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INSURANCE COVERAGE IN A CLIMATE CHANGED CANADA: HOW CAN CANADA PAY FOR LOSS AND DAMAGE FROM ANTHROPOGENIC CLIMATE CHANGE?

Eric Dwyer*

ABSTRACT

This article looks at the impact of anthropogenic climate change and its associated costs in the Canadian context. It begins by outlining how climate change is predicted to alter the Canadian climate before evaluating how this will affect the insurance industry. It determines that insurers' response to the unpredictable risks and high costs associated with climate change will lead to significant gaps in coverage. How litigation of major carbon polluters could help cover some of the costs associated with climate change by holding polluters accountable is considered. State-led climate litigation can overcome some of the litigation obstacles identified and it may be preferable to civil litigation. The current state of civil and state-led litigation will be inadequate to address the mounting costs associated with climate change. Thus, the article considers the use of legislation to assist state-led litigation against major carbon polluters, which would be modeled after the tobacco legislation first used in British Columbia. The article contemplates how these funds could be disbursed into disaster relief and no-fault insurance schemes to compensate for climate loss and damage, as well as briefly discussing the international concerns relevant to these domestic issues. Ultimately, it is determined that there are viable combinations of legislation, litigation, taxation, compensation, mitigation, adaptation, and insurance that can better prepare Canada for managing the high costs associated with anthropogenic climate change.

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INTRODUCTION: CLIMATE CHANGE IN CANADA

The world is getting warmer. There have been unprecedented changes to earth's climate since the 1950s and each of the last three decades has been successively warmer than any preceding decade since 1850.¹ Undoubtedly, there is a problem and it is clear human influence is contributing to observed climate change. Since the pre-industrial era, there has been a dramatic increase in anthropogenic greenhouse gas emissions that has led to “atmospheric concentrations of carbon dioxide, methane, and nitrous oxide that are unprecedented in the last 800,000 years.”² In a 2014 report, the Intergovernmental Panel on Climate Change (“IPCC”) used Representative Concentration Pathways (“RCP”) to outline the different trajectories that increases in surface temperature may take. RCP 2.6 represents a scenario where temperatures do not increase more than 2°C above pre-industrial temperatures, which would be in line with the upper limits from the Paris Agreement.³ Globally, the faster emissions are cut, the easier it will be to meet RCP 2.6.⁴

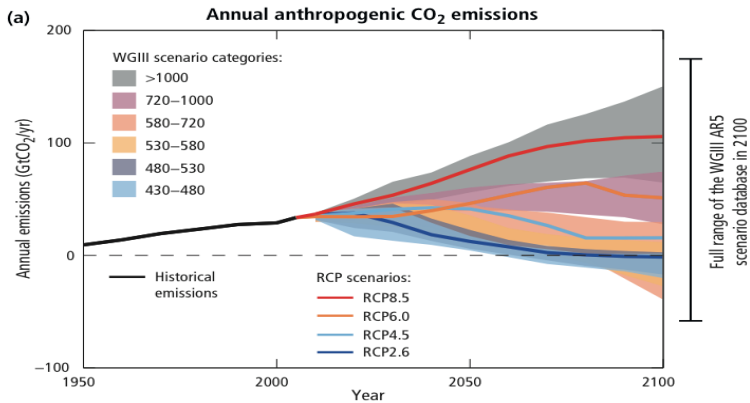


Figure 1: Details the expected RCPs in relation to annual emissions. Source: IPCC, 2014: *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental panel on Climate Change*, at 9.

¹ IPCC, 2014: *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental panel on Climate Change* [Core Writing team, RK Pachauri and LA Meyer eds] IPCC, Geneva, Switzerland, at 2.

² *Ibid* at 4.

³ *Ibid* at 9. Warming of less than 2° C would likely be exceeded under RCP 8.5, RCP 6.0, and RCP 4.5, but warming of 2° C is unlikely to be exceeded if global emissions follow RCP 2.6.

⁴ *Ibid*.

In 2016, the United Nations Framework Convention on Climate Change (“UNFCCC”) reached the COP-21 Paris Agreement, which has 195 signatories, 186 of which have ratified.⁵ The agreement seeks to limit the increase in global average temperature to well below 2°C above pre-industrial levels, and ideally to keep it as low as 1.5°C.⁶ However, based on current commitments, it is unlikely that the COP-21 temperature targets will be feasible.⁷ Rather, it is suggested that surface temperatures could increase by as much as 3.1-5.2°C by 2100.⁸ Regardless, global surface temperatures are expected to rise under even the most optimistic emission scenarios. Canada is already experiencing significant warming. Canada registered its warmest year on record in 2010, which was 3°C above normal, and Canada’s average annual surface temperature has warmed by 1.5°C from 1950-2010.⁹ The rate of warming differs across the country, but the average rate of warming over this period is about twice the global average.¹⁰

The implication of exceeding RCP 2.6 is that the attendant effects of climate change will occur with more frequency and with greater intensity.¹¹ The Canadian climate will not be immune from the deleterious effects of climate change. In Canada, rising temperatures will mean that severe precipitation events, droughts, heatwaves, floods, and other extreme weather events will become more prevalent.¹² Rising sea levels, changes in seasonal arctic ice flow, and changes in ground temperature will also pose significant problems.¹³ As the frequency and severity of these events intensify the costs associated with them will increase

⁵ United Nations, “*United Nations Treaty Collections*” (November 4, 2016), available online at: <<https://treaties.un.org/doc/Publication/MTDSG/Volume%20II/Chapter%20XXVII/XXVII-7-d.en.pdf> <https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en>.

⁶ *Paris Agreement*, FCCC/CP/2015, UNFCCC, 21st Sess, (2015) art 2(a).

⁷ Brad Plumer & Nadja Popovich, “Here’s How Far the World is from Meeting Its Climate Goals” (6 November 17) *The New York Times*, online: <<https://www.nytimes.com/interactive/2017/11/06/climate/world-emissions-goals-far-off-course.html>>; Lucas Bergkamp, “The Paris Agreement on Climate Change: A Risk Regulation Perspective” (2016) 7:1 *EJRR* 35 at 36; Rogelj et al, “Paris Agreement Climate Proposals Need a Boost to Keep Warming Well Below 2°C” (2016) 534 *Nature IJS* 631 at 631.

⁸ Bergkamp, *supra* note 7 at 36.

⁹ Natural Resources Canada, *Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation*, by Warren FJ & Lemmen DS eds, (Canada: Minister of Natural Resources, 2014), at 27.

¹⁰ Insurance Bureau of Canada, *The Economic Impacts of the Weather Effects of Climate Change on Communities*, (Guelph, 2015) at 32.

¹¹ IPCC, *supra* note 1 at 10.

¹² Warren & Lemmen, *supra* note 9 at 11.

¹³ IBC, *supra* note 10 at 32.

significantly. Canada's residential, commercial, industrial, and municipal infrastructure will be especially vulnerable to the effects of climate change. For example, a 2012 report by the Insurance Bureau of Canada ("IBC") found that 30% of Canada's municipal infrastructure was either "fair" or "very poor" and that the associated replacement costs were \$171.8 billion nationally.¹⁴ Loss and damage from climate change will expose both insurers and the Canadian government to significant risk, and by extension, all Canadians.

INSURANCE AND CLIMATE CHANGE IN CANADA

Canadian insurers and disaster relief funds are already paying out far more for climate related harms than they ever have before. In the last 6 fiscal years the federal government has spent more on recovering from large-scale natural disasters than in the previous 39 fiscal years combined.¹⁵ The federal Disaster Financial Assistance Arrangements program paid out \$2.4 billion from 1970-2008 and \$3.3 billion from 2009-2015.¹⁶ The private insurance industry displays a similar pattern. From 1983 to 2004, insured losses averaged \$373 million a year and they increased to an average of \$1.2 billion a year between 2005-2015.¹⁷ In a 2011 report, The National Roundtable on the Economy and the Environment projected climate costs, under a low climate change-slow growth scenario, to grow from \$5 billion a year in 2020 to somewhere between \$21 billion to \$43 billion a year by 2050.¹⁸ Alternatively, under a high climate change-rapid growth scenario, climate costs could increase to somewhere between \$43 billion to \$91 billion annually by 2050.¹⁹ These discrepancies highlight the uncertainty in modelling climate change related weather events, as well as the significant risks and costs associated with climate change.²⁰ The further we deviate from RCP 2.6

¹⁴ *Ibid* at 34.

¹⁵ Canada, Office of the Auditor General, *Report 2 – Mitigating the Impacts of Severe Weather*, (Report to Parliament), Spring 2016 Reports of the Commissioner of the Environment and Sustainable Development (Canada: 2016) at 1.

¹⁶ *Ibid*.

¹⁷ Canada, Clean Energy Canada, *The Costs of Climate Change*, by Clare Demerse, (Canada: 2016) at 3.

¹⁸ Canada, National Round Table on the Environment and the Economy, *Paying the Price: The Economic Impacts of Climate Change for Canada*, (Ottawa, Ontario: 2011) at 118.

¹⁹ *Ibid*.

²⁰ *Ibid*.

the higher these projected figures could run.

As the risks and unpredictability of these events increase there will be less insurance coverage available for the resulting losses.²¹ The response of Canadian insurers to recent catastrophic events indicates that these trends are already starting to take shape. The 2016 Fort McMurray wildfires are estimated to cost at least \$3.58 billion, while the 2013 Alberta floods caused about \$6 billion in damage.²² The latter event was largely uninsured, as one could not purchase insurance for overland flooding at that time, leaving the government to deal with the majority of the costs.²³ The Fort McMurray wildfires were mostly an insured event and the response of insurers is a glimpse to the future. Insurers received as many claims following the wildfires as they would normally see in a year. This led to delays and communication issues with policy holders, which were further compounded by consumer misconceptions regarding coverage.²⁴ Commentary from industry experts following the Fort McMurray wildfires also indicates that it is likely insurers, in their response to catastrophic weather events, will increase premiums and begin requiring the implementation of resiliency features to limit potential future damages.²⁵ The response of insurers in Alberta is not unique and it represents some of the problems that damage from climate change will pose for Canadians.

