



# ENERGY REGULATION QUARTERLY

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# EDITORIAL

Managing Editors

*Rowland J. Harrison Q.C. and Gordon E. Kaiser*

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It is increasingly being recognized that, among the many challenges in implementing measures to address government emission reduction targets, the development of innovative regulatory approaches will be critical. In the lead article in this issue of *Energy Regulation Quarterly*, titled “Agile Regulation for Clean Energy Innovation: Examining the Early Experience of Two Canadian Institutions,” Colleen Kaiser and Geoff McCarney assert that Canada’s energy regulators “must become more agile in nature” in order to accelerate the transition to a low carbon economy and capture a larger portion of the clean growth market. The article examines the early experience of two leading examples of “agile regulatory institutions”: the Ontario Energy Board Sandbox and the Vancouver Zero Emission Building Exchange.

Another daunting challenge in moving towards a low carbon economy is developing and implementing specific measures that move beyond the adoption of mere aspirational targets. It is perhaps not surprising that what are put forward as implementation actions sometimes, on critical examination, fall well short of the mark. Such appears to be the case with the recently enacted *Canadian Net-Zero Emissions Accountability Act*.<sup>1</sup> The Act prescribes a greenhouse gas emissions **target** for 2050 of “net-zero emissions,” without enacting any measures by which that target might be achieved. In his critical analysis, subtitled “A Legislative Placebo?,” Andrew Roman concludes that the Act “wrongly pretends that legislating the target will be a useful and effective new law for making the world livable for Canadians’ children and grandchildren...This is not so much a law as a public relations statement presented as law.”

Judicial developments with respect to Indigenous rights continue, with particular relevance to resource development and energy infrastructure projects. In their article “Cumulative Effects can Infringe Treaty Rights,” Wally Brault *et al.* analyze a recent decision of the B.C. Superior Court holding that British Columbia had infringed the Blueberry River First Nation’s rights under Treaty 8 by allowing decades of industrial development in the Nation’s traditional territory. The authors conclude that the Court’s interpretation of the law governing infringement of treaty rights, and of the Crown’s obligations under Treaty 8 is likely to inform other Canadian courts adjudicating claims of treaty right infringement by cumulative adverse impacts arising from Crown decisions authorizing resource development: “As such, this decision has potentially far reaching implications across the country.”

Much of the jurisprudence on Indigenous rights has revolved around the duty to consult and, where appropriate, accommodate. In “Reconciliation: The Public Interest and a Fair Deal,” Gordon E. Kaiser<sup>2</sup> analyzes a recent decision of the Alberta Court of Appeal that considers the role of reconciliation in the context of the public interest responsibility of the Alberta Utilities Commission. He concludes that “for all practical purposes a Canadian energy regulator in determining the public interest where aboriginal land interests are involved must make a determination if the economic settlement arrived at between the aboriginal interests and the utility is a fair agreement.”

The contents of the last issue of *ERQ* reflected the significant role of hydrogen in the list of emerging technologies aimed at advancing decarbonization, noting that Canada has a federal hydrogen program and reviewing

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<sup>1</sup> SC 2021, c 22, assented to June 29, 2021.

<sup>2</sup> Gordon E. Kaiser is Co-Editor of *Energy Regulation Quarterly*.

British Columbia's hydrogen program. In this issue, Bob Heggie reviews Alberta's recently announced Hydrogen Roadmap in "Alberta Joins the Canadian Hydrogen Race."

This issue of ERQ also includes reports on two recent cross-border webinars sponsored by the Canadian Chapter of the Energy Bar Association. In "Is Alberta the next Texas? – Lessons Learned from the Texas Energy Crisis," referring to the Texas electricity crisis in February 2021, Bob Heggie reports on insights into the crisis from two former Chairs of the Federal Energy Regulatory Commission, a former Chair of the Alberta Energy and Utilities Board and a former President of the Alberta Electric System Operator. Gordon E. Kaiser reports on "Can Canada and the United States Agree on a Carbon Tariff?"

The issue closes with a review by Kenneth A. Barry of Bill Gates *How to Avoid a Climate Crisis*. Barry summarizes: "Gates has provided a determined yet realistic vision, a goldmine of facts, and an arsenal of recommendations of the indubitably complex task of confronting climate change across its many fronts...As an entry-level guide to the morass of information, predictions, and political hurdles surrounding climate change, it is ideal." ■

# AGILE REGULATION FOR CLEAN ENERGY INNOVATION: EXAMINING THE EARLY EXPERIENCE OF TWO CANADIAN INSTITUTIONS

*Colleen Kaiser and Geoff McCarney\**

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## I. INTRODUCTION

Canadian energy regulators operate in an increasingly complex environment, marked by rapid technological change, high uncertainty, and confronted with unprecedented challenges, most notably, the need to drastically reduce national emissions both to meet emission reduction targets and keep pace with a greening global economy. However, Canada's current regulatory system is increasingly understood as a significant obstacle to innovation and the transition to a low carbon economy. Comparatively, Canada ranks 14<sup>th</sup> on the World Economic Forum's (WEF) 2018 Global Competitiveness Index, but ranks 38<sup>th</sup> on the burden of government regulations.<sup>1</sup> Similarly, Canada ranks 22<sup>nd</sup> overall on the 2019 World Bank's Ease of Doing Business Index and 34<sup>th</sup> out of 35 Organisation for Economic Co-operation and Development (OECD)

countries with respect to the time required to obtain a construction permit.<sup>2</sup> At the same time, Canada ranks relatively low (22<sup>nd</sup> of 35 OECD countries) on the Global Environmental Performance Index.<sup>3</sup> In order to accelerate the transition to a low carbon economy and capture a larger portion of the clean growth market — which represents a US\$26 trillion opportunity over the next 12 years — Canada's energy regulators must become more agile in nature.

The COVID-19 global pandemic has made reducing regulatory barriers to cleantech an even more urgent task. Stimulus spending and related recovery measures provide an ideal window to accelerate low carbon innovation and growth in Canada. The 'build back better' agenda strongly emphasizes accelerating clean growth in Canada to align a post-COVID-19

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This research was supported by the Social Sciences and Humanities Research Council.

<sup>1</sup> World Economic Forum, "Canada: The Global Competitiveness Index 2017-2018 edition" (2017), online (pdf): <[www3.weforum.org/docs/GCR2017-2018/03CountryProfiles/Standalone2-pagerprofiles/WEF\\_GCI\\_2017\\_2018\\_Profile\\_Canada.pdf](http://www3.weforum.org/docs/GCR2017-2018/03CountryProfiles/Standalone2-pagerprofiles/WEF_GCI_2017_2018_Profile_Canada.pdf)>.

<sup>2</sup> The World Bank, "Doing Business 2019: Training for Reform" (2019), online (pdf): <[www.worldbank.org/content/dam/doingBusiness/media/Annual-Reports/English/DB2019-report\\_web-version.pdf](http://www.worldbank.org/content/dam/doingBusiness/media/Annual-Reports/English/DB2019-report_web-version.pdf)>.

<sup>3</sup> Yale Centre for Environmental Law and Policy, "Environmental Performance Index" (2018), online (pdf): <[epi.yale.edu/downloads/epi2018policymakerssummary01.pdf](http://epi.yale.edu/downloads/epi2018policymakerssummary01.pdf)>.



recovery with recent policy commitments to net-zero emissions in 2050 in order to position Canada as a leader in this rapidly growing market.<sup>4</sup> Achieving the Government of Canada's ambitious emission reduction strategy will require an unprecedented scale and pace of innovation. Against this backdrop, shifting to a more agile regulatory system has never been more pressing to ensure that Canada's growing investments in recovery and innovation, and burgeoning climate policies, achieve the combined objective of maximizing economic recovery while reducing national emissions.

Shifting towards a more agile regulatory system has two dimensions. It involves changing policy *instruments* and the regulatory *institutions* that implement them. Agile regulatory instruments are stringent, flexible, and dynamically predictable. They avoid prescriptive, command and control approaches favouring performance-based standards, which are inherently more flexible. They also place greater reliance on non-state actors, especially for informing the ideal level of stringency. Agile regulations are also predictable — to support long-term investment — without remaining static. Operationalizing such regulations requires regulators that are well-informed, collaborative, and have both the ability and capacity to experiment, approaching policy-making and implementation as an iterative rather than static process. By doing so, integrating regulatory agility via improved stringency, flexibility and predictability in both instrument and institutional design can help drive innovation and foster improved performance towards Canada's economic and environmental goals.

Despite this potential, the implementation of previous strategies to increase regulatory agility has, at times, faltered due to concerns that increases in flexibility and efficiency come at the expense of stringency and the protection of public goods. However, if optimally designed and implemented (with continual evaluation

and adjustment), agile regulatory practices should drive innovation in environmental performance. The issue lies in a lack of understanding of what this means in practice. Currently, the state of knowledge has been formalized only slightly beyond the notion that 'agile regulation is what agile regulators do.'<sup>5</sup> This lack of knowledge is especially true for agile regulatory institutions (vs. instruments) and for the Canadian jurisdiction, where there has been little research generated compared to the United States and Europe.

This article aims to start filling this knowledge gap by examining the early experience of two leading examples of agile regulatory institutions in Canada: the Ontario Energy Board Innovation Sandbox (est. 2019) and the Vancouver Zero Emission Building Exchange (est. 2018). This article provides an in-depth account of the development of these current initiatives over their first years in operation to draw out preliminary insights into how the design and functions of these institutions are enabling (or are intended to enable) more agile regulatory practice. In presenting our preliminary analysis, we attempt to provide nuanced descriptions of the early experience of these two case studies of agile regulatory institutions by drawing from interviews with senior staff, along with a comprehensive review of the secondary literature on agile regulatory institutions (and instrument) design.

## II. BACKGROUND

### **Agile Regulatory Approaches in Context – A Brief History of Regulatory Reform**

There have been multiple waves of regulatory reform approaches over the past 50 years that, in many ways, follow broader shifts in modes of governance. Globally, governance and public administration narratives and coordination models have evolved from bureaucracy/hierarchy, to new public management/

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<sup>4</sup> Brendan Haley, "Economy and Climate Need More than Stimulus after COVID-19", *Policy Options* (April 27, 2020), online: <[policyoptions.irpp.org/magazines/april-2020/economy-and-climate-need-more-than-s-stimulus-after-covid-19/](http://policyoptions.irpp.org/magazines/april-2020/economy-and-climate-need-more-than-s-stimulus-after-covid-19/)>.

<sup>5</sup> Here we adapt the famous quote by Jacob Viner (eminent international trade theorist, 1892-1970): "Economics is what economists do".

market-oriented models, to new governance/networked-centred models.<sup>6</sup> This shift has by no means been linear, nor anything close to uniform across regions or timescales, but these models do capture the general transition from government to governance represented by ‘more diffuse’ methods of societal steering.<sup>7</sup> As a critical aspect of governance, it is not surprising that dominant regulatory models have followed a similar evolution. The evolution between these models of governance, and the associated shifts in approaches to environmental regulation, are described below in chronological order. Although different terms are used to describe these phases of dominant regulatory models, we refer to them as Command-and-Control, New Public Management, and New Governance.

Throughout Canada and the United States, initial approaches to environmental regulation generally reflected a command-and-control approach, where prescriptive regulations are primarily enforced by government with heavy reliance on technical experts. This model was a classic expression of ‘bureaucratic rationality’ (as defined by Max Weber<sup>8</sup>); the underlying assumption of this approach was a zero-sum game, where firms were considered ‘amoral actors’, which required blunt legalistic and deterrence-based rules to change behaviour effectively.<sup>9</sup> Over time this more adversarial model, based on centralized bureaucratic control through substantive law, was heavily critiqued for being too costly in comparison to the benefits delivered.<sup>10</sup>

Beginning in the late-1980s/early-1990s, following the broader shift towards market-oriented, New Public Management (NPM) governance models, governments, industry, and environmental non-governmental organizations (ENGOS) began to look for regulatory instruments that could maintain or improve environmental performance at lower costs and with more flexibility.<sup>11</sup> This shift reflected the core features of NPM approaches, which are associated with privatization and out-sourcing of government activities and the prominent use of markets (vs. hierarchies), reflecting the school’s adherence to ‘efficiency first.’<sup>12</sup> Economic and risk analysis and more selective regulatory interventions in the economy were stressed.<sup>13</sup> Broadly, this shift in environmental policy and regulation was associated with the rise of neoliberal ideas about government.

This move away from prescriptive command and control regulation also reflected a second stream of criticism for environmental regulations in the 1990s — that command-and-control regulation was no longer capable of dealing with the increasingly complex environmental problems that regulators were trying to manage.<sup>14</sup> For example, so-called first-generation pollution problems like toxins emitted from a smokestack were less complicated to manage than multi-dimensional, second-generation pollution issues like acid rain.<sup>15</sup> These management and performance-based regulatory models also differentiated from the previous model in their involvement of non-state actors (including industry) in their implementation.

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<sup>6</sup> Andrew Jordan & Adriaan Schout, *The coordination of the European Union: Exploring capacities for networked governance*, (Oxford: Oxford University Press, 2006); Reinhard Steurer, “From government strategies to strategic public management: an exploratory outlook on the pursuit of cross-sectoral policy integration” (2007) 17:3 *European Environment* 201, online: <doi.org/10.1002/eet.452>.

<sup>7</sup> Jordan & Schout, *Ibid*; For more see Ann Marie Bissessar, “From Governance to Government” in Ali Farazmand, ed., *Global Encyclopedia of Public Administration, Public Policy, and Governance* (Springer, 2016), online: < doi.org/10.1007/978-3-319-20928-9\_2831>.

<sup>8</sup> Stanley Udy, “‘Bureaucracy’ and ‘Rationality’ in Weber’s Organization Theory: An Empirical Study” (1959) 24:6 *American Sociological Rev* 791, online: <www.jstor.org/stable/2088566>.

<sup>9</sup> Daniel Fiorino, *The New Environmental Regulation*, (MIT Press, 2006) at 6.

<sup>10</sup> *Ibid* at 7.

<sup>11</sup> Scott Hassell et al, *An Assessment of the U.S. Environmental Protection Agency’s National Environmental Performance Track Program*, (Santa Monica, CA: RAND Corporation, 2010), online: <www.rand.org/pubs/technical\_reports/TR732.html>.

<sup>12</sup> Jackson 2001; Hood 1991; Jann 2002; cited in Steurer, *supra* note 6.

<sup>13</sup> Fiorino, *supra* note 9.

<sup>14</sup> *Ibid*.

<sup>15</sup> 1<sup>st</sup> and 2<sup>nd</sup> generation pollution problems can also be called point-source or non-point-source pollution problems, which highlights the difference in complexity in addressing the problem through policy and regulation.

In Canada, this shifting regulatory landscape coalesced into an initiative on ‘Smart Regulations’, and the Federal government struck an External Advisory Committee on Smart Regulations in 2003. The Smart Regulations initiative represented a broad agenda that was supposed to be embraced across departments and sectors.<sup>16</sup> The approach aimed to “forge a middle path between the extremes of command regulation and deregulation.”<sup>17</sup> The Committee described a vision wherein “Governments, citizens and businesses will work together to build a national regulatory system that maximizes the benefits of regulation for all Canadians, enables them to take advantage of new knowledge and supports Canada’s participation in an international economy.”<sup>18</sup> The Committee made 73 recommendations, including sector-specific recommendations (e.g. for manufacturing, biotechnology, and environmental assessment). Many of the themes of these recommendations are also reflected in agile regulation, including the need for cultural change, enhanced intergovernmental coordination, increased responsiveness and developing improved performance measurement and evaluation methods.<sup>19</sup>

The results of the Smart Regulation agenda in Canada have been mixed.<sup>20</sup> There is a lingering opinion that much of this effort devolved into simple deregulation and that reform efforts were only about improving competitiveness — without achieving other public benefits related to health, safety, and the environment. This critique has been made more

broadly for New Public Management governance models, where the focus of the model shifted to management, performance appraisal and efficiency as opposed to policy, public order and accountability.<sup>21</sup> These criticisms also echo the broader stated deficiencies of the neoliberal turn in government (especially in the U.S. and Britain) and associated aggressive deregulation agendas (e.g., increased inequality).<sup>22</sup>

The most recent shift in governance and regulatory models, known as ‘new governance’ approaches, attempts to address these critiques by focusing on effectiveness, transparency and upholding public trust while still utilizing market-oriented measures and a reliance on non-state actors to ensure flexibility, efficiency, and to enable innovation. In this way, the ideas and strategies for reform embodied in new governance or networked governance approaches attempts to strike a middle ground between the two prior models. In Canada, this new governance approach has come to be known as agile regulation or regulatory excellence.

The Canadian federal government accordingly re-engaged with regulatory reform in 2018, motivated by the understanding that the current system was inadequate for dealing with highly complex challenges (like climate change mitigation) and the rapid pace and scale of innovation in an increasingly interconnected world. As a part of the Federal Government’s implementation framework for the Pan Canadian Framework on Climate Change<sup>23</sup>, Economic

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<sup>16</sup> Government of Canada, *Canada’s report on Actions and Plans for Smart Regulation*, Catalogue No CP22-80/2005E-PDF (Ottawa: Privy Council Office, 2005), online (pdf): <publications.gc.ca/collections/Collection/CP22-80-2005E.pdf>.

<sup>17</sup> Stephan Wood & Lynn Johansson, “Six Principles for Integrating Non-Governmental Environmental Standards into Smart Regulation” (2008) 46 *Osgoode Hall LJ* 345 at 359.

<sup>18</sup> Canada, External Advisory Committee on Smart Regulation, *Smart Regulation: A Regulatory Strategy for Canada Report to the Government of Canada*, Catalogue No CP22-78/2004E (Canada: Privy Council Office, 2004) at 14, online (pdf): <publications.gc.ca/collections/Collection/CP22-78-2004E.pdf>.

<sup>19</sup> *Ibid* at 137–45.

<sup>20</sup> See British Columbia, Office of the Superintendent of Professional Governance, *The Final Report of the Review of Professional Reliance in Natural Resource Decision-Making*, by Mark Haddock (Victoria: Ministry of Environmental and Climate Change Strategy, 18 May 2018), online (pdf): <professionalgovernancebc.ca/app/uploads/sites/498/2019/05/Professional\_Reliance\_Review\_Final\_Report.pdf>; See also Martin Olszynski, “From Badly Wrong to Worse: An Empirical Analysis of Canada’s New Approach to Fish Habitat Protection Laws” (2015) 28 *J Envtl L & Prac* 1; See also Mark Winfield, “The Lac-Mégantic Disaster and Transport Canada’s Safety Management System (SMS) Model: Implications for Reflexive Regulatory Regimes” (2016) 28 *J Envtl L & Prac* 299.

<sup>21</sup> Steurer, *supra* note 6.

<sup>22</sup> David Harvey, *A Brief History of Neoliberalism* (Oxford: Oxford University Press, 2005).

<sup>23</sup> Government of Canada “Canada’s climate plan” (last modified 12 July 2021), online: <www.canada.ca/en/services/environment/weather/climatechange/climate-plan.html> (Pan Canadian Framework is Canada’s national climate change plan).

Strategy Tables, made up of primarily industry representatives, were established to ensure the challenges of maintaining a competitive economy were addressed in the context of pursuing a low carbon transition. The Federal Government's 2018 Economic Strategy Tables concluded "Canada's regulatory system is...not conducive to innovation," and recommended a shift towards more agile regulations as a critical priority for Canada's future competitiveness.<sup>24</sup> The report of the Resources Table described such regulations as "outcomes-driven, flexible, stringent, timely and predictable in order to attract investment and stimulate innovation while continuing to achieve world-class safety, health and environmental performance."<sup>25</sup>

Following the recommendations of the Economic Strategy Tables, the External Advisory Committee on Regulatory Competitiveness was formed to help improve Canada's regulatory frameworks to enable investment and innovation while upholding its public good protection function (i.e. safeguarding health, safety, security and the environment).<sup>26</sup> Targeted regulatory reviews were also announced in 2018 to bolster government efforts at modernizing the regulatory system. These ongoing reviews are overseen by the Treasury Board Secretariat in coordination with relevant government departments and agencies. The sectors targeted are chosen based on advice provided by the External Advisory Committee. The Committee has delivered four recommendation letters to the Treasury Board Secretariat since it was formed. In their most recent letter (March 2021), the External Advisory Committee on Regulatory Competitiveness highlighted the need for what they are now calling 'regulatory excellence' as its "most important and urgent recommendation."<sup>27</sup> The Committee's definition

of regulatory excellence clearly reflects a new governance approach to regulation:

We define regulatory excellence as a regulatory system that is rigorous, agile, and efficient, giving consumers confidence in their protections and businesses confidence to invest. It is a system where decisions are made in a timely way that recognizes the interconnectedness of a modern economy. Improving the lives of Canadians means taking an ecosystem approach and working collaboratively with those inside and outside of government. When departments work in silos, valuable opportunities are lost, and time is wasted. Regulatory excellence means using the best available evidence and being transparent and inclusive. It means regulations that are flexible and predictable, so investors and households can make long-term investments with confidence in regulatory direction. It favours simplicity, recognizing that additional rules and complexity do not always lead to better outcomes. It puts a high premium on ensuring that regulations and the processes to implement them (reporting, verification, and enforcement) minimize compliance burden and avoid unintended consequences. Regulatory excellence builds trust between government and the citizens it serves.<sup>28</sup>

Globally, there are many names for this latest regulatory reform movement, geared towards building regulatory regimes capable of managing 21<sup>st</sup> Century challenges — or what is sometimes

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<sup>24</sup> Canada's Economic Strategy Tables, "The Innovation and Competitiveness Imperative: Seizing Opportunity for Growth" (2018) at 10, online (pdf): <[www.ic.gc.ca/eic/site/098.nsf/vwapj/ISED\\_C\\_SeizingOpportunities.pdf/\\$file/ISED\\_C\\_SeizingOpportunities.pdf](http://www.ic.gc.ca/eic/site/098.nsf/vwapj/ISED_C_SeizingOpportunities.pdf/$file/ISED_C_SeizingOpportunities.pdf)>.

<sup>25</sup> Canada's Economic Strategy Tables, "Resources for the Future" (2018) at 7, online (pdf): <[www.ic.gc.ca/eic/site/098.nsf/vwapj/ISED\\_C\\_ResourcesFuture.pdf/\\$file/ISED\\_C\\_ResourcesFuture.pdf](http://www.ic.gc.ca/eic/site/098.nsf/vwapj/ISED_C_ResourcesFuture.pdf/$file/ISED_C_ResourcesFuture.pdf)>.

<sup>26</sup> Treasury Board Secretariat, "External Advisory Committee on Regulatory Competitiveness: About the committee" (last modified 22 March 2021), online: <[www.canada.ca/en/government/system/laws/developing-improving-federal-regulations/modernizing-regulations/external-advisory-committee-regulatory-competitiveness.html](http://www.canada.ca/en/government/system/laws/developing-improving-federal-regulations/modernizing-regulations/external-advisory-committee-regulatory-competitiveness.html)>.

<sup>27</sup> External Advisory Committee on Regulatory Competitiveness, "Recommendation Letter (March 2021)" (31 March 2021), online: <[www.canada.ca/en/government/system/laws/developing-improving-federal-regulations/modernizing-regulations/external-advisory-committee-regulatory-competitiveness-advice-treasury-board/external-advisory-march-2021.html](http://www.canada.ca/en/government/system/laws/developing-improving-federal-regulations/modernizing-regulations/external-advisory-committee-regulatory-competitiveness-advice-treasury-board/external-advisory-march-2021.html)>.

<sup>28</sup> *Ibid.*

called ‘the Fourth Industrial Revolution.’<sup>29</sup> In the United Kingdom, the birthplace of some of the most innovative regulatory mechanisms like regulatory sandboxes, the regulatory reform agenda is often called ‘anticipatory regulation.’ Similarly, The Australian Government speaks about ‘innovative and agile government’, including the need for more agile regulation. The World Economic Forum’s Global Future Council on Agile Governance also refers to this kind of sophisticated regulation as agile regulation.<sup>30</sup> Although the OECD once outlined principles for good regulation, it now refers to this line of work as ‘better regulation.’<sup>31</sup> The European Commission also uses this phrase and has established a ‘better regulation agenda’ for its member states. Regardless of the exact phrasing, the underlying notion of these regulatory reform agendas are very similar: to reform regulatory systems so that they can deal with highly complex novel challenges in an increasingly interconnected and uncertain world, characterized by rapid technological change at unprecedented scales.

Although governments and organizations have begun to describe what this kind of regulatory system might look like at a very high level (e.g., agile, rigorous, efficient, transparent, inclusive, evidence-based, flexible, predictable), the widely varying terminology makes it more difficult to compare and contrast emerging approaches and to understand what these different understandings mean for regulatory reform in practice.

### **Achieving Agile Regulation: Instruments and Institutions**

We argue that increasing regulatory agility, in practice, relies heavily on the regulatory *institutions*, which implement regulations and define the practice of regulatory management. To

date, there has been much more research on agile regulatory *instruments* (e.g., flexible regulations) as opposed to regulatory *institutions*. This is especially true in the Canadian context, where the handful of existing efforts to describe agile regulatory *institutions* have been high-level and primarily descriptive.<sup>32</sup>

There are multiple characteristics of regulatory institutions that enable regulators to operate in a more agile manner (e.g., being transparent, dynamically predictable, anticipatory, experimental, connected, adaptive). Examples of innovative institutions aimed at enhancing these elements include innovation offices, regulatory sandboxes, in-house research and innovation programs, novel technology/data applications, and various protocols for assisting proponents on cases made to regulatory boards and for ensuring meaningful public consultation. These regulatory institutions that enable agile regulatory management share multiple inter-related characteristics and linkages. For example, more anticipatory approaches to regulation will require regulators to undertake direct research activities, like the production of periodic ‘foresight reports’ to understand the drawbacks and opportunities of emerging technologies and business models, in addition to foreseeing disruption with existing regulatory regimes. This kind of work, by definition, means regulators will have to be more inclusionary, working with policymakers, innovators, and experts.

To better understand some of these institutions and provide reflections on their implementation experience, the remainder of this paper will look in more detail at two specific case studies of agile regulatory institutions: the Ontario Energy Board Innovation Sandbox and the Vancouver Zero Emission Building Exchange. These two case studies represent three types of

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<sup>29</sup> World Economic Forum, “Agile Regulation for the Fourth Industrial Revolution: A Toolkit for Regulators” (December 2020), online: <[www3.weforum.org/docs/WEF\\_Agile\\_Regulation\\_for\\_the\\_Fourth\\_Industrial\\_Revolution\\_2020.pdf](http://www3.weforum.org/docs/WEF_Agile_Regulation_for_the_Fourth_Industrial_Revolution_2020.pdf)>.

<sup>30</sup> *Ibid.*

<sup>31</sup> OECD, “Better Regulation Practices across the European Union” (19 March 2019), online: <[doi.org/10.1787/9789264311732-en](https://doi.org/10.1787/9789264311732-en)>.

