (1939) 62 CLR 1.
107 *Brodie v Singleton Shire Council* (2001) 206 CLR 512.
108 *Joslyn v Berryman* (2002) 214 CLR 552.
109 *Azzopardi v State Transport Authority (Rail Division)* (1982) 30 SASR 434.
110 *Joslyn v Berryman* (2002) 214 CLR 552; *Davies v Swan Motor Company (Swansea) Limited* [1949] 2 KB 291, 326 (Lord Denning); *Stapley v Gypsum Mines Ltd* [1953] AC 663, 682.
111 Section 24 *Civil Liability Act 2003* (Qld). Similar provisions have been enacted in s 47 *Civil Law (Wrongs) Act 2002* (ACT); s 5S *Civil Liability Act 2002* (NSW); s 4(1) *Civil Liability Act 2002* (Tas); s 63 *Wrongs Act 1958* (Vic).
112 Grossman, above n 90, 25.
113 It is envisaged that proportionate responsibility for emissions will be uneven with greater fault falling to the industrial source of emissions rather than the emissions of the individual plaintiff.

of greenhouse gases would result in climate change and harm.[114] The evidence must support an inference that the plaintiff *consented* to the risk of injury, by the defendant, and to the lack of reasonable care which would create that risk of harm.[115] This argument would be weakened where it can be demonstrated that there was no free choice in using those goods and services as there were no reasonably available, low-emission, alternatives.[116]

Finally, time limitations in the bringing an action could pose significant difficulties for plaintiffs.[117] In any action, the plaintiff must identify the point in time at which the cause of action accrued. This is exacerbated in the climate scenario where it is impossible to identify the historical point in time at which the emission of greenhouse gases gave rise to the current harm suffered. Given scientific uncertainty as to the timescale between the emission of greenhouse gases and resulting forcing effect in the climate system, it will be a challenge to identify the point in time at which the action accrued.

VIII PROSPECTS OF SUCCESS OF CLIMATE ACTIONS

The purpose of this paper was to consider the role of the common law action of negligence in addressing climate related harms from large-scale emitters in Australia. At this embryonic stage of climate change torts, both in Australian and overseas jurisdictions, it is largely a theoretical exercise in assessing the likely probabilities of success of tortious actions. So much will be dependent upon the character of the defendant, the nature of the harm suffered and the specificity of the scientific evidence available. Critically, it will also depend upon the judicial philosophy of the residing Court in terms of their commitment to developing the common law to remedy these new emerging climate injustices.

This paper has identified a number of significant obstacles to the successful instigation of tortious actions in negligence for climate related harm including: foreseeability, causation and public policy considerations. Without doubt, the establishment of causation remains the primary obstacle to any successful tortious action against any private or public defendant. The level of scientific uncertainty is significant and the challenges of meeting the legal test of causation enormous.

The likelihood of the Court indulging such tenuous claims of a causative link between the emissions and harm suffered is doubtful. Moreover, the judiciary may well consider that it is not its proper role to establish such wide private liability for harm that is caused through the global, public, phenomenon of climate change. Concerns about the imposition of indeterminate liability, floodgates concerns, and the proper role of the

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114 *Smith v Baker and Sons* [1891] AC 325.

115 *Woodridge v Sumner* [1963] 2 QB 43, 69.

116 Grossman, above n 90, 51. As to the requirement to be able to choose freely see, *Bowater v Rowley Regis Corporation* [1944] KB 476, 479 (Lord Justice Scott).

