

# THE NET-ZERO ADVISORY BODY AND THE PROBLEM OF INCREASING OIL PRODUCTION

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Under the provisions of the *Canadian Net-Zero Emissions Accountability Act* (Bill C-12), the government is required by March 30, 2022, to publish its new emissions reduction target for 2030. When the new target is released, it will include “sectoral targets” for each of Canada’s seven economic sectors, including for the oil and gas sector. The promise a year ago was that by 2030 Canada will achieve a 40% to 45% reduction of its domestic emissions below the 2005 level.

One feature of the new target for the oil and gas sector, which is still unresolved, is the promised “capping and cutting” of oil and gas sector emissions, which was announced on November 1, 2021, by the Prime Minister at the COP26 meeting in Glasgow. The government has formally requested that the eleven-person Net-Zero Advisory Body” give advice on that plan.<sup>1</sup>

## The concern: global oil production levels

An issue of concern, and in our view a grave concern, is that the new emissions “capping” plan, which proposes to reduce emissions released in Canada by our oil sands industry (“upstream emissions”) will allow the industry to *continue increasing oil production* in an unlimited way. Canada’s oil production is currently projected to increase 19% by 2032, above the 2019 level. Upstream emissions account for less than 15% of the total emissions released by every barrel we produce.<sup>2</sup> The other 85% of the emissions from every barrel we produce occurs after we export our oil, when it is burned as fuel in cars and trucks (“downstream emissions”) and released into the atmosphere as tailpipe emissions. But the downstream emissions, which every year are about 6 times larger<sup>3</sup> than the amount of the domestic emissions we propose to “cap”, do not get counted in our national emissions accounting, and we do not include them in setting Canada’s emissions reduction targets. Under the emissions cap plan, we are promising to reduce our upstream emissions, but the volume of the downstream emissions attributed to the growing volume of our exported oil will continue to increase.

The reasons for concern are acute because a recent analysis by the International Energy Agency (IEA) shows that to stay on a pathway to limit atmospheric warming to 1.5°C, global oil production must decline about 25% by 2030, below the 2019 level.<sup>4</sup> Notwithstanding that warning by the IEA and other similar studies published during the past year, Canada and the world’s other leading oil producers are all on track to produce by 2030 about 50% more oil than would be consistent with meeting the 1.5°C goal.<sup>5</sup>

## The Net-Zero Advisory Body

We made a written submission<sup>6</sup> to the Advisory Body on December 20, 2021, urging that the Advisory Body examine the inconsistency between Canada's present plan to continue increasing oil production and the available evidence showing the very substantial and rapid cuts in global oil production needed by 2030 and 2040 to stay within the 1.5°C or 2°C warming limits. Our submission is that the government's new promise to cap and cut the annual level of emissions from Canada's oil industry, without a concurrent plan to also cap and begin reducing our *oil production* level, will be fatally inadequate. If the Advisory Body were to agree that the government's plan is flawed and plainly fails to address the consequences of our expanding oil production, that surely would be a proper reason for the Body to raise that concern. We proposed that the Advisory Body should advise the government (and inform Canadians) that:

*In the absence of a clear policy decision to curb the further expansion of Canada's oil production and to initiate a plan to begin to reduce production, measures that are focused on reducing emissions during extraction and processing and setting quantitative targets over five-year intervals to achieve that objective will not address the unfolding crisis.*

The Advisory Body is not a panel of climate experts. The Body has no staff or research capabilities of its own. Its members were all appointed by the government, some with senior backgrounds in business and government, finance and clean technology development, in communications and public relations, one is a climate scientist. But under the terms of its appointment, it has been given the right to request that government departments and agencies carry out any research, analysis, or scenario modelling that it requires to discharge its important advisory role. The Advisory Body therefore has the means and opportunity to obtain an analysis, based on expert evidence, of whether Canada's plans to continue expanding its oil production can be reconciled with any realistic chance to stay within a 1.5°C warming limit, and what future production level would be safely aligned with that goal.

That is exactly the kind of study that the Ministry of Environment, the Ministry of Natural Resources, and the National Energy Board (now called the Canada's Energy Regulator) have all consistently refused to do, despite repeated requests over the past nine years by many of Canada's leading energy economists and climate scientists.<sup>7</sup>

## The Net-Zero Advisory Body: testimony February 9, 2022

In late January, the Standing Committee on Natural Resources began holding a series of hearings which it describes as "A study of a plan to cap oil and gas sector emissions".

The Natural Resources Committee has 12 members: 6 Liberal Party Members of Parliament, 4 Conservatives, 1 member from the NDP, and 1 Bloc Quebecois. It was clear from the proceedings over the first few days of the hearings that none of the Conservative or Liberal members were prepared to entertain any suggestion that the proposed "cap" on emissions should be allowed to impair the industry's plans to *continue growing Canada's oil production* for many more years. Based on their interventions, questions, and stated positions during the hearings, the

position held by almost all the MPs is that oil production in Canada will continue to increase, and should continue to increase, for another 20 or 30 years.