After the 2017 floods in Ottawa, numerous policy holders were denied coverage because the “water travelled over land.”²⁶ This specific restriction was a response to the 2013 Alberta floods.²⁷ Only fifteen insurance companies offer

²¹ Craig Brown & Sara Seck, “Insurance Law Principles: In an International Context: Compensating Losses Caused by Climate Change” (2013) 50:3 *Alta L. Rev.* 541 at 542.

²² Wallis Snowden, “Fort McMurray Wildfire Costliest Insured Disaster in Canadian History”, *CBC News* (07 July 2016), online: <<http://www.cbc.ca/news/canada/edmonton/fort-mcmurray-wildfire-costliest-insured-disaster-in-canadian-history-at-nearly-3-6b-1.3668602>>.

²³ *Ibid.*

²⁴ David Thurton, “A lot of learning to do”: Wawanesa Insurance on Fort McMurray Wildfire Response”, *CBC News* (15 November 2016), online: <<http://www.cbc.ca/news/canada/edmonton/a-lot-of-learning-to-do-wawanesa-insurance-on-fort-mcmurray-wildfire-response-1.3851122>>.

²⁵ Sharon Crowther, “Insurance Claim ‘Chaos’ Slows Fort McMurray Rebuild”, *The Globe and Mail* (24 March 2017), online: <<https://beta.theglobeandmail.com/real-estate/calgary-and-edmonton/insurance-claim-chaos-slows-fort-mcmurray-rebuild/article33800364/?ref=http://www.theglobeandmail.com&>>; Julie Cazzin, “Higher Insurance Premiums a Fallout of the Fort McMurray Fire”, *Maclean’s* (4 May 2017), online: <<http://www.macleans.ca/economy/higher-insurance-premiums-a-fallout-of-the-fort-mcmurray-fire/>>.

²⁶ James Bagnall, “The Great Flood of 2017: Aftermath Finds Many in Limbo”, *Ottawa Citizen* (2 July 2017), online: <<http://ottawacitizen.com/news/local-news/the-great-flood-of-2017-aftermath-finds-many-in-limbo>>.

²⁷ *Ibid.*

overland flood insurance, but if you live in a floodplain “the insurance is either expensive or capped – often both.”²⁸ The result is that many Ottawa homeowners, just like homeowners in Alberta three years earlier, had to turn to disaster assistance programs. In doing so, many homeowners found out that provincial disaster relief has strict stipulations about how and where you are allowed to rebuild.²⁹

Both insurers and disaster relief funds are trying to mitigate future costs by imposing requirements about how and where homes get rebuilt. These are but a few Canadian examples, yet a pattern is emerging – after catastrophic disasters insurers will respond by raising premiums, imposing requirements on future coverage, capping pay outs, adding strict exclusions, or removing themselves from that area of coverage altogether. It is also entirely possible that these catastrophic weather events will become uninsurable in the future, as the unpredictability and risk associated with climate harms increase.³⁰

INSURANCE LAW PRINCIPLES

The possibility for loss and damage from both the predicted and unforeseen effects of climate change are almost infinitely variable, so insurers will continually be exposed to unpredictable risks. As Craig Brown and Sara Seck have outlined, there will be consequences for traditional property insurance as loss and damage increase; for life, health, accident, and disease insurance as sickness and mortality rise; for professional liability insurance as builders and professionals are held to higher standards; for general commercial liability as corporations and businesses will face a higher risk of litigation; for credit risk as projects and developments are destroyed or delayed; and from new conceptions about what a “catastrophe” means in an insurance contract.³¹ Most importantly, these unpredictable risks will change the way insurers operate.

Insurance, at its core, is about transferring risk. To quote Denis Boivin, “risk

²⁸ *Ibid.*

²⁹ *Ibid.*

³⁰ Brown & Seck, *supra* note 21 at 542.

³¹ *Ibid.* at 545.

is a fortuitous event – an event that may or may not happen, the occurrence of which does not depend on the will of the insured.”³² Typical “first-party” insurance involves a policy holder (the first-party) who pays a premium (the fee for coverage and the consideration for the contract) to the insurer, who, in return for the fee, agrees to indemnify the policy holder should it incur a covered loss set out in the insurance contract.³³ A key principle of fortuity is that insurers do not cover risks that are certain to occur. For example, wear and tear is not covered in an insurance contract.³⁴ Insurers also prefer uncorrelated risks (i.e. fire, theft, or auto accidents) to correlated risks (i.e. floods, hurricanes, and forest fires).³⁵ As Brown and Seck note:

Insurers can provide protection against the financial consequences of loss for a fraction of that loss because they afford similar protection to multiple insureds knowing that loss is going to happen to a relative few of them, and it is not known in advance which of them will suffer loss. The key is the randomness of loss in terms of when it happens, to whom it happens, and its extent.³⁶

The unpredictable nature of climate harms, their severity, and the increasing certainty of their occurrence will create problems for insurers. Again to quote Brown and Seck, “unpredictability of risk is what insurers fear most. When faced with unpredictability, they assume the worst and price accordingly, or decline to cover the hazard at all.”³⁷ The problem is that climate risks are becoming more certain, but the corresponding increase of risk, as well as the nature and extent of that risk, remains unpredictable. It follows that insurers will respond to increased and uncertain risk by either expanding restrictions, increasing premiums, or simply withdrawing that type of coverage altogether.³⁸ This is exactly how Canadian insurers responded after the 2013 Alberta floods – few insurers even

³² Denis Boivin, *Insurance Law*, 2nd ed (Toronto: Irwin Law, 2015) at 28.

³³ Jeffrey W Stempel, “Insurance and Climate Change Litigation” in William CG Burns & Hari M Osofsky, eds, “*Adjudicating Climate Change: State, National, and International Approaches*” (New York: Cambridge University Press, 2009) 230 at 230-31.

³⁴ Boivin, *supra* note 32 at 28.

³⁵ Stempel, *supra* note 33 at 230, n 2.

³⁶ Brown & Seck, *supra* note 21 at 546.

³⁷ *Ibid* at 545.

³⁸ *Ibid* at 547.

offer overland flood insurance, those that do have expensive premiums and limited, capped coverage. Insurance companies are able to do this because insurance law is purely a contractual undertaking. Generally, where insurance companies no longer want to offer coverage for that type of loss or damage, they are mostly free to do so.

Insurance law looks to promote the financial interests of policy holders and support their confidence in the industry, while also recognizing the need for insurance companies to be profitable and financially stable.³⁹ Insurance law is inapplicable where there is no contract, because it simply does not apply.⁴⁰ There are situations, for example with automotive insurance, where legislation intervenes to control the transfer of risk and actually mandates that the transfer takes place, otherwise the risks faced by motorists would not be adequately covered at reasonable premiums.⁴¹ But, Brown and Seck accurately outline why legislative intervention that mandates coverage for catastrophic climate harm is unlikely:

A legislature is unlikely to impose upon insurers obligations to provide specific coverage at a specific premium without regard to realistic actuarial considerations. If the predictions mentioned previously hold true and certain types of catastrophic loss become uninsurable according to the principles of private insurance, mandatory provisions of coverage for inadequate premiums would be a recipe for financial calamity. Even mandated coverage must comply with basic insurance business principles.⁴²

Given the projected costs associated with climate change and based on realistic actuarial considerations, it seems inevitable that the traditional first-party insurance contract is going to have gaps in coverage, either due to unaffordable premiums, restrictive exclusions, or from insurers simply withdrawing coverage.

Liability insurance provides an alternative avenue to compensate for losses from climate change, and it will be more difficult for insurers to limit their

³⁹ *Ibid* at 546.

⁴⁰ *Ibid*.

⁴¹ *Ibid* at 556.

⁴² *Ibid* at 546.

exposure to climate related risks in this context.⁴³ Most major historical polluters will have some form of a comprehensive or commercial general liability (“CGL”) insurance or an “all-risk” commercial policy. These are best understood as a bundle of various coverages lumped together.⁴⁴ The same actuarial principles that will increase premiums and limit coverage under first-party insurance will apply to CGL insurance contracts too. For instance, asbestos exclusions are now common in CGL insurance contracts as a result of asbestos litigation in the 1980s and 1990s.⁴⁵ Yet, there are two critical aspects common to most CGL insurance contracts that will make it difficult for insurers to limit their risk exposure. First, they typically include a “duty to defend,”⁴⁶ and second, the latent nature of climate change harm means that older CGL policies without specific pollution exclusions may be triggered.⁴⁷

The duty to defend is conceptually broader than an insurer’s duty to indemnify, and this is especially important in relation to potential climate litigation.⁴⁸ In *Progressive Homes Ltd v Lombard Insurance Co of Canada*, the Supreme Court of Canada held that “an insurer is required to defend a claim where the facts alleged in the pleadings, if proven to be true, would require the insurer to indemnify the insured of the claim.”⁴⁹ The question is not whether the claim is likely to succeed at trial. Rather, the question is whether the claim, if successful, reveals a possibility for coverage under the policy. If so, the duty to defend is triggered.⁵⁰ This represents a significant risk to insurers. They could end up having to spend significant sums just defending climate litigation regardless of whether the claims are successful or not.

Insurers will undoubtedly still try to limit their exposure to the substantial costs associated with climate litigation. It is axiomatic to insurance law that intentional acts of the insured are not covered, and insurers are certainly going to contend that climate harms fall outside the scope of CGL insurance contracts.⁵¹

⁴³ Stempel, *supra* note 33 at 241.

⁴⁴ *Ibid* at 235.

⁴⁵ *Ibid* at 236, 248.

⁴⁶ Boivin, *supra* note 32 at 410; Stempel, *supra* note 33 at 235.