<sup>32</sup> Gordon Kaiser, “Canadian Energy Regulators and New Technology: The Transition to a Low Carbon Economy” (2021) 9:2 Energy Regulation Q 7, online: <[energyregulationquarterly.ca/articles/canadian-energy-regulators-and-new-technology-the-transition-to-a-low-carbon-economy#sthash.dojmb0jX.dpbs](http://energyregulationquarterly.ca/articles/canadian-energy-regulators-and-new-technology-the-transition-to-a-low-carbon-economy#sthash.dojmb0jX.dpbs)>; Quest & Pollution Probe, “Enter The Sandbox: Developing Innovation Sandboxes For The Energy Sector” (2020), online (pdf): <[www.pollutionprobe.org/wp-content/uploads/Innovation-Sandboxes-Report-1-EN.pdf](http://www.pollutionprobe.org/wp-content/uploads/Innovation-Sandboxes-Report-1-EN.pdf)>; Quest & Pollution Probe, “Getting To Deployment: Bridging The Gaps In Energy Innovation In Canada” (2020), online: <[www.pollutionprobe.org/wp-content/uploads/Innovation-Sandboxes-Report-2-EN.pdf](http://www.pollutionprobe.org/wp-content/uploads/Innovation-Sandboxes-Report-2-EN.pdf)>.

agile regulatory institutions: innovation offices, regulatory sandboxes, and capacity-building institutions. Before moving on to the case studies, these three types of agile regulatory institutions are briefly described below.

### ***Innovation Offices***

The concept of an innovation office is relatively simple. Their primary function is to facilitate information exchange between proponents and regulators to help proponents navigate the regulatory system. This, in turn, improves regulators' understanding of innovative products and developments in the field to serve as evidence for amending regulations and dismantling barriers. As a permanent mechanism, innovation offices provide a consistent and standardized way for proponents and regulators to connect outside of more formal mechanisms like regulatory hearings. This provides benefits in terms of more informal (and therefore less time-consuming) information exchange and increased reciprocity since innovation offices allow for increased engagement between stakeholders who would not normally communicate outside formal channels. The exact design of innovation offices can vary, for example, by implementing different rules or practices required for proponents using the service. This can include different levels of reporting by proponents on all information gathered while using the service in order to reduce any risk of certain proponents gaining an unfair advantage over others.<sup>33</sup>

### ***Regulatory Sandboxes***

Recent years have witnessed a growing interest in 'regulatory sandboxes' as a tool to address regulatory barriers. Regulatory Sandboxes are commonly understood as "a regulatory approach...that allows live, time-bound testing of innovations under a regulator's oversight."<sup>34</sup>

In particular, the financial technology (FinTech) industry that pioneered the concept has embraced it, with sandboxes in place or proposed around the globe. By identifying barriers and piloting projects with alternative compliance arrangements to mitigate risk, regulatory sandboxes can help reduce regulatory burdens to innovation. Regulatory sandboxes should not be confused with technology pilots. Technology pilots can take place under a regulatory sandbox, but the scope of a sandbox is broader than testing technologies under alternative arrangements. For example, novel business models can also be tested under sandboxes to provide insights into how they interact with an existing regulatory regime. Early evidence from the United Kingdom's Financial Conduct Authority suggests that sandbox participation supported companies in reducing time to market, facilitating investor funding, testing products and markets, and building consumer safeguards.<sup>35</sup>

### ***Capacity Building Institutions***

Unlike innovation offices or regulatory sandboxes, there is no set definition for capacity-building institutions within regulatory theory, although there is no shortage of discussions in the literature on the need for capacity building to enable better regulation.<sup>36</sup> However, a related body of literature on polycentric climate governance provides a basis for the beginnings of a definition, which we develop here. Within polycentric governance theory, networks and institutions facilitating connection and coordination can be understood as 'trans-local collaborations.'<sup>37</sup> When the role of trans-local collaborations was explicitly tested in research, they were found to provide sites critical for collective action that helped engage conditional cooperators and provide political causal mechanisms for unlocking low-carbon

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<sup>33</sup> See e.g. United Kingdom Civil Aviation Authority, "Regulatory challenges for innovation in aviation" (last assessed 10 October 2021), online: <[www.caa.co.uk/Our-work/Innovation/Regulatory-challenges-for-innovation-in-aviation/](http://www.caa.co.uk/Our-work/Innovation/Regulatory-challenges-for-innovation-in-aviation/)>.

<sup>34</sup> United Nations Secretary-General's Special Advocate for Inclusive Finance for Development, "Briefing on Regulatory Sandboxes" (3 June 2018) at 1, online: <[www.unsgsa.org/sites/default/files/resources-files/2020-09/Fintech\\_Briefing\\_Paper\\_Regulatory\\_Sandboxes.pdf](http://www.unsgsa.org/sites/default/files/resources-files/2020-09/Fintech_Briefing_Paper_Regulatory_Sandboxes.pdf)>.

<sup>35</sup> Financial Conduct Authority, "Regulatory Sandbox" (last modified 17 August 2021), online: <[www.fca.org.uk/firms/innovation/regulatory-sandbox](http://www.fca.org.uk/firms/innovation/regulatory-sandbox)>.

<sup>36</sup> OECD, "Better Regulation In Europe: The Netherland" (2010) at 47-59 (Chapter 2: Institutional Capacities For Better Regulation), online (pdf): <[www.oecd.org/gov/regulatory-policy/44912418.pdf](http://www.oecd.org/gov/regulatory-policy/44912418.pdf)>.

<sup>37</sup> van der Heiden 2018 cited in Colleen Kaiser, "State Steering in Polycentric Governance Systems: Climate Policy Integration in Ontario and California's Transportation Sectors" (March 2020) at 286, online: <[yorkspace.library.yorku.ca/xmlui/handle/10315/37701](http://yorkspace.library.yorku.ca/xmlui/handle/10315/37701)>.



transition pathways, specifically capacity and coalition building.<sup>38</sup> Broadly defined, capacity-building institutions in the context of agile regulation provide a site for knowledge generation and exchange. However, they function as more than just a knowledge exchange platform in their intention to build coalitions towards a normative goal or objective. They may also have additional functions that stem from these primary ones. For example, the Zero Emissions Building Exchange's (ZEBx) arm's length and politically neutral design enabled the organization to act as a neutral arbiter or intermediary in its provision of information between industry and regulators around what building standards were and were not achievable.

### III. INTRODUCTION TO THE CASES

#### Ontario Energy Board Innovation Sandbox

The OEB's Innovation Sandbox is a prime example of a Canadian effort to increase regulatory agility, in particular via increased flexibility, (dynamic) predictability and capacity building via information provision and two-way engagement/learning. Because the Innovation Sandbox encompasses a combination of innovation office and sandbox functions, in theory, it should enable learning and capacity building from both experimentation and knowledge exchange. Formal opportunities for engagement and two-way learning provide opportunities for capacity building and enhanced predictability through a set and transparent engagement and decision-making process. Flexibility in the form of regulatory relief is provided by the experimental element of the innovation sandbox, where specific projects are provided with assistance.

#### *Overview of the Sandbox*

In January 2019, the Ontario Energy Board (OEB) launched its energy Innovation Sandbox. The stated objective of the OEB Innovation Sandbox is to promote the development of "energy-related projects that show clear potential for benefit to consumers — whether

in the form of long-term economic efficiencies, cost performance improvement, service enhancements or other ways."<sup>39</sup>

The Sandbox offers two streams of support: Stream 1 is a regulatory sandbox, further discussed below as a tool for addressing barriers in existing regulatory regimes. Stream 2 is an example of an innovation office function where 'customized guidance' is offered to proponents. This stream applies to projects that are not facing regulatory barriers but would nevertheless benefit from assistance in navigating regulatory compliance. For example, OEB staff may help firms identify which regulations apply to them or provide written assurances that the project does not raise specific compliance concerns. In practice, these regulators could also refer innovators to the sandbox for regulatory experimentation.

Proponents can approach the Innovation Sandbox at any time — there are no set deadlines or parameters of any kind around when information can be requested. Also, the process for requesting a meeting is straightforward — proponents simply send an email to the listed address for a meeting request or to discuss specific questions. There are no intake or application forms required. Critically, regulatory staff require themselves to meet with a proponent within 20 days of the request.<sup>40</sup>

Projects must demonstrate the following five conditions to qualify for the OEB's Innovation Sandbox:

1. Consumer benefit and protection: e.g., long-term economic efficiencies, improvement in cost performance, enhancements to service or other forms.
2. Relevance: Must relate to gas or electricity.
3. Innovation: The project must involve testing a new product, service or business model for gas or electricity that is not widely in use in Ontario and can be scaled.

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<sup>38</sup> Kaiser, *supra* note 37.

<sup>39</sup> Ontario Energy Board, "OEB Innovation Sandbox" (last visited 10 October 2021), online: <[www.oeb.ca/\\_html/sandbox/](http://www.oeb.ca/_html/sandbox/)>.

<sup>40</sup> *Ibid.*

4. Readiness: Project must be ready to be trialed.
5. True regulatory barrier (Stream 1): There must be a clear regulatory barrier.

According to the Innovation Sandbox website, the primary concerns that would disqualify a project or idea from the Sandbox are if there is no prospect for a benefit to customers (and certainly no chance of harm), no cost-shifting, and that if relief is being sought, it is relief that the OEB has the ability to provide (i.e., not relief from legislation). The idea should also be innovative — although OEB staff acknowledge defining what this means in practice can be ‘tricky.’ The OEB’s Innovation Sandbox also does not support:

1. Technical demonstration or feasibility trials.
2. Projects that would lead to cost-shifting among consumers.
3. Requests to change utility revenue requirements.
4. Requests to permanently change regulation.

The streamlined criteria for considering an idea or the project was done purposefully so the Sandbox process did not start to resemble the formal application process at the OEB and was further justified by the lower risk profile posed by projects which would receive only temporary exemptions.

### ***Origins of the Sandbox***

In 2018, the Advisory Committee on Innovation (ACI) delivered a report to the Chair of the OEB on actions the Board could take to promote innovation in Ontario’s energy sector, including implementing a regulatory sandbox.<sup>41</sup> OEB staff had also heard anecdotally from stakeholders about the need to examining ways to reduce regulatory barriers to innovation. OEB staff then began to strategize how to address this issue at large versus focusing on potential reforms for a particular aspect of the existing regulatory framework. OEB staff began researching what other leading regulators were doing to promote innovation and quickly identified regulatory sandboxes. OEB staff developed the OEB Innovation Sandbox, modelled in part on leading examples like the United Kingdom Ofgem’s sandbox,<sup>42</sup> and formally launched it in January of 2019.

### ***Early Experience of the Sandbox (January 2019 – June 2021)***

The Innovation Sandbox operated primarily as an innovation office for the first year and a half, where “open, frank conversations with OEB staff” were the most popular way proponents engaged with the institution.<sup>43</sup> The most common topic of conversations between OEB staff and proponents using the innovation office was whether a project or idea was possible under the current regulatory framework.<sup>44</sup> Between January 2019 and June 2020, the Innovation Sandbox was approached by 33 proponents, 8 of which submitted written proposals. Of the eight written submissions, one submission by a rate-regulated electricity distributor resulted in customized guidance in the form of a regulatory Bulletin, which was issued in August of 2020.<sup>45</sup> Other proponents who submitted written

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<sup>41</sup> Advisory Committee on Innovation, “Report to the Chair of the Ontario Energy Board: Actions the OEB can take to advance innovation in Ontario’s energy sector” (November 2018), online (pdf): <[www.oeb.ca/sites/default/files/Report-of-the-Advisory-Committee-on-Innovation-20181122.pdf](http://www.oeb.ca/sites/default/files/Report-of-the-Advisory-Committee-on-Innovation-20181122.pdf)>.

<sup>42</sup> U.K. Office of Gas and Electricity Markets, “Innovation Sandbox Service Overview” (27 February 2020), online: <[www.ofgem.gov.uk/publications/innovation-sandbox-service-overview](http://www.ofgem.gov.uk/publications/innovation-sandbox-service-overview)>.

<sup>43</sup> Ontario Energy Board, “Reporting[2]” (last updated 26 August 2020), online: <[www.oeb.ca/\\_html/sandbox/reporting-2.php](http://www.oeb.ca/_html/sandbox/reporting-2.php)>.

<sup>44</sup> *Ibid.*

<sup>45</sup> Ontario Energy Board, “Bulletin: Ownership and operation of behind-the-meter energy storage assets for remediating reliability of service” (6 August 2020), online: <[www.oeb.ca/sites/default/files/OEB-Staff-Bulletin-ownership-of-BTM-storage-20200806.pdf](http://www.oeb.ca/sites/default/files/OEB-Staff-Bulletin-ownership-of-BTM-storage-20200806.pdf)>.



proposals to the Innovation Sandbox requested support for which the OEB did not have the authority to provide relief. For example, 4 of the 8 written requests were for exemptions that are not within the OEB's power to give<sup>46</sup> and one submission did not require regulatory exemption.<sup>47</sup> Other proponents were looking for business development support for a new product or proposed suggestions for permanent, long-term modifications to OEB policy and regulation — both of which are outside the scope of the Innovation Sandbox.<sup>48</sup>

In contrast to the first year and a half, OEB staff report that in the past 12 months (roughly Summer 2020–2021), more written proposals (as a share of total engagement) have been received. In this way, the Innovation Sandbox is starting to operate more equally as both an innovation office and a regulatory sandbox. The experimental element of the Innovation Sandbox, the regulatory sandbox, enables the much-needed flexibility for proponents to test innovative ideas in a manner that contains risk. The use of the regulatory sandbox, as a permanent institution where time-bound pilots can be undertaken and the results assessed, allows the OEB to leverage the innovative capacities of non-state actors to help meet the stated policy objectives of the regulatory system. To further increase the utility of the experimental element of the Innovation Sandbox, it would be beneficial if the OEB required some kind of reporting by Sandbox proponents, which would ideally be made public. This would ensure that the experience and insights from a given experiment were documented for the sake of co-learning and capacity building, but also, this process of sharing insights publicly ensures a given proponent will not have a competitive advantage over others in the sector.

As the institution has matured, OEB staff initiated a 'sandbox renewal' consultation

to solicit feedback from stakeholders on the experience to date and on future items to consider in relation to the Innovation Sandbox design and function. The fact that the OEB is conducting iterative consultations based on reflections on the experience to date illustrates OEB staff are cognizant of the need for iteration in continually shaping the institution for learning — two hallmarks of agile regulatory practice. One area where feedback should ideally be solicited is in regards to policy clarity, which has recently been recognized as an important variable in the context of regulator's efforts to increase agility.<sup>49</sup>

Canadian energy regulators, like the OEB, are increasingly being directed by government to become more innovative. Indeed, the OEB's mandate was recently updated to include the objective of facilitating innovation.<sup>50</sup> A critical aspect of achieving this objective in practice is for regulators to understand to what end they are encouraging innovation (i.e., advance policy clarity), so that they can better evaluate where to increase flexibility (around the 'purposeful dimension' where innovation is sought), while retaining (or tightening) regulatory stringency in other dimensions. Similar to other provincial energy regulators, the OEB's mandate around innovation does not explicitly address any decarbonization goals. Ideally, further conversations under the auspices of the sandbox renewal consultations will flush out the objectives embedded in purposeful innovation, which in theory should improve the OEB's ability to adjust the Innovation Sandbox's design and function in order to better meet the clarified objectives. This clarity is particularly important where decisions entail a consideration of tradeoffs between potentially conflicting objectives like decarbonization goals and maintaining the lowest possible costs for customers.

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<sup>46</sup> The OEB may grant exemptions from its own regulatory requirements, such as OEB electricity codes, OEB natural gas rules and OEB licences. However, subject to certain exceptions, the OEB cannot grant exemptions to requirements that are found in statutes or regulations.

<sup>47</sup> Ontario Energy Board, *supra* note 43.

<sup>48</sup> *Ibid.*

<sup>49</sup> Patricia Larkin, "What Works? Identifying And Scaling Up Successful Innovations In Canadian Energy Regulatory Decision-Making" (July 2021), online (pdf): <[www.uottawa.ca/positive-energy/sites/www.uottawa.ca.positive-energy/files/what\\_works\\_identifying\\_and\\_scaling\\_up\\_web\\_final.pdf](http://www.uottawa.ca/positive-energy/sites/www.uottawa.ca.positive-energy/files/what_works_identifying_and_scaling_up_web_final.pdf)>.

<sup>50</sup> Kaiser, *supra* note 32.

### **The Vancouver Zero Emission Building Exchange (ZEBx)**

The Building Bylaws and the Rezoning Policy for Green Buildings, under the Vancouver Zero Emission Building Plan (ZEBP), exemplifies an agile approach to reducing emissions from buildings through regulation. Both the regulations themselves (i.e., instrument) and Vancouver Zero Emission Building Exchange (i.e., institution) developed to support the implementation of these stringent regulations can be considered agile. Firstly, the new regulations are stringent, with increasing stringency built-in, and are performance-focused, providing flexibility in compliance. The regulations provide predictability for builders by establishing set timelines for stringency increases and reviews. In addition, criteria and expectations regarding zero emissions buildings are set to remain fairly consistent from year to year to enable industry to focus on the desired outcomes and optimize their solutions by learning from prior projects. Periodic evaluation of the regulations ensures an iterative approach to regulatory review and improvement. The Zero Emission Building Plan squarely provides for capacity building via a novel institution, the ZEBx, which forms the focus of this analysis.

#### ***Overview of the ZEBx and Regulations under the Vancouver Zero-Emission Building Plan***

The City of Vancouver's Zero Emission Building Plan<sup>51</sup> (ZEBP) is a flexible, phased approach to combat and reduce carbon pollution in Vancouver. This Plan lays out four action strategies to require the majority of new buildings in Vancouver to use 100 per cent renewable energy and have no operational greenhouse gas emissions by 2025 and for all

new buildings to achieve these outcomes by 2030.<sup>52</sup> These four strategies are:

1. Limits: establish GHG and thermal energy limits by building type and step these down over time to zero
2. Leadership: require City-owned and City managed building projects to demonstrate zero emission building approaches where viable
3. Catalyse: develop tools to catalyse leading private builders and developers to demonstrate effective approaches to zero emission new buildings; and
4. Capacity Building: establish a Centre of Excellence for Zero Emission Buildings to facilitate the removal of barriers, the sharing of knowledge, and the development of the skills required to successfully achieve this goal<sup>53</sup>

In May of 2017, new regulations under the Green Building Policy for Rezoning<sup>54</sup> were introduced as a part of the Vancouver ZEBP. The regulations require new large-buildings to meet specified standards based on GHG intensity targets (GHG emissions per unit area per year) by building type. The performance of both energy efficiency and carbon are regulated under this scheme. Targets are based on a stepped reduction timeline starting in 2016 (in approximately 5-year intervals) until all buildings achieve zero emissions by 2030, and for many building types, by 2025.<sup>55</sup> The regulations will be updated to reflect these targets as hard limits for the set milestone years.<sup>56</sup> In order to provide consistency to the building industry in British Columbia, these rules were designed to be closely aligned with B.C. Energy Step Code, which was also released in 2017.<sup>57</sup> Under these rules, developers have

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<sup>51</sup> City of Vancouver, "Zero Emissions Building Plan" (12 July 2016), online (pdf): <[vancouver.ca/files/cov/zero-emissions-building-plan.pdf](http://vancouver.ca/files/cov/zero-emissions-building-plan.pdf)>.

<sup>52</sup> *Ibid*

<sup>53</sup> *Ibid* at 3.

<sup>54</sup> City of Vancouver, "Green Buildings Policy For Rezoning - Process And Requirements" (last modification 14 June 2019), online (pdf): <[bylaws.vancouver.ca/Bulletin/bulletin-green-buildings-policy-for-rezoning.pdf](http://bylaws.vancouver.ca/Bulletin/bulletin-green-buildings-policy-for-rezoning.pdf)>.

<sup>55</sup> City of Vancouver, *supra* note 51.

<sup>56</sup> City of Vancouver, "Policy Report, Development And Building: Zero Emission Building Plan" (5 July 2016), online (pdf): <[council.vancouver.ca/20160712/documents/tr2.pdf](http://council.vancouver.ca/20160712/documents/tr2.pdf)>.

<sup>57</sup> The BC Energy Step Code sets the path for all new buildings to be net zero ready by 2032; see Energy StepCode, "Background" (last visited 10 October 2021), online: <[energystepcode.ca/](http://energystepcode.ca/)>.

significant flexibility in choosing their approach to develop more energy-efficient buildings (e.g., building practices, technologies and energy sources, including electricity and natural gas).<sup>58</sup>

In order to aid in the achievement of these more stringent regulations, the ZEBx was established in 2018. The primary function of the ZEBx is capacity building via knowledge gathering and exchange with the goal of establishing a community of practice for the high-performance building industry. The ZEBx website describes the organization as “a collaborative platform [and]...an industry hub that facilitates knowledge exchange to accelerate market transformation.”<sup>59</sup> Its mission is “to rapidly accelerate the knowledge, capacity and passion for zero-emissions building in Vancouver and British Columbia.”<sup>60</sup>

### *Origins of the ZEBx*

Specialized skills and knowledge are required to develop zero-emission buildings, as it requires more of a systems approach to development.<sup>61</sup> In Vancouver, the City Government realized that the local building industry was lacking in these skills and sought to mitigate for this, in part, by recommending for an institution to carry out pro-active capacity building aimed at knowledge generation and sharing, in addition to engaging the public on the benefits of zero-emission buildings.<sup>62</sup> According to ZEBx staff, when it came time to establish a capacity-building institution, one of the main inspirations for the City of Vancouver Green Building Team was the model of New York City’s Building Energy Exchange. Drawing partly on this model, the ZEBx was established in 2018 as an arm’s length government agency hosted by the Vancouver Regional Construction Association in partnership with the City of Vancouver, Passive House Canada and the Open Green Building Society.<sup>63</sup>

### *Early Experience of the ZEBx*

In reflecting on the early experience of the ZEBx, staff report the capacity building model is working; however, while the ZEBx has been successful in growing a community of practice in Vancouver, they acknowledge they still have work to do in terms of reaching some groups in the building sector. In particular, the ZEBx has not had much engagement with large traditional developers in either the small-building or large-building sub-sectors. To date, the primary groups that make up this growing community of practice are the architecture community and smaller builder-developers that were already early adopters in the green building sector. Individual homeowners do not really interact with the ZEBx but are likely influenced by the architects and builders that do interact with the institution. Given the engagement experience so far, the strategy being employed by ZEBx is to showcase the building successes of smaller developers and builders engaged with the institution as a proof of concept to those developers and builders, often traditional larger developers, who are not yet involved in the community of practice. The main way this ‘showcasing’ is done is through the host of programs the ZEBx runs, which makes up the bulk of the day-to-day work for ZEBx staff.

According to ZEBx staff, the core means of capacity-building occurs through the programming developed and run by Exchange staff. There are many different kinds of programs that are structured differently, employing various engagement styles, and targeting various audiences and knowledge needs. One of the critical mechanisms initially developed to meet the institutions capacity building objectives was the Standardized Case Studies to Catalyze Implementation of ZEBs.<sup>64</sup> This series of case studies provided a means for systematically undertaking direct research and

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<sup>58</sup> Matt Horne, “Opinion: Vancouver’s rezoning policy cuts carbon and costs”, *The Vancouver Sun* (1 May 2017), online: <[vancouver.sun.com/opinion/op-ed/opinion-vancouver-s-rezoning-policy-cuts-carbon-and-costs](http://vancouver.sun.com/opinion/op-ed/opinion-vancouver-s-rezoning-policy-cuts-carbon-and-costs)>.

<sup>59</sup> Zero Emissions Building Exchange, “About,” (last visited 10 October 2021), online: <[www.zebx.org/about/](http://www.zebx.org/about/)>.

<sup>60</sup> *Ibid.*

<sup>61</sup> Hannah Kacary, “Energy Efficiency in Buildings: The Challenges and Opportunities in the Drive to Net-Zero” *Eco Canada* (11 February 2021), online: <[eco.ca/blog/energy-efficiency-in-buildings-the-challenges-and-opportunities-in-the-drive-to-net-zero/](http://eco.ca/blog/energy-efficiency-in-buildings-the-challenges-and-opportunities-in-the-drive-to-net-zero/)>.

<sup>62</sup> City of Vancouver, *supra* note 51.

<sup>63</sup> Zero Emissions Building Exchange, *supra* note 59.

<sup>64</sup> Zero Emissions Building Exchange, “Standardized Case Studies to Catalyze Implementation of ZEBs” (last visited 10 October 2021), online: <[www.zebx.org/standardized-case-studies-to-catalyze-implementation-of-zeb/](http://www.zebx.org/standardized-case-studies-to-catalyze-implementation-of-zeb/)>.

dissemination activities. Like the model for the entire organization, this direct research approach to capacity building was also inspired by an existing effort — the British Columbia Energy Step Code Study Series.<sup>65</sup> A key design element of this series is its standardized format, which is meant to enable “industry to effectively access the information, compare results across various projects, building systems, products and designs, and integrate the knowledge into their projects.”<sup>66</sup> The case study series is also structured by its focus on addressing four core objectives of high-energy performance buildings. Another more recent program, the ZEBx Decarb Lunch webinar series, which was developed during the COVID-19 period, has now become their most popular program.<sup>67</sup>

According to ZEBx staff, one early lesson learned in designing programming for capacity building is striking a balance in providing information that is accessible and understandable while still providing enough substance and detail to ensure the information exchange truly results in capacity being built. Arguably, it is the keen focus on information provision as a means to an end (i.e., building capacity) and correlating attention to the design of information exchange that has made this capacity-building strategy successful in increasing regulatory agility in practice.

The showcasing of successful ZEB projects through ZEBx programming not only increases regulatory agility by capacity-building geared at industry, but also by providing evidence to regulators that zero-emission building regulations can be met in a cost-efficient manner. According to ZEBx staff, the fact that the organization is impartial in its orientation and capacity builds towards the goal of decarbonizing the building sector, as opposed to advocating for any kind of specific solution, has been critical for building the institution’s credibility as a neutral intermediary between industry and government. Given regulators often struggle to know where the leading edge of technology lies, and therefore how far they can ‘ratchet up’ stringency levels,<sup>68</sup> having an

active, informed and impartial institution to substantiate appropriate stringency levels based on agnostic assessments of existing industry capacity enables regulators to 1) push back against industry attempts to downgrade stringency levels based on exaggerated or false claims of unfeasibility and 2) justify increase stringency levels when appropriate. In a sense, the role of the ZEBx as a neutral intermediary in assessing industry capacity can be viewed as indirect capacity building for the regulators themselves, which has helped them uphold the implementation of the City’s agile approach to building regulations.

#### IV. SUMMARY DISCUSSION AND FUTURE RESEARCH

Regulatory models have evolved over time, largely following the generalized pattern of shifting modes in governance systems. The latest iteration of regulatory reform in Canada, known as regulatory excellence or agile regulation, has emphasized the need for flexible, stringent and predictable regulations to be operationalized by regulatory management that is agile, rigorous, efficient, transparent and inclusive. This paper describes and examines the early experience of two examples of agile regulatory institutions to both understand the complexities of development and implementation and to begin to link their design and function to increasing regulatory agility. Specifically, this research highlights the critical role of knowledge gathering and exchange as a means of capacity building through co-learning processes.

The two examples of agile regulatory institutions examined in this research were able to increase regulatory agility, in practice, due to the unique functions these institutions provided, especially their shared capacity-building functions related to information gathering, dissemination and co-learning. Given these two cases represent two different kinds of agile regulatory institutions, there are, of course, differences in their function and structure that impacted how co-learning and capacity building translated into increased agility in practice.