Only two members, Mario Simard who is the Bloc Quebecois MP for Jonquiere and Charlie Angus, the NDP MP for Timmins-James Bay in Ontario, questioned the wisdom of adopting a new climate plan for the oil and gas sector that seeks to cap emissions, but allows oil production levels to increase.

At its hearing<sup>8</sup> on February 9, 2022, the Committee called the two Co-chairs of the Net-Zero Advisory Body to testify. Co-chair Dan Wicklum was questioned at length by the Committee members. Based on Wicklum's answers, it appears that the Advisory Body *has already decided* that it will not consider, and will not recommend, that there is any need for a cap on Canada's oil production when it provides policy "advice" to the Ministers. Mr. Wicklum repeatedly assured the Parliamentary Committee that "*we (the Advisory Body) do not have an opinion on that*"; "*we are not going to talk about production*"; and "*that is not our mandate*". Co-chair Marie-Pierre Ippersiel was also questioned by MPs but she did not dissent from Wicklum's testimony. The Advisory Body has seemingly made up its mind that, in fulfilling its advisory role, it can ignore the issue of Canada's oil production levels.

The Advisory Panel is choosing to remain silent on the most salient issue in Canada's climate policy, namely the future path of our oil production, the one issue that, in terms of Canada's contribution to global emissions, will more than anything else determine our fate.

## Oil Industry evidence at the Natural Resources Committee hearings

Later the same day, on February 9, the President and CEO of the Canadian Association of Petroleum Producers (CAPP), Tim McMillan, gave his evidence to the Committee.<sup>9</sup> He began his testimony with a statement about the world's growing need for energy. "The International Energy Agency", he said, "*is putting out some very relevant content that I think we should be aware of*". Referring to what he called "their base case", he told the MPs that the IEA "expects oil to grow from its current 100 million bpd by another 6% out to 2040". He described to the MPs a world of growing oil demand for another 20 years and invoked the prestige and authority of the International Energy Agency to reinforce his narrative.

McMillan went on to warn that if Canada does not continue to increase its oil production, other countries will simply increase theirs. As he put it, "*investors will go to Kazakhstan and we will see an increase in emissions*". CAPP's narrative is that global oil demand is going to continue expanding and that if Canada does not supply that growing appetite for oil, "other jurisdictions that do not have our high standards" will do so. McMillan told the MPs to "look at the environmental record in other countries" and spoke darkly about Venezuela's poor "emissions profile". His point to the Committee, repeated in different ways, was that global oil demand will continue to rise and for that reason Canada should continue to increase its production.

It was noticeable that, at the start of his testimony, McMillan had quietly prefaced his remarks by referring to the IEA's "base case". His entire commentary was in fact based on the IEA's "Stated Policies Scenario" (STEPS Scenario) which, as the IEA acknowledges, is a "baseline scenario".

The STEPS Scenario projects the expected future path of oil demand over the next 30 years, based on *existing energy policies* and it assumes that the world's major economies over the next 30 years continue to rely mainly on oil, natural gas, and coal. The STEPS Scenario counts the benefit of all promised new carbon-reduction measures that have already been announced by governments but assumes there will be no significant new policies. It reflects the pathway we are presently following and assumes that the world's major industrial economies will continue their existing high level of dependence on oil as the principal transportation fuel. Under the STEPS Scenario, global oil demand will move back up to 98 million bpd by 2023 and rise to 103 million bpd by 2030 or soon after and flatline at that level to 2050. That is the bright future described by Mr. McMillan of CAPP, the Canadian oil industry's leading lobbyist.

The STEPS Scenario (which McMillan referred to as the "base case") is not a pathway that offers any remote chance that warming can be limited to 1.5°C or even less than 2°C. In fact, it is a pathway that is aligned with warming of about 2.6°C. But McMillan did not mention that.

Apart from Mr. Angus and Mr. Simard, none of the eleven MPs on the Natural Resources Committee entitled to interrogate the witness (the Committee Chair may not do so) asked any questions about the "base case" referred to by Mr. McMillan, which was the foundation for his entire submission about why Canada's oil production must continue to increase.

Mr. Angus to his credit challenged McMillan, citing the IEA's report released on May 18, 2021, and pointing to the IEA's "Net-Zero by 2050 Scenario" (NZE Scenario) which, not mentioned at all by McMillan in his testimony, concludes that if we are going to have any realistic chance to limit warming to 1.5°C, there must be *an immediate halt to any further expansion of global oil production*. Mr. Angus summarized the findings in the IEA's report: "no new fossil fuel projects can come online". The NZE Scenario very clearly shows the scale of the very deep reductions in global oil production required to give us even a 50% chance of limiting average global temperature rise to 1.5°C. To stay on a pathway to 1.5°C, global oil production must decline to 72 million bpd by 2030 (a 25% reduction below the 2019 level) and must decline 50% down to 44 million bpd by 2040, and 75% by 2050 down to 24 million bpd.