⁴⁷ Stempel, *supra* note 33 at 243-44.

⁴⁸ *Ibid* at 236-37.

⁴⁹ *Progressive Homes Ltd v Lombard General Insurance Co of Canada*, 2010 SCC 33 at para 19, 2 SCR 245.

⁵⁰ Boivin, *supra* note 32, at 410-411.

⁵¹ Stempel, *supra* note 33 at 241.

Insurers will assert that polluters – especially major polluters in the energy, transportation, and fossil fuel industries – knew what they were doing and that their actions were volitional conduct that cannot be considered a “fortuitous” event.⁵² Jeffrey Stempel suggests that it is generally a high bar to have claims excluded as a result of intentional conduct by the insured and that it will probably be difficult for insurers to prove polluters intended to bring about the deleterious effects of climate change.⁵³ However, it strains credibility for any polluter to seriously claim they were unaware of the dangers of climate change after 1990.⁵⁴ Not to mention, there is mounting evidence that major polluters were engaged in deceptive practices regarding the dangers of climate change.⁵⁵

There is also jurisprudence suggesting that intent can be imputed to polluters and that pollution is not necessarily “accidental” for the purpose of liability insurance coverage.⁵⁶ Imputed intent could permit the insurer to deny payment for the claim. Nonetheless, given the fact that insurers bear the onus of proof and given the traditional narrow interpretation of these exclusions, insurers will certainly have an uphill battle avoiding their duty to defend. Many insurers will likely be left defending actions and then trying to claim remuneration from the insured after the fact.⁵⁷ Express exclusion clauses will be similarly unhelpful, since they are generally strictly construed and insurers again bear the burden of demonstrating that the exclusion is clearly applicable.⁵⁸ Additionally, older CGL policies, which are likely to be triggered by climate litigation, probably will not have sufficiently explicit exclusion clauses to preclude a duty to defend.⁵⁹

The existence of CGL policies means that insurers’ exposure to the economic risks of climate change will not be limited to traditional first-party

⁵² *Ibid.*

⁵³ *Ibid.*

⁵⁴ Richard Heede, “Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers, 1854-2010” (2014) 122:1-2 *Climatic Change* 229 at 230; Martin Olszynski, Sharon Mascher, & Meinhard Doelle, “From Smokes to Smokestacks: Lessons from Tobacco for the Future of Climate Change Liability,” (2017) 30:1 *Geo Envtl L Rev* 1 at 15-16.

⁵⁵ Justin Gillis & Clifford Krauss, “Exxon Mobil Investigated for Possible Climate Change Lies by New York Attorney General” *The New York Times* (5 November 2015), online: <<https://www.nytimes.com/2015/11/06/science/exxon-mobil-under-investigation-in-new-york-over-climate-statements.html>>

⁵⁶ Brown & Seck, *supra* note 21 at 547.

⁵⁷ Stempel, *supra* note 33 at 245-47.

⁵⁸ *Ibid* at 245.

⁵⁹ *Ibid* at 243-244.

insurance contracts. Under CGL policies, insurers could see claims from an insured polluter in response to climate litigation against the insured party. Accordingly, it seems likely that insurers will play some role in defending climate change litigation on behalf of polluters. But it seems unlikely that insurers will have to actually compensate any of these claims, since climate litigation to date has mostly been stymied in the courts, as discussed below. Therefore, Canadians who will increasingly be unable to rely on first-party insurance policies will be left with inadequate means for compensation from climate harms. They will often be forced to rely on provincial or federal disaster relief assistance, which probably will not be able to fully compensate victims for loss and damage resulting from climate change.

POTENTIAL RESPONSES TO THE COSTS OF CLIMATE CHANGE

Litigating Climate Change: Nuisance and Negligence

The inadequate response of many governments in addressing and mitigating climate change has spurred an increase in climate related litigation over the past few years. However, the majority of these cases have not been aimed at compensation. Instead, they have sought to compel governments to follow international treaties and domestic legislation, as well as to force governments to contemplate climate change when creating policy or enacting legislation. In the landmark case of *Urgenda Foundation v The State of Netherlands*, the District Court held that the Dutch Government had to limit greenhouse gas (“GHG”) emissions by at least 25% by 2020 in comparison to 1990 levels.⁶⁰ In *Massachusetts v EPA*,⁶¹ the Supreme Court of the United States held that the state of Massachusetts had standing to bring the claim and that the U.S. Environmental Protection Agency had to regulate GHG emissions in accordance with the *Clean Air Act*.⁶² While these cases outline the potential viability of climate litigation going forward, there have been far more unsuccessful than successful cases to date. For instance, in

⁶⁰ Olszynski et al, *supra* note 54 at 18; *Urgenda Foundation v The State of Netherlands*, C/09/456689 HA ZA 12-1396.

⁶¹ *Massachusetts v EPA*, 546 US 497 (2007). Justice Stevens wrote for the majority in a narrow 5-4 decision.

⁶² *Clean Air Act*, 42 USCA § 7401.

Friends of the Earth v Canada (Governor in Council),⁶³ the Federal Court held that under the language of the *Kyoto Protocol Implementation Act* (“KPLA”),⁶⁴ it had no role in judicially reviewing the reasonableness of Canada’s efforts to meet its Kyoto commitments. Some sections of the *KPLA* seemed to specifically require Canada to honour its commitments to reduce emissions under the Kyoto Protocol.⁶⁵ Despite this, the Federal Court found there was a lack of binding language in the *KPLA* and expressed hesitation about adjudicating on policy decisions.⁶⁶

While many of the aforementioned cases are important in the climate change litigation context, the forms of relief sought will not help compensate victims of climate related harms. The case of *Native Village of Kivalina v ExxonMobil Corporation (Kivalina)* takes a novel, but increasingly popularized,⁶⁷ step in the direction of holding major polluters responsible for their contribution to climate related loss and damage.⁶⁸ In 2008, the Village of Kivalina faced relocation costs of \$95 to \$400 million after its coastline eroded because of melting sea ice, making the area nearly uninhabitable.⁶⁹ Kivalina’s claim was unsuccessful for a number of reasons,⁷⁰ but most importantly it failed because the District Court held that Kivalina lacked standing, since there was “no realistic possibility of tracing any particular alleged effect of global warming to any particular emissions by any

⁶³ *Friends of the Earth v Canada (Governor in Council)*, 2008 FC 1183 at para 46, 3 FCR 201 [Friends of the Earth].

⁶⁴ *Kyoto Protocol Implementation Act*, SC 2007, c 30 [repealed by the *Jobs, Growth and Long-term Prosperity Act*, SC 2012, c 19, s 699].

⁶⁵ *Ibid* at ss 4-5, 7.

⁶⁶ *Friends of the Earth*, *supra* note 63 at paras 33-37, 41.

⁶⁷ See for example, Andrew Gage & Michael Byers, “Payback Time? What the Internalization of Climate Litigation Could Mean for Canadian Oil and Gas Companies” (2014), online: *West Coast Environmental Law* <<https://www.wcel.org/publication/payback-time-what-internationalization-climate-litigation-could-mean-canadian-oil-and>>; David Grossman, “Tort-Based Climate Litigation” in William CG Burns & Hari M Osofsky eds, *Adjudicating Climate Change: State, National, and International Approaches* (New York: Cambridge University Press, 2009); Andrew Gage, “Climate Change Litigation and the Public Right to a Healthy Atmosphere” (2013) 24 J Envtl L & Prac 257; Olszynski et al, *supra* note 54 at 19-20; Michael B Gerrard, “What Litigation of a Climate Nuisance Suit Might Look Like” (2011) 12:2 Sustainable Dev L & Pol’y 12 at 12-13.

⁶⁸ *Native Village of Kivalina v ExxonMobil Corporation*, 663 F Supp (2d) 863 (2009) [*Kivalina*]. This decision was affirmed by the Court of Appeals for the Ninth Circuit in *Native Village of Kivalina v ExxonMobil Corp*, 696 F (3d) 849 (2012). In *Native Village of Kivalina v ExxonMobil Corporation*, 569 US 1000 (2013), the Supreme Court of the United States denied Kivalina’s petition for writ of certiorari, upholding the decision from the Ninth Circuit.

⁶⁹ Olszynski et al, *supra* note 54 at 19.

⁷⁰ *Ibid* at 19-20.

specific person, entity, [or] group at any particular point in time.”⁷¹ The *Kivalina* decision confirmed the prevailing academic consensus that causation would be a particularly challenging impediment to plaintiffs in climate change litigation.⁷² Beyond issues with causation, the viability of civil suits in either nuisance or negligence still remains very limited.

There are numerous obstacles to civil nuisance and negligence claims, to discuss all of them in sufficient detail would be outside the scope of this paper.⁷³ Instead, the focus will be on why climate litigation will likely be limited to recovering against non-government entities and why state-led litigation is the best option to compensate victims of climate harm. Firstly, it is clear that plaintiffs looking to recoup losses from climate related harm will probably not find a viable defendant in the government. It is well-established that when the government is making “core policy” decisions, their actions will not ground liability in tort.⁷⁴ A “core policy” decision is a decision or action that “[is] based on public policy considerations, such as economic, social and political factors, provided they are neither irrational nor taken in bad faith.”⁷⁵ For example, the decision not to honour the Kyoto Protocol commitments was undertaken with an eye to the significant economic considerations associated with Canada’s dependence on fossil fuels.⁷⁶ Thus, absent specific evidence of bad faith, it seems highly unlikely that any liability in tort will result from governmental decisions to prioritize Canada’s economic considerations over its environmental commitments.

It is somewhat incongruous to suggest that government actors and legislators will avoid liability before suggesting that polluters ought to be held liable, and that governments ought to facilitate the imposition of this liability.

⁷¹ *Kivalina*, *supra* note 68; Olszynski et al, *supra* note 54 at 20.