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<sup>65</sup> *Ibid.*

<sup>66</sup> *Ibid.*

<sup>67</sup> Zero Emissions Building Exchange, “Annual Report 2020-2021” (2021), online (pdf): <[www.zebx.org/wp-content/uploads/2021/07/FINAL-ZEBx-Annual-Report-Year-3-2020-2021-1.pdf](http://www.zebx.org/wp-content/uploads/2021/07/FINAL-ZEBx-Annual-Report-Year-3-2020-2021-1.pdf)>.

<sup>68</sup> Colleen Kaiser & Martin Olszynski, “Key Characteristics of Agile Regulations: Stringency” (21 April 2021), online (blog): *Smart Prosperity Institute* <[institute.smartprosperity.ca/AgileRegulationsStringency](http://institute.smartprosperity.ca/AgileRegulationsStringency)>.

In the case of the ZEBx, the organization's structure as an independent non-profit knowledge platform meant capacity building and co-learning (and increased agility) occurred through direct knowledge gathering and dissemination and neutral intermediary functions. Information gathering and exchange happened through ZEBx programming, which included direct research, analysis and dissemination activities like regular case study analysis and training webinars. In comparison, the OEB's Innovation Sandbox was able to enable capacity building and co-learning by providing opportunities for informal and timely conversations between regulatory staff and proponents, in addition to opportunities for experimentation. In the OEB case, information-gathering activities did not take the form of direct research, analysis and dissemination but was more of a two-way learning process between proponents who approached the Innovation Sandbox and OEB staff.

In these cases, capacity-building through co-learning represents the core crossover element that enabled increased regulatory agility. These co-learning processes between relevant stakeholders resulted in increased capacity for regulated entities to understand and navigate the respective regulatory frameworks in a way that enhanced the potential for innovative approaches for compliance. This increased capacity is especially critical for operationalizing agile regulation, given capacity limitations are a common barrier to increasing regulatory agility, especially in sectors like building and energy where technologies are rapidly evolving. These experiences also reflect the theoretical proposition of agile regulation, that increasing regulatory agility requires the inclusion of a larger number of increasingly diverse stakeholders.

This research represents an initial effort to make these linkages; however, additional research is required to develop a context-sensitive theory of agile regulatory institutions. Specifically, the characteristics of agile regulatory institutions and the elements that support them need to be further explored and categorized, and our understanding improved for how these elements: 1) improve agility and 2) what new authorities and capacities are required to operationalize them. This kind of future research is vital given the wide variety of terminology used to describe similar elements of agile regulatory institutions and almost no understanding of the causal relationships

between individual elements and increased regulatory agility. Filling this gap in the literature will provide other would-be agile regulators with important context-specific lessons and best practices, which are urgently needed to drive clean innovation and accelerate emission reductions. ■

# THE CANADIAN NET-ZERO EMISSIONS ACCOUNTABILITY ACT: A LEGISLATIVE PLACEBO?

*Andrew Roman\**

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On June 30, 2021, Environment and Climate Change Canada issued a news release announcing that Bill C-12, the *Canadian Net-Zero Emissions Accountability Act* had received Royal Assent, and had therefore become the law in Canada.<sup>1</sup> The headline of the news release was: “Government of Canada legislates climate accountability with first net-zero emissions law.”

Generally speaking, a new law is necessary only if the absence of such a law will create or perpetuate a serious societal problem. My commentary on this legislation will explore both the need for this new law and what it is likely to accomplish.

## BACKGROUND

Historically, laws have generally been written to make mandatory, in effect, certain generic requirements, e.g., do this, don't do this, or

pay this tax or fine. In this century, particularly with the rise of social media, governments have realized that most journalists read media releases and Twitter, not statutes. And the public reads what journalists write. This has led to the enactment of some statutes which are more like public relations statements than useful laws.

More of our laws now contain lengthy rhetorical preambles, vague or circular definitions<sup>2</sup>, little substantive content and glowing descriptions in media releases and Ministers' speeches about what these laws are supposed to accomplish. The objective is to make the public feel good about their government's good intentions. Such a law could be described as a “feel-good law,” a legislative placebo rather than an effective piece of legislation.

The well-known placebo effect causes many of the test patients who receive a placebo in

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Mr. Roman has appeared as legal counsel before numerous administrative tribunals and courts, including the Supreme Court of Canada. He has authored some 90 published legal articles and a book, and was an adjunct faculty member at four Canadian law schools while maintaining an active law practice from 1973 to 2017.

You can read more of Andrew Roman's writing on a variety of energy related topics on his blog, here: [andrewromanviews.blog](http://andrewromanviews.blog).

<sup>1</sup> Environment and Climate Change Canada, News release, “Government of Canada legislates climate accountability with first net-zero emissions law” (June 30, 2021), online: <[www.canada.ca/en/environment-climate-change/news/2021/06/government-of-canada-legislates-climate-accountability-with-first-net-zero-emissions-law.html](http://www.canada.ca/en/environment-climate-change/news/2021/06/government-of-canada-legislates-climate-accountability-with-first-net-zero-emissions-law.html)>.

<sup>2</sup> See e.g. *Impact Assessment Act*, SC 2019, c 28, s 1, which has a preamble of several clauses that merely state what the Government of Canada recognizes, which would not be of any great assistance in statutory interpretation. It then goes on in the definition section, s 2, to define “Indigenous knowledge”, which is given special statutory status in that Act, as: “Indigenous knowledge means the Indigenous knowledge of the Indigenous peoples of Canada.” How will this help a regulator to determine whether the evidence to be presented by an Indigenous group's witness at a public hearing is or is not Indigenous knowledge in the statutory sense?

drug clinical trials to feel better because of their expectation that they would feel better. It is this effect that has been used by politicians in recent years to create the illusion that essentially symbolic, useless or even harmful legislation will be beneficial. This commentary will explain why Bill C-12 (hereafter, the “*Accountability Act*”) is essentially placebo legislation, with a potentially harmful effect.

### **THE JUNE 30, 2021 NEWS RELEASE ON THE ACCOUNTABILITY ACT**

After summarizing the targets and commitments in the legislation the government’s news release emphasizes that “The *Act* also provides accountability and transparency...” in a variety of ways, e.g.:

- Requiring an emissions reduction plan, a progress report, and an assessment report for each target to be tabled in both Houses of Parliament and made available to the public.
- Requiring the Minister of Finance to prepare an annual report respecting key measures that the federal government has taken to manage its financial risks and opportunities related to climate change.
- Requiring the Commissioner of the Environment and Sustainable Development, at least once every five years starting no later than the end of 2024, to examine and report on the Government of Canada’s implementation of measures aimed at mitigating climate change.<sup>3</sup>

The news release also quotes the Minister as saying “We promised to legislate net-zero emissions by 2050 and put in place legally-binding targets, and yesterday we delivered on that promise...”

How merely reaching an emissions target (which cannot be measured, only estimated, with a lot of judgment) can be legally binding, who is bound by it, and how that can be enforced is unexplained.

### **THE PURPOSE CLAUSE**

“The purpose of this Act is to require the setting of national targets for the reduction of greenhouse gas emissions based on the best scientific information available and to promote transparency and accountability in achieving those targets, in support of achieving net-zero-emissions in Canada by 2050 and Canada’s international commitments in respect of mitigating climate change.”<sup>4</sup>

### **MY ANALYSIS OF THE REAL PURPOSE OF THE ACT**

#### **1. Setting of National Targets**

The Harper government set greenhouse gas emissions reduction targets as part of government policy, without any legislation. Until recently, these targets were accepted by the Trudeau government, also without any legislation. What changed? Why is this legislation being enacted now? It cannot be because emission reduction targets suddenly require legislation.

It is probably for two political reasons. First, because the legislation will make it more difficult for future governments to reduce, or to fail to meet the legislated targets. If another political party becomes the government it will have to amend the legislation — a highly visible process — to reduce the targets. And second, because enshrining something in legislation will stimulate lawsuits or judicial review applications seeking to enforce the government’s compliance with its own targets.

Amending or repealing the law, which any future government could legally do, would encounter high-profile political opposition, making it a vote loser. Thus, the legislation is cleverly designed to bind successor Parliaments politically, even though constitutionally one Parliament cannot bind its successor. Any future government that failed to pursue the target would be accused of failing to care about the planet and Canada’s environment. One purpose of the law is to attempt to cast the net-zero target in stone.

Through carbon taxes and other nationally applicable regulatory measures, Ottawa can

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<sup>3</sup>Environment and Climate Change Canada, *supra* note 1.

<sup>4</sup>*Canadian Net-Zero Emissions Accountability Act*, SC 2021, c 22, s 4.



effectively force provincial policies to contribute to its target, and penalize provincial policies that fail to do so. As the failed provincial litigation against the carbon tax<sup>5</sup> has demonstrated, even without the legal power to bind provinces to its target, the federal government can use economic carrots and sticks to control both provinces and their legal creations, municipalities.

An increasing number of court cases see environmental advocacy groups, sometimes representing children<sup>6</sup>, arguing that challenges to government climate policy are justiciable, and therefore, should be decided by judges. These lawsuits seek to compel governments to carry out the advocated climate policies to meet the targets. Once these targets are legislated such litigation — the private enforcement of public laws — becomes a lot easier.

Government defendants in lawsuits are not always unhappy to be sued, and do not always defend them vigorously. If these legislated emission reduction targets are not being met, resulting in litigation, this enables the government to justify its actual achievements as realistic compared to the claims in the lawsuits. The government can also justify settling the litigation by actions such as increasing the carbon tax. Given its facilitation of lawsuits, the *Accountability Act* might well be nicknamed the “Come and Sue Me Act.”

## **2. To Promote Transparency and Accountability**

The Government seeks to sell this law as adding an important element of transparency and accountability to its reporting requirements. But there is nothing preventing the Government from being more transparent and accountable without legislation.

The federal government is already committed to file reports with the United Nations (UN) every two years on all major climate change measures undertaken by federal and provincial governments. It is also required to file reports

every five years on emissions reduction measures under the 2015 Paris Agreement, to which Canada is a signatory. These reports are not secret, but publicly available on the website of Environment and Climate Change Canada. Furthermore, the Commissioner on the Environment and Sustainable Development (a branch of the Office of the Auditor General of Canada) also issues periodic reports on the performance of federal departments and the government as a whole in meeting their program objectives. Although the new legislation is presented as creating transparency and accountability, that cannot be its real purpose because even without this legislation there is already complete transparency, which creates accountability.

That said, the information to be provided will be opaque on the single most important policy issue: cost. Without knowing the cost to Canadians, year by year, there is no way to judge whether the benefits to Canadians exceed our costs. The claimed benefits are the reduction in Canada’s greenhouse gas emissions, with the assumption that this domestic reduction will reduce the adverse effects of CO<sub>2</sub> on the Canadian climate and weather.

The decarbonization of the Canadian economy through the accelerated elimination of fossil fuels and the electrification of all energy sources will be very costly. Yet no one knows the costs because the federal government has never published a cost-benefit analysis of Canada’s climate-related programs and expenditures. In a May, 2018 collaborative report by the federal and provincial governments’ Auditors General, they observed that no one has a complete record of all the programs in place, that the number of programs at the municipal level appears to be growing quickly, and that there is very poor coordination among governments in administering these programs.<sup>7</sup> How many of these programs are redundant or conflict with other programs is unknown. Similarly, no authoritative analysis has ever been done on the international competitive damage caused to Canadian industry by higher

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<sup>5</sup> *Reference re Greenhouse Gas Pollution Pricing Act*, 2021 SCC 11.

<sup>6</sup> See e.g. *La Rose v Canada*, 2020 FC 1008 (unsuccessful) and *Mathur v Ontario*, 2020 ONSC 6918, brought by the environmental law firm Ecojustice, was successful against Ontario’s motion to strike out the case.

<sup>7</sup> Office of the Auditor General of Canada, “Perspectives on Climate Change Action in Canada – A Collaborative Report from Auditors General – March 2018” (March 2018), online: <[www.oag-bvg.gc.ca/internet/English/par\\_optp\\_201803\\_e\\_42883.html#>](http://www.oag-bvg.gc.ca/internet/English/par_optp_201803_e_42883.html#>).



carbon dioxide taxes and higher electricity rates than other countries with which we compete.<sup>8</sup> The legislation and government information about it provides no estimate of how costly it will be to reach the next milestone, or who will bear the cost, or how the cost will be financed.

Of necessity, Canadians have, for almost two centuries, relied on hydrocarbons to heat and light their homes or transport themselves, their children and their food. To eliminate all of these essential sources of life in 30 years is unprecedented, with a high risk of failure. Embracing this radical change without disclosing its costs and risks is at best opaque and at worst misleading.<sup>9</sup> The purpose of the law is to disclose a legislated target while intentionally declining to disclose its impact on Canadian lives. This is inconsistent with the professed objectives of greater accountability and transparency.

University of Manitoba Professor emeritus Vaclav Smil is a globally recognized energy transitions authority. In his several books and articles<sup>10</sup> he has shown that the number of years that it has historically taken for new sources of energy to surpass just 25 per cent of energy use in a country is typically 50–70 years. It takes many more decades to become a dominant energy source. Such major energy transitions only happen when the new technology has clear advantages of cost, effectiveness and reliability over other existing technologies. Yet today, Western governments profess to believe they can legislate such a transition within 30 years without any new, fully developed and tested breakthrough in energy technology.

Professor Smil recently wrote<sup>11</sup>:

“The most important fact is that during those decades of rising concerns about global warming the world has been running towards fossil carbon, not moving away from it...emissions have nearly tripled in Asia, largely because the Chinese combustion of fossil fuels has almost quadrupled. As a result, global emissions of CO<sub>2</sub> increased by more than 60 per cent since 1992, setting yet another record in 2018.

...

Designing hypothetical roadmaps outlining complete elimination of fossil carbon from the global energy supply by 2050 is nothing but an exercise in wishful thinking that ignores fundamental physical realities....The complete decarbonization of the global energy supply will be an extremely challenging undertaking of an unprecedented scale and complexity that will not be accomplished – even in the case of sustained, dedicated and extraordinarily costly commitment – in a matter of a few decades.”

It is easy for politicians in any country to seek power with promises to fight climate change that cannot be kept until long after they're out of office. China has recently said that it will reach net zero by 2060, 40 years from now.<sup>12</sup> By that date, if he is still alive, President Xi

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<sup>8</sup> Only 27 countries have a carbon tax. The US is not one of these.

<sup>9</sup> The rush to achieve net-zero will create domestic and international winners and losers. For Canadians, the target will make all forms of transportation, home heating, electricity and food much more costly. This will particularly impact low income consumers and smaller businesses. At the international level, as the West reduces its purchases of coal and natural gas in international markets, it makes these fuels cheaper for China to purchase, further enhancing China's international competitive position. In effect, the developed countries of the West are off-shoring emissions to the developing countries, resulting in little or no net planetary benefit, and thereby off-shoring production, jobs and investment. In the global economic competition the winners are likely to be the ones who reduce their emissions last and by the least. The emission reduction leaders will be the losers.

<sup>10</sup> See e.g. Vaclav Smil, “It'll Be Harder Than We Thought to Get the Carbon Out” (June 2018) 55:6 IEEE Spectrum 72, online (pdf): <vaclavsmil.com/wp-content/uploads/2018/09/Smil-Essay-IEEE-Spectrum-June-2018.pdf>. See also Vaclav Smil, “What we need to know about the pace of decarbonization” (2019) 3:2 *Substantia* (Suppl. 1) 13.

<sup>11</sup> Vaclav Smil, “What we need to know about the pace of decarbonization” (April 2020) at 2, 4, online (pdf): *Johnson Shoyama Graduate School of Public Policy* <www.schoolofpublicpolicy.sk.ca/documents/research/policy-briefs/jsgs-poly-briefs-pace-of-decarbonization\_web.pdf>.

<sup>12</sup> At the November 2021 COP 26 Summit in Glasgow, India went even further. Prime Minister Narendra Modi said India would aim for net zero carbon emissions by 2070. While it's the first time India has made such a pledge, the timeline is still two decades beyond the 2050 target set by the climate summit's organizers. See Saheli Roy Choudhury, “Can India achieve net zero carbon emissions by 2070? The road is long but not impossible” *CNBC* (4 November 2021), online: <www.cnbc.com/2021/11/05/can-india-achieve-net-zero-carbon-emissions-by-2070-the-road-is-long-but-not-impossible.html>.

Jinping will be 106 years old. By the 2050 US and Canadian target dates President Joe Biden would be 107, and Prime Minister Justin Trudeau, 78. None of them will be leaders of their countries at these times.

### 3. Canada's International Commitments

The Paris Agreement<sup>13</sup> has been widely misrepresented in the Western media, and therefore, widely misunderstood. It has repeatedly and wrongly been described as an international agreement to which individual nations including Canada have made binding commitments to reduce global average temperature increase to no more than 2°C, and preferably 1.5°C. The Agreement actually set no national goals for greenhouse gas emission reductions. The Agreement merely requires each of the 195 country signatories to set its own “nationally determined contribution,” which may be to **increase** emissions if the country so wishes — and may do. Countries are required to submit five-year plans showing what they intend to do to increase or reduce their emissions, in what number of years. Canada has made no binding international commitment requiring us to impose legal obligations for any level of greenhouse gas emissions reductions.

There is a widespread belief that if “we” all do our part, “we” will successfully keep the global average temperature increase below 2°C. That is a misunderstanding. It is based on the assumptions, so far incorrect, that, first, most of the large emissions countries of the world are intent upon reducing emissions and second, that they will forego the benefits of hydrocarbons-based economic development to follow the leadership of countries like Canada. That 2°C target was political, proposed by environmental campaigners, not scientists, and the UN adopted it as the aspirational goal of the Agreement.<sup>14</sup> After 2015 it very quickly became

obvious, based on what countries actually committed to, that the goal cannot be reached.<sup>15</sup>

On examining the text of the Paris Agreement — which almost no one seems to do — it is clear that no country, not even Canada, is required by the text of the Agreement to set net-zero, or any other level of emissions, as its national goal. Each of the 195 country signatories is free to set its own “nationally determined contribution,” regardless of what other countries may or may not commit to do. And the Agreement has no mechanism for enforcement of any nationally determined contributions.

The Organisation for Economic Co-operation and Development (OECD) countries, mostly of the developed West, represent approximately one third of global emissions. They have made various reduction commitments. But the developing countries, mostly of Asia and Africa, represent approximately two thirds of global emissions. Most of these countries have promised to increase, not reduce their emissions because reductions would jeopardize their efforts to reduce the poverty of millions of their people, some eight hundred million of whom still have no access to electricity.

Since 2010, most of the CO<sub>2</sub> emissions growth has occurred in the non-OECD countries.<sup>16</sup> In the plans that the developing countries have submitted to the UN, they have generally conditioned any future emissions reductions (or even reductions in the rate of increase) on large financial assistance from the OECD countries. On March 13, 2021, Pakistan's prime minister warned<sup>17</sup> that developing countries would need about US\$400 billion per annum in climate finance support to shift toward low carbon development pathways. Yet developed countries have thus far failed to deliver even the \$100 billion a year they promised in 2016 under the Paris Agreement. India has called the

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<sup>13</sup> *The Paris Agreement, United Nations Framework Convention on Climate Change*, 12 December 2015, Can TS 2016/9 (entered into force 4 November 2016).

<sup>14</sup> Bjorn Lomborg, *False Alarm* (New York: Basic Books, 2020) at 24–25.

<sup>15</sup> Jeff Tollefson, “The hard truths of climate change – by the numbers”, *Nature* (18 September 2019), online: <[www.nature.com/immersive/d41586-019-02711-4/index.html](http://www.nature.com/immersive/d41586-019-02711-4/index.html)>.

<sup>16</sup> British Petroleum, “Statistical Review of World Energy, 69<sup>th</sup> Edition” (2020), online (pdf): <[www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2020-full-report.pdf](http://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2020-full-report.pdf)>.

<sup>17</sup> See GWPF & BBC News, “Net Zero agenda faltering: ‘Pie in the sky’” (1 April 2021), online: *NetZero Watch* <[www.netzerowatch.com/net-zero-agenda-faltering-pie-in-the-sky](http://www.netzerowatch.com/net-zero-agenda-faltering-pie-in-the-sky)>.

West's 2050 net-zero targets "pie-in-the-sky." India's energy minister said that poor nations want to continue using fossil fuels and the rich countries "can't stop it".<sup>18</sup>

At the November 2021 COP26 meeting in Glasgow, most of the world's developing countries backed a demand for wealthy nations to channel **at least** \$1.3 trillion in climate finance to them, **annually**, starting in 2030.<sup>19</sup> If the developed countries cannot collect the \$100 billion promised in Paris even once in the six years from 2015 to 2021 how likely are they to pay \$1.3 trillion every year?

China is responsible for approximately 28 per cent of global emissions in 2019 versus only 13 per cent in 1999.<sup>20</sup> It merely promised in Paris to peak its emissions by 2030 at some unspecified level, without indicating how long it would remain at whatever that peak level will be.<sup>21</sup> India, which is catching up to China, presented its nationally determined contribution as a reduction in emissions per unit of Gross Domestic Product (GDP), which is a reduction in intensity, not in tonnes of CO<sub>2</sub>.<sup>22</sup> This means India's emissions can remain the same or increase as long as its GDP is increasing fast enough (thanks to fossil fuel use) to reduce emissions per unit of GDP.

When we add up and net out the nationally determined contributions, even if all of the 195 countries fully comply with their targets (which is already doubtful), the net reduction in global temperature increase by 2100 would be insignificantly small, within the range of measurement error.

There is a huge disconnect between the aspirational goal of this Agreement as presented in the media and Canadian government communications, and what the 195 signatory nations have actually said in their nationally determined contributions that they intend to do. As Nobel prize-winning economist William Nordhaus has written in the American Economic Association Journal of August 2018<sup>23</sup>:

"The reality is that most countries are on a business-as-usual (BAU) trajectory of minimal policies to reduce their emissions... The international target for climate change with a limit of 2°C appears to be infeasible with reasonably accessible technologies even with very ambitious abatement strategies."

Regardless of what Canada does, the Paris Agreement, like its predecessor accord, Kyoto<sup>24</sup>, is already evidently a failure.

#### **4. What the Accountability Act Does Not Require**

The *Accountability Act* requires the federal government to set targets and report on the extent to which it is meeting those targets. But it does not require Canada to meet the 2050 target. That means that the target is not legally binding. Nor is there any penalty set out for failure to do so. It is not clear why the Minister says that the target is legally binding.

An undated media release (which was modified on August 13, 2021) from Environment and Climate Change Canada is headed "Net-Zero

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<sup>18</sup> *Ibid.*

<sup>19</sup> Matthew Dalton, "China, India and Other Developing Nations Seek \$1.3 Trillion a Year in Climate Finance", *The Wall Street Journal* (4 November 2021), online: <[www.wsj.com/articles/climate-finance-china-india-11636039142](http://www.wsj.com/articles/climate-finance-china-india-11636039142)>.

<sup>20</sup> Hannah Ritchie & Max Roser "China: CO<sub>2</sub> Country Profile" (2020), online: *Our World in Data* <[ourworldindata.org/co2/country/china#citation](http://ourworldindata.org/co2/country/china#citation)>.

<sup>21</sup> Stephen Eule, "China's INDC: Significant Effort or Business as Usual?" (2 July 2015), online: *Global Energy Institute* <[www.globalenergyinstitute.org/chinas-indc-significant-effort-or-business-usual](http://www.globalenergyinstitute.org/chinas-indc-significant-effort-or-business-usual)>.

<sup>22</sup> Government of India, "India's Intended Nationally Determined Contribution: Working Towards Climate Justice" (2015), online (pdf): <[www4.unfccc.int/sites/ndcstaging/PublishedDocuments/India%20First/INDIA%20INDC%20TO%20UNFCCC.pdf](http://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/India%20First/INDIA%20INDC%20TO%20UNFCCC.pdf)>.

<sup>23</sup> William Nordhaus, "Projections and Uncertainties about Climate Change in an Era of Minimal Climate Policies" (2018) 10:3 *American Economic J: Economic Policy* 333 at 333–34, online (pdf): <[pubs.aeaweb.org/doi/pdfplus/10.1257/pol.20170046](http://pubs.aeaweb.org/doi/pdfplus/10.1257/pol.20170046)>.

<sup>24</sup> *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 11 December 1997, 2303 UNTS, 148, 37 ILM 22 (entered into force 16 February 2005).

Emissions by 2050.”<sup>25</sup> It states in carefully crafted language that “The Government of Canada is committed to moving to zero emissions by 2050.” Note that it does not say that it is committed to achieving this, but merely “moving” to it. Despite this careful use of weasel words the media coverage has been as if “moving to” means actually achieving.

### UNCERTAINTY AND CONFUSION IN GOVERNMENT COMMUNICATIONS

This media release also mentions that in February 2021 the Government established an independent group of experts from across the country to consult with Canadians and provide the government with advice on the best pathways to achieving net-zero emissions by 2050. This begs the question: why is the government enshrining in legislation a target that requires an advisory body to show it how to meet?

In explaining how net-zero is to be achieved, and the benefit of doing so, the media release states:

“Achieving net-zero emissions means our economy either emits no greenhouse gas emissions or offsets its emissions, for example, through actions such as tree planting or employing technologies that can capture carbon before it is released into the air. This is essential to keeping the world safe and livable for our kids and grandkids.”<sup>26</sup>

There are two problems with this paragraph: the first sentence and the second sentence.

As for the first sentence, currently there is no existing technology that would enable the Canadian economy to emit no CO<sub>2</sub>. Today, and for the foreseeable future, there are no battery or hydrogen-powered passenger jet aircraft, ongoing cargo ships, large transport trucks

or farm tractors. No one manufactures steel or concrete without massive use of fossil fuels, so the construction of the large concrete bases and tall steel towers of wind turbines entails large CO<sub>2</sub> emissions from fossil fuels. The planting of trees is not really a long-term solution because it may take decades for them to grow to a substantial height, and, although they absorb CO<sub>2</sub> during their growth period, when they die they decompose, releasing the CO<sub>2</sub> they have absorbed. As for carbon capture, although it is technically feasible and being done, it is not yet economic on anywhere near the scale that would be required to offset Canada’s reasonably foreseeable emissions.<sup>27</sup> Our emissions will likely increase due to population growth, both domestic and through immigration. Nor is it possible to capture CO<sub>2</sub> “before” is released into the air from the literally millions of sources of CO<sub>2</sub> emissions in Canada — every home, every car, every office and factory would need to have some sort of carbon capture device, which does not yet exist, even on paper.

The second sentence appears to equate Canada with the entire world. If Canada achieves net-zero, will that really keep the Canadian climate, created by the emissions of the entire world, safe and livable for our kids and grandkids in Canada? Of course not. Canada represents only 1.6 per cent of global CO<sub>2</sub> emissions, and this percentage is declining as the developing countries increase their emissions.

According to Canada’s 2021 National Inventory Report (NIR) on greenhouse gas emissions submitted to the United Nations, our national emissions in 1990 were 600 Mt of carbon dioxide equivalent (MtCO<sub>2</sub>e). By 2017 they had increased to 716 MtCO<sub>2</sub>e (+19.3%) and by 2019, to 730 MtCO<sub>2</sub>e (+21.7%). Since 1990, in every year but three, Canada’s emissions have increased. As we emerge from the pandemic lockdowns further increases are likely. Canada is actually moving away from net-zero, not towards it.

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<sup>25</sup> Government of Canada, “Net-Zero Emissions by 2050” (last modified 13 August 2021), online: <[www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050.html](http://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050.html)>.