Covering his tracks like any other artful witness, caught out omitting the most important half of the truth from his testimony, Mr. McMillan responded by acknowledging that "they [the IEA] had several other scenarios", thus implying by his vague reference to "several other" scenarios that they were of no importance or relevance and for that reason he had not bothered to mention them. In reference to the IEA's "Net-Zero by 2050 Scenario" identified by Mr. Angus, McMillan said "*that is one of their scenarios ... they had some very specific criteria they put into it*". The "very special criterial" used by the IEA to develop the NZE Scenario was the need, based on the scientific evidence, that industrial countries over the next 30 years must massively and very rapidly reduce GHG emissions to give us any realistic chance of limiting warming to 1.5°C. In assuring the Committee members, as he did, that there will be a future of growing oil demand, Mr. McMillan was instead citing the IEA's "base case", which aligns with committing us to warming of about 2.6°C. He omitted any mention of the IEA's other scenario. He did not mention the warming implications of the base case he cited.

Yet, after Mr. Angus directed the Committee's attention to the IEA's "other scenario", which explains why *declining* oil production is essential to meet the internationally agreed 1.5°C limit,

not a single member of the Committee (apart from Mr. Angus and Mario Simard, the Bloc Quebecois MP) posed a question to McMillan or any of the other industry witnesses about their assurances that world oil demand will continue to increase and that Canada must expand its own production. The MPs showed no interest at all in the IEA's "net-Zero by 2050" scenario, or what it might mean for the future of Canada's oil industry.

## The role of the Advisory Body

The Co-Chair of the Advisory Body in his testimony flatly avoided involving himself in any discussion of the implications of continuing to expand Canada's oil production. Evidently speaking on behalf of the entire Advisory Body, he assured the Committee: "*we are not going to talk about production*". We might question whether all eleven current members of the Advisory Body can in conscience accept that position. However, a week later, on February 17, one of the members of the Advisory Body, Simon Donner, who is a climate scientist in the field of oceanography and knowledgeable about the impacts of warming on coral reefs (he is the only climate scientist serving on the appointed body), sent this Tweet:

*What will determine the future of the climate? We humans. The more we cut emissions, the less the planet warms ... and the less people will suffer. That's pretty much the math of the problem.*

Jennifer Nathan replied to Donner's Tweet. She had observed the whole of the Natural Resource Committee hearings on February 9 and listened to the testimony given by the Advisory Body's Co-Chair Dan Wicklum about increasing Canada's oil production. Nathan posed this question, directed to Donner:

*Dan Wicklum told Nat Resources Committee that the Advisory Body would not look at oil production – do you agree that reducing upstream emissions from the oil sands while increasing production is unworkable math as well?*

Scientist Simon Donner in a Tweet on February 17 replied to Nathan:

*I think that was specifically referring to the mandate of the body, which is emissions within Canada's borders, in order to be consistent with national and international accounting.<sup>10</sup>*

Based on his response, Mr. Donner appears to have accepted that the Advisory Body has no responsibility to examine or advise the Government of Canada on the climate implications of continuing to increase our oil production. In Donner's view, the Advisory Body is only called upon to advise on government policies that will affect the level of Canada's "domestic emissions", which do not include the "downstream emissions" released into the atmosphere by our exported oil when it is burned as fuel. Therefore, in his view, the entire question of global oil production and Canada's role as the world's 4<sup>th</sup> largest oil producer and 3<sup>rd</sup> largest exporter is off the table. It seems that the issue of Canada's oil production issue exists only in a kind of "no man's land", out between the trenches where nobody dares to go.

That is also what energy economist Mark Jaccard told the Natural Resources Committee in his testimony on February 8. Jaccard told the Committee that under the Paris Agreement (and under the terms of the UN Framework Agreement on Climate Change that defines what emissions countries are obliged to count in their national emissions accounting) Canada has no responsibility to “count” our “downstream” emissions as part of our formal national emissions.

But the accounting rules are not an answer to the problem we face. The scientific evidence is clear that cumulative global emissions are driving the warming of the atmosphere. That includes the substantial share of the downstream emissions attributed to our exported oil. There is no existing technology that can “remove” them from the atmosphere once they are released. The fact that we do not “count” them does not halt the warming.

The downstream emissions from our oil are a core problem, and they contribute directly to climate change in Canada – to the same extent as if those emissions were released in Saskatchewan or in Nova Scotia. Interestingly, the Supreme Court of Canada in its decision on March 25, 2021, in the *Greenhouse Gas Pollution Pricing Act* case, relying on the scientific evidence presented to the Court in that case, clearly and precisely acknowledges the *borderless* way emissions released in one jurisdiction will affect (and drive climate change) in all other jurisdictions. In the Carbon Pricing case, the Court was required