⁷² Olszynski et al, *supra* note 54 at 20; Gage, *supra* note 67 at 260-2; See also Jacqueline Peel, “Issues in Climate Change Litigation” (2011) 5:1 Carbon & Climate L Rev 15; David Hunter & James Salzman, “Negligence in the Air: The Duty of Care in Climate Change Litigation” (2007) 155:6 U Pa L Rev 1741; International Bar Association (“IBA”), “*Achieving Justice and Human Rights in an Era of Climate Disruption*” Climate Change Justice and Human Rights Task Force Report, (July 2014), London; David Weisbach, “*Negligence, Strict Liability, and Responsibility for Climate Change*” (2012) 97 Iowa L Rev 521; Grossman, *supra* note 67.

⁷³ See Brown & Seck, *supra* note 21 at 548-50 for a more complete outline of the various frailties at each level of a negligence claim.

⁷⁴ *R v Imperial Tobacco Canada Ltd*, 2011 SCC 42 at para 90, 2 SCR 45 [*Imperial Tobacco*]; *Just v British Columbia*, [1989] 2 SCR 1228 at para 20, 64 DLR (4th) 689.

⁷⁵ *Imperial Tobacco*, *supra* note 74 at para 90.

⁷⁶ *Friends of the Earth*, *supra* note 63 at para 12.

Major polluters have tended to view government regulation as the maximum constraint on their conduct rather than as a bare minimum,⁷⁷ and have for the most part tended to reduce emissions in strict accordance with government regulations and legislation, rather than exceeding the minimum targets.⁷⁸ Undeniably, Canadian governments must bear some of the blame for Canada's contributions to climate change and for their failure to facilitate creative solutions, because while our understanding of the risks attendant to climate change continue to evolve, the existence of climate related risks have still been apparent for a very long time.⁷⁹ However, even if governmental policy decisions were not barred from liability, and no matter how much enacted environmental legislation left to be desired,⁸⁰ it does not make sense in the context of compensating climate harms to draw these funds from the government.

In the face of shrinking insurance coverage, federal and provincial governments will be bearing a substantial portion of the costs associated with climate change through disaster relief programs.⁸¹ They will be forced to deal with the effects of their inadequate response to climate change head-on, and defending litigation would only exacerbate existing issues. Canadians would simply end up bearing the burden for past government conduct. Major carbon polluters are unlikely to voluntarily internalize the costs associated with their GHG emissions.⁸² Thus, in accordance with the polluter pays principle, equity, and concepts of corrective justice, major polluters should be forced to internalize at least some of the costs associated with their actions.⁸³ In many regards the government is in the best position to effectively and efficiently carry out tort-based litigation against major carbon polluters.⁸⁴

⁷⁷ Olszynski, *supra* note 54 at 8.

⁷⁸ *Ibid.*

⁷⁹ Heede, *supra* note 54 at 230; Olszynski et al, *supra* note 54 at 16; IPCC, *Climate Change: The IPCC Scientific Assessment 1990, Summary for Policy Makers*, Report of Working Group One (available at: https://archive.ipcc.ch/ipccreports/far/wg_1/ipcc_far_wg_1_spm.pdf).

⁸⁰ Mike De Souza, "Oil Lobbyists Approved Harper's Climate Policy as 'Elegant' Approach" *Postmedia News* (29 April 2012).

⁸¹ Commissioner of the Environment and Sustainable Development, *supra* note 15 at 2.

⁸² Gage & Byers, *supra* note 67 at 12.

⁸³ David Grossman, "Warming Up to A Not So Radical Idea: Tort-Based Climate Change Litigation" (2003) 28 *Colum J Env't L* 1 at 5; Boris N Mamlyuk, "Analyzing the Polluter Pays Principle Through Law and Economics" (2009) 18:1 *SE Env't LJ* 40 at 42-4.

⁸⁴ Grossman, *supra* note 67 at 217.

With the government acting as plaintiff in a tort-based climate suit, some of the causation issues that might frustrate tort claims are overcome. For instance, governments are able to aggregate damages on a much larger scale than a single litigant or even a community.⁸⁵ As David Grossman notes, a single sinkhole in a laneway as a result of thawing permafrost has a much more tenuous causal chain than a provincial government tendering evidence of damaged roadways across an entire province or state.⁸⁶

The most viable and commonly discussed tort in the climate context is nuisance.⁸⁷ The basic principle of public nuisance is that there has been unreasonable interference with a right common to the general public (for example, air quality is recognized as a general public right).⁸⁸ Public nuisance claims have two important features that make them viable in the context of climate litigation. First, they are typically brought by an Attorney General, so they are a natural fit for the government as plaintiff.⁸⁹ Second, the tort of public nuisance simplifies the causal chain by focusing on unreasonable interference with a public right, rather than a specific harm.⁹⁰ The focus on the unreasonable interference with a public right places greater emphasis on the harm suffered and comparatively⁹¹ less emphasis on the defendant's conduct or intentions.⁹² This naturally results in the court balancing the utility of the defendants' conduct or interference against the harm caused.⁹³ As the costs associated with climate change continue to increase, the balancing part of this analysis should start to tip toward the harm suffered by plaintiff.

⁸⁵ *Ibid.*

⁸⁶ *Ibid.*

⁸⁷ Gage, *supra* note 67 at 262; Gerrard, *supra* note 67; Olszynski et al, *supra* note 54 at 28; Grossman *supra* note 67 at 195-196.

⁸⁸ Gage, *supra* note 67 at 262-7; Grossman *supra* note 67 at 195-7; *British Columbia v Canadian Forest Products*, 2004 SCC 38 at para 74, 2 SCR 74.

⁸⁹ Gage, *supra* note 67 at 262.

⁹⁰ *Ibid.* The connection between a defendants' emissions and the harm suffered by a plaintiff is often tenuous. It requires the plaintiff to prove a long chain of causation. While claims in both public and private nuisance could potentially be viable, a claim in public nuisance is preferable to private nuisance because it focuses on the effect of the defendants' actions in regard to their interference with a public right. This naturally simplifies the causal steps in comparison with a private nuisance claim, since it is more direct than trying to prove that a single emitter was somehow responsible for rising temperatures, which in turn caused a severe weather event that then damaged an individual plaintiff's personal property.

⁹¹ The standard of care branch in a claim for negligence places comparatively more emphasis on the defendant's conduct when compared to the analysis undertaken in a tort of public nuisance.

⁹² Grossman, *supra* note 67 at 195-7.

⁹³ Philip H Osborne, "The Law of Torts" 5th ed (Toronto: Irwin Law, 2015) at 418.

Many of the issues limiting a claim in nuisance are amplified by a claim in negligence. Potential problems exist at almost every single stage of a negligence claim.⁹⁴ While a government plaintiff in a negligence claim might potentially overcome some of the standing, justiciability, and causation issues, there remain a number of enduring problems.⁹⁵ Yet, it seems likely that many producers, especially in the automotive industry, owed a duty to manufacture their products reasonably and to warn consumers about the dangers associated with them.⁹⁶ It has been apparent at least since the early 1990s that humans were contributing to global warming and that there were dangers associated with anthropogenic climate change.⁹⁷ These dangers have only become better understood through the end of that decade and into the present century.

In many cases, large-scale polluters from the energy, agricultural, and transportation industries were acutely aware of the harm they could cause and in some cases actively misled public opinion about the nature and extent of these potential dangers.⁹⁸ Thus, it can credibly be argued that the harms were and are reasonably foreseeable.⁹⁹ Defendants are generally only held liable to industry standards at the time of their alleged negligence or nuisance, but if an entire industry was engaged in conduct that was obviously fraught with risk, then industry standards will not be of much assistance.¹⁰⁰ Standard of care is an objective determination that considers whether there was a reasonably foreseeable risk, the likelihood of the harm or damage, the seriousness of the threatened harm, the cost to prevent or reduce that harm, the utility of the defendant's conduct, and the applicable industry standards or customs.¹⁰¹

Determinations regarding standard of care often involve an economic cost-benefit analysis, which considers the cost of preventative measures against the

⁹⁴ Brown & Seck, *supra* note 21 at 548; Gage & Byers, *supra* note 67 at 19-22.

⁹⁵ Grossman, *supra* note 67 at 206, 213, 215.

⁹⁶ Olszynski et al, *supra* note 54 at 30.

⁹⁷ *Ibid*; Heede, *supra* note 54 at 230. The IPCC warned about GHG emissions in relation to global warming in 1990.

⁹⁸ Gillis & Krauss, *supra* note 55; Geoffrey Supran & Naomi Oreskes, "Assessing ExxonMobil's Climate Change Communications (1977-2014)" (2017) 12 Environmental Research Letters 1 at 15.

⁹⁹ Olszynski et al, *supra* note 54 at 30. See also *The T.J. Hooper*, 60 F2d 737 (2d Cir 1932). In this case, the failure to equip tugs with radio equipment was negligent, despite the fact that it was industry standard not to do so.

¹⁰⁰ Osborne, *supra* note 92 at 38.

¹⁰¹ *Ibid* at 29-50.

cost of the harm. If the cost of preventative measures exceeds the cost of the harm occasioned, then it ought not to be taken.¹⁰² As the damage and costs resulting from GHG emissions mount, it seems likely that this analysis will begin to favour the prevention of these harms. As such, the use of the top industry standards may prove to be a compelling defence for fossil fuel and automotive companies.¹⁰³ Alternatively, failing to adhere to best practices or engaging in openly deceptive practices, may make certain companies an apt target for climate litigation.¹⁰⁴ As Martin Olszynski, Sharon Mascher, and Meinhard Doelle note, the standard of care inquiry is specific to the tort of negligence, but the reasonableness of the defendant's conduct will be an important consideration in any climate-related tort.¹⁰⁵

Ultimately, state-led climate litigation helps overcome some of the jurisdictional, standing, and causation issues common to most civil litigants.¹⁰⁶ In many respects a public nuisance claim brought by an Attorney General seems to be the most viable tort for effective state-led litigation.¹⁰⁷ Yet, public nuisance claims will not adequately compensate the type of widespread, specific harm to property and person that will result from climate change. In this regard, negligence is the optimal tort for recovering against major carbon polluters for specific harms to property and infrastructure. But negligence in the climate change context is currently plagued by a number of issues at every level of the analysis and these stages of "prospecting" and "defining" may take the common law years to flesh out.¹⁰⁸ Gage and Byers note that novel fields of civil claims are typified by an initial period of trial and error where the likelihood of success is initially underestimated before eventual success and "mega-recovery."¹⁰⁹

¹⁰² *Ibid* at 40.