<sup>26</sup> *Ibid.*

<sup>27</sup> Jeffrey Rissman & Robbie Orvis, “Carbon Capture and Storage: An Expensive Option for Reducing U.S. CO<sub>2</sub> Emissions”, *Forbes* (3 May 2017), online: <[www.forbes.com/sites/energyinnovation/2017/05/03/carbon-capture-and-storage-an-expensive-option-for-reducing-u-s-co2-emissions/?sh=127f85846482](http://www.forbes.com/sites/energyinnovation/2017/05/03/carbon-capture-and-storage-an-expensive-option-for-reducing-u-s-co2-emissions/?sh=127f85846482)>.

## CLIMATE CHANGE IS A COLLECTIVE ACTION PROBLEM

The media release also seems confused about the nature of the climate change issue: it is a global collective action problem not an individual national action problem. The CO<sub>2</sub> we emit doesn't stay above Canada, and the CO<sub>2</sub> other nations emit doesn't stay out of Canada. There is no CO<sub>2</sub> wall around the country. A molecule of CO<sub>2</sub> is the same wherever it is emitted, and is dispersed globally by prevailing winds. Therefore, if "keeping the world safe and livable for our kids and grandkids" requires the achievement of net-zero, that would have to be net-zero for the entire world. Canada can't do it alone. It is ignorant and misleading for our government's media release to tell Canadians that it can, and is legally bound to do so, in order to attempt to justify unnecessary placebo legislation.

## OTHER EXAMPLES OF PLACEBO LEGISLATION

The current Liberal government in Ottawa is by no means the only one presenting placebo legislation; neither is such legislation limited to climate change. It has been enacted with increasing frequency since approximately the beginning of this century, at both the federal and provincial levels, in Canada and elsewhere. Here just three examples.

### 1. BC's "Enshrinement" of UNDRIP into BC Law

In 2019 the BC government announced, to unanimous applause in the BC Legislature, that it was the first Canadian province to enshrine the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) into law. Despite the all party applause in the Legislature, BC's new law didn't actually do that in 2019. BC's *Declaration on the Rights of Indigenous Peoples Act*<sup>28</sup> sets out four items of work to be done in the future. This work was not completed, and barely commenced, when the new Act was being celebrated. The law enshrines nothing. It is really just a to do list. To describe this to do list as part of an enforceable, protective BC law is wrong. It

makes people feel good but it doesn't do good, at least not yet. Perhaps it will when the work on the to do list has been completed.

### 2. Bill C-69, the *Canadian Impact Assessment Act* (SC 2019, c 28, s 1) (hereafter, the IAA)

In 2012 the Harper government removed the power to make decisions about pipelines, electricity transmission lines and similar projects from the National Energy Board and transferred it to the federal cabinet. That politicized what had for decades been a regulatory decision by an expert tribunal. The 2012 Act violated the principle that whoever hears shall decide, and whoever decides shall hear. The IAA was presented as fixing the 2012 Act. However, it didn't do that. Under both the 2012 Act and the IAA, those who hear all the evidence decide nothing; they merely prepare a report. Then, those who hear nothing decide everything.

Regrettably, the IAA did more than preserve this fatal flaw, it introduced other amendments that made the assessment process even worse. As shown in the September 2018 issue of the *Energy Regulation Quarterly* article titled "Federal Energy Project Reviews: Timelines in Practice,"<sup>29</sup> Canadian federal impact assessments under the 2012 law could take two to three times as long as assessments in the US. Typical hearings in Canada occupied from 6 to 8 years. Under the IAA the new Agency will be required to assess 20 mandatory issues (versus 12 under the 2012 Act), regardless of whether these are relevant to the proceeding before it. This almost doubles the number of mandatory issues, yet the government has legislated a hearing deadline that is much shorter than previous proceedings. It is never explained how the Agency will do twice the work in half the time. It seems more likely that unless the Minister grants multiple time extensions or provides widespread exemptions from various provisions of the Act, the process will be much longer than previously, even before the usual post-decision litigation adds a few more years. Indeed, I have suggested in testimony before the Canadian Senate that this legislation might well be called the "No More Pipelines Act."<sup>30</sup>

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<sup>28</sup> SBC 2019, c 44.

<sup>29</sup> Jonathan Drance, Glenn Cameron & Rachel Hutton, "Federal Energy Project Reviews: Timelines in Practice" (2018) 6:3 *Energy Regulation Quarterly* Q 23, online (pdf): <energyregulationquarterly.ca/wp-content/uploads/2019/05/ERQ\_Volume-6\_Number-3-2018.pdf>.

<sup>30</sup> Senate, Standing Committee on Energy, the Environment and Natural Resources, Issue No. 58 – Evidence (2 April 2019), online: <senCanada.ca/en/Content/SEN/Committee/421/enev/58ev-54639-e>.

### 3. The Paris Agreement

If Canada's placebo *Accountability Act* is stimulated by the Paris Agreement it should come as no surprise that the Paris Agreement itself is a placebo. After the failure of previous international climate agreements the UN decided to try again with Paris. Under pressure from well-financed Western environmental NGOs on the one side, and the recognition that countries representing the vast majority of the planet's population would not agree to dispensing with fossil fuels and condemning their millions to continued poverty, the UN chose the politically safe path. That was to pretend to do the impossible by setting a politically acceptable goal — limiting global warming to 2°C — with no known means of achieving it. That PR objective is the real purpose of the Paris Agreement.

More optimistically, even if every single country met its stated goals for 2030, how close will the planet get to the target of 2°C/1.5°C maximum warming, versus the Intergovernmental Panel on Climate Change's estimated 4.5°C, by the year 2100? According to economist Bjorn Lomborg<sup>31</sup> the reduction in warming would be 0.048°C (less than 5 per cent of 1°C). Even if every nation fulfils every promise all the way to the end of this century, and there is no CO<sub>2</sub> leakage to non-committed nations, the entirety of the Paris promises will reduce temperature rises by just 0.17°C — only 8 per cent of the Agreement's 2.0°C target (11 per cent of the 1.5°C target). This illustrates why, in essence, the Paris Agreement is an international political placebo agreement.

Bringing the entire planet to net-zero by 2050 would require a complete global energy transition to electricity. According to the British Petroleum Statistical Review of World Energy 2020, hydrocarbons in 2019 (pre-pandemic lockdowns) accounted for 84 per cent of both primary energy consumption and carbon dioxide emissions globally. "Renewables," which includes mainly biomass (i.e., burning trees), wind, and solar energy, accounted for just

under 5 per cent. How long will it take for this 5 per cent to become 100 per cent? On this issue Vaclav Smil concluded in his 2016 book *Energy Transitions*<sup>32</sup>:

“As in the past, the unfolding global energy transitions will last for decades, not years, and modern civilization's dependence on fossil fuels will not be shed by a sequence of government-dictated goals.”

As noted above, anthropogenic climate change can only be controlled through universal global action involving every country. But that raises difficult questions about doing our part. How much are others doing? How much is our part? With most other countries with large populations actually increasing their emissions even faster than we are, should Canada keep on trying to be an exception and do more, or should we also continue to do less? If the planet's capacity for additional CO<sub>2</sub> emissions needs to be rationed among 195 countries with different political systems and cultures how can the world do this, who does it, and by when? Protesters blocking traffic or children taking a day off school to demonstrate with placards may provide drama, but not the answers. Governments setting distant targets they have no idea how to meet simply kick the CO<sub>2</sub> can down the road.

An abrupt transition off fossil fuels would drastically reduce living standards.<sup>33</sup> Painfully high carbon taxes and massive increases in sales and income taxes would be needed to fund the massive new all electric energy infrastructure to replace Canada's heavy reliance on fossil fuels for manufacturing, transportation, heating and air-conditioning. Are Canadians really willing to do this for no net global effect, while China and others are massively increasing their emissions? If not, Western governments need to listen to William Nordhaus and Vaclav Smil and stop pretending that the Paris Agreement will fix the “climate crisis.”

On a per capita basis, pre-pandemic (2019) Canada, emitted 15.4 tonnes of CO<sub>2</sub> per capita

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<sup>31</sup> Bjorn Lomborg, Press release, “Paris climate promises will reduce temperatures by just 0.05°C in 2100” (last visited 10 October 2021), online: <[www.lomborg.com/press-release-research-reveals-negligible-impact-of-Paris-climate-promises](http://www.lomborg.com/press-release-research-reveals-negligible-impact-of-Paris-climate-promises)>.

<sup>32</sup> Vaclav Smil, *Energy Transitions: Global and National Perspectives*, 2<sup>nd</sup> ed (Santa Barbara: ABC-CLIO, 2016).

<sup>33</sup> Ross McKittrick & Elmira Aliakbari, “Energy Abundance and Economic Growth: International and Canadian Evidence” (May 2014), online: *Fraser Institute* <[www.fraserinstitute.org/sites/default/files/energy-abundance-and-economic-growth.pdf](http://www.fraserinstitute.org/sites/default/files/energy-abundance-and-economic-growth.pdf)>.



per year, among the highest of any developed nation, including the US.<sup>34</sup> By comparison, another cold country, Sweden, emitted 4.26 tonnes per capita per year,<sup>35</sup> less than one third of ours. It will be interesting to see how Canada is actually going to reverse this trend and go from 15.4 to zero over the next 30 years.

In 2019, Canada's CO<sub>2</sub> emissions were up 21.7 per cent over 1990<sup>36</sup>. That doesn't look like a rapid transition to green energy.

Don't get me wrong. I am not saying that Canada should do nothing whatsoever about the effects of climate change. But our government should not legislate a target for a journey to an unreachable destination on an unknown route, to be paid for with large, undisclosed sums of money: yours, and your children's, and your grandchildren's.

## CONCLUSION

Climate change, which is measured by the change in the mean global temperature, is a global concern that is neither locally caused nor locally cured. The *Accountability Act*, and the extensive government PR blitz promoting it, wrongly pretends that legislating the target will be a useful and effective new law for making the world livable for Canada's children and grandchildren. Real, useful, transparent laws generally do not say, in effect, "we intend to move towards accomplishing this in under 30 years, but we have no idea how to do it or what your costs will be." This is not so much a law as a public relations statement presented as a law.

Passing legislation about a target assures neither that Canada will attain the net-zero goal nor that the costs and benefits of attempting to do so will be justified. Does this placebo make you feel better? ■

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<sup>34</sup> Hannah Ritchie, "Where in the world do people emit the most CO<sub>2</sub>?" (4 October 2019), online: *Our World in Data* <ourworldindata.org/per-capita-co2>.

<sup>35</sup> *Ibid.*

<sup>36</sup> Environment and Climate Change Canada, *National inventory report: greenhouse gas sources and sinks in Canada*, Catalogue No En81-4E-PDF (Ottawa: Environment Canada, 2021), online: <publications.gc.ca/site/eng/9.506002/publication.html>.

# CUMULATIVE EFFECTS CAN INFRINGE TREATY RIGHTS<sup>1</sup>

Wally Braul, Maya Stano, Josh Jantzi, Paul Seaman, and Mark Youden\*

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## INTRODUCTION

On June 29, 2021, the Supreme Court of British Columbia issued reasons for judgment in *Yahey v British Columbia*.<sup>2</sup> In the decision, Madam Justice Burke held that the Province of British Columbia infringed the Blueberry River First Nation's rights held under Treaty 8, by allowing decades of industrial development in the Nation's traditional territory.

Justice Burke found that Treaty 8 protects the Blueberry River way of life from forced interference, including its members' rights to hunt, trap, and fish. These rights were guaranteed by the written terms of Treaty 8 and further oral promises made by the Crown to the adherents of Treaty 8 when it was negotiated in 1899 and 1900. Importantly, Justice Burke found that while Treaty 8 does provide BC with the power to "take up lands" pursuant to the terms of Treaty 8, the power to do so is "not infinite" and "must be exercised in a way that upholds the promises and protections associated with that treaty."<sup>3</sup> Accordingly, BC's right to take up land is limited: it cannot take up so much land that Blueberry River members can no longer meaningfully exercise their rights under Treaty 8.

## KEY TAKEAWAYS

Some key takeaways from this significant decision include the following:

- BC must develop and implement a comprehensive method of assessing the

cumulative effects of development on Indigenous rights, specifically treaty rights. The Court ordered that it must do so in a very short time frame (6 months), and other provincial and territorial governments may consider whether to follow suit.

- This assessment of cumulative effects on Indigenous rights may need to be integrated into all decisions which relate to authorizing development on lands subject to such rights. As such, government departments, regulators, and tribunals may no longer be able to limit the assessment of a project only on its own individual impacts, but instead be required to evaluate the cumulative effects of approving such project — together with past, present and reasonably foreseeable projects and activities — on treaty rights. In addition to adding significantly to the information required by statutory decision-makers, this may require reconciling the interests of some Indigenous peoples to pursue or support resource development in their territory, and others who may wish to lessen cumulative impacts to their treaty rights, or even outright oppose further development because certain cumulative effects thresholds have been exceeded.
- Proponents wishing to develop projects on lands subject to treaty rights will no doubt begin considering how a particular project may fit into the broader scheme of development on the landscape.

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<sup>1</sup> An earlier version of this article was published in the Gowlings WLG newsletter, see: [gowlingswlg.com/en/insights-resources/articles/2021/bc-court-cumulative-effects-infringe-treaty-rights/](https://gowlingswlg.com/en/insights-resources/articles/2021/bc-court-cumulative-effects-infringe-treaty-rights/).

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<sup>2</sup> *Yahey v British Columbia*, 2021 BCSC 1287 [Yahey].

<sup>3</sup> *Ibid* at paras 3, 1809.



Projects that cause minimal effects in and of themselves, and may have been authorized in the past on that basis, may not be justifiable if there has already been extensive development in a particular area, particularly if it is being proposed in a key area for the exercise of treaty rights.

For this reason, such proponents should pay close attention to any assessment framework developed by BC in response to this decision.

### THE BACKGROUND

Blueberry River's territory is located in northeastern British Columbia, above the Montney gas basin. This area has been subject to significant oil and gas exploration and extraction for many decades. Blueberry River is a signatory to Treaty 8,<sup>4</sup> and the basis of its claims in this case centered on the rights bargained for by Blueberry River under that treaty, and the Crown's obligations owed to Blueberry River in that regard.

In this case, Blueberry River alleged that, over time, BC has authorized industrial development without due regard for the Nation's treaty rights. In particular, Blueberry River alleged that the cumulative effects of development have had significant adverse impacts on its members' abilities to meaningfully exercise their rights, and that BC had consequently breached Treaty 8 and unjustifiably infringed those rights. Accordingly, Blueberry River brought a claim for infringement, arguing that further development activities in its territory should be halted.

### THE IMPORTANT PRINCIPLES

#### *Location is Important – Critical Areas in Blueberry River's Territory*

As noted, Blueberry River's position in this case was that its members were no longer able to meaningfully exercise their treaty rights. It brought forward evidence of specific locations of central importance to exercising those rights. These locations related in significant part to an

area referred to as the "Blueberry Claim Area", which Justice Burke found to generally accord with the area that Blueberry River's members used and occupied at the time Treaty 8 was negotiated. Justice Burke noted that the extent of this territory and specific locations within it were both important to the assessment of any infringement of treaty rights, and that information related thereto should come from Blueberry River members themselves (including, specifically, from the historical accounts of Elders).

While BC argued that a First Nation could not bring claims to "core" or preferred areas within its territory, Justice Burke disagreed, stating that:

*"[w]hen faced with allegations that important or core areas within a nation's traditional territory are being impacted or destroyed, it is no answer to say: go elsewhere, you have a large territory."*<sup>5</sup>

In other words, the issue of whether Blueberry River members could still exercise their rights in other areas (which may have been of lower cultural, ecological, or spiritual significance) was irrelevant. This finding corresponds with prior jurisprudence, including the comments of the Supreme Court of Canada in *Mikisew Cree First Nation v Canada (Minister of Canadian Heritage)*,<sup>6</sup> where Justice Binnie rejected a similar argument, stating that "*it makes no sense from a practical point of view to tell the Mikisew hunters and trappers that, while their own hunting territory and traplines would now be compromised, they are entitled to invade the traditional territories of other First Nations distant from their home turf (a suggestion that would have been all the more impractical in 1899).*"<sup>7</sup>

#### *The Test for Infringement – A Significant or Meaningful Diminution of Treaty Rights*

A central and novel issue in *Yabey* concerned the proper test to prove infringement of rights under treaty, especially where the infringement in question is not alleged to arise from one

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<sup>4</sup> A treaty within the meaning of the *Constitution Act, 1982*, s 35, being Schedule B to the *Canada Act 1982 (UK)*, 1982, c 11. The Crown's obligations under Treaty 8 have the force of constitutional law.

<sup>5</sup> *Yabey*, *supra* note 2 at para 595.

<sup>6</sup> 2005 SCC 69 [*Mikisew Cree*].

<sup>7</sup> *Ibid* at para 47.

specific project or event, but rather the cumulative effects of several projects or events that have occurred over an extended period of time.

The infringement test was first developed in *R v Sparrow*,<sup>8</sup> where the court set out three key considerations for an infringement analysis:

1. whether the limitation on the right is unreasonable;
2. whether the limitation imposes undue hardship; and
3. whether the limitation denies the holders of the right their preferred means of exercising that right.

In *R v Badger*,<sup>9</sup> a case dealing with Indigenous people ticketed for wildlife offences while exercising their rights under Treaty 8, the Supreme Court of Canada confirmed that the *Sparrow* test applies to an alleged infringement of treaty rights. Later, in *Mikisew Cree*, the Supreme Court of Canada examined Treaty 8 again in the context of a winter road being proposed, and noted that where a First Nation had no meaningful right to hunt, fish, or trap remaining in its territory, bringing an action for treaty infringement is a legitimate response.

In *Yahey*, relying on *Mikisew Cree*, BC argued that an action for infringement requires proof that there is *no* meaningful right to hunt, fish, or trap remaining whatsoever. Blueberry River countered that the proper way to interpret *Mikisew Cree* is to focus on whether there was a meaningful right left, not whether the rights can be exercised at all.

Justice Burke rejected BC's argument, finding instead that *Mikisew Cree* "*left the door open for holders of treaty rights to bring actions alleging their rights have been infringed, but did not set the threshold for such infringement claims as requiring proof that no rights remain.*"<sup>10</sup> Justice Burke noted that the appropriate test for an

infringement occupies a "middle ground" between two ends of a spectrum. On one end, infringement is not established by *any interference* with the rights in question; on the other end, a claimant is not required to prove that the Crown has taken up so much land that no ability to hunt, fish, or trap remains whatsoever.

In applying this test, Justice Burke stressed that it is critical for a court to include context in their analysis. To do so, a court must consider a number of factors, including:

- applicable governmental regulatory schemes, as a whole;
- the history of development on the lands in question; and
- the historical use and allocation of relevant resources.

Thus, the appropriate test is to consider whether there has been a significant or meaningful diminution of the rights when viewed within the way of life from which they arise and are grounded.<sup>11</sup>

Applying this test to Blueberry River's claim in *Yahey*, Justice Burke found that the extent of the lands taken up by BC for industrial development rendered the remaining, undeveloped parts insufficient to allow Blueberry River members to meaningfully exercise their rights as promised under Treaty 8. In reaching this finding, Justice Burke examined data from 2018 which indicated that 85 per cent of the Blueberry Claim Area was within 250 metres of an industrial disturbance and 91 per cent was within 500 metres. Justice Burke concluded that the cumulative effects of provincially-authorized industrial development have significantly impaired the ability of Blueberry River members to exercise their rights to hunt, fish, and trap, which in turn amounted to an unjustified infringement of Blueberry River's rights under Treaty 8.

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<sup>8</sup> [1990] 1 SCR 1075, 70 DLR (4<sup>th</sup>) 385.

<sup>9</sup> [1996] 1 SCR 771, 133 DLR (4<sup>th</sup>) 324.

<sup>10</sup> *Yahey*, *supra* note 2 at para 508.

<sup>11</sup> *Ibid* at para 541.

Justice Burke found that BC had not met its obligations under Treaty 8 in a number of specific respects, for example:

- for at least a decade, BC had notice of Blueberry River’s concerns about cumulative effects of development, but failed to respond in a manner consistent with the honour of the Crown and the terms of Treaty 8;
- despite BC’s arguments to the contrary, provincial consultation processes “*have not resulted in a consequential way to assess the cumulative effects of development in the Blueberry Claim Area*”<sup>12</sup> and “*provincial regulatory regimes do not adequately consider treaty rights or the cumulative effects of industrial development*”<sup>13</sup>; and
- BC’s “*piece-meal project-by-project approach*” to consulting with Blueberry River regarding the effects of authorizing development in the Blueberry Claim Area was inadequate.

Justice Burke concluded that BC’s existing regulatory framework did not adequately consider cumulative effects and that the accumulated effects of discretionary decision-making under various statutes has led to the infringement of Blueberry River’s rights. Under the Supreme Court of Canada’s decisions in *Sparrow*, *Badger*, and *Mikisew Cree*, once an infringement has been established, the onus shifts to the Crown to demonstrate that the infringement is justified. However, in this case BC did not attempt to justify the infringement, arguing instead that “*it could not advance a justification defence before the scope of [the rights claimed by Blueberry River] were known.*”<sup>14</sup>

Justice Burke disagreed, holding instead that “[t]he starting point is that the Indigenous people are entitled to what they have been granted in the Treaty.” As such, “[t]he Province must be taken to know the promises the Crown made to Indigenous people, and which it is bound to uphold today.”<sup>15</sup>

## THE COURT’S ORDERS

As a result of these findings, Justice Burke granted four declaratory orders:

1. **BC’s Breach of Treaty 8** – In causing and/or permitting the cumulative impacts of industrial development on Blueberry River’s treaty rights, BC breached its obligation to Blueberry River under Treaty 8, including its honourable and fiduciary obligations. BC’s mechanisms for assessing and taking into account cumulative effects are lacking and have contributed to the breach of its obligations under Treaty 8;
2. **Unjustifiable Infringement** – BC has taken up lands to such an extent that there are not sufficient and appropriate lands in the Blueberry Claim Area to allow for Blueberry River’s meaningful exercise of its treaty rights. BC has therefore unjustifiably infringed Blueberry River’s treaty rights in permitting the cumulative impacts of industrial development to meaningfully diminish Blueberry River’s exercise of its treaty rights in the Blueberry Claim Area;
3. **No Further Authorizations** (delayed implementation) – BC may not continue to authorize activities that breach the promises included in Treaty 8, including its honourable and fiduciary obligations associated with Treaty 8, or that unjustifiably infringe Blueberry’s exercise of its treaty rights; and,
4. **New Mechanisms Required** – The parties must act with diligence to consult and negotiate for the purpose of establishing timely enforceable mechanisms to assess and manage the cumulative impact of industrial development on Blueberry’s treaty rights, and to ensure these constitutional rights are respected.<sup>16</sup>

Justice Burke suspended declaration #3 for six months to enable the parties to “*negotiate changes that recognize and respect Blueberry’s treaty rights.*”<sup>17</sup>

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<sup>12</sup> *Ibid* at para 1735.

<sup>13</sup> *Ibid* at para 1880.

<sup>14</sup> *Ibid* at para 1832.

<sup>15</sup> *Ibid* at paras 1833–34.

<sup>16</sup> *Ibid* at paras 1884, 1888.

<sup>17</sup> *Ibid* at para 1895.

### ***A New Cumulative Effects Precedent***

Justice Burke noted that in previous cases where Indigenous groups have alleged an infringement of Treaty rights, those claims have been premised on a single project approval or specific legislative provision. This case may therefore be used to argue that the cumulative effects of authorized development in a particular territory have infringed treaty rights.

### ***Structuring Discretion by Provincial Decision-makers***

Following *Yahey*, provincial decision-makers may need to restructure relevant regulatory systems to provide specific guidance relating to the exercise of discretionary powers, to minimize or avoid further infringements. This stems from Justice Burke's strong criticism of BC's decision-making structures over natural resource development. Referring to comments first made by the Supreme Court in *R v Adams*,<sup>18</sup> Justice Burke found that BC "could not simply adopt an unstructured discretionary administrative regime which risked infringing Aboriginal rights. Instead, the statute or regulations had to provide specific guidance regarding the exercise of discretion which sought to accommodate the existence of the rights."<sup>19</sup>

Indeed, in this case Justice Burke was particularly concerned about the level of discretion afforded to individual decision-makers which lacked appropriate regard to cumulative effects and impacts to Blueberry River's rights. Justice Burke held that "[i]n the end, these processes are at the discretion of the Province and its agencies, with no clear ability for Blueberry to enforce its treaty rights. That has to change."<sup>20</sup> Justice Burke added the following:

*"The Province continues to have all the power, and ultimately little incentive to change the status quo. There is a clear need for timely, definitive, enforceable legal commitments that recognize and accommodate Blueberry's treaty rights."*<sup>21</sup>

Ultimately, Justice Burke found that the Crown "must guard against unstructured discretion and provide a guide for the decision-maker."<sup>22</sup> Specific guidance regarding the exercise of discretion must therefore be developed to correct BC's current practices in this regard.

BC now has six months to consider adjustments to its applicable regulatory systems. In so doing, BC will need to engage with Blueberry River on establishing a mechanism for assessing the cumulative effects of development, and means to protect Blueberry River's treaty rights.

Although Justice Burke made clear that changes of this nature are required, it is unclear what specific changes will be made both to BC's method of cumulative impact assessment and the relevant regulatory systems. Further, it is unknown which parties will be involved in negotiating these changes beyond the parties involved in this case (other Indigenous groups, the federal government and industry stakeholders will undoubtedly be very interested in any proposed changes).

As a result, this decision is expected to have a significant impact on industries involved in resource development, particularly in Treaty 8 territory. At present, liquefied natural gas is seen by the provincial government as a key component of BC's economic growth. With large sources of oil and gas still available in Treaty 8 territory, the government and industry will have to assess how to move forward with such development in light of *Yahey*. Industry representatives may anticipate a newly modified regulatory and cumulative effects assessment regime when seeking to engage in development in Treaty 8 territory. It is unclear whether this decision will affect any projects or developments which have already been approved.

### ***Implications for Neighbouring Indigenous Groups***

First Nations throughout Treaty 8 may now wish to bring similar challenges to industrial development near their communities. However, *Yahey* was a lengthy trial involving

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<sup>18</sup> [1996] 3 SCR 101, 138 DLR (4th) 657.

<sup>19</sup> *Yahey*, *supra* note 2 at para 465.

<sup>20</sup> *Ibid* at para 1416.

<sup>21</sup> *Ibid* at para 1417.

<sup>22</sup> *Ibid* at para 1767.

an extraordinary amount of evidence, including specific evidence from Blueberry River Elders going back many years. It is unclear whether, or the extent to which, the circumstances facing Blueberry River may be comparable to other areas of Treaty 8 territory. It is also unknown whether BC will be able to put a new regulatory process in place within the six month period provided by the Court.

On the other hand, some neighbouring Indigenous groups may be contemplating or already be involved in economic opportunities associated with industrial development. Any new regulatory process will have to consider the fact that some First Nations have opted to participate in economic development initiatives which may impact treaty rights, and therefore may be viewed as part of a set of infringing cumulative effects by neighbouring First Nations. This is likely to present a complex issue.