117 As a general rule, a limitation period of three years applies to personal injuries and a period of six years to property damage. Sections 11, 10(1) *Limitation of Actions Act 1974* (Qld); ss 16B(2), 11(1) *Limitation Act 1985* (ACT); ss 18A, 50C, 14(1)(b) *Limitation Act 1969* (NSW); ss 36, 35 *Limitation of Actions Act 1936* (SA); ss 5(1), 4(1)(a) *Limitation Act 1974* (Tas); ss 5(1AA), 5(1)(a) *Limitations of Actions Act 1958* (Vic); ss 13(1), 12 *Limitation Act 1935* (WA).

legislature in 'laying down the law' may well operate to prevent a finding of any liability in negligence.[118] As noted in the decision of *Cambridge Water*:

> as a general rule it is more appropriate for strict liability in respect of operations of high risks to be imposed by Parliament, than by the courts. If such liability is imposed by statute, the relevant activities can be identified, and those concerned can know where they stand. Furthermore, statute can where appropriate lay down precise criteria establishing the incidence and scope of such liability.[119]

IX THE FUTURE OF TORT-BASED CLIMATE LITIGATION

As a regulatory tool, tortious actions for climate harm are expensive and unruly and the outcomes are indeterminate. As commented by Peel 'the ad hoc nature of court proceedings, the expense involved in bringing them, and the uncertainty as to their results means that, in the long-term, litigation alone is unlikely to be an optimal approach for bringing about effective action to address climate change'.[120]

Given the prevalent uncertainties and weaknesses in tortious actions for climate change, the common law is not the most appropriate tool for achieving necessary behavioural changes to reduce emissions and avoid climate harms. In addressing climate change, the proper role of the common law should be to act as a complementary measure against a background of strong regulatory action. However, it is highly questionable whether the common law can adapt sufficiently to address the current 'gaps' in the regulatory web.[121]

International and domestic regulatory frameworks for the reduction of greenhouse gas emissions are slowly emerging around the world in an ad hoc fashion. There is now a Federal government proposal in Australia to implement a scheme for the reduction of greenhouse gas emissions.[122] However, such a scheme would not commence until 2010 and reductions in emissions would not be instantaneous. Moreover, all of these regulatory schemes currently fail to address issues of liability for climate harm.

It is submitted that the issue of liability in Australia would be best addressed through a *nationally consistent*, clear regulatory framework to allocate liability for risk of harm.

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118 J Goudkamp, 'The Spurious Relationship Between Moral Blameworthiness And Liability for Negligence' (2004) *Melbourne University Law Review* 11.

119 *Cambridge Water Co Ltd v Eastern Counties Leather plc* [1994] 2 AC 264, [76] (Lord Goff of Chieveley).

120 J Peel, 'The Role of Climate Change Litigation in Australia's Response to Global Warming' (2007) 24 *Environmental and Planning Law Journal* 90, 103.

121 John Murphy, 'Noxious Emissions and Common Law Liability: Tort in the Shadow of Regulation' in John Lowry and Rod Edmunds (eds), *Environmental Protection and the Common Law* (2000) 51, 75.

122 Prime Minister Kevin Rudd is proposing to implement a national emissions trading scheme by 2010. He has indicated that the government will adopt a target to reduce emissions by 60 per cent on 2000 levels by 2050 in conjunction with a 20 per cent target for renewable energy by 2020. Prime Minister Kevin Rudd, *Ratifying the Kyoto Protocol* (2007) Official Website of the Australian Labor Party <http://www.alp.org.au/media/1207/mspm030.php> at 8 January 2008. It is unclear the extent to which this scheme will build upon the design work of the previous Prime Ministerial Task Group on Emissions Trading, *Report of the Task Group on Emissions Trading* (2007) Australian Government, The Department of the Prime Minister and Cabinet, <http://pandora.nla.gov.au/pan/79623/20071127-1411/www.dpmc.gov.au/publications/emissions/index.html> at 8 January 2008.

The creation of clear statutory principles could provide large-scale emitters with some level of certainty regarding their future climate risks and legal liabilities. Potentially, some form of compensation fund could also be established through the allocation of a proportion of royalties or profits from these industries.

Such legislation could adopt an appropriate test for causation which incorporates the precautionary principle and accommodates the prevailing scientific uncertainty. Such regulation requires a balancing of a range of conflicting economic, social and environmental priorities of our society, both now and in the future.[123] Accordingly, it is submitted that such a process more properly resides in the democratic domain of the legislator.

[123] Peel, above n 120, 103.