¹⁰³ CBC News, "Going Electric" (3 October 2017), online: <<http://www.cbc.ca/news/business/going-electric-1.4192167>>.

¹⁰⁴ Guilbert Gates et al, "How Volkswagen's 'Defeat Devices' Worked" *The New York Times* (16 March 2017), available online at: <<https://www.nytimes.com/interactive/2015/business/international/vw-diesel-emissions-scandal-explained.html>>; Hunter & Salzman, *supra* note 72 at 1773-1774; Grossman, *supra* note 67 at 204-05.

¹⁰⁵ Olszynski et al, *supra* note 54 at 32.

¹⁰⁶ Gage, *supra* note 67 at 262; see also 262, n 13.

¹⁰⁷ *Ibid*.

¹⁰⁸ Gage & Byers, *supra* note 67 at 22.

¹⁰⁹ *Ibid*.

There may well be successful civil actions in negligence and nuisance in the future,¹¹⁰ and as Jeffrey Stempel has hypothesized, the interplay of experienced insurance litigators defending these claims may help order the process.¹¹¹ But Stempel's view seems a bit idealistic. It seems more likely that insurers and carbon polluters will simply frustrate the process of climate litigation in a manner similar to how tobacco companies successfully defended litigation for decades.¹¹² As Olszynski, Mascher, and Doelle note, private litigation of tobacco companies had been largely unsuccessful until tobacco legislation "fundamentally changed the rules of the tobacco liability game."¹¹³

The blueprint for successful climate litigation exists, the Canadian government just needs to put it to use. Canada cannot wait for climate litigation to advance out of its infancy stage. Loss and damage from anthropogenic climate change already costs Canada billions every year. As a matter of efficiency, it makes sense for state-led climate litigation to take the lead against major carbon polluters. Richard Heede's research has outlined the major historical GHG polluters.¹¹⁴ These major polluters represent the first step for state-led climate litigation.¹¹⁵ Indeed, the Canadian government litigating against major carbon polluters and then allocating those funds to disaster relief or no-fault climate insurance programs would be more practical than proceeding through the trials and tribulations of civil litigation. Being proactive is going to be imperative. State-led climate litigation that is enabled by legislation will be more effective and efficient in holding polluters accountable than relying on common law developments. Ideally, as a society we want compensation from those responsible for causing

¹¹⁰ *Ibid* at 16-18.

¹¹¹ Stempel, *supra* note 33 at 250-51.

¹¹² Gage & Byers, *supra* note 67 at 13; BA Levin, "The Liability of Tobacco Companies – Should Their Ashes Be Kicked" (1987) 29 *Ariz L Rev* 195 at 200.

¹¹³ Olszynski et al, *supra* note 54 at 12-13.

¹¹⁴ Heede, *supra* note 54 at 231-34. Heede's research has found that about 63% of global industrial emissions between 1751-2010 can be attributed to 90 companies. They are commonly referred to as the "carbon majors." It is also important in the climate litigation context, since more than half of the emissions have been emitted since 1986.

¹¹⁵ Gage & Byers, *supra* note 67 at 15. Gage & Byers noted that there are five oil and gas companies from Heede's report that are listed on the Toronto Stock Exchange. If the tobacco legislation was adopted and implemented in the climate context, these five companies would represent the natural starting point for state-led climate litigation.

harm or damage, and in the climate context this will require litigating against the major carbon polluters.

The Government as Plaintiff: Tobacco Legislation Method

Martin Olszynski, Sharon Mascher, and Meinhard Doelle have thoroughly explored the use of tobacco legislation in the climate litigation context.¹¹⁶ The IBA,¹¹⁷ as well as Andrew Gage and Margaretha Wewerinke,¹¹⁸ have both published separate “Model Climate Acts.” It is again outside the scope of this paper to consider all three in full, but they offer additional ideas on potential climate legislation and also provide important perspective on the potential for international climate litigation. The model legislation from Olszynski, Mascher, and Doelle is preferable for the scope of this paper because it focuses specifically on domestic litigation and it incorporates a realistic application of previous Canadian tobacco legislation in a uniquely Canadian context. The application of this type of legislation in the climate context seems both applicable and desirable.¹¹⁹

In *British Columbia v Imperial Tobacco Canada Ltd*,¹²⁰ the Supreme Court of Canada, despite vigorous opposition from tobacco companies, upheld the constitutionality of the *Tobacco Damages and Health Care Costs Recovery Act* (“*TDHCCRA*”).¹²¹ This legislation allowed the British Columbia government to directly recover against tobacco companies for healthcare costs associated with tobacco related disease.¹²² Olszynski, Mascher, and Doelle listed four concepts

¹¹⁶ See Olszynski et al, *supra* note 54. The authors come to the conclusion that this type of legislation, while not without its constraints and issues, is both likely and feasible. Their conclusions are mostly supported by this paper, and given the breadth and detail of their analysis, this section of the paper adopts many of their findings and suggestions. For a more detailed account of the history of tobacco legislation and its parallels to climate litigation refer to their article.

¹¹⁷ IBA, *supra* note 72 at 127-36.

¹¹⁸ Andrew Gage & Margaretha Wewerinke, “Taking Climate Justice into Our Own Hands: A Model Climate Compensation Act” (2015), online: *West Coast Environmental Law* <https://www.wcel.org/sites/default/files/publications/cca_report_updated_web.pdf>.

¹¹⁹ Olszynski et al, *supra* note 54 at 9; Gage & Byers, *supra* note 67 at 35-36.

¹²⁰ *British Columbia v Imperial Tobacco Canada Ltd*, 2005 SCC 49 at para 7, 2 SCR 473. [BC v Imperial]

¹²¹ *Tobacco Damages and Health Care Costs Recovery Act*, SBC 2000, c 30 [TDHCCRA]; Olszynski et al, *supra* note 54 at 7; Gage & Byers, *supra* note 67 at 35.

¹²² *JTI-Macdonald Corp v AGBC*, 2000 BCSC 312 at para 12, 184 DLR (4th) 335; Olszynski et al, *supra* note 54 at 7; Gage & Byers, *supra* note 67 at 35.

from the tobacco legislated which could be “highly relevant” to the climate change liability context:

- (1) It creates a *direct action* against tobacco companies by the provinces to recover the public costs of healthcare incurred as a result of tobacco-related disease where such disease is the result of some “tobacco-related wrong”, defined broadly as the breach of “a common law, equitable or statutory duty or obligation owed to persons” in that province;
- (2) It permits the provinces to use statistical, epidemiological, and sociological evidence to establish *causation on an aggregate basis* and to quantify damages (i.e. the province’s cost of healthcare services for tobacco-related disease
- (3) It *apportions liability based on the market share* of particular tobacco companies; and
- (4) It *applies retroactively*.¹²³

In *British Columbia v Imperial Tobacco Canada Ltd*, Justice Major held:

... s.2(1) [of the *Tobacco Damages and Health Care Costs Recovery Act*] creates a cause of action by which the government of British Columbia may recover from a tobacco manufacturer money spent treating disease in British Columbians, where such disease was caused by exposure to a tobacco product (whether entirely in British Columbia or not), and such exposure was caused by that manufacturer’s tort in British Columbia, or breach of a duty owed to persons in British Columbia.¹²⁴

The Supreme Court of Canada’s interpretation of the *TDHCCRA* created a distinct and direct cause of action that solved many of the issues that were hampering tort litigation against tobacco companies.¹²⁵ Specifically, it solved many of the issues relating to causation and the apportionment of damages, which

¹²³ Olszynski et al, *supra* note 54 at 12-13 [emphasis added].

¹²⁴ Olszynski et al, *supra* note 54 at 26; *BC v Imperial*, *supra* note 120 at paras 2-7.

¹²⁵ *BC v Imperial*, *supra* note 120 at para 7.

are two of the biggest hurdles in the climate context.¹²⁶ The *TDHCCRA* restricted liability (i.e. potential defendants) to “manufacturers”¹²⁷ but defined the term broadly.¹²⁸ The tobacco legislation indicates that legislation in the climate context would not need to target all potential defendants to maintain its legality, rather it could target specific industries or classes of corporations within industries to attract liability.¹²⁹

Potential climate legislation would rely on state-led litigation, either at the provincial or federal level – or both.¹³⁰ It would also be amenable to nuisance, negligence, or other various torts.¹³¹ Improving the viability of a claim in negligence would be critical, as it would allow provincial and federal governments to recover for expenses related to direct harm incurred by its constituents or for damage to state infrastructure. Climate legislation could address issues about limitation periods, recognize or create new legal rights, provide reciprocal enforcement, and define remedies.¹³² Most importantly though, this legislation would directly address issues of causation and apportionment. Under the ‘but for’ causation standard, it would be difficult if not impossible to prove that the associated climate harms would not have occurred absent a specific polluters’ emissions.¹³³ Instead, climate legislation could use a varied form of the material contribution of risk test set out by the Supreme Court of Canada in *Clements v. Clements*.¹³⁴ Regardless of the exact approach taken, the legislation will need to

¹²⁶ Peel, *supra* note 72 at 16. Peel refers to the drop in the “drop in the ocean” problem, which outlines that it is difficult to say any one entity is responsible for climate change given the immense number of polluters spread out around the globe. It makes determining contribution difficult. Peel also notes the issue of “proof” (i.e. that it is almost impossible to prove that GHG emissions from a particular entity or facility gave rise to a specific impact or harm).