***Broader Implications to Other Treaty 8 Jurisdictions – Alberta, Saskatchewan and the Northwest Territories***

While this decision is focused on BC, the implications are likely farther reaching, given that the territory covered by Treaty 8 extends over a large portion of northern Alberta, Saskatchewan and the Northwest Territories. First Nation adherents to Treaty 8 in these other jurisdictions may rely on Justice Burke's consideration of cumulative impacts and the corresponding limitation on the "taking up" clause to bolster arguments of infringement. In addition, similar "taking up" clauses are present in several other numbered Treaties across Canada. It remains to be seen how this decision will affect the interpretation and protection of rights under such other treaties, where "taking up" may be interpreted differently based upon the context of the treaty and the oral promises made at the time of signing.

**CONCLUSION**

Subject to any appeal by BC, the Court's interpretation in *Yahay* of the law governing infringement of treaty rights, and of the Crown's obligations under Treaty 8, is likely to inform other Canadian courts adjudicating claims of treaty right infringement by cumulative adverse impacts arising from Crown decisions authorizing resource development. As such, this decision has potentially far reaching implications across the country. ■

# RECONCILIATION: THE PUBLIC INTEREST AND A FAIR DEAL

*Gordon E. Kaiser\**

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## INTRODUCTION

From time to time a decision appears that may have a major impact on the regulation of energy utilities in Canada. The recent decision of the Alberta Court of Appeal in *AltaLink Management*<sup>1</sup> may be an example. There were two issues in the decision. The first is whether the Alberta Utilities Commission correctly applied the “no harm” test in approving the sale of transmission facilities by AltaLink to two aboriginal groups. The second and the most important issue concerned constitutional issues that involved five questions:

- Does the honour of the Crown principle apply to the decision-making authority of the Commission?
- If so, what is the impact of the honour-of-the-Crown principle on its decision-making authority?
- What are the legal benchmarks of “reconciliation”?
- Does the reconciliation concept apply to the decision-making authority of the Commission?
- If so, what is the impact of the reconciliation concept on its decision-making authority?

## BACKGROUND

AltaLink owns and operates the largest transmission system in Alberta. In 2007 the

company applied for permission to construct and operate a new transmission line that became necessary because of the growth in wind generation in the province. AltaLink considered three different routes. In the end the company chose the one that crossed the reserve lands of two aboriginal groups — the Piikani Nation and the Blood Tribe. These were the lowest cost routes.

AltaLink next faced a dispute regarding land access with both tribes. That was resolved when AltaLink granted the tribes an option to acquire an ownership interest in the transmission lines. The tribes subsequently exercised their options and AltaLink then applied the Alberta Utilities Commission to approve the sale and transfer of the assets.

### The Commission Decision

The Commission approved the sale of the segments of the transmission line that were located on the reserves to the limited partnerships controlled by the Piikani Nation and the Blood Tribe. But there was a condition. The Commission ruled that the new limited partnerships could not recover new audit and hearing costs from ratepayers.

As is common in these cases the Commission applied what is known as the “no harm” test. As is also common the Commission focused on whether the transaction would increase rates or reduce reliability. There was no concern about reliability because under the agreement AltaLink would continue to manage and operate the transmission line.

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\* Gordon Kaiser is a counsel and arbitrator at Energy Law Chambers in Toronto, Calgary, and Washington. He is the former vice-chair of the Ontario Energy Board, and currently President of Canadian Chapter of the Energy Bar Association, co-chair of the Canadian Energy Law Forum and co-editor of *Energy Regulation Quarterly*.

<sup>1</sup> *AltaLink Management Ltd v Alberta (Utilities Commission)*, 2021 ABCA 342.

However, the rate impact was a problem. The Commission found that there would be an increase in cost to ratepayers because of additional fees and hearing costs. The Commission rejected any offsetting benefits on the grounds that the no harm test is a forward-looking exercise and that any benefits arising from the partnerships were too speculative.

### **The Court of Appeal Decision**

AltaLink then appealed the Commission decision to the Alberta Court of Appeal. The company argued that the Commission incorrectly applied the no harm test and had failed to properly apply principles relating to the honour of the Crown and reconciliation.

The majority agreed that the Commission erred in considering only forward-looking benefits when applying the no harm test indicating that there is no legislative basis for a strict forward-looking approach. The Commission stated at paragraph 55:

[55] The Commission misfired when it characterized the cost savings solely from the initial construction phase as irrelevant. The manner in which this project was built necessarily involved a real prospect of forward-looking savings. There were predictable lower maintenance costs for this shorter and more accessible route. Moreover, the integration of the First Nations' corporations as operators linked to the larger grid also offered the prospect of further benefits over time as technology improves and the needs of the rate-paying population increase (as, for example, with electric vehicles) potentially involving increased requirements for operational capacity of the system. The benefit for the environment is also ongoing, and not frozen in the past. The Commission, in effect, rejected as speculative the suggestion that the comparatively modest incremental hearing and audit costs would be offset by these future benefits predictably linked to the how the lines were placed and constructed. Seen in this light, the fact that the placement and construction was in the past is not on its own a basis to disregard the predictable future benefits.

The majority further stated:

[1] We allow this appeal and direct the Alberta Utilities Commission to allow two limited partnerships ultimately controlled by the Piikani Nation and the Blood Tribe to pass on audit and hearing costs they incur as utility owners to ratepayers. The Commission had ordered the appellants to absorb these costs. This is the first and only time that the Commission has issued such an order.

[2] The Commission determined that its approval of the electrical transmission asset transfer from AltaLink Management Ltd. to the limited partnership controlled by the Piikani Nation and the Blood Tribe would result in incremental costs to the ratepayers — the consumers of electricity. The transferees would each incur additional annual audit fees payable to external auditors and Commission hearing costs, estimated to be \$60,000. The Commission refused to allow the transferees to pass these costs on to the ratepayers.

...

[11] The Commission committed a legal error by failing to take into account all relevant factors that determine whether a sale is in the public interest. Its decision to ignore the cost savings arising from the routing of the transmission lines across the reserves of the Piikani Nation and the Blood Tribe is an error of law.

[12] We vary the Commission's Decision 22612-D01-2018 by ordering that the transferees be allowed to include the incremental audit and hearing costs in their respective tariff applications and recover them from ratepayers in the usual course.

### **THE CONCURRENCE**

The majority did not address the constitutional questions. Instead they stated at paragraph 13:

[13] Given our answer to the first question, we need not answer the other queries. Only one declaration



of error is needed to strip the contested order of its legal effect.

What followed the majority decision was a 10 page concurrence by Justice Feehan. It began with the following statements:

[81] I wholly concur with the decision of the majority. I agree with allowing the appeal and directing the Alberta Utilities Commission to supplement its decision 22612-D01-2018 by removing from its approval of the transfer of segments of the AltaLink southwest transmission line to KainaiLink LP and PiikaniLink LP the condition that those entities absorb the annual approximate \$120,000 for audit and hearing costs.

[82] However, the focus of much of the written and oral argument before us was on the Commission's obligations respecting the principle of honour of the Crown and the imperative of reconciliation. All parties before us, including the Commission, asked this Court to clarify when the Commission has a duty to consider the honour of the Crown and reconciliation in its decisions.

[83] Specifically, the parties asked this Court to address the question of whether the Commission is obligated to consider the honour of the Crown and reconciliation when Indigenous collectives are involved as private partners in the energy transmission industry. Although this appeal can be resolved on the administrative law principles set out in the reasons for decision of the majority, it is important to address this question and clarify the Commission's duties to Indigenous peoples or their governance entities who appear before it.

[84] I conclude that the Commission, in exercising its statutory powers and responsibilities, must consider the honour of the Crown and

reconciliation whenever the Commission engages with Indigenous collectives or their governance entities, and include in its decisions an analysis of the impact of such principles upon the orders made, when raised by the parties and relevant to the public interest.

[85] I hasten to add that the Crown, as represented by the Departments of Justice of Canada or Alberta, were not parties before this Court. This concurrence is not to be interpreted to say the Crown has failed in any way to act honourably in its dealings with the Blood Tribe or the Piikani Nation or their governance entities on this matter. There was no evidence of that before this Court on this appeal. This concurrence is meant to provide guidance and assist the Commission in exercising its statutory powers and responsibilities consistently with the honour of the Crown and the goal of reconciliation when raised by the parties and relevant to the public interest.

Justice Feehan notes in paragraph 95 that the Alberta Commission has the authority to consider questions of law including the honour of the Crown and reconciliation as relevant factors in determining the public interest. The Alberta Commission and all Canadian regulators are familiar with the concept of determining the public interest. It is a fundamental principle of public utility law in Canada and is involved in regulatory decisions approving every major construction project in the Canadian energy sector.

#### **THE LEGAL BENCHMARKS OF RECONCILIATION**

In Alberta section 17 of the *Alberta Utilities Commission Act*<sup>2</sup> is relevant to this issue:

17(1) Where the Commission conducts a hearing or other proceeding on an application to construct or operate a hydro development, power plant or transmission line under the *Hydro*

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<sup>2</sup>SA 2007, c A-37.2.



and *Electric Energy Act* or a gas utility pipeline under the *Gas Utilities Act*, it shall, in addition to any other matters it may or must consider in conducting the hearing or other proceeding, give consideration to whether construction or operation of the proposed hydro development, power plant, transmission line or gas utility pipeline **is in the public interest**, having regard to the social and economic effects of the development, plant, line or pipeline and the effects of the development, plant, line or pipeline on the environment.

Justice Feehan at paragraph 113 states that reconciliation is “a work in progress’ of rebuilding the relationship between indigenous people and the Crown following historical and continuing injustices by the Crown against indigenous people”. He states further at paragraph 114 that “[w]hile reconciliation underlies the honour of the Crown in section 35 rights, it is a distinct concept that exist separately from the honour of the Crown and includes both legal and social dimensions”.

The following statements in the concurrence deal precisely with the concept of reconciliation.

[115] Reconciliation is a primary consideration where constitutionally protected interests are potentially at stake. The fundamental purpose of s 35 of the *Constitution Act, 1982* is to rebuild the relationship between the Crown and Indigenous peoples through reconciliation; legally, morally and socially. The fundamental objective of the modern law of Aboriginal and treaty rights is the reconciliation of Indigenous peoples and non-Indigenous peoples and their respective claims, interests, and ambitions: *Mikisew Cree*, paras 1, 63. Section 35 supports reconciliation of the assertion of Crown sovereignty over Canadian territory and prior occupation by distinctive Indigenous societies by “bridging Aboriginal and non-Aboriginal cultures”: *R v Van der Feet*, [1996] 2 SCR 507, paras 42–45, 49–50, 137 DLR (4<sup>th</sup>) 289. The controlling question in all situations is what is required to effect reconciliation with respect

to the interests at stake in an attempt to harmonize conflicting interests, and achieve balance and compromise: *Taku River*, para 2.

[116] The concept of reconciliation is illustrated in *Tsilhqot’in Nation v British Columbia*, 2014 SCC 44, [2014] 2 SCR 257, para 23:

What is at stake is nothing less than justice for the Aboriginal group and its descendants, and the reconciliation between the group and broader society. It is in the broader public interest that land claims and rights issues be resolved in a way that reflects the substance of the matter. Only thus can the project of reconciliation this Court spoke of in *Delgamuukw* be achieved.

...

[118] Any consideration of public goals or public interest must “further the goal of reconciliation, having regard to both the Aboriginal interest and the broader public objective”: *Tsilhqot’in Nation*, Page: 29 para 82. Reconciliation requires justification of any infringement on or denial of Aboriginal rights, paras 119, 125, 139, and meaningful consideration of the rights of Indigenous collectives as part of the public interest.

The most important paragraphs in Justice Feehan’s concurrence may be at paragraphs 119 and 120 as follows:

[119] As this Court said in *Fort McKay*, the direction to all authorized government entities to foster reconciliation particularly requires that they consider this constitutional principle whenever they consider the public interest, para 68, and requires the Crown to act honourably in promoting reconciliation, such as by “encouraging negotiation and just settlements” with Indigenous

peoples: *Mikisew Cree*, para 26; *Fort McKay*, para 81.

[120] Aiming to achieve reconciliation is a continuing obligation, existing separately from honour of the Crown. An important aspect of reconciliation is the attempt to achieve balance and compromise, essential to the consideration of the public good. Reconciliation must be a consideration whenever the Crown or a government entity exercising delegated authority contemplates a decision that will impact the rights of Indigenous peoples.

The concept of reconciliation means that for all practical purposes a Canadian energy regulator in determining the public interest where aboriginal land interests are involved must make a determination if the economic settlement arrived at between the aboriginal interests and the utility is a fair agreement.

#### **CONCLUSION: THE PUBLIC INTEREST AND A FAIR DEAL**

Justice Feehan concludes his concurrence with the following two paragraphs:

[125] The Commission is an authorized governmental entity empowered to decide questions of law and constitutional issues, and make decisions that are in the public interest. As a result, it has special obligations to consider the honour of the Crown and reconciliation whenever these are raised by the parties and relevant to determining the public interest, and to provide in its decisions an analysis of the impact of such principles upon the orders made. Where one or more of the parties appearing before the Commission is an Indigenous collective which raises the honour of the Crown or reconciliation in its submissions, the Commission should consider whether those constitutional principles are applicable to its decision.

[126] The Commission must take all relevant factors into account in determining the public interest. In exercising its authority, it is required to consider the social and legal impact of its decisions

on Indigenous peoples, including doing what is necessary to uphold the honour of the Crown and achieve reconciliation between the Crown and Indigenous peoples.

Canadian energy regulators have long understood that when they approve the construction of new energy projects they must make a determination that the project is in the public interest. That test is very broad. In some cases the legislation has been amended to add specific criteria such as a consideration of the environment.

Where energy projects are being built on aboriginal land and aboriginal parties are before them most regulators understand that they had a obligation to ensure that the Crown has undertaken meaningful consultation. The regulators also understand that the regulator may have the obligation to conduct that consultation.

The Concurrence adds a new requirement: the regulator must ensure that the agreement with respect to the land use is a fair deal. To cite the Concurrence the agreement between the utility and the aboriginals must display:

“significant accommodation” (para 109), “constructive action” (para 114), “balance and compromise” (para 115), “justice for the aboriginal group” (para 116) and a “just settlement” (para 119)

What this also means is that aboriginal property rights as defined by the Concurrence are not different than those of all Canadians. Some will find that shocking. Others will say it is about time.

A third group will say this will help Canadian energy projects proceed in a timely fashion. It will remove a major obstacle and source of delay. Developers will understand that if they want to build on aboriginal land they will have to treat the aboriginal land interests just like any other Canadian property owner. ■

# ALBERTA JOINS THE CANADIAN HYDROGEN RACE

*Bob Heggie\**

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The last issue of *ERQ* included two excellent articles that analyze the use of hydrogen in Canada's attempt to reduce greenhouse gas emissions. The first was titled "Is Hydrogen the Silver Bullet"<sup>1</sup> outlined various government commitments by the Canadian government, the provinces of British Columbia and Alberta, the United States, Europe and the UK. The article also outlined the regulatory challenges and included a commentary on green hydrogen by a Research Director at Siemens.

The second article addressed the British Columbia program to reduce regulatory barriers to hydrogen investment.<sup>2</sup> This article concerns the announcement by the Alberta government on November 5, 2021 of the new Alberta hydrogen roadmap.<sup>3</sup> The roadmap builds on the previously announced 2020 Alberta Recovery Plan<sup>4</sup> and Natural Gas Vision and Strategy<sup>5</sup> and follows the government of Canada's hydrogen strategy<sup>6</sup> announced in December of last year.

Alberta has joined a growing number of international countries and companies that

have announced strategies to benefit from the hydrogen economy or have already made investments since 2019. For Alberta, the hydrogen economy has been called a \$100B opportunity and the roadmap shows why hydrogen holds significant promise for the Alberta economy.

Alberta is the largest producer of hydrogen in Canada and has been producing hydrogen for more than 50 years. While hydrogen gas is already being produced and utilized as an energy carrier and feedstock, it is mostly used in industrial settings and has a higher carbon intensity. The promise is to produce hydrogen gas using low- or zero-emission sources, enabling hydrogen to drive deep decarbonization efforts across all sectors of the economy. This would position Alberta as a leader in Canada's push to net zero and attract investment into the Alberta economy that has been reluctant to invest in other carbon-intensive fuels. The roadmap signals that ambition for Alberta and allows the industry to develop hydrogen in a more coordinated way.

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\* Bob Heggie is the Chief Executive of the Alberta Utilities Commission.

<sup>1</sup> Jay Lalach et al, "Is Hydrogen the Silver Bullet" (2021) 9:3 Energy Regulation Q 8.

<sup>2</sup> Eric Bremermann, Glenn Zacher & Daniel Gralnick, "British Columbia Reduces Regulatory Barriers to Hydrogen Investment" (2021) 9:3 Energy Regulation Q 19.

<sup>3</sup> Alberta, Ministry of Energy, *Alberta Hydrogen Road Map*, (Edmonton: Government of Alberta, 4 November 2021), online (pdf): <[open.alberta.ca/dataset/d7749512-25dc-43a5-86f1-e8b5aac7db4/resource/538a7827-9d13-4b06-9d1d-d52b851c8a2a/download/energy-alberta-hydrogen-roadmap-2021.pdf](https://open.alberta.ca/dataset/d7749512-25dc-43a5-86f1-e8b5aac7db4/resource/538a7827-9d13-4b06-9d1d-d52b851c8a2a/download/energy-alberta-hydrogen-roadmap-2021.pdf)>.

<sup>4</sup> Alberta, Ministry of Treasury Board and Finance, *Alberta's Recovery Plan*, (Edmonton: Government of Alberta, 29 June 2020), online (pdf): <[open.alberta.ca/dataset/27b15abd-0f96-4e6b-8ea5-8b0b4f2ec797/resource/0f6a4f8d-44d0-44a4-81e0-7bdfcb06f4b1/download/tbf-albertas-recovery-plan-2020.pdf](https://open.alberta.ca/dataset/27b15abd-0f96-4e6b-8ea5-8b0b4f2ec797/resource/0f6a4f8d-44d0-44a4-81e0-7bdfcb06f4b1/download/tbf-albertas-recovery-plan-2020.pdf)>.

<sup>5</sup> Alberta, Ministry of Energy, *Getting Alberta back to work: natural gas vision and strategy*, (Edmonton, Government of Alberta, 6 October 2020), online (pdf): <[open.alberta.ca/dataset/988ed6c1-1f17-40b4-ac15-ce5460ba19e2/resource/a7846ac0-a43b-465a-99a5-a5db172286ae/download/energy-getting-alberta-back-to-work-natural-gas-vision-and-strategy-2020.pdf](https://open.alberta.ca/dataset/988ed6c1-1f17-40b4-ac15-ce5460ba19e2/resource/a7846ac0-a43b-465a-99a5-a5db172286ae/download/energy-getting-alberta-back-to-work-natural-gas-vision-and-strategy-2020.pdf)>.

<sup>6</sup> Natural Resources Canada, *Hydrogen Strategy for Canada*, (Ottawa: Government of Canada, December 2020), online (pdf): <[www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/environment/hydrogen/NRCAN\\_Hydrogen-Strategy-Canada-na-en-v3.pdf](https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/environment/hydrogen/NRCAN_Hydrogen-Strategy-Canada-na-en-v3.pdf)>.

## THE ALBERTA ROADMAP

The roadmap focuses on “clean” hydrogen and avoids the distinction between low-emission and zero-emission (or “green”) hydrogen. In that sense the roadmap is technology neutral and envisions low- or zero-emission sources of hydrogen as both contributing to the decarbonization strategy. Hydrogen can be produced from many different sources. Hydrogen made from natural gas, for example, will result in carbon emissions. But, as long as you abate those emissions by using, for example, carbon capture utilization and storage (CCUS), progress is made in reducing carbon emissions.

Alberta is ideally situated to produce hydrogen from fossil fuels. It has a low-cost natural gas feedstock and can build on its existing expertise and infrastructure. Additionally, Alberta has proven CCUS expertise with the QUEST and CCS Project at the Shell Scotford Refinery and the Alberta Carbon Trunk Line, a 240-km pipeline that can transport 15 million tonnes of carbon dioxide annually, ultimately injecting the carbon in old oil and gas reservoirs. Both of these projects use proven technology that can be scaled up.

Alberta has shovel-ready economic solutions that can meet the immediate need to decarbonize as soon as possible. Additionally, operating and capital costs for hydrogen production from natural gas are significantly less as compared to hydrogen production from renewable sources through electrolysis. Alberta’s roadmap mentions various uses for hydrogen including heating, transport, power generation and energy storage, industrial processing and exports. Building local demand depends on the establishment of hydrogen hubs. Hubs are essentially regions where users of hydrogen are co-located, whether in the transportation, industrial or energy markets. Hubs make infrastructure investments more cost effective and Alberta has already announced two hubs in the Edmonton and Medicine Hat regions. In total, six such hubs or collaborative industrial clusters have been identified in the province.

The roadmap signals that while some technologies in the hydrogen value chain are mature, some will require further investment, innovation and scale-up. Some simple projects are already moving forward. For example, hydrogen blending in the natural gas supply stream is the subject of an ATCO trial in the Fort Saskatchewan area. We can anticipate more projects like these — perhaps on a larger

scale. Additionally, Alberta has started to invest in heavy-duty electric trucks powered by hydrogen fuel cells. The project envisions further investment in a distribution network for vehicle fueling.

The roadmap to a large-scale and low-carbon hydrogen industry is predicated on hydrocarbon fuel being uneconomic for the end-user. Neither target hydrogen production prices or carbon pricing mechanisms are mentioned in the strategy so this aspect of the pathway is unclear.

## CONCLUSION

Alberta’s hydrogen roadmap is the latest, and strongest, signal of its ambition to become a leading clean energy provider domestically and on a world stage. It aims to capitalize on its existing resources and expertise, and the roadmap provides a path forward to support the coordinated development of a clean, innovative hydrogen industry that will benefit Albertans and establish Alberta as a major global player in the hydrogen economy. ■

# IS ALBERTA THE NEXT TEXAS? – LESSONS LEARNED FROM THE TEXAS ENERGY CRISIS

*Bob Heggie\**

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## OVERVIEW

In many ways Alberta is the envy of the world in terms of reliability and quality of electric service, but the assumptions that underlie the provision of this service were fundamentally shaken during four frigid days in Texas in February 2021.

While this shock to the system was felt across North America, the lessons to be learned from Texas are particularly germane to Alberta because of the similarity in deregulated electricity market frameworks. Texas and Alberta are the only jurisdictions in North America to utilize an energy only market design. Given the unique similarities, the obvious question is: “What happened in Texas and could it happen in Alberta?”

The Canadian chapter of the Energy Bar Association recently invited four distinguished speakers to provide insights into the crisis. Pat Wood III and Joe Kelliher, former FERC Chairmen, spoke to the circumstances in Texas while former AEUB Chairman Neil McCrank and former AESO President Dale McMaster joined the panel to discuss the Alberta implications. The complete program is set out in *The Panel*. A video of the debate can be found at [lawlectures.com](http://lawlectures.com).

All four speakers were integral to the transition in both Texas and Alberta over the past two decades from heavily regulated gas and electric

sectors to today’s restructured approach where competition and markets operate together with a modern regulatory approach.

## THE TEXAS ENERGY CRISIS

The historic polar vortex that hit the southern United States in February inflicted a severe cost in Texas — nearly 200 lives lost and property damages over \$200 billion. The sub-zero temperatures caused two events that were not anticipated by state regulators:

1. Failure of thermal generating plants due to lack of winterization and limited fuel supply.
2. Unprecedented surge in electricity demand.

Inadequate winterization caused freezing of gas supply and control instruments and, in a system with a winter peak of 66 GW, about 30 GW were unavailable. In its worst case planning, based on the “Groundhog Day” blizzard of 2011, Electric Reliability Control Council of Texas (ERCOT), the system planner and operator, had anticipated a loss of 14 GW of thermal plant.

While wind resources were initially accused of causing the crisis, in fact, even though they experienced some storm related outages, ERCOT had anticipated these outages in its planning and wind resources performed as expected.

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\* Bob Heggie is the Chief Executive of the Alberta Utilities Commission. He is also co-chair of the Energy Law Forum and Vice President of the Canadian Chapter of the Energy Bar Association.

Texas natural gas production dropped 45 per cent from 21.3 Bcf/d in the week prior to the crisis to a low of 11.8 Bcf/d during the crisis. Gas supply was impacted by freezing conditions, however the bigger supply disruption was caused by power being cut to wells, processing plants and compressor stations.

At the same time that electricity supply was failing, demand for electricity surged as Texans turned up their thermostats. A large portion of Texans rely on low efficiency resistant electric heat in poorly insulated homes and the demand surge caused by the frigid conditions increased demand by 20 GW — roughly one-third of winter peak. Again, this demand surge was not anticipated in the state's extreme winter planning scenario because planning was based on the 2011 storm.

The large drop in supply together with the surge in demand made it impossible to balance the system without controlled outages. ERCOT requested controlled outages for about 20 per cent of the system. These actions avoided a more catastrophic state-wide blackout.

Over the four days of the crisis, the shortage between supply and demand averaged 10 GWs. The deficit was so large that the distribution companies could not rotate the outages due to inadequate control systems. The inability to rotate outages was devastating as it left two-thirds of Texans without electricity and water for up to 70 hours.

### **WHAT CAUSED THE CRISIS?**

While other factors have been identified as playing a contributing role in the crisis including planned outages, lack of interconnection capacity to other grids, and energy only market/lack of capacity mechanism, these factors played a minor contributing role, if any.

The key insight is that the gas and electric systems in Texas are deeply integrated and while all units went offline (wind, gas, coal, nuclear), the largest loss was from natural gas production. As more renewables are added into the grid in the future, the reliance on natural gas during shortage events will increase.

### **GOING FORWARD**

Texas will need to change the way it plans for extreme weather events. The current practice of planning based on historic worst case may

be insufficient due to the unpredictability of extreme weather events that cause multi-point, systemic failure. Better coordination across responsible regulatory agencies may also be required. Integrating planning and enforcement responsibilities across PUCT, ERCOT and Texas Railroad Commission will ensure winterization of infrastructure and identify critical gas infrastructure that would not be subject to load shed.

Improved coordination would address the issue of gas production and processing equipment that use electricity being cut off during rolling outages which then cut gas supply leading to generator outages.

Operationally, the outage management system must be overhauled to allow for rotation of controlled load sheds.

Lastly, improved communication with the public would likely have led to a smaller demand increase and less loss of life if the public was made aware of emergency procedures. For example, citizens were operating generators or cars in garages to stay warm.

### **LESSONS FOR ALBERTA**

The main lesson for Alberta is a functioning market under normal conditions is not a substitute for emergency preparedness and rigorous system planning. The similarities between the Texas and Alberta markets is striking. In both markets natural gas fuelled electricity met approximately half of the total consumer demand. Gas is the dominant resource and will remain that way for many years. A combination of coal retirements and coal to gas conversions will further increase Alberta's reliance on gas generation by 2023. Unlike Texas however natural gas, not electricity, is the primary source of heat for housing stock. Nevertheless, the deep integration of gas and electricity increases the risk that gas supply outages could severely impact Alberta's electricity generators.

While energy markets by design omit the central planning role, the Texas crisis underscored the need for proactive, forward looking planning and emergency preparedness in Alberta, particularly to address extreme weather events.

### **CONCLUSION**

The Texas crisis highlighted the critical importance of communication during a crisis

in order that Albertans are prepared when electricity, gas and water may not be available for an extended period. Regulatory oversight in Alberta is similarly fractured and greater clarity in roles and responsibilities was recommended to address the increasing interdependence of markets.

Alberta's natural gas system is winterized but may not be weatherized. Facilities are designed for cold temperatures. For example, gas wells may have alcohol injected to alleviate freeze-offs and compressors are located inside. Less clear is whether system planning in Alberta takes extreme heat or wildfire risk into account. Regardless of the cause, managing multi-point failures in the gas and electricity systems is critical as climate change and extreme, unpredictable weather events threaten infrastructure more than ever.

The Texas electricity crisis is a wake up call for all jurisdictions, not just Alberta. The session provided valuable lessons in the hope that the Texas energy crisis is not repeated — anywhere. ■



**THE PANEL**

**IS ALBERTA THE NEXT TEXAS?**

***ENERGY BAR ASSOCIATION, CANADIAN CHAPTER***

**June 22, 2021 (EDT)**

The polar vortex in Texas sent shock waves into the electrical system that are being felt in Alberta and throughout North America. The lessons to be learned from Texas are particularly germane to Alberta because our deregulated electricity market framework is called an energy only market and Alberta and Texas are the only two jurisdictions in North America to have structured their electricity sector in this way. Given the similarities in market design, the obvious questions include, what happened in Texas? Can it happen in Alberta? How can Texas fix it? What are the lessons for Alberta?

<b>11:30 – 11:35 am</b>	<b>Introduction</b>
	Gordon Kaiser, Arbitrator and Counsel, Energy Arbitration LLP
	President, Energy Bar Association, Canadian Chapter

**Moderator**

Bob Heggie, Chief Executive, Alberta Utilities Commission

<b>11:35 am – 12:05 pm</b>	<b>What Happened in Texas?</b>
	Pat Wood, III, former Chair, Federal Energy Regulatory Commission
	Joseph T. Kelliher, former Chair, Federal Energy Regulatory Commission
<b>12:05 – 12:35 pm</b>	<b>Can it Happen in Alberta?</b>
	Neil McCrank, Q.C., former Chair, Alberta Energy and Utilities Board
	Dale McMaster, former President and Chief Executive Officer, Alberta Electric system Operator
12:35 – 12:45 pm	Health Break
<b>12:45 – 1:20 pm</b>	<b>How Can Texas Fix It?</b>
	Pat Wood, III, former Chair, Federal Energy Regulatory Commission
	Joseph T. Kelliher, former Chair, Federal Energy Regulatory Commission
<b>1:20 – 1:50 pm</b>	<b>The Lessons for Alberta</b>
	Neil McCrank, Q.C., former Chair, Alberta Energy and Utilities Board
	Dale McMaster, former President and Chief Executive Officer, Alberta Electric System Operator
<b>1:50 – 2:00 pm</b>	<b>Closing Remarks</b>
	Mary Anne Aldred, Former Chief Operating Officer and General Counsel, Ontario Energy Board

### **Bob Heggie**

Bob Heggie was appointed Chief Executive of the Alberta Utilities Commission in January 2008. In his current role, Bob is responsible for leading the implementation of overall organizational strategy and day-to-day operations to ensure achievement of the Commission's organizational objectives.

He is the co-chair of the Energy Law Forum, the CAMPUT Energy Regulation course and the Energy Regulatory Forum. He is a contributing author to Canadian Energy Law and Policy.

### **Neil McCrank, Q.C.**

Neil recently retired from senior counsel to Borden Ladner Gervais (Calgary office). Prior to his retirement, Neil's practice primarily focused on oil and gas, energy and litigation. With a wealth of insight into Alberta's regulatory regime, he provided strategic advice on major provincial energy projects, including northern development and the oil sands and electricity generation and transmission.

Neil served as Alberta's Deputy Justice Minister from 1989 to 1998 before chairing the Alberta Energy and Utilities Board from 1998 until 2007. Since then, he has served both provincial and federal governments in different advisory capacities.

### **Dale McMaster**

Dale McMaster joined the Versant Power board of directors in July 2020. Dale has over 40 years of system operations, transmission maintenance, generation planning and market experience, working both in Canada and internationally.

Dale was previously Executive Vice President, Power Supply and Delivery & Chief Operating Officer for ENMAX Corporation. During his time at ENMAX, Dale was accountable for strategic direction and oversight of ENMAX's regulated transmission and distribution (wires) businesses, power generation and wholesale markets, regulated market services, safety and environment and security.

Prior to his time at ENMAX, he served as President and Chief Executive Officer at the Alberta Electric System Operator, President of the Transmission Administrator of Alberta and Chief Operations Officer for the Power Pool of Alberta. Dale also gained valuable utility experience during his time at SaskPower and while consulting with SNC and Acres International. Dale graduated from the University of Saskatchewan with a Bachelor of Engineering (Electrical Engineering).

### **Joseph T. Kelliher**

Joe Kelliher is the former executive vice president for federal regulatory affairs for NextEra Energy Inc. As executive vice president, Kelliher was responsible for managing regulatory issues for NextEra's two principal subsidiaries, NextEra Energy Resources and Florida Power & Light Co. before federal agencies.

From 2005 to 2009, he served as chairman of the Federal Energy Regulatory Commission (FERC), where he managed 1,400 employees and a \$260 million annual budget. Among the highlights of his chairmanship was the efficient implementation of the *Energy Policy Act* of 2005, the largest expansion in FERC regulatory authority since the 1930s.

Kelliher has worked on energy policy matters in different capacities for the federal government and private sector. He holds a B.S. from Georgetown University's School of Foreign Service and a J.D. from The American University Washington College of Law.

### **Pat Wood, III**

Pat Wood is the past Chairman of the Federal Energy Regulatory Commission (FERC) and of the Public Utility Commission of Texas (PUCT).

Pat is currently CEO of Hunt Energy Network, which develops power systems that integrate into competitive power markets. Pat also serves as a Director of SunPower Corporation and the construction firm Quanta Services. He was recently appointment to the Luma Energy Board responsible for overseeing the Quanta-ATCO joint venture to operate the Puerto Rico utility system.

During his four years at the helm of the FERC, under President George W. Bush, Mr. Wood led the responses to the 2000–2001 California energy crisis, the bankruptcy of Enron, and the 2003 North American power blackout. By the end of his term, over two-thirds of the nation's economy was served by the reliable, organized wholesale power markets FERC championed. Pat holds a B.S. degree (civil engineering) from Texas A&M University and a J.D. from Harvard Law School.

### **Mary Anne Aldred**

Mary Anne Aldred is the Former Chief Operating Officer & General Counsel, Ontario Energy Board. Prior to retiring in April 2021, Mary Anne Aldred was Chief Operating Officer & General Counsel of the Ontario Energy Board.

Mary Anne is a seasoned lawyer with over 25 years of experience in the energy sector. She was responsible for leading all aspects of the organization's corporate operations and providing legal counsel, policy advice, leadership and guidance on government relations, administrative law and civil litigation. Mary Anne joined the OEB as General Counsel in 2006 and in 2015 she was appointed Vice President of Strategic Policy and assumed the additional responsibilities of strategic policy development and overseeing the establishment of the Registrar's office.

Prior to joining the OEB, Mary Anne was a lawyer and regulatory affairs advisor for over 12 years with Hydro One and the former Ontario Hydro where she held the roles of Assistant General Counsel, Senior Legal Counsel and Director, Transmission Regulation. Mary Anne obtained her Law degree at the University of Western Ontario and was called to the Bar of Ontario in 1986.

# CAN CANADA AND THE UNITED STATES AGREE ON A CARBON TARIFF?

*Gordon E. Kaiser*

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## OVERVIEW

Policy makers have long claimed that without carbon tariffs, meaningful reductions in carbon emissions will not take place because some countries will continue to prioritize economic objectives over environmental ones. Recently the European Commission declared that carbon tariffs were essential:

“On 14 July 2021, the Commission adopted a proposal for a new Carbon Border Adjustment Mechanism which will put a carbon price on imports of a targeted selection of products so that ambitious climate action in Europe does not lead to ‘carbon leakage’. This will ensure that European emission reductions contribute to a global emissions decline, instead of pushing carbon-intensive production outside Europe. It also aims to encourage industry outside the EU and our international partners to take steps in the same direction.”<sup>1</sup>

Canada and the United States share the longest undefended border in the world and are the two most highly integrated countries in terms of energy investment. Both countries are now closely aligned on carbon policy but will they be able to agree on this latest issue? The Canadian Chapter of the Energy Bar Association recently presented a challenging debate between experts from both countries. A transcript of the proceedings follows, including the bios of the panel members. A video of the debate can be found at [lawlectures.com](http://lawlectures.com).

## Gordon E. Kaiser

The title to this program is *Can Canada and the United States Agree on a Carbon Tariff?* I use the word carbon tariff. We don't like calling these things carbon taxes or carbon tariffs. People get too excited, so we call them “carbon border adjustments.” CBAs are the elephant in the room. Many believe that if this remedy is not in place on a multi-national basis, we will not achieve the carbon goals we have set worldwide. There is a concern with such things as carbon leakage. This is an American term, as our guest from California will tell us. The Americans also call it “contract shuffling.”

Today we have a great panel to address these issues. The way we set the program up is a little bit different. We have Team Canada and Team U.S. On each team there is an economist and a lawyer. On Team Canada we have Adonis Yatchew from the University of Toronto. He is also the editor of the Energy Journal. We also have Neil Campbell, the lawyer on the team, who is the head of the Trade Law Group at McMillan LLP in Toronto. Neil may be at bit of a disadvantage. He doesn't know this, but Adonis's wife is a lawyer at the U.S. Justice Department in New York City. I'm not sure that Neil will be getting the support that he thought he was getting.

On the Team U.S., we have Meredith Fowle. She is at the University of California in Berkeley. She is a director of the Energy Institute at Haas at that institution. She is also on a the California Market Advisory Committee, since 2018. She is the economist

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<sup>1</sup> European Commission, Taxation and Customs Union, “Carbon Border Adjustment Mechanism” (14 July 2021), online: <<cc.europa.eu/taxation\_customs/green-taxation-0/carbon-border-adjustment-mechanism\_en>.

on the American team. Sanjay Mullick, a partner with the Washington DC law firm of Kirkland and Ellis, is the lawyer on Team U.S.

### **Adonis Yatchew**

It is a pleasure to be here. I have the privilege of introducing the topic today. Let me begin with the following observations. The first one is that prices that reflect the value and the costs of goods provide efficient signals for consumers and producers. This is one of the most fundamental messages of economics. Markets work. They allocate resources efficiently as long as prices reflect true costs.

If they do not reflect true costs, then markets do not allocate resources efficiently and one of those circumstances arises here because of the carbon externality. So, the external consequences of generating energy producing carbon dioxide are not embedded in the costs that we pay and therefore we're not going to arrive at an efficient allocation of that resource and an efficient allocation of the resources that are used to produce the energy, including the air and the concentration of carbon in the atmosphere.

Economists of course call this a market failure, and many have referred to the carbon externality as being the ultimate market failure of the 21<sup>st</sup> century. Certainly, it looks like it's starting out that way. In the 20<sup>th</sup> Century, there was also a very prominent market failure, actually multiple market failures, but one particularly prominent one was the Great Depression.

Returning to the present subject, the objective is to try to incorporate the costs of the externality in the price of the good. If one can do that reasonably accurately, even approximately, then one can restore efficient market signals. This is the basic idea underlying putting a price on carbon.

Now there are two ways, relatively common ways, of putting a price on carbon. One is to impose a tax, carbon tax, the other one is to use the cap-and-trade scheme under which there's a limit on the level of carbon emissions within a jurisdiction, but permits are issued and can be traded determining the price of these carbon permits.

What's been going on with the climate change agenda over the last three or four decades? Some have argued that very little progress has been made, at least on a global scale, when we

think back to Kyoto in 1997 or Paris in 2015. A key reason for slow progress is the absence of a price on carbon which has been resisted by producers and consumers.

The costs of this, whether it's the costs that are imposed on producers, and then get passed on to consumers, leads to intra-jurisdictional concerns along with the attendant economic impacts such as unemployment, the potential for shifts in industry, and so forth. Take for example a country like Poland, which is heavily dependent on coal which is extracted in Poland. If you try to shift away from coal, which has the highest carbon footprint of the three of the three hydrocarbon fuels, if you try to shift away from coal to something else that Poland doesn't have, it's not only going to have cost impacts, it's also going to have serious employment consequences.

There are also inter-jurisdictional concerns about the loss of competitiveness. If I put a price on carbon in my jurisdiction and my trading partner doesn't or other countries that can produce the goods that I produce don't put a price on carbon, then I'm going to lose competitiveness. There's going to likely be an industrial shift. These are very real and reasonable concerns.

So, if a price on carbon is an efficient tool (whether through a carbon tax or cap and trade) and if we really do recognize that global warming is a challenging and important problem to be solved, then why have carbon taxes or some form of carbon pricing not been introduced on a large scale? Every year personal taxes in Canada are due on April 30<sup>th</sup>. I know Americans have to file a little bit earlier, April 15<sup>th</sup>. In Canada the personal income tax came in during the first world war. It was to be a temporary tax, the purpose of which was to fund the war effort. Each year I file at the last possible minute in the vain hope that this temporary tax will be rescinded, and I won't owe anything the following day. So, the point I'm trying to make is that once taxes are in place, they stay, people are suspicious of taxes, they're reluctant to accept taxes. You heard Gordon say that or this is a very sensitive issue, and it is.

As a result, many jurisdictions have opted for alternative approaches and in many cases, these are what economists would call second best solutions. Rather than taxing the externality, they subsidize technologies that some agency of the government thinks is a promising

technology that will help in decarbonization, for example, wind and solar generation. This is arguably less efficient because it involves a government agency in the selection of the technology itself.

In fact, the conservative argument is that the government should be involved in correcting the market failure, in this case the externality, and that business and individuals should be the ones that are incentivizing the technologies, choosing winners, and so forth.

So why international progress on decarbonization been so slow? Perhaps the shortest answer to that question is that the agreements that have come into place are voluntary and that there are minimal penalties for failing to meet one's targets, for deferring the target date and so forth. This is a classic political science collective action problem. For economists it is a Prisoner's Dilemma where you can free ride for as long as you can get away with it.

So, the deeper question here is: how do you get countries to cooperate, especially once it really looks like we're not going to come to a global agreement very quickly? Here I'm just going to outline an argument that has been set forth by William Nordhaus, the 2018 Nobel Prize winner in economics. He's not the originator or not the only one contributing to this line of reasoning but certainly a very articulate individual when it comes to advancing the idea of carbon taxes and carbon border tariffs or carbon border adjustments.

The ideas are very succinctly expressed in a 2020 paper by Nordhaus in *Foreign Affairs*. The paper is entitled "The *Climate Club. How to Fix the Failing Global Effort.*" Here are the steps that he outlines. The first one is you need a domestic price on carbon, and it can be a tax, or a cap-and-trade approach, but something that is relatively uniform, so you don't end up with within country inequities and imbalances or distortions.

Now both Canada and the U.S. have a federal structure, provinces and states have strong self-governing powers, something that keeps returning in U.S. politics and certainly was very important recently when the Canadian Federal Government introduced a carbon price. Nordhaus would then suggest two members of a club for starters. The club could be U.S. and Canada as long as we have similar carbon prices within our countries. We would then impose a tariff on any imports into Canada or

the U.S that come from other countries that do not choose to subscribe to a carbon price domestically. Nordhaus suggests a relatively low tariff carbon border adjustment, on the order of about three per cent.

Before I close, let me comment briefly on innovation related to pricing carbon. There are at least two issues. The first one is if we're not pricing carbon then carbon fuels are priced too low, and you don't have that incentive to innovate into non-carbon technologies. Imagine for a moment that oil prices went up to \$150 a barrel and stayed there. There would be considerable additional incentive to innovate in the transportation sector to replace oil.

The second problem is that the social returns from solving or mitigating carbon are much higher than private returns. You cannot expect companies to spend the resources, to devote the investment resources, that are necessary to produce the kinds of innovations that we're going to need to move more quickly, unless they can monetize those returns. That's an argument for some sort of government role for example in the area of subsidizing research to promote these non-carbon technologies.

In summary, countries around the world have tried various approaches to mitigating the carbon problem. Few have introduced a serious price on carbon. There are all kinds of standards and building codes and so on. I'm not taking away from the value of those types of policies. Climate clubs, composed of groups of countries with similar carbon prices, and carbon border tariffs would contribute greatly toward progress. Thank you.

#### **Meredith Fowlie**

Thank you for the opportunity to be part of this conversation. I'm not a lawyer, I'm an economist. I study, among other things, the design and implementation of greenhouse gas regulation.

For some additional context, I may be playing for team USA today, but I was born and raised in Canada. I grew up in Toronto and consider myself Canadian. Although you probably cannot hear my Canadian accent any more. I've lived in California for almost 15 years now. So, my comments will be drawn from my current home state.

At the crux of the issues we're talking about today is an inconvenient truth that Adonis has laid out so nicely: climate change policies are incomplete.

Only a subset of global greenhouse gas emissions are subject to stringent regulation. And across those emissions that are regulated, regulatory stringency varies a lot across trading partners.

This presents a real predicament for jurisdictions that want to move aggressively on climate policy. If they impose a regulation on their own producers and raise their operating costs, these regulated producers could lose market share to unregulated rivals. This can shift GHG emissions out of the reach of the regulation. Economists use the term “leakage” to describe the phenomenon where in the process of regulating your own emissions, you induce an increase the emissions in jurisdictions that you’re trading with.

What does a climate concerned jurisdiction have to do with this problem? One idea: impose a border carbon adjustment. Economists have written lots of papers exploring this elegant idea that a government imposing a costly regulation on its own emissions can mitigate this shift in emissions by standing at the border and imposing a commensurate tax on the greenhouse gas emissions embodied in the products it imports.

This is a compelling idea in theory. But the reality is inevitably more complicated. To elucidate some of these complications, I wanted to share some insights from the California experience because here in California we actually have a policy that prices the carbon embodied in electricity imports. I think there’s lessons to be learned from this real-world experiment. In particular, I think this example helps focus attention on a key design trade-off that may be underappreciated.

First, a little background. When California was designing its cap-and-trade program it was clear that it needed to find a way to regulate electricity imports. At the time, more than half the emissions from electricity consumption in California came from power plants outside of California that we were importing from.

There were lots of papers being written showing that emissions leakage would be really significant if we just regulated electric producers inside California but didn’t attempt to regulate emissions from our electricity imports. To tackle this problem, California’s cap-and-trade program was designed to regulate *first deliverers* of electricity. This means we directly regulate emissions from power plants inside California, but for our imports, we tax electricity imports according to the estimated embodied emissions in those imports.

To implement this policy, we need a way to assess the carbon embodied in the kilowatt hours we’re importing. This is a really hard, or impossible, thing to do with great precision. So, the question is, how do you assess the GHG intensity of imports? It’s worth emphasizing that this is going to be a key challenge for any border carbon adjustment.

The simplest approach, which is not the approach California ultimately took, would be to pick a single value, a carbon intensity per unit of imported electricity, and just use this to assess compliance obligations for every kilowatt hour we import from wherever we’re importing it. The problem is that if you pick a low number, we’re going to under-tax the emissions and imports from a carbon-intensive producer such as a coal plant.

We call this carbon “laundering” insofar as some imports will look cleaner than they actually are. But if you pick a high number, then you’re unfairly discriminating against low carbon imports. For example, a wind turbine in California pays nothing but a wind turbine in Nevada is being treated as if it’s a carbon emitter/ The lawyers in the room know better, but my understanding is that this approach can look like unfair protectionism.

To get around these problems, California came up with a different approach. I’m simplifying a bit here, but the basic structure is as follows. California is implementing a *source-based* carbon adjustment. There’s a default carbon intensity — 0.428 tons of CO<sub>2</sub> per megawatt-hour — that exporters to California can accept. But if a deliverer to California can point to a clean source outside the state and demonstrate that this is the resource supplying California, then that deliverer claim that low (or zero) carbon intensity.

It may seem that this source-based approach has solved the leakage problem. But it hasn’t because it creates an incentive to preferentially sell — at least on paper — the cleanest out of state resources to California. Meanwhile, the more carbon intensive producers will be redirected to supply other load in the states that are not subject to greenhouse gas emissions regulation. Economists call this *reshuffling* or *resource shuffling*. Whatever you call it, this phenomenon will shrink California’s carbon footprint on paper, but understate the true impact of electricity imports into California on global greenhouse gas emissions.



In the design stages of this policy, California's policy architects could see that reshuffling had the potential to be a problem. So initially policymakers tried to exterminate the problem by fiat. Electricity importers were required to attest that they were not resource shuffling under penalty of perjury. But as the lawyers in the room well-understand, it's hard to ban something you can't precisely define or measure. Ultimately, the state had to walk back efforts to ban reshuffling outright and instead introduced a group of nuanced rules and accounting practices that are designed to mitigate the problem.

As an economist who looks empirically at how climate change policies are working in practice, I have been interested to understand what impact this BCA design has had on electricity imports and associated GHG emissions. To answer this question definitively, I'd ideally have parallel universes to work with. One in which California implements its carbon price without any border carbon adjustment. And another with the border carbon adjustment.

We don't have parallel worlds. But we have models and data, so what we have done is use a detailed model of the western electricity wholesale market to simulate power plant dispatch in scenarios with and without carbon adjustments, just to try and understand how well the California solution seems to be working in terms of mitigating this leakage or reshuffling problem. I briefly want to highlight some key findings.

The first one was pretty depressing. We find that when we model electricity dispatch in the western interconnect, there's a lot of zero carbon resources outside of California so there's tremendous potential for reshuffling.

In principle, California can reshuffle its way to major reductions in greenhouse gases on paper without making a dent in western emissions and that's indeed what we found when we simulated power system operations in 2019 calibrated to match the market structure we observe in 2019. We see no difference in simulated western emissions, with or without the border carbon adjustment.

When we compare our simulated emissions to observed emissions, things don't look quite as bad. Observed emissions are lower than our worst-case scenario. What's the reason? Hard to say definitively. Electricity markets are really complex, we can't capture all the complexity in

our models, so it may be that observed emissions are lower than our projected emissions because our attempts to mitigate reshuffling is working or because there's other model specification errors that we're leaving out.

The final insight that I want to launch into this room and hopefully get some discussion going, is in our modeling work we also consider the third policy design. One in which we set a default carbon emission rate at the border use it to assess compliance obligations for all imports. When you do that, you find that if you set a default rate high enough, you can have a moderating impact on emissions leakage because you're charging every import as if it's associated with emissions. So, as the default rate rises, California's demand for imports falls and we really do see an impact on western wide emissions.

So, a question for the lawyers in the room: Is this option on the table? Can we use a default rate to try and capture the impacts of California imports on western emissions even if the actual resource that's on paper supplying electricity has an emissions intensity lower than that default rate, because I think the results are that it does offer a way to start mitigating emissions leakage more effectively than the current policy design.

To conclude, I leave you with two quick takeaways. First carbon pricing at the border, border carbon adjustments, whatever we want to call it, is going to be challenging in markets where sources are highly substitutable and where you've got a lot of variation in the emissions intensity of the sources in the market. Particularly, in markets where you've got a lot of low or no carbon suppliers as potential exporters to your market.

Second, California has shown that it's possible for a jurisdiction that's regulating its own emissions to price carbon at its borders. California continues to experiment with policy design so I encourage you to pay attention or keep tracking this evolving policy situation because I'm hopeful that future experimentation will hold lessons for other jurisdictions considering similar policy approaches and ways forward. I'll end there and look forward to the discussion.

**Neil Campbell**

It is a real pleasure to be on a panel with this diverse group of experts and I'm going to try, as one of the lawyers, to shift focus on what can

countries do under the international trade rules that create part of the constraining, or maybe part of the enabling, framework, for using border carbon adjustments. I'm going to talk about what we most immediately think about, which is charges on imports. If I have time, I'll say a little bit about the opposite, which is adjusting through rebates on exports.

The import charge is really trying to level a playing field in your domestic market by bringing the imports up to a competitive playing field. In other words, if you've priced carbon domestically, the import products that are competing in the domestic market will bear at least some comparable measure of carbon cost. An export rebate goes the other way. For a domestic industry that exports to international markets, how do you level the playing fields for domestic producers — who are paying for carbon — to compete internationally against firms that are not. The concept of the rebate is to remove or reduce the charges for carbon that they are paying domestically, so that they can be competitive internationally. This is obviously working in a quite different direction from the environmental policy objective.

The EU is the leader on BCAs with a real proposal. Canada is thinking about border carbon adjustments, and hopefully we're moving on a path where we get there soon. I think one of the answers to the challenge coming from our two economists is, if you can get a large enough "club" (to use the Nordhouse terminology), that starts to be more impactful than a single small jurisdiction like Canada or a single large jurisdiction like Europe taking action.

There are two fundamental trade law principles deeply rooted in the WTO system (of which almost every country of relevance is a member): "national treatment" and "most-favoured nation treatment." We can talk about BCAs at that level because agreements like the USMCA or other regional agreements are, with respect to the relevant trade law rules, cross-referencing back to the GATT and WTO framework.

So how do we deal with adjusting carbon on imports? As Gordon said, tariffs are actually not a very viable concept from a trade law point of view. Most tariffs are bound under the GATT, so countries cannot just introduce new tariffs (Article II of GATT).

What countries can do, if you do it appropriately, is introduce internal taxes or introduce internal

regulatory regimes with associated charges. The key pathway from a GATT WTO compliance point of view when using both those kinds of mechanisms (or "measures", to use trade law jargon), is national treatment (Articles II and III of GATT). National treatment basically means non-discrimination, and the relevant comparison is between domestic treatment of a country's own producers and its treatment of the imports of the foreign exporters.

The second key principle, most-favored nation or "MFN" treatment, is also a strong non-discriminatory norm in trade agreements (Article I of GATT). Here, the discrimination concern is whether you are treating all the other member countries of the trade agreement — all the other members of the GATT in this context — in the same way. That has some interesting challenges for BCAs.

Let me briefly discuss the EU. In a new proposal made in July, the so-called "CBAM" (Carbon Border Adjustment Mechanism) the European Commission is proposing to introduce BCAs in 2024. There is two-year gestation to get EU approvals and then a couple of years of planned phase-in on an administrative basis before the monetary aspects take effect. The long lead time reflects something that Meredith said that bears underlining: the details of BCAs are going to be very complex.

At this stage, we can only talk about the EU at a conceptual level. What they have chosen to do is import charge. This is clearly positioning for WTO compliance. They are going to apply this CBAM charge on imports to the same key sectors that are paying for carbon within the EU — basically emissions-intensive and trade-exposed sectors. In concept, they are getting the imports to pay for carbon at the EU level — in other words, cross referencing the import charge with the price mechanism from the EU's emission trading system (ETS). There may be details in the implementation that may matter for trade law compliance, but conceptually that is a pretty sensible pathway in respect of pricing from a trade law non-discrimination point of view.

The quantity aspects of the CBAM are going to be complicated. The EU proposal is going to be source-based, to take Meredith's point, and that could include sources in many countries which have no carbon costs. However, there will be other countries like Canada where producers pay for carbon. For example, under Canada's federal regime you might be paying forty Canadian

dollars per ton currently. By comparison, there could be 60 euro per ton current pricing in Europe. Conceptually the European design is to top the pricing on imports up to current EU levels (in the year that you are importing, starting in 2026) relative to what you are paying in your domestic market (Article 9 of CBAM). We should anticipate lots of complexity in the implementation around the quantities and around the measuring and verifying of the home-country pricing that you are paying as, say, a Canadian exporter to Europe, but in principle you will pay a differential import charge that brings the total carbon cost on a product going into Europe to a level that matches the European domestic level of carbon pricing.