¹²⁷ *TDHCCRA*, *supra* note 121 at s 1.

¹²⁸ Olszynski et al, *supra* note 54 at 34.

¹²⁹ *Ibid* at 35.

¹³⁰ *Ibid* at 26.

¹³¹ *Ibid* at 28-31.

¹³² Gage & Byers, *supra* note 67 at 36.

¹³³ Osborne, *supra* note 92 at 54. The ‘but for’ test determines causation based on a simple question, “would the plaintiffs damage have occurred *but for* the defendant’s negligence?”

¹³⁴ *Clements v Clements*, 2012 SCC 32 at paras 40, 46, 2 SCR 181; Olszynski et al, *supra* note 54 at 42. The “material contribution to risk” test is utilized where the ‘but for’ test has essentially been satisfied, but has broken down when applied to each defendant individually. Olszynski et al have noted that the legislation could, as it did in the tobacco context, create a rebuttable presumption that the costs incurred by the province were the result of emissions-generating activities. The defendants would be subject to liability that they did not cause alone, subject to a reverse burden of proof where it would fall on them to satisfy the court on the balance of probabilities that their breaches did not cause or contribute to costs incurred by the province. They also note that test does not work seamlessly and some variation to the traditional *de minimus*

adapt the common law principles surrounding causation to ensure a fair but effective test for causation.

Apportionment is a specifically troublesome aspect of climate litigation and it will take creative solutions from the legislature to devise a formulation that is both fair and logically sound. Olszynski, Mascher, and Doelle have suggested that the legislation could divide “the cost incurred by a government in a given year by the total GHG emissions in that same year, and use the resulting cost per ton as the basis for apportioning liability.”¹³⁵ This is imperfect because the majority of the costs incurred will be in the future and, hopefully, the bulk of the emissions will have been emitted in the past. It seems necessary then to ensure that the formula for apportioning damages takes into account historical emissions, while also incorporating considerations of present day contributions and reductions.

Determining the parameters of any potential formula for apportioning damages will be complex. Ideally, legislation will enable the government to recover against corporations for past pollution that pre-dates the legislation, while simultaneously allowing them to spur better industry practices by recovering for continued excess emissions after the legislation is enacted. A formula of this nature would also raise some difficult questions – how far back should liability go and on what basis? Unfortunately, there is no neat and tidy conceptual framework to deal with climate litigation and any date selected could be criticized as being somewhat arbitrary, but a date set within 1986-1990 seems the most logical. Heede’s research noted that half of the industrial CO₂ and CH₄ emitted between 1751 and 2010 has been emitted since 1984.¹³⁶ In 1990, the IPCC released its First Assessment Report that linked, with certainty, emissions resulting from human activities to substantial increases in atmospheric concentrations of GHG and a corresponding increasing in additional warming to Earth’s surface.¹³⁷ Accordingly, it seems appropriate to begin imposing liability on polluters at a time where their emissions increased despite credible warnings about the adverse

rule would be necessary, since even the carbon majors from Heede’s analysis would be excluded by the operation of this rule.

¹³⁵ Olszynski et al, *supra* note 54 at 44.

¹³⁶ Heede, *supra* note 54 at 234. “Of the emissions traced to carbon major fossil fuel and cement production, half has been emitted since 1986.”

¹³⁷ *Ibid*, at 230; Olszynski et al, *supra* note 54 at 16.

impact they would have on earth's climate. The formula could then apportion liability based on the percentage of the specific companies' contribution to emissions during the period. As methods for modelling climate change improve, it will become easier to apportion fault and determine causation for climate related harms.

A corollary and critically important benefit to immediately adopting climate legislation would be to spur better industry wide standards in regards to limiting GHG emissions. The more GHG that continues to enter the atmosphere, the more difficult it will be to meet the temperature goals set out in the Paris Agreement.¹³⁸ Climate legislation would put the proverbial writing on the wall for GHG emitters that they either need to shape up or keep paying out. The fossil fuel, automotive, and energy sectors have left a lot to be desired with respect to their disclosure of the associated risks of climate change and, in at least a few instances, they have gone as far as to actively engage in misinformation.¹³⁹ As previously mentioned, the reasonableness of companies' actions will be directly relevant to most torts, so engaging in best practices or perhaps even exceeding industry standards will limit future liability for major carbon polluters.¹⁴⁰ To summarize, enacting climate legislation modeled after the tobacco legislation will accomplish two critical things: firstly, it will allow the federal or provincial government(s) to recoup losses associated with climate change; and secondly, it will push major carbon polluters to decrease their emissions in the interest of reducing their future liability.

Filling the Gaps: Disaster Relief and No-Fault Insurance

Irrespective of how governments can raise additional funds from climate litigation, there must be efficient, cost-effective programs in place to help fill the impending gaps in first-party insurance coverage. One way to provide compensation would be through a more comprehensive and robust disaster relief

¹³⁸ IPCC, *supra* note 1 at 3-9; *Paris Agreement*, *supra* note 6 at preamble, art 2(a).

¹³⁹ Gates, *supra* note 104; Gillis & Krauss, *supra* note 55; Olszynski et al, *supra* note 54 at 24; Kathy Mulvey & Seth Shulman, "The Climate Deception Dossiers: Internal Fossil Fuel Industry Memos Reveal Decades of Corporate Disinformation" (July 2015) Union of Concerned Scientists, online: <<https://www.ucsusa.org/sites/default/files/attach/2015/07/The-Climate-Deception-Dossiers.pdf>>.

¹⁴⁰ Olszynski et al, *supra* note 54 at 45; Grossman, *supra* 67 at 204-5.

program. The federal government has recently rolled back what they are willing to spend on disaster relief.¹⁴¹ Instead, the federal government has prioritized funding disaster mitigation and have allocated \$2-billion for disaster mitigation funding in the most recent federal budget.¹⁴² This shift in funding comes after the Disaster Financial Assistance Arrangements (“DFAA”) program paid out more during the fiscal years from 2009-10 to 2014-15 than during the preceding 39 years combined.¹⁴³ While it is important to have the necessary funding available to augment provincial disaster relief, it is probably sound policy to begin funding adaptation efforts as well. Studies show that adaptation and mitigation spending will save more money in the long run and lead to more efficient results.¹⁴⁴ These additional funds could be used to improve flood plain mapping, help build above code, or improve deficient infrastructure.¹⁴⁵ The question remains whether provinces will maximize this adaptation and mitigation funding, since prior mitigation funding under the DFAA program was often not utilized as effectively by the provinces as it could have been.¹⁴⁶

If the federal government continues to cut disaster relief funding in favour of funding mitigation efforts, then the bulk of the costs associated with loss and damage will be borne by the provinces. At present, provinces have to apply to the federal government to have a portion of their costs reimbursed through the DFAA program.¹⁴⁷ Currently, pursuant to the cost sharing formula of the DFAA, a province must spend more than \$3.19 per capita before it can apply for any federal funding.¹⁴⁸ In 2015, the federal government increased the per capita provincial spending required to receive 90% reimbursement from \$5 per capita

¹⁴¹ Maura Forrest, “Federal Government Cutting Back on Disaster Assistance as Floods Become More Severe”, *The National Post* (10 May 2017), online: <<https://nationalpost.com/news/politics/federal-government-cutting-back-on-disaster-assistance-as-floods-become-more-severe>>.

¹⁴² Don Forgeron, “Ottawa Gets It Right on Funding for Disaster Mitigation” *The Globe and Mail* (30 April 2017), online: <<https://www.theglobeandmail.com/report-on-business/rob-commentary/ottawa-gets-it-right-on-funding-for-disastermitigation/article34860059/>>. Don Forgeron is the CEO of the Insurance Bureau of Canada and was writing an opinion piece for *The Globe and Mail*.

¹⁴³ Spring 2016 Reports of the Commissioner of the Environment and Sustainable Development, *supra* note 15 at 2.

¹⁴⁴ *Ibid* at 3; National Round Table on the Environment and the Economy, *supra* note 18 at 119-20.

¹⁴⁵ Spring 2016 Reports of the Commissioner of the Environment and Sustainable Development, *supra* note 15 at 3.

¹⁴⁶ *Ibid* at 12.

¹⁴⁷ Public Safety Canada, *Guidelines for the Disaster Financial Assistance Arrangements*, (Canada: 2019) online: <<https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rcvr-dsstrs/gdlns-dsstr-ssstnc/index-en.aspx>> [Guidelines for the DFAA].

¹⁴⁸ *Ibid*.

to \$15.97 per capita.¹⁴⁹ Thus, provinces are expected to bear a significant portion of the costs before federal funding becomes available, so what provinces choose to cover or not to cover becomes very important.

Many of the provinces have similar acts in place for disaster assistance. In British Columbia, the *Compensation and Disaster Financial Assistance Regulation* (“CDFAR”) sets out the particulars of the provinces’ approach to disaster response.¹⁵⁰ Following a disaster, the government will set the criteria for assistance and appoint adjusters who make suggestions about the amount of assistance, and applicants can appeal these decisions if they are not satisfied.¹⁵¹ Disaster assistance is limited to a principal residence, farm materials, community service materials, or small businesses.¹⁵² Applicants can also have their claim reduced or denied if it is determined that they did not take sufficient action to protect their property “before, during, or after the occurrence of the disaster.”¹⁵³ Claims will also be denied if insurance was “reasonably and readily available” for the damage suffered.¹⁵⁴ The CDFAR also requires structures erected in a flood plain to be properly protected in order to be eligible for funding.¹⁵⁵ The end result is that there are a number of exclusions and requirements for individuals to receive funding. It is also clear that both the provincial and federal governments are trying to reduce their involvement in flood assistance, which is not surprising given the high costs generally associated with flooding.¹⁵⁶

The CDFAR sets a limit on relief to 80% percent of the amount over \$1,000, up to a maximum award of \$300,000.¹⁵⁷ In Alberta, like British Columbia, the Minister can determine appropriate damages and these findings can also be appealed.¹⁵⁸ There are also similar limits on acceptable claims.¹⁵⁹ Ontario also has similar cost limitations on items claimed, on requests for appeal, on eligibility

¹⁴⁹ *Ibid.* See Table 1 – Cost-sharing formula up to January 31, 2015.

¹⁵⁰ Compensation and Disaster Financial Assistance Regulation, BC Reg 211/2105 (“CDFAR”).

¹⁵¹ *Ibid.* at s 19; *Emergency Program Act*, RSBC 1996 c 111, at ss 1(1), 19(1); Brown & Seck, *supra* note 21 at 558.

¹⁵² CDFAR, *supra* note 150 at ss 8(1), 9.

¹⁵³ *Ibid.* at s 16.

¹⁵⁴ *Ibid.* at s 8(1), “eligible costs” (a).

¹⁵⁵ *Ibid.* at s 15.

¹⁵⁶ Jason Thistlethwaite & Daniel Henstra, “Municipal Flood Risk Sharing in Canada: A Policy Instrument Analysis” (2017) 42:4 Canadian Water Resources J 349 at 349-353; Bagnall, *supra* note 26.

¹⁵⁷ CDFAR, *supra* note 150 at s 13.

¹⁵⁸ *Disaster Recovery Regulation*, Alta Reg 51/1994, at ss 2, 7-8.

¹⁵⁹ *Ibid.* at ss 3, 9.

requirements for reimbursement, and pays 90% of a claim after \$500 dollars up to a limit of \$250,000.¹⁶⁰ Thus, in many provinces, disaster assistance is essentially acting as an insurance plan that only covers damage to what the province deems to be essential items or property, and generally restoration is limited to restoring basic conditions.

The emphasis on taking reasonable steps to protect personal property and limit damage is important because this will help governments reduce their costs. However, exclusions and stringent protection requirements regarding flood zones are common to many provincial relief funds. As a result, these policies are likely to create classes of claimants who are unfairly subjected to loss and damage from climate change without opportunity for relief. It will be important to combine federal funding, which is increasingly focused on adaptation and mitigation, with effective provincial funding for post-disaster relief to help support claimants who are adversely affected by climate change. As evidenced by the response to the 2017 Ottawa floods, it seems likely that after major flooding events we will not be able to build where we have or how we have previously.¹⁶¹ As such, adaptation and mitigation will need to be absorbed into our response to disaster relief in an effort to limit future expenses.

It could also be feasible for provinces to put funds acquired from climate litigation toward a form of no-fault climate insurance. The guideline would be something similar to a worker's compensation model. Traditional worker's compensation has meant that workers give up their right to sue for negligent injury (workable in the climate context because the government would be litigating instead) and in return, they are guaranteed compensation for injuries suffered at work irrespective of fault.¹⁶² Workers' compensation funds would receive contributions from employers relative to their accident history and the payments would then be administered by the government.¹⁶³ In the climate

¹⁶⁰ Ontario Municipal Affairs, *Disaster Recovery Assistance for Ontarians Program Guidelines*, online: <<http://www.mah.gov.on.ca/AssetFactory.aspx?did=13630>>. See s 2.3 for cost limits, s 2.7 for reconsideration, and ss 3-6 for eligibility of homeowners, small businesses, not-for-profit organizations, and farms.

¹⁶¹ Bagnall, *supra* note 26; Warren & Lemmen, *supra* note 9 at 149-53.

¹⁶² Brown & Seck, *supra* note 21 at 555; Samuel A Rea, Jr, "Economic Analysis of Fault and No-Fault Liability Systems" (1987) 12 CBLJ 444 at 452.

¹⁶³ Brown & Seck, *supra* note 21 at 555; Rea, *supra* note 162 at 452.

context, the program could be partially funded through the litigation of carbon polluters (or through other means of acquiring funds established through the legislation) and the provinces would then distribute funding to claimants who have suffered climate related harms.

A revamped and enhanced disaster relief program remains preferable to the worker's compensation model for a few reasons. Firstly, there are existing disaster relief funds that can be adapted upon and improved, whereas a no-fault climate insurance program would be a novel undertaking. Secondly, under existing disaster funding there is an impetus placed on applicants to exercise due care and take reasonable precautions to limit their damages. Admittedly, similar requirements could be attached to a no-fault program but this would contravene the general premise behind a "no-fault" program, since they generally compensate irrespective of the reasonableness of the claimants conduct.¹⁶⁴ Lastly, there are existing mechanisms in federal and provincial disaster relief funds to more efficiently integrate adaptation and mitigation into the programs, which will help limit future costs. Regardless of the program utilized, the essential component of any program will be to allow provincial constituents to augment their decreasing insurance coverage.

As insurance premiums and deductibles increase, a more robust and comprehensive disaster relief program could allow claimants to utilize their government funding to make their insurance coverage more affordable.¹⁶⁵ Functionally, if a claimant received a \$150,000 award, this could then be utilized as a deductible for a larger insurance claim.¹⁶⁶ If climate litigation can infuse funding to disaster relief programs, then the interplay between disaster relief funding and private insurance provides the potential for a number of creative solutions to maintain comprehensive coverage despite increasingly unpredictable risk.

¹⁶⁴ Rea, *supra* note 162 at 452.

¹⁶⁵ Brown & Seck, *supra* note 21 at 557.

¹⁶⁶ *Ibid.*

INTERNATIONAL CONSIDERATIONS

The bulk of this analysis has been focused on Canada's climate risks and potential domestic solutions, but climate change has no borders and there are a number of transboundary considerations that warrant a brief discussion. Firstly, the use of reinsurance could be a viable way for Canadian insurers to mitigate risk. Reinsurance is essentially insurance for insurance companies.¹⁶⁷ Large international insurers such as Munich Re, who wrote €22.2 billion of reinsurance in 2010, issue insurance to smaller insurance companies on the risks that they are exposed to.¹⁶⁸ Thus, severe losses in one country or region (i.e. the 2016 Fort McMurray or 2013 Alberta floods) are balanced out by a loss free year in another country or region.¹⁶⁹ The problem is that reports from Munich Re in 2012 seem to suggest that both the number and the severity of major weather related catastrophes are increasing globally.¹⁷⁰ The global scope of climate change poses an issue for reinsurance companies, because as extreme weather events increase across the globe it will be harder for them to balance their risk exposure. If reinsurance companies are going to remain an effective risk reduction mechanism, then they must develop more advanced and accurate modelling of catastrophic weather events, as well as a better understanding of the natural environment and how it is changing.¹⁷¹

¹⁶⁷ Stuart N Lane, "Explaining Changing Catastrophe Losses" (2012) 97:2 *Geography* 100 at 100.

¹⁶⁸ *Ibid.*

¹⁶⁹ *Ibid.*

¹⁷⁰ *Ibid.*, at 102.

¹⁷¹ *Ibid.* at 103-04.

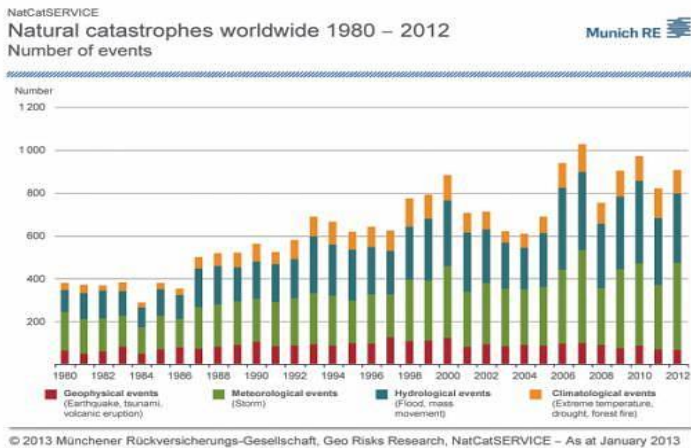


Figure B: Outlines the global increase in catastrophic events from 1980-2012. Source: Munich Re 2012

Secondly, in order to meet the emission and temperature targets set out in the Paris Agreement, at some point fossil fuel companies are going to have to stop extracting their reserves. The problem is that the valuation of fossil fuel companies takes into account their current and potential reserves.¹⁷² Where reserves contribute to the market capitalization rate of a company, but cannot be used, then they become ‘stranded assets.’¹⁷³ Presently, Canada’s fossil fuel reserves are larger than the amount of carbon that we can burn off in accordance with reasonable projections to stay within the 2°C target from Paris.¹⁷⁴ Marc Lee and Brock Ellis looked at 114 fossil fuel companies operating in Canada and developed an estimate of their potential carbon liabilities.¹⁷⁵ Their estimates suggest that Canada’s major fossil fuel companies have carbon liabilities ranging from \$844 billion on the low end to \$5.7 trillion on the high end.¹⁷⁶ Twelve of the larger companies combined have carbon liabilities between \$500 billion and \$3.5 trillion.¹⁷⁷ Many of Canada’s largest carbon polluters are also its most

¹⁷² Marc Lee & Brock Ellis, *Canada’s Carbon Liabilities: The Implications of Stranded Fossil Fuel Assets for Financial Markets and Pensions Funds* (Canadian Centre for Policy Alternatives: 2013) at 13-14.

¹⁷³ *Ibid* at 5-6, 13, 19.

¹⁷⁴ *Ibid* at 6.

¹⁷⁵ *Ibid*.

¹⁷⁶ *Ibid* at 6-7.

¹⁷⁷ *Ibid* at 7.

vulnerable to carbon liability, and this will create problems for future climate litigation.