That design is sensible from a national treatment point of view. The challenge that trade law brings to bear is that if you are not taking account of the price that the exporter may be paying in its home country, such as Canada, then you would charge the full equivalent of domestic carbon pricing on inbound products that already has embedded carbon pricing from its home jurisdiction. Treating that import in a way that is less advantageous to your domestic environmental policy carbon pricing measure would be problematic.

The CBAM provides for this home jurisdiction carbon to be taken into account and basically levels the playing field with the domestic treatment of producers in the European ETS system. So, the path on national treatment appears to be promising. But the EU will also have to be careful in not disadvantaging the foreigners through implementation mechanics (e.g. tactical and other problematic disadvantages for these imported products coming in).

On the MFN front, the CBAM raises an issue about differential outcomes. If I am a Canadian exporter I might be facing a charge into Europe of 60 euros minus 40 Canadian dollars, to take my example above, using current prices. However, if I am an American exporter I might be paying a higher import charge because the CBAM adjustment going into Europe won't have a comparable reduction for domestic carbon costs incurred in the U.S. We will then be

dealing with two trade partners of the European Union whose exports are being treated differently in the result. However, I would argue — and I think you'll see this argued if and when a case gets to the GATT — that they are being treated even-handedly by a measure that is neutral in its objective design (i.e. as to the methodology that it applies to all foreign countries), and it is a function of what the foreign countries have chosen to do or not to do that creates the difference in results. In my view, we will see WTO litigation over this, but I think there is a pathway to get to a place where the WTO will find a way to say yes, if you design these systems objectively and fairly, the outcome differentials are okay.

The last thing to say about GATT is that there are a couple of important exemptions which could be invoked to justify contraventions of national treatment or MFN treatment (Article XX(b) and (g) of GATT). One is for measures that are necessary to protect human life and health. Another is for measures related to conservation of exhaustible resources. I think most people feel that those are potentially very plausible exceptions to invoke in respect of carbon pricing, given the nature of the problem the world is confronting.

The challenge is that those exceptions come with a requirement that the domestic measures not be implemented in a way that is arbitrary or unjustifiable discrimination, or is a disguised restriction on trade (see the opening “chapeau” of Article XX). I think these issues can be managed, but this does provide a cautionary note for countries regarding BCA implementation. You can't go and say we're doing a policy that is good for human health and the environment, and then play tactical games with your trading partners and disadvantage the foreign producers on the implementation, despite claiming that you've got a facially neutral measure.

I will just briefly make a comment about how export rebates would look in a trade law framework. It is notable that, in the BCA consultations underway right now, the Canadian government says that it is considering that option.<sup>2</sup> It is doing so because Canada

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<sup>2</sup> Department of Finance Canada, “Exploring Border Carbon Adjustments for Canada” (last modified 5 August 2021), online: <[www.canada.ca/en/department-finance/programs/consultations/2021/border-carbon-adjustments/exploring-border-carbon-adjustments-canada.html](http://www.canada.ca/en/department-finance/programs/consultations/2021/border-carbon-adjustments/exploring-border-carbon-adjustments-canada.html)>.

is export-oriented jurisdiction with a lot of manufacturers selling not only into the U.S. but all over the world. Many of those playing fields have low or no carbon pricing for domestic manufacturers. Interestingly, the EU did not introduce an export rebating mechanism as an integral part of its CBAM regime although it has made statements indicating that it remains interested in looking at ways to do so if rebates could be designed in a way that is appropriate from a trade law point of view.

From a trade law point of view export rebates may be very challenging to design. There is a big risk, depending on how you do the rebating, that what you are effectively creating is an export subsidy. Many export subsidies in the WTO regime are prohibited. It will also be much more challenging for governments from a policy point of view to say that they are exploring export rebates as part of a climate policy. The policy rationale for the rebate is basically the protection of the domestic production that is carbon intensive, and the rebate would be contrary to the domestic environmental policy.

### **Sanjay J. Mullick**

It is good to be with you. Thank you to the Canadian Chapter of the Energy Bar Association. The U.S. is behind many countries. It certainly doesn't have something like a BCA. In August there was legislation proposed in Congress under the *Fair Transition and Competition Act*. It's a parcel of different climate change measures. In it there is a border carbon adjustment measure that I'd like to discuss. It would be scheduled to be implemented in early 2024. There's still a lot of meat that's not on the bones. The legislation would assign responsibility to the Treasury Department to define the environmental cost. One feature that maybe sets it apart from others is there would be exemptions if other countries do not have a BCA.

To Neil's point, there would not be an export rebate construct, at least under this bill as proposed. Estimates are that it would affect about 10 to 12 per cent of imports into the U.S. using a similar framework as others have articulated, which is the carbon intensive and trade exposed. It is similar to Europe, aluminum, cement, iron, and steel, those would be first mover areas that would be subject to the BCA but also potentially coal, gas, and petroleum, and products that are considered to be composed of greater than 50 per cent of the types of principal products, say aluminum, steel, etc.

In terms of calculating the BCA, this is where it gets a little bit tricky. Certainly under U.S. law, perhaps, like others, the proof is in the eating of the regulations that would be ultimately issued by the applicable executive agencies. We are far from that. Essentially, you would be looking to somehow define and identify the domestic environmental costs and multiply that times the greenhouse gas emissions. It could be done at a production level or it could be done at an upstream level, say in the instance of fuel cost of extraction.

Meredith and others touched on some points that may be interesting to pick up in discussion. The question is, what is the value and what's the information? There are some interesting noises as to what would happen in the absence of information and what sort of inferences regulators might be able to make.

There is an interesting commentary to touch on in terms of potential incentive structures. But this has to be put in the context of other legislation. The Biden agenda at the moment is very much subject to negotiation. There is a question whether this will proceed or not.

The president has been a little bit non-committal on carbon tariffs. There have been other proposals. Senator Wyden, for example, made noises about having a price and a carbon tax to go part and parcel with the carbon tariff. That is as yet still undefined.

We talked about how Treasury would really be authorized or empowered or made responsible for implementing the BCA. Secretary Yellen has acknowledged that carbon tariffs could be effective, but she has also cautioned that they wouldn't be the only way to meet emissions goals.

The U.S. lead representative to COP26 is former Secretary of State and Senator John Kerry. He is President Biden's Climate Envoy. He has been the most distant in saying that carbon tariffs are more of a last resort. The thinking is that he's really trying to preserve the options heading into Glasgow before coming down on any particular side. At the same time others are suggesting that if the U.S. doesn't come forth as others have with something like this then we might be a little bit empty-handed going into Glasgow.

As you benchmark this against something like the CBAM that Neil mentioned, the products and industries are fairly similar. As

Neil mentioned, the EU's a bit more open to the possibility of an export rebate. There's no mention of that yet in the U.S. federal proposal.

The last point is that the CBAM really works under the emissions trading scheme that the EU has and the U.S. doesn't have. That is considered a bit of a blind spot in terms of not having a fixed carbon price.

Sitting here in Washington, both the IMF and the World Bank have talked about proposing something like a 75 dollar a ton carbon price as being necessary as part and parcel of a BCA.

There have also been views from the private sector. The U.S. Chamber of Commerce representing 4,000 different companies, has talked about how it's very important to have a federal carbon price. They prefer market-based solutions to go along with that as opposed to a BCA because they have warned that a BCA could actually stifle development of nascent green tech. Finally, having carbon tariffs in the absence of a carbon price, could raise international trade regulatory risk at the WTO. Neil summarized nicely the key issues at the WTO in terms of the offense provisions, non-discrimination requirements and MFN treatment. But I think there is momentum around the exceptions provisions that Neil mentioned in terms of public health and exhaustible resources.

That's a quick readout of what's happening in Washington as to at least a potential U.S. federal proposal for a BCA.

#### **Gordon E. Kaiser**

I'm going start the questions with Meredith, mainly because she has a class to run to but more importantly, you're in a bit of a unique position. California has been doing some heavy lifting in this area for a long time and this is a bit of an inside baseball question, but when the Europeans were shuffling around with this stuff, did they talk to any of the California agencies?

#### **Meredith Fowlie**

I personally can't verify whether they did or not. I can say one thing, which is I think when California justifies the heavy lifting it's doing, which is sometimes asked to do by Californians who are paying higher electricity prices, for example, for this climate leadership, I mean, California is responsible for less than, I think it's 0.7 per cent of global emissions so

we cannot be doing this to reduce our own emissions because we could shut California down and you wouldn't be a blip on the trajectory of global emissions so, California dealing with other jurisdictions.

I would have to imagine some of that happens because I know folks at the California Resources Board and other implementing agencies, make it a priority to tell the stories of what we're learning and mistakes that we're making in California.

I cannot personally point to the conversations that happen. But, I would hope that they happen because a real emphasis of the California climate ambition is to help other jurisdictions learn and grease the wheels of policy adoption when it works and avoid the mistakes that we're making and learning the hard way.

#### **Gordon E. Kaiser**

One more question for you. We've listened to Sanjay on this, which is almost as depressing as listening to CNN every night as we watch the American government machine slowly grind to a halt. If the Americans don't get on board with this concept, is it toast? We're never going to see a worldwide scheme if the Americans are hesitant is my argument.

#### **Meredith Fowlie**

The only thing I will say, because I'm inherently an optimist, is it's very easy to get depressed when you're watching Washington but there's been some tremendous innovation at the state level, and not just in California, if you look at some of the northeastern states as well. Under the Trump administration it was all at the state level and there was a lot of movement and some galvanization of state action given what was happening at the federal level.

My preferred outcome would be to see a coordinated federal ambitious move on the climate front. I think if that doesn't happen, if the past is any indication, there are plenty of states, a growing coalition of states, that are going to try to move the ball. Sanjay is sitting in Washington and can probably give a more accurate read of where we stand.

#### **Gordon E. Kaiser**

Neil, you will appreciate more than anyone else on the panel how the federal government has to fight with the provinces. We have gone

through three years of carbon tax litigation where three of the provinces opposed it. It finally got resolved and still they're not on the same page. Listening to the prospect that the Americans may kick the ball down the field, are you reasonably confident the Canadians will do anything?

**Neil Campbell**

I am confident that Canada will take some action on BCAs. I think that it makes sense, even for small jurisdiction like Canada, to go ahead and do this unilaterally. The starting point is that, once you have a price on carbon domestically — whether it's a cap-and-trade system, a tax, or whatever form you've chosen — it's almost a no-brainer to add the border carbon adjustments on an import basis.

All you are doing with the import charge is bringing the imports up to the level playing field that you put your domestic producers on, so it's an easy political step once you've taken the hard first step of domestic carbon regulation or pricing. You may have downstream industries who are affected constituencies and might complain because you are taking away cheap imports that allow them to evade using the domestic high carbon cost inputs in downstream production. But Canada just held an election, and all the political parties were supporting border carbon adjustments notwithstanding other differences in climate views and policies. While we have elected a minority government, the fact that the governing party plus all of opposition parties support BCAs means we will likely see the import charge version of BCAs adopted. The details are complicated though, so it is going to take some time to consult and work through all of that.

The Canadian government also noted the importance of thinking about our trading partners — in Canada's case the two biggest ones on these emissions-intensive and trade-exposed sectors are the U.S. (about 70 per cent of the trade) and Europe (about 10 per cent).

One of the attractions for the Canadian government in adopting BCAs is to become the second mover after the EU in introducing BCAs as a climate initiative. This is an opportunity to say we are a leader and a model, with relatively modest domestic economic or political downside. The EU envisions that they will do implementation agreements with counterparties, and I think Canada would love

to be one of the first countries to do that with them. If you get to a point where the U.S. comes into the fold too, suddenly you would have the North Atlantic as a meaningfully large block and that would start to tip the world as a whole in this direction because it reduces the number of markets that countries without carbon pricing could sell into at low prices.

On the other hand, I predict that Canada will not establish export rebates BCAs. I don't see how the Canadian government introducing import charge BCAs as a climate initiative could square that with the negative environmental impacts of a rebate mechanism. They would also need to get support from at least one other party to dilute Canada's existing carbon policy regime in that manner.

**Gordon E. Kaiser**

Adonis, over to you. You were making a point, which no one else has, which is that we haven't really adequately considered the impacts of this kind of regulatory regime on a on innovation and product development and I suppose in particular with new technology necessary to reduce carbon. Is that really an issue that is going to weigh significantly in this in this matter?

**Adonis Yatchew**

Before I go there, let me just comment on something that was of concern a moment ago and that is the half empty, half full glass with respect to the United States. Winston Churchill once famously said that Americans will do the right thing only after they've tried everything else. I would suggest that the right thing here is a price on carbon and they will get to it and they are getting to it piecemeal, along with Canadian talent. Today the Nobel Prize in economics was awarded. One of the co-winners was David Card who's a colleague of my fellow panelist, Meredith Fowlie. He is also a Canadian. So, I think that collectively there's enough talent here in North America.

With respect to innovation, if hydrocarbons attract a carbon tax and are therefore more expensive, it would promote innovation but let me suggest that there is more of a nuance here with the carbon border tariff. Innovation is not just innovation anywhere, for everybody. The kind of innovation that China needs, or India needs to, and they are dominant carbon growth centers now, certainly China is, the kind



of innovation that they need might be very different from what we need in North America.

Where are you going to put the wind farms and the solar panels around New Delhi or around Beijing? Maybe their solution is something quite different from what we need.

These countries that are in a different phase of development and are much more densely populated, need direct incentives to find their solutions, given their particular circumstances. Carbon border adjustments would be a meaningful incentive.

I think at the heart of it is that not all technological innovation is transferable, and I don't think we are spending enough on innovation proportionately on the kind of innovation that is transferable to countries that need different solutions from the ones that we have and that's one of the contributions that a carbon border tariff or adjustment would make.

#### **Gordon E. Kaiser**

Sanjay, I'm going to give the last word to you. You can wrap it up. The politics of these things are impossible to forecast. You seem to be a little bit negative on this whole thing. Do you have anything more positive you could end with?

#### **Sanjay J. Mullick**

In the short term I believe that inflationary pressure around the world will not help green momentum. In the UK you've already got gas lines. In China one reason they might have banned bitcoin is because of all the energy it's sucking up. India is already oil dependent. Prices are going up. These things won't help if there's also a perception that there's now taxes and tariffs on top of that.

China might surprise everyone at COP26 with something innovative. Why? Let's talk trade. They want to get into the CPTPP. What better way to show everybody that they're a new China than to do something that contributes to everyone's interest. Maybe we shouldn't be so worried about the WTO and might that give runway to things like BCAs. I say so because in a way the WTO has its own COP26 coming up in December which is called MC12, the Ministerial Conference 12.

This is the highest-level decision-making body of the WTO. It meets every couple of years and

they've been having a trade and environmental sustainability discussion and dialogue and this is one of the agenda items for December. Recently at a meeting one of the Deputy Director Generals flipped the script, talked about how you know legacy, the environment, was used sort of as an obstruction to trade right, as a pretext for protectionism, but he said now it's the opposite. Unsustainable practices, those are what are being seen as an obstacle to trade. He made, I thought two very interesting, specific statements at this meeting, I think it occurred on October 1<sup>st</sup>. He talked specifically about a carbon price and that a global carbon price is the quote-unquote first best approach and second of all he generally commented about how WTO stakeholders have to ask themselves, do they want to solve the problem by quote-unquote cooperation or litigation? Now, those words are interesting, but I tell you why I think they're particularly interesting.

A decade ago, the WTO issued a paper called the Interface between Trade and Climate Change. That's 10 years ago, a lot of things have changed, I get it, but that paper went through a lot of the same provisions that we've talked about, and that Neil talked about. But what I thought was interesting, and this was literally a coincidence in finding this, and feel free to look it up, and I respect that the WTO has issued all kinds of papers, in the conclusions a couple of points were made. One was in discussing Article 20, the exemptions, the exemptions to WTO-compliant trade provisions. It literally said that the first best option is an international agreement. And it literally said that, as stakeholders think about the interface between climate change and trade policy, and that governments need to emphasize negotiation over litigation.

What's the takeaway? The WTO at the end of the day is not a document, it's an organization. It has to act. A lot of people have said it's not effective anymore. The Appellate Body has been described as being in crisis. The Director General recently suggested she might resign, as did the last one. I'm suggesting that the WTO is maybe pulsing that a carbon price, if you have one, that's how you can make yourself WTO proof, and that going there with disputes is really not the desired path forward.

#### **Gordon E. Kaiser**

That's very true. What you're really saying is the WTO may be looking for an opportunity to be a leader and a good guy for a change.



**Sanjay J. Mullick**

I agree.

**Gordon E. Kaiser**

I'm going to turn the program over to Anna Fung and see if she can wrap this thing for us.

**Anna K. Fung, Q.C.**

I want to thank you, Gordon, for single-handedly putting together such a stellar panel on the whole issue of Can Canada and the United States agree on a carbon tariff. I think that we can all agree after hearing the presentations this afternoon that we can, and we should. It's going to however require a lot of work and some degree of cooperation and negotiation.

I also want to thank the debaters from Team Canada, Adonis Yatchu and Neil Campbell, for presenting their views and their worthy opponents, Meredith Fowlie and Sanjay Mullick from Team USA. I want to thank Meredith for providing us with a couple of new words to use in terms of carbon laundering and resource shuffling. I will use these whenever I can as a Commissioner at the BC Utilities Commission when we're dealing with carbon tax issues.

British Columbia has had a carbon tax since 2008. It started out at ten dollars per metric ton. It's now gone up to fifty dollars. And that's higher than the federal carbon tax.

I thank you again, both our panel members and listeners, on behalf of the Energy Bar Association and in particular Canadian Chapter.

**GOING FORWARD**

In the introduction to this Webinar Review we mentioned that in energy policy terms the question of a Carbon Tariff was the elephant in the room. It turns out that there is also an elephant that's not in the room. That is China. The CBA concept may prove to be the most burning issues in multilateral climate change analysis.

A short time after this panel discussion, COP26 opened in Glasgow. It quickly became known as COP-out. China produces almost 30 per cent. of the world's carbon dioxide emissions. Xi Jinping didn't even turn up at COP26. China is still increasing its capacity for coal-fired power

stations. The last minute standoff at COP26 by India regarding coal powered generation was not helpful either.

Carbon Border Adjustments will be a long and difficult issue. Like it or not it is probably the most important one. ■

## THE PANEL MEMBERS

### **Gordon E. Kaiser**

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Gordon E. Kaiser is a counsel and arbitrator in energy and competition law matters practising in Toronto and Calgary.

He is a former vice chair of the Ontario Energy Board and a former Market Surveillance Administrator in Alberta. Prior to that he was a partner in a national law firm where he appeared in the courts of five provinces, the Federal Court of Appeal and the Supreme Court of Canada.

Gordon has advised the Alberta Utility Commission and the Ontario Independent Electricity System Operator (IESO) on settlements under the *Electricity Act* and the Attorney General of Canada on settlements under the *Competition Act*. He has acted in disputes dealing with transmission and pipeline facilities, power purchase agreements, gas supply contracts, and wind and solar contracts. He is the editor of *Energy Law and Policy* and *The Guide to Energy Arbitration*. Gordon was the first Visiting Professor in Law and Economics at the University of Toronto Faculty of law. He is currently Co-Chair of the Canadian Energy Law Forum, Editor of the Energy Regulation Quarterly and President of the Canadian Chapter of The Energy Bar Association.

### **Neil Campbell**

McMillan LLP, Toronto

Neil is the co-chair of McMillan's Competition and International Trade Groups and a partner in the Energy Group, based in Toronto. Neil's energy law practice focuses on electricity market issues including in relation to generation, loads, renewables/conservation, procurement contracts, imports/exports and regulatory matters; as well as competition and foreign investment issues in the oil and gas sector. He is the former chair of the Ontario Energy Board's Market Surveillance Panel (2007–2012). Neil's trade law practice includes anti-dumping and subsidy proceedings, export controls, sanctions, and international trade agreements. He is a member of the roster of panelists for trade remedy binational panel dispute settlement proceedings under Chapter 10 of the US Mexico Canada Agreement (USMCA).

Neil's competition law practice includes representation of clients in merger, unilateral conduct, cartel and class action litigation, as well as foreign investment reviews under the *Investment Canada Act*. He is particularly experienced in energy, financial services, healthcare, pharmaceuticals/chemicals, transportation, and other regulated sectors. Neil is the Global Contributing Editor for the *Cartel Regulation* desk book, a former co-chair of the IBA Antitrust Section and a member of the Executive of the CBA Competition and Foreign Investment Review Section.

### **Adonis Yatchew**

University of Toronto

Editor-in-Chief, *The Energy Journal*

Adonis Yatchew's research focuses on energy and regulatory economics, and econometrics. Since completing his Ph.D. at Harvard University, he has taught at the University of Toronto. He has also held visiting appointments at the University of Chicago, Trinity College, Cambridge, and Australian National University, among others. He has written a graduate level text on semiparametric regression techniques published by Cambridge University Press.

He has served in various editorial capacities at *The Energy Journal* since 1995 and is currently the Editor-in-Chief. He has advised public and private sector companies on energy, regulatory and other matters for over 30 years and has provided testimony in numerous regulatory and litigation proceedings.

Currently he teaches undergraduate and graduate courses in energy economics, graduate courses in econometrics and 'Big Ideas' courses on energy and the environment with colleagues in physics

and classics. In June 2018 the International Association for Energy Economics presented him with its Award for Outstanding Contributions to the Profession.

**Meredith Fowlie**

University of California, Berkeley

Meredith Fowlie is a Professor in the Department of Agricultural and Resource Economics and holds the Class of 1935 Endowed Chair in Energy at UC Berkeley. She is a faculty director at the Energy Institute at Haas and a research associate at the National Bureau of Economic Research.

Fowlie has worked extensively on the economics of energy markets and the environment. Her research investigates market-based environmental regulations, the economics of air pollution, electricity market regulation, and incomplete GHG regulations. She currently serves as a Governor-appointed member of California's Independent Emissions Market Advisory Committee. She is a member of the Economic Advisory Council for Environmental Defense Fund, the advisory council to the Brookings Institution Center on Regulation and Markets, a Scientific Committee Member for the Chaire Economie du Climat, and the steering committee of the National Bureau of Economic Research (NBER), Environmental and Energy Economics Program. Her work has appeared in the *American Economic Review*, the *Journal of Political Economy*, *Quarterly Journal of Economics*, and the *Review of Economic Studies*, among other leading journals.

**Sanjay J. Mullick**

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Sanjay J. Mullick is a Partner at Kirkland & Ellis LLP in Washington, DC. Mr. Mullick advises companies, private equity sponsors, and financial institutions on export controls, national security supply chain controls, and economic sanctions risk assessment in conjunction with investments, offerings and mergers and acquisitions. He also conducts internal investigations, handles voluntary self-disclosures, and designs and implements trade controls compliance programs.

Mr. Mullick has represented U.S. companies and foreign governments in trade remedy proceedings, including antidumping and countervailing duty investigations and suspension agreements before the Department of Commerce, the International Trade Commission and the Court of International Trade. He has advised companies and governments in international arbitration and litigation, including dispute resolution proceedings under the investment provisions of the North American Free Trade Agreement (NAFTA) and bilateral investment treaties (BITs), administered under the rules of the International Center for the Settlement of Investment Disputes (ICSID) and the United Nations Committee on International Trade Law (UNCITRAL).

**Anna K. Fung, Q.C.**

Deputy Chair, British Columbia Utilities Commission

Ms. Fung received her Bachelor of Laws Degree from the University of British Columbia and was called to the BC Bar in 1985. Prior to joining the British Columbia Utilities Commission as a Commissioner, she spent more than 20 years practising law as corporate counsel, including 15 years as Senior Counsel at Terasen Inc. (now Fortis Inc.). She was an elected Bencher of the BC Law Society for 10 years and served as President in 2007. She is the recipient of several awards including the R.V.A Jones Corporate Counsel Award, the BC Community Achievement Award, the YWCA Woman of Distinction Award and the UBC Law Alumni Achievement Award. She also served as President of the Canadian Corporate Counsel Association, Association of Chinese Canadian Professionals, the People's Law School and the BC Autism Association. She authored several legal publications on corporate counsel practice and Indigenous law.

She has served as Director of the Vancouver Airport Authority, the Vancouver Foundation, the Law Foundation, the Continuing Legal Education Society and the Arts Club Theatre Society. She is the current Chair of the BC Unclaimed Property Society and a director of the UBC Alumni Association.

# HOW TO AVOID A CLIMATE DISASTER, BILL GATES<sup>1</sup>

Kenneth A. Barry\*

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## I. INTRODUCTION

The first question Bill Gates confronts in his new book, *How to Avoid a Climate Disaster* (subtitled “The Solutions We Have and the Breakthroughs We Need”)<sup>2</sup> is why a world-famous, unimaginably wealthy computer software innovator with no specific credentials in climate change science is authoring a book on this sprawling — and unquestionably vexing — subject. He explains that the project sprang from his charitable foundation’s work in developing nations, including addressing “energy poverty.” Apprehending that these communities could not reach goals to improve their education, health, and economies while burning wood and candles to cook, heat, or read, Gates initiated his search for practical solutions.<sup>3</sup>

At roughly the same time, Gates was drawn into the work of former Microsoft colleagues on the linkages between energy consumption and global warming. Merging these two projects, Gates was struck that the third-world challenge was two-fold: poor countries not only needed new, affordable, and reliable sources of energy, but these resources had to be “clean” (meaning low-carbon), particularly since much of the increasing demand for energy would be coming from developing nations.<sup>4</sup>

As Gates launched a self-guided study of climate science, he shed his initial skepticism that the accumulation of atmospheric greenhouse gases (“GHG”) would, if unabated, place the planet on an irreversible course towards unsustainably high temperatures.<sup>5</sup> The author emerged with four conclusions that have since shaped his new, self-appointed role as a climate change solutions activist and investor:<sup>6</sup>

- Not enough is currently being done to spur widescale deployment of wind and solar energy;
- Regardless of that deficit, these technologies alone will be insufficient to reach the net zero-carbon goal Gates has embraced;
- Since power generation accounts for only slightly over a quarter of global GHG emissions,<sup>7</sup> the focus of curtailing emissions has to go far beyond the electric power industry;
- New, ‘breakthrough’ technologies across a wide front must be developed and deployed, through a synergistic coalescence of public policy and private investment.

Gates’s journey to becoming a dedicated climate change advocate also evolved from his

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<sup>1</sup> An earlier version of this review first appeared in the *Energy Law Journal* published by the Energy Bar Association in Washington.

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<sup>2</sup> Gates’s book was published in 2021.

<sup>3</sup> Bill Gates, *How to Avoid a Climate Disaster* (New York: Penguin Random House, 2021) at 4–5.

<sup>4</sup> *Ibid* at 6–7.

<sup>5</sup> *Ibid* at 7. Amusingly, the celebrated author here notes that an invaluable text in accelerating his learning curve was *Weather for Dummies*.

<sup>6</sup> *Ibid* at 8.