Canada is uniquely vulnerable to carbon liability. About 80% of the world's oil reserves are nationalized, and Canada has two thirds of the remaining non-nationalized reserves.¹⁷⁸ This has made it a hot spot for foreign investment, but this makes Canada's economy especially vulnerable to the impending fall out of the fossil fuel industry. This also poses a major issue for state-led litigation of major fossil fuel companies. Any legislation that enables government litigation against major fossil fuel companies will also systemically begin to devalue them, and as it becomes more certain that their reserves will stay in the ground these 'assets' will properly be regarded as massive liabilities. With increasing scrutiny of emissions standards, internalization of their pollutions' true environmental costs, and their mounting carbon liabilities, major fossil fuel companies in Canada are susceptible to losing some, if not all, of their current market valuations.

It should be noted that the goal of litigating against major carbon polluters is not to bankrupt them, indeed the failure of many of the major carbon polluters in Canada would be extremely problematic for the Canadian economy. However, major fossil fuel companies have mostly treated pollution as an externality that is borne by the population at large, which cannot be permitted to continue. The goal of litigation against carbon polluters is to help fund mitigation and relief efforts by forcing them to internalize at least some of the costs from their pollution, but hopefully it will also spur better industry wide practices and prompt investment into advancing renewable energy practices. Many of these companies are already exploring and investing in renewable energy.¹⁷⁹ Climate litigation can help accelerate this process by positively rewarding companies who adopt best practices relative to current industry standards.

Thirdly, it is also unlikely that Canada will receive any international financial assistance to help offset the increasing costs of climate change. To date, the

¹⁷⁸ *Ibid* at 7-8.

¹⁷⁹ Tony Seskus, "As Renewable Energy Grows, So Does Interest From Big Oil", *CBC News* (May 10, 2018), online: <<https://www.cbc.ca/news/business/renewable-energy-oil-1.4656106>>; Anna Hirtenstein, "ExxonMobil Is Spending \$1 Billion A Year In Researching Renewable Energy", *Independent* (November 3, 2017), online: <<https://www.independent.co.uk/news/business/news/exxonmobil-renewable-energy-research-oil-company-development-biofuels-algae-electricity-a8035496.html>>.

UNFCCC has not explicitly set out a scheme for international compensation for climate related loss and damage. The Warsaw Mechanism was created to provide an instrument for international review for loss and damage associated with climate change.¹⁸⁰ It was important because it set out a separate head of loss and damage for the UNFCCC, but it does not use any binding language regarding compensation or liability for loss and damage.¹⁸¹ It is a review and assessment tool for the UNFCCC to “facilitate international co-operation related to climate loss and damage.”¹⁸²

The inclusion of loss and damage was a hotly debated topic during the Paris Agreement in 2015. Many developed countries, Canada included, were reluctant to have a head of loss and damage in the Paris Agreement.¹⁸³ Given the tremendous climate risks most developed countries face, it is obviously highly unpopular to have a binding head of loss and damage that requires them to compensate smaller, undeveloped countries for climate-related harms. Article 8 of the Paris Agreement formally recognized loss and damage as separate from adaptation and mitigation.¹⁸⁴ Although, there was no express recognition of binding legal responsibility or financial obligations associated with this formal recognition of loss and damage. Under Article 8(3) the Paris Agreement expressly recognized “action and support” in a “cooperative and facilitative basis with respect to loss and damage associated with the adverse effects of climate change.”¹⁸⁵ However, it is unclear who that applies to and what it entails. The UNFCCC has subsequently noted that Article 8 of the Paris Agreement does not “involve or provide a basis for any liability or compensation.”¹⁸⁶ Given that international treaties and agreements to date have been punctuated with vague, non-committal pronouncements about loss and damage, it seems unlikely that Canada will either receive any international compensation or be forced to pay any compensation. Even if a binding head of loss and damage is established by the

¹⁸⁰ UNFCCC, Report of the Executive Committee of the Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts, FCCC/SB/2017, UNFCCC, 47th Sess (2017) at 3.

¹⁸¹ *Ibid* at 5-10.

¹⁸² Gage & Byers, *supra* note 67 at 32.

¹⁸³ *Ibid*.

¹⁸⁴ *Paris Agreement*, *supra* note 6, at art 8. Adaptation and mitigation are covered separately under art 9.

¹⁸⁵ *Ibid* at art 8(3).

¹⁸⁶ *Decision Adopted by the Conference of the Parties*, Decision 1/CP.21, FCCC/CP/2015/10/Add.1, 21st Sess (2016) at para 51.

UNFCCC, which seems politically impossible at the moment, Canada, an affluent country with a history of high emissions, will probably be compensating other countries' climate related harms rather than receiving compensation itself.¹⁸⁷

CONCLUSION

It is increasingly clear that global warming poses an unprecedented threat to humanity. If immediate action is not taken on a global scale to reduce emissions, then we will lose any semblance of control over the path that global warming takes.¹⁸⁸ The Paris Agreement is undeniably a positive step in the right direction, but it already seems unlikely that we will meet our temperature targets coming out of COP-21, and that is assuming countries actually adhere to the agreement.¹⁸⁹ Beyond the obvious implications for humanity on a global scale, climate change will pose a number of unique domestic challenges. Canada is already experiencing an unprecedented amount of insurance and disaster relief claims arising from catastrophic weather events. Canada has spent more on disaster relief and insurance claims in the past few years than at any time in our history.¹⁹⁰ The private insurance industry, in its current iteration, will not be able to adequately compensate for the expected loss and damage resulting from climate change without government intervention.¹⁹¹

Unquestionably, some changes need to be made. Based on recent catastrophic events in Alberta and Ottawa it is clear that better education of consumers, clearer policies, better communication between insurers and insured, as well as a realistic understanding on the part of the insured about what insurance does and does not do will be imperative in a climate changed Canada.¹⁹² Additionally, Canadian governments must move quickly to adopt legislation that allows them to effectively and efficiently litigate against major carbon polluters before the valuation of these companies begins to decrease. It is clear that Canada

¹⁸⁷ Brown & Seck, *supra* note 21 at 574-575.

¹⁸⁸ IPCC, *supra* note 1 at 9.

¹⁸⁹ Bergkamp, *supra* note 7 at 36.

¹⁹⁰ Spring 2016 Reports of the Commissioner of the Environment and Sustainable Development, *supra* note 15 at 2.

¹⁹¹ Brown & Seck, *supra* note 21 at 576.

¹⁹² Bagnall, *supra* note 26.

is precariously reliant on the fossil fuel industry.¹⁹³ Fossil fuel companies have benefitted from this reliance by treating their GHG emissions as an externality borne by the population at large. As a matter of corrective justice and in line with the polluter pays principle this should not continue. Adopting legislation modeled after the *Tobacco Damages and Health Care Costs Recovery Act* would be an efficient and effective way to enable litigation against major carbon polluters in Canada.¹⁹⁴ Specifically, this legislation would address issues of causation and apportionment of damages that seem to be the greatest obstacle to successful litigation. Canada cannot wait for civil litigation in the climate context to advance out of its infancy stage.

The manner in which Canadian governments raise the requisite funds to supplement traditional insurance is open to debate. Whether it is a carbon tax, legislation enabling climate litigation, or some form of legislation mandating contribution from major polluters, the key is that the government takes action to begin raising the necessary funds. Climate legislation aiding state-led litigation presents one viable avenue. As Brown and Seck note, a carbon tax administered through disaster relief funds could also be a viable solution to supplement traditional insurance schemes.¹⁹⁵ Traditionally, carbon taxes have been used to fund adaptation or mitigation. But, a carbon tax could be adapted to fund loss and damage from catastrophic weather events as well. To date, carbon taxes have not been well received publicly and the concept of litigating against fossil fuel, automotive, and energy companies is probably similarly unpopular.¹⁹⁶ However, as insurance coverage starts to become more expensive or cease to exist altogether, and as the costs associated with climate change mount, public perception may shift. Regardless, some form of government intervention is inevitable, whether it is via legislation enabling state-led litigation, a carbon tax, or a combination of both.

¹⁹³ Lee & Ellis, *supra* note 172 at 6-8.

¹⁹⁴ Olszynski et al, *supra* note 54 at 44.

¹⁹⁵ Brown & Seck, *supra* note 21 at 575.

¹⁹⁶ *Ibid.* See the recent decision in *Reference re Greenhouse Gas Pollution Pricing Act*, 2019 SKCA 40, where the constitutionality of the *Greenhouse Gas Pollution Act*, SC 2018, c 12, s186, which would impose a minimum national price on GHG emissions, was challenged by Saskatchewan.

How effectively the government is able to distribute these additional funds will define our experience in a climate changed Canada. Many countries are already taking proactive approaches to limit their susceptibility to climate change.¹⁹⁷ The Canadian government has allocated \$2 billion dollars to fund adaption and mitigation in the most recent federal budget. At present, this has come at the expense of less comprehensive disaster relief funding, but in the long-term both these programs must be supported with additional funding. It will be imperative that adaption and mitigation function in concert with loss and damage to minimize costs before, during, and after catastrophic weather events. It also seems inevitable that in response to disasters we often will not be able to rebuild where or how we did before, so our response to climate change will need to be flexible and adaptive in its approach.

There are viable combinations of legislation, litigation, taxation, compensation, mitigation, adaptation, and insurance to proactively address some of the deleterious effects of climate change in Canada. However, Canada will need to develop domestic solutions to climate change because they are unlikely to receive any international support, and even if it seems politically impossible at present, there remains the possibility that Canada may even end up compensating other countries for their loss and damage. Canada has been a laggard with regard to reducing GHG emissions, so we should start by addressing our own domestic issues before looking outward to the broader international context. Ultimately, our government's ability to extract compensation from companies that form the cornerstone of our precariously situated fossil-fuel-dependent-economy, while simultaneously addressing reduced insurance coverage and increased disaster relief costs, will determine much of our experience in a climate changed Canada.

¹⁹⁷ Hiroko Tabuchi, "Tokyo Is Preparing for Floods 'Beyond Anything We've Seen'" *The New York Times* (6 October 2017), online: <<https://www.nytimes.com/2017/10/06/climate/tokyo-floods.html>>.