<sup>7</sup> Gates’s use of the terms GHG and “carbon” emissions includes not only the carbon dioxide associated with burning fossil fuels, but also other, more potent GHG emissions such as methane.

earlier activity as a venture capitalist placing bets on clean energy concepts (including “next-generation” nuclear power).<sup>8</sup> Around 2015, he was drawn into the politics of global warming by (1) student protests against institutions investing in fossil fuel companies (including his own Gates Foundation); and (2) overtures from heads-of-state as the December 2015 date of the Paris climate change approached.<sup>9</sup> The latter triggered an abiding interest — one at the heart of *How to Avoid a Climate Disaster* — in the intersection between governmental policy, public funding of clean energy research, and private investment in decarbonizing product development.<sup>10</sup> Soon, Gates found himself organizing a large circle of wealthy investors — dubbed the Energy Breakthrough Coalition — providing badly needed venture capital to promising clean energy technologies, as well as interfacing with political leaders to enhance national R&D budgets.<sup>11</sup> In short, Gates had found his niche in the clean energy game.

But how can a multi-billionaire with an extravagant lifestyle develop “street cred” with the environmental community? In a preemptive strike, Gates pleads guilty to being a super-emitter in his personal and business life, owning multiple large residences and regularly globe-trotting in private jets.<sup>12</sup> However, he asserts that (1) he has more than made up for these sins with his investments — now totaling over \$1 billion — in technologies to produce low or zero-carbon energy (and other products); and (2) he knows of no one who has invested more heavily in methods to remove carbon dioxide directly from the atmosphere.<sup>13</sup>

## II. SETTING THE TABLE

Near the outset, Gates suggests that two crucial components for avoiding a climate disaster are already present: (1) public enthusiasm — exemplified by “a growing global movement led by young people;” and (2) an increasing level of commitment from national and local leaders.<sup>14</sup> What the author finds most lacking is a “concrete plan” that pulls together the numerous scientific, engineering, and financial disciplines necessary to realize his ambitious goal of zero net carbon emissions by mid-century.<sup>15</sup> Filling this gap is a core mission of *How to Avoid a Climate Disaster*.

But prior to delineating the path to planetary salvation, Gates gives us a tour of the living hell awaiting civilization if it doesn’t act, radically and urgently, to decelerate emissions causing global warming. His first chapter, “Why Zero?,” is a catalog of environmental calamities climate change researchers have been predicting for years should warming continue much beyond the one degree Celsius rise already recorded since pre-industrial times.<sup>16</sup> This part of the book is obviously derivative — Gates accepts, rather than reassesses, the projections of legions of climate scientists — but he does do an effective job of blending them into a coherent tableau, embellished with photographs and relatively uncomplicated charts. The picture is one of increasingly frequent weather abnormalities and ecological dislocations, in which agriculture and livestock rearing become more challenging, storms more intense, beaches and low-lying cities less inhabitable, marine life stressed, and entire communities splintered or uprooted. Along with more prolonged heat waves, shifting rainfall patterns either soak or parch the land; settlements and nations most dependent on subsistence farming perversely

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<sup>8</sup> Gates, *supra* note 3.

<sup>9</sup> *Ibid* at 9–10. Gates explains that he wasn’t swayed by the protests, as the world’s energy industry was deeply entrenched and divestment — the goal of the protests — was an empty gesture. However, he later divested, simply so he wouldn’t have a personal incentive at crosscurrents with his efforts to incubate new, cleaner technologies.

<sup>10</sup> *Ibid* at 11.

<sup>11</sup> *Ibid*. Gates here reports that the governmental budget reboot stimulated by the Paris climate change accords was a signal success that “unlocked \$4.6 billion a year in new money for clean energy research.”

<sup>12</sup> *Ibid* at 15.

<sup>13</sup> *Ibid*.

<sup>14</sup> *Ibid* at 17.

<sup>15</sup> *Ibid*.

<sup>16</sup> *Ibid* at 18ff. At 21, Gates notes that, while the global average increase is just one degree Celsius so far, some places in continental interiors have seen a two-degree rise.

become the hardest hit; and forced population migrations far exceed current levels.<sup>17</sup>

Gates acknowledges the inherent uncertainty in the welter of climate change prognostications, conceding scientists still have “a lot to learn about how and why the climate is changing.”<sup>18</sup> But he does not mince words in bottom-lining what he believes the world is up against: “The earth is warming, it’s warming because of human activity, and the impact is bad and will get much worse. We have every reason to believe...the impact will be catastrophic.”<sup>19</sup>

Gates hedges somewhat on his early suggestion that the cornerstones of public enthusiasm and political commitment are already firmly in place. In the chapter titled “This Will be Hard,” he first observes that existing environmental laws in the U.S. are “outdated” with respect to climate change<sup>20</sup> and that the nation’s quadrennial election cycles are prone to put ongoing government support for long-term investments in green technologies on a shaky footing.<sup>21</sup> He’s concerned that “[t]here isn’t as much of a climate consensus as you might think.”<sup>22</sup> His contention here is that, while many now recognize climate change as a valid concern, when it comes to “investing large amounts of money in breakthroughs,” public support tends to wane, or take a back seat to investing in education and health.<sup>23</sup> In the same vein, Gates asserts that global cooperation — a critical element in any truly comprehensive climate change strategy — is “notoriously difficult,” and bluntly concludes: “We need to build a consensus that doesn’t exist and create public policies to push a transition that would not happen otherwise.”<sup>24</sup>

### III. GETTING ARMS AROUND THE PROBLEM

Gates offers in a chapter called “Five Questions to Ask in Every Climate Conversation,” various frameworks and tools for evaluating potential investments in GHG emission solutions, helping him to cut through the mass of data.<sup>25</sup> One organizing principle is to boil down all sources of emissions into five broadly simplified categories, listed in order of their relative contributions to total GHG emissions. His matter-of-fact labels for these categories are: (1) *Making things* (31%); (2) *Plugging in* (27%); (3) *Growing things* (19%); (4) *Getting around* (16%); and (5) *Keeping warm and cool* (7%). As to the electric generation sector that draws so much attention in climate change discussions — *i.e.*, “Plugging in” — Gates proposes that this category can contribute more to reducing GHG emissions than its 27 per cent proportionate contribution would indicate. He sees such potential not just in displacing fossil fuel-burning generation with low-carbon power, but also in electrifying energy utilization in other categories (*e.g.*, transportation, space heating/cooling, natural gas-based processes in manufacturing).<sup>26</sup>

Another analytic tool Gates enthusiastically recommends is what he calls the “Green Premium.” As a realistic businessman, Gates does not advocate embracing new technologies simply because they are “greener.” Rather, he wants to pinpoint the Green Premium: what the incremental cost may be to substitute a low-carbon energy application for one using fossil fuels. If the premium is small, or even negative (*i.e.*, cheaper than fossil fuels), that supports the case for near-term investment and deployment. However, if the

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<sup>17</sup> *Ibid* at 25–34.

<sup>18</sup> *Ibid* at 24.

<sup>19</sup> *Ibid* at 25.

<sup>20</sup> *Ibid* at 48.

<sup>21</sup> *Ibid*.

<sup>22</sup> *Ibid* at 49–51.

<sup>23</sup> *Ibid*.

<sup>24</sup> *Ibid* at 51. While this warning about the difficulty of getting broad global commitment seems to cut against Gates’s previous proclamation that world leader commitment is growing, the distinction seems to be in getting universal buy-in. Thus, his disappointment in the Trump Administration’s withdrawal from the 2015 Paris Accords (reversed in 2021 by the new Biden Administration): Gates concedes that the national commitments in Paris were not nearly deep enough to stem climate change but were at least “a starting point that proved global cooperation is possible.”

<sup>25</sup> *Ibid* at 52–55.

<sup>26</sup> *Ibid* at 55.

premium is sizeable, that signals the need for “breakthrough” technologies along with the investment to attain them.<sup>27</sup> Notably, Gates resists the premise that zero-carbon power generation (*i.e.*, wind and solar) are already fully competitive with conventional fuels. “By and large,” he states, our current energy technologies are “the cheapest ones available...[s]o moving our immense energy economy from ‘dirty’...technologies to ones with zero emissions will cost something.”<sup>28</sup>

He uses the Green Premium to illustrate the expense hump airlines (or their customers) would face in converting from conventional, petroleum-based jet fuel to available, but over twice-as-expensive “advanced biofuels,” rhetorically asking, “How much are we willing to pay to go green?”<sup>29</sup> The Green Premium tool is nonetheless “a fantastic lens,” Gates enthuses, for making practical decisions on whether to deploy existing low-carbon technologies or continue the quest for more affordable breakthroughs.<sup>30</sup> As a caveat, Gates points out that some Green Premiums may be presently affordable for wealthier countries but not for middle- or low-income ones.<sup>31</sup>

#### IV. GREENING UP THE GRID

The chapter titled “How We Plug In” — Gates’s outlook for decarbonizing the electric grid — may be of the most interest to readers of *Energy Regulation Quarterly*, especially given the author’s belief that the power sector

can make an outsized contribution in reducing overall GHG emissions. Here, Gates treads carefully. Perhaps to the disappointment of some environmental advocates, he dwells on the limitations of solar and wind energy in shouldering the bulk of generation, given the intermittency of these technologies and the insistence of modern civilization on near-perfect reliability.

After laying out some electricity basics for lay readers, Gates digs into the problem by underscoring that, currently, about two-thirds of the world’s energy is generated with fossil fuels (largely coal and natural gas)<sup>32</sup> — mainly because “fossil fuels are cheap.”<sup>33</sup> Plus, he relates, it is an *increasing* trend, as China has, since 2000, been building coal-fired capacity apace, tripling the amount of coal power it uses.<sup>34</sup> On the other hand, Gates suggests that it is feasible, at least for the U.S. and Europe, to “eliminate our emissions with only a modest Green Premium.”<sup>35</sup> It is important to keep in mind, however, that the decarbonized generation fleet Gates envisions *includes* nuclear stations and fossil fuel-burning units equipped with carbon capture technologies.<sup>36</sup>

In asserting that the Green Premium is manageable in the U.S., Gates calculates that the typical household bill would go up by only around 15 per cent, or \$18/month.<sup>37</sup> Other countries, he posits, may not be so lucky, as their solar and wind resources may not be as favourable as those in the U.S. Moreover, Gates

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<sup>27</sup> *Ibid* at 59–61.

<sup>28</sup> *Ibid* at 58. Gates does not distinguish here between existing, conventional power plants and newbuilds in his generalization that current, fossil-fuel energy technologies are the cheapest. He does underscore that his cost comparisons do not take into account any harm caused to the environment by burning hydrocarbons.

<sup>29</sup> *Ibid* at 60.

<sup>30</sup> *Ibid* at 61.

<sup>31</sup> As a self-described “thought experiment,” Gates also imagines what it would cost to remove the annual global GHG emissions — currently 51 billion tons — via direct air capture (DAC), and comes up with a ballpark figure of \$5.1 trillion/year. DAC would be much less expensive than shutting down entire segments of the world economy, as happened in the Covid-19 crisis, Gates observes, but he doesn’t see it as practical solution anytime soon. *Ibid* at 63–64.

<sup>32</sup> *Ibid* at 70.

<sup>33</sup> *Ibid*.

<sup>34</sup> *Ibid* at 72. Gates adds that this is “more capacity than in the United States, Mexico, and Canada combined.” though he doesn’t clarify whether he means all types of installed generation capacity or just coal, nor does he distinguish between “use” and “capacity.”

<sup>35</sup> *Ibid*.

<sup>36</sup> *Ibid*.

<sup>37</sup> *Ibid*. Gates includes the “wires” cost — which can compose half or more of the total household power bill — in the denominator to calculate just a 15% Green Premium. If delivery costs are set aside, the projected Green Premium would be about double. Either way, the Green Premium would be higher for industrial and commercial end users with their typically higher load factors, as their generation-driven costs compose a larger percentage of the total bill.



worries about China marketing its own business model — building inexpensive coal-fired plants — to the rest of the developing world to grow their power industries.<sup>38</sup> If third-world nations follow in China's footsteps, Gates opines, "it'll be a disaster for the climate."<sup>39</sup> This bleak prospect propels Gates's relentless pursuit of *affordable* green generation options.

The next question Gates tackles is how come solar and wind generation entail *any* Green Premium, since their "fuel" comes free?<sup>40</sup> He advances several reasons, but the "biggest driver," he states, is "the curse of intermittency," coupled with the expectation of high reliability in first-world nations.<sup>41</sup> His analysis touches on the challenges — cost and otherwise — of massively augmenting the transmission network, along with the prohibitive (in Gates's view) expense of batteries systems robust enough to offset the intermittency of solar and wind resources.<sup>42</sup> Diurnal and seasonal swings in solar and wind output are a related problem; Gates cites Germany as a case study in the dislocations caused by both over- and under-generation of renewables, when a country commits to producing more than half of its energy with such resources.<sup>43</sup>

Having sketched out the inherent difficulties in relying too heavily on solar and wind power, Gates recognizes these technologies still need to play "a substantial role in getting us to zero" and therefore recommends the removal of barriers to deploying them "wherever it's economical."<sup>44</sup> He closes the discussion with a plea for more national planning of transmission grids, and upgrading the existing transmission

and distribution networks, if there is any hope for states (such as New York and California) reaching their lofty goals for green energy dominance within a decade.<sup>45</sup>

In a pitch for increasing reliance on nuclear energy, Gates maintains "it's hard to foresee a future where we decarbonize our power grid affordably without using more nuclear power."<sup>46</sup> As a founder of TerraPower, a company devoted to creating advanced nuclear designs capable of addressing the well-publicized safety and cost concerns about nuclear,<sup>47</sup> Gates qualifies as an informed proponent. His survey continues with a series of pocket-sized profiles on still other emerging technologies: nuclear fusion, offshore wind, geothermal generation, and storage methods (batteries, pumped hydro, thermal storage, and hydrogen fuel cells).<sup>48</sup> Notwithstanding Gates's fondness for engineering innovation, there is nothing starry-eyed about these capsule summaries; he touches on the potential, but also the obstacles facing each concept in becoming a mainstream contributor to the grid.

## V. DECARBONIZING TRANSPORTATION

Yet another tough nut to crack in Gates's view is the prevalence of oil-derived fuels for cars, trucks, ships, and airplanes. While the transportation sector is only the fourth-largest contributor to GHG emissions, he notes (coming in at 16%), it ranks as the largest emitter in the U.S. — where gas is "remarkably cheap."<sup>49</sup> It adds to the challenge that the growth in emissions among OECD nations<sup>50</sup> is not in the automobile and light

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<sup>38</sup> Gates notes that Chinese companies "drove down the cost of a coal plant by a remarkable 75%." *Ibid* at 73.

<sup>39</sup> *Ibid* at 74.

<sup>40</sup> *Ibid*.

<sup>41</sup> *Ibid* at 75.

<sup>42</sup> *Ibid* at 75–79.

<sup>43</sup> Over-generation in Germany in the summer of 2018, he relates, caused the dual problems of straining the grid connections with its European neighbors to the south and "causing unpredictable swings" in energy costs. *Ibid* at 78.

<sup>44</sup> *Ibid* at 81.

<sup>45</sup> *Ibid* at 82–84.

<sup>46</sup> *Ibid* at 85.

<sup>47</sup> *Ibid* at 86–87.

<sup>48</sup> *Ibid* at 84–94.

<sup>49</sup> *Ibid* at 130–31.

<sup>50</sup> The acronym stands for "Organization for Economic Cooperation and Development" and includes the U.S. and other developed nations.

truck sector — that is falling in the U.S. and the European Union — but rather in the modes of transportation least susceptible to electrification: aviation, trucking, and shipping.<sup>51</sup> Meanwhile, most of the growth in transportation-driven emissions is coming from the less-developed countries whose populations are growing and economies expanding, meaning more people are buying personal vehicles.<sup>52</sup>

Electrification of the ground vehicle fleet is the most obvious answer, and Gates notes that a lengthy roster of global manufacturers is producing electric vehicles (EVs).<sup>53</sup> Moreover, as efficiencies in batteries have improved and costs have come down (Gates mentions an 87% decrease since 2010), the Green Premium is “modest,” he declares. In the pertinent chapter, Gates offers a comprehensive look at the advantages and drawbacks, along with the remaining challenges, of introducing EVs to the market in quantity.<sup>54</sup> Moreover, given that a billion or so cars are already on the road and the vast majority of these are *not* EVs,<sup>55</sup> the chapter considers the development of liquid biofuels and “electrofuels” capable of running internal combustion engines. Although Gates sees little environmental benefit in corn-based ethanol, he is excited by the prospect of “advanced, second-generation” biofuels produced from other crops.<sup>56</sup>

Examining the current Green Premiums for these emerging biofuels, however, Gates shows that the incremental costs are too sizeable for widespread adoption and, hence, more investment in their development is required. As to larger vehicles, Gates distinguishes between garbage trucks and city buses — whose medium size and predictable routes lend themselves to electrification — and 18-wheelers or

long-distance buses, whose size and long-haul routes do not, at least with current battery technology and charging infrastructure.<sup>57</sup>

As to ships and airplanes, Gates’s analysis likewise shows that batteries aren’t up to the job, and the Green Premiums for alternate, low-carbon liquid fuels are too great for commercial adoption. His book calls for innovation to reduce these differentials, and floats the idea of nuclear-powered container ships, despite the conceded risks.<sup>58</sup>

## VI. MANUFACTURING AND SPACE HEATING/COOLING<sup>59</sup>

Gates provides an extensive discussion on manufacturing processes that produce substantial amounts of GHG gas emissions — focusing on steel, cement, and plastics to make his point — and on methods for heating and cooling buildings. While the book does not provide a deep dive into current and emerging technologies, Gates has enough to say on each of these topics to give readers a feel for the challenges and opportunities. A recurrent theme in the book is sounded loudly in the passages on manufacturing: the role of fossil fuels is pervasive, and reversing this is technically and economically daunting. However, this does not prevent Gates from suggesting innovations on the cusp of introduction or at least being contemplated in laboratories.<sup>60</sup>

Gates’s advice is to:<sup>61</sup>

- Electrify everything capable of being electrified in the manufacturing process;

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<sup>51</sup> Gates, *supra* note 3 at 132–33.

<sup>52</sup> *Ibid* at 133.

<sup>53</sup> *Ibid* at 135.

<sup>54</sup> *Ibid* at 135–37.

<sup>55</sup> *Ibid* at 135.

<sup>56</sup> *Ibid* at 138.

<sup>57</sup> *Ibid* at 140–41.

<sup>58</sup> *Ibid* at 147.

<sup>59</sup> For brevity, we will omit a discussion of agriculture and livestock rearing, a category which contributes a not inconsiderable 19% of total GHG emissions. However, it should be noted Gates applies the same comprehensive, pragmatic approach to challenges and opportunities in this as to the four other emissions categories more directly implicating the energy industry. Readers interested in climate change causes and solutions generally will find the relevant chapter, “How We Grow Things” (*Ibid* at 112–29) absorbing.

<sup>60</sup> Gates, *supra* note 3 at 98–111.

<sup>61</sup> *Ibid* at 111.

- Make sure the electricity being employed is decarbonized;
- Deploy carbon capture technologies to remove the rest of the emissions;
- Make more efficient use of materials.

Every one of these advancements is going to require “lots of innovation,” he adds.<sup>62</sup>

On the space heating and cooling front, the Green Premium fares better, to the extent people have or will install electric heat pump equipment. Generally in the U.S., this technology affords a *negative* Green Premium; in other words, its life-cycle costs are actually lower than the combination of a natural gas furnace and electric air conditioning.<sup>63</sup> However, there are two thorny problems; first, heat pumps are currently in only 11 per cent of American homes, while half run on natural gas; and second, their environmental benefits are realized only to the extent the electric generation fleet is decarbonized.<sup>64</sup>

These facts lead Gates to redouble his claim that advanced biofuels and electrofuels must be brought down to more affordable levels, so that furnaces designed to run on natural gas or fuel oil can be decarbonized.

The urgency of the issue is underscored by the accelerating deployment of air conditioning in developing countries, Gates notes. As the planet grows warmer, the growing demand for air conditioning exacerbates the problem of warming — a vicious cycle — unless the remedies outlined in the book take hold.<sup>65</sup>

## VII. EXPANDING THE ROLE OF GOVERNMENT

In a chapter dissecting the critical role of government policymaking in combatting climate

change, Gates admits to a touch of hypocrisy. It may seem “ironic,” he acknowledges, that the former CEO of Microsoft, who regarded government and politics so warily and felt these forces only prevented his company “from doing our best work,” is now attesting to the need for “more government intervention.”<sup>66</sup> Gates offers a selective inventory of historic government interventions he considers victories over challenging energy-industry problems.<sup>67</sup>

Whatever one may think of the government’s track record, Gates contends that “when it comes to massive undertakings...[such as] decarbonizing the global economy — we need the government to play a huge role in creating the right incentives and making sure the overall system will work for everyone.”<sup>68</sup> National leaders must “articulate a vision,” he argues, and “can write rules regarding how much carbon power plants, cars, and factories are allowed to emit.”<sup>69</sup>

This may be strong stuff for readers who come at technological and economic problems from the point of view that markets are better at solving them than politicians and policy implementers, however well-intentioned. Nevertheless, *How to Avoid a Climate Crisis* makes its case by insisting that nations and the global economy are on a perilous course and that radical government intervention — characterized by well-conceived incentives as much as command-and-control measures, and crafted to catalyze private industry’s skill at product development and commercialization — is necessary to pull out of the tailspin.

Gates maintains that the private sector (utilities in particular) has a history of underinvesting in research and development, compared with other industries.<sup>70</sup> And given the long lead times to perfect energy innovations, as well as the considerable risk of failures, he envisions a major role for government in funding and

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<sup>62</sup> *Ibid.*

<sup>63</sup> *Ibid* at 154.

<sup>64</sup> *Ibid* at 154–55.

<sup>65</sup> *Ibid* at 150.

<sup>66</sup> *Ibid* at 183.

<sup>67</sup> *Ibid* at 182.

<sup>68</sup> *Ibid* at 183.

<sup>69</sup> *Ibid.*

<sup>70</sup> *Ibid* at 184–85.

spurring the kind of innovation necessary to make clean energy technologies affordable and thus competitive with systems they would replace.<sup>71</sup>

Coupled with Gates's consistent cheerleading for investment in innovation to bring down the Green Premium is a somewhat contrary strain: Gates argues that governmental policy can "level the playing field," as Gates puts it, via imposing cost of externalities" — that is, the assumed social cost of carbon to the environment — on fossil fuels or their products.<sup>72</sup> This would reduce the "Green Premium" by increasing the cost of what "clean" energy applications and products must compete against. Gates defends this as a strategy to "nudge producers and consumers toward more efficient decisions" while encouraging innovation.<sup>73</sup> "You're a lot more likely to try to invent a new kind of electrofuel," he posits, "if you know it won't be undercut by artificially cheap gasoline."<sup>74</sup> Critics may assail this as moving the goalposts if you can't hit the field goal, but it is undeniably a policy tool governments worried about climate change are inclined to wield.

In his "Adapting to a Warmer World" chapter, Gates raises another haunting question: what if, despite all efforts, strenuous or not, we see climate change approaching dangerous levels? Should more drastic measures be employed if, as climate scientists have hypothesized, the planet reaches a "tipping point" that "could dramatically increase the rate at which climate change happens"?<sup>75</sup> Lest this happen, Gates advocates studying and potentially exploring "geoengineering" — meaning, the intentional release of fine particulars that would, at least in theory, deflect some of the sun, much like releases from a volcanic eruption, with cooling impact.<sup>76</sup> The author realizes this constitutes

heresy to some environmentalists, but reveals he has been funding such studies, and submits the concepts are "worthy studying and debating while we have the [time for the] luxury of study and debate."<sup>77</sup>

## VIII. CONCLUSION

Gates tells us a "concrete plan" is what's badly needed to organize and orchestrate meaningful GHG emission reductions, and he offers one. He cautions against the rhetoric these days urging "deep decarbonization" by 2030. This is "unrealistic," in his view, given how thoroughly fossil fuels permeate and enable modern existence,<sup>78</sup> and could be counterproductive.

Instead, Gates advocates adopting *policies* in the near term that would put the world on a path to deep decarbonization by 2050.<sup>79</sup> Some interim goals for the coming decade — *e.g.*, pushing ahead with carbon-free generation and electrifying vehicles or industrial processes — are consistent with "zero carbon" by 2050, he maintains, so long as we avoid halfway measures that could cripple the 2050 goal.<sup>80</sup> Now is the time, Gates says, for nations to prioritize innovation in science and engineering, as well as in supply chains and markets, to pave the way for a net zero carbon future.<sup>81</sup>

Gates's plan is not a treasure map — that would be too much to expect — but rather a business-oriented way of the laying the pathway. Drawing on his Microsoft experience, Gates divides the task into two main parts: expanding the *supply* of innovation, while nurturing and conditioning *demand* for it. After offering a long list of needed technologies, he prescribes a major ramp-up of public investment to pursue them and guidance on how to select

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<sup>71</sup> *Ibid.*

<sup>72</sup> *Ibid* at 186.

<sup>73</sup> *Ibid.*

<sup>74</sup> *Ibid.*

<sup>75</sup> *Ibid* at 176.

<sup>76</sup> *Ibid* at 176–77.

<sup>77</sup> *Ibid.*

<sup>78</sup> *Ibid.*

<sup>79</sup> *Ibid.*

<sup>80</sup> *Ibid* at 197.

<sup>81</sup> *Ibid* at 198.

priorities while forming “partnerships” with industry.<sup>82</sup> The same kinds of meticulous steps, coupled with market-sensitive incentives, must be taken in preparing the demand side (i.e., customers) for the uptake of “good ideas.”<sup>83</sup> And government must take a lead role in building the infrastructure so that customers may access the benefits of new technology.<sup>84</sup>

In sum, Bill Gates has provided a determined yet realistic vision, a goldmine of facts, and an arsenal of recommendations to the indubitably complex task of confronting climate change across its many fronts. The book is surprising in its comprehensiveness and grasp of detail, while refreshing in avoiding the academic cant and the alphabet soup of acronyms that can so easily discourage non-specialist readers.<sup>85</sup> The diction and sentence structure are consistently plain and straightforward — especially helpful in a context involving such a myriad of technical information and concepts — occasionally accented with a dab of humor.

People who are already immersed in the science behind *How to Avoid a Climate Crisis* may disagree with some of Gates’s assertions, and energy law specialists may trip across an error or two regarding their own field; but much credit is due to Gates for rolling up his sleeves and lending his name (and a good chunk of his fortune) to assessing and, he hopes, solving an issue as perplexing as any facing mankind in the 21<sup>st</sup> century. As an entry-level guide to the morass of information, predictions, and political hurdles surrounding climate change, it is ideal. ■

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<sup>82</sup> *Ibid* at 200–02.

<sup>83</sup> *Ibid* at 203–04.

<sup>84</sup> *Ibid* at 205. The “Plan for Getting to Zero” usefully delineates the important, sometimes overlapping, roles of the federal, state, and local governments and agencies – including the Federal Energy Regulatory Commission and the public utility commissions of the several states. Here, Gates praises state coalitions that picked up the fallen banner of the Paris accords, after President Trump withdrew the U.S. See *ibid* at 210–14.

<sup>85</sup> The reader may feel baffled how one person, especially someone whose early-to-middle career has been spent in other complex fields, can pull together such an informative and lucid work. At the end, in an “Acknowledgements” section, one learns that Gates has levered the work of many advisers, researchers, and a “writing partner,” Josh Daniel, to accomplish his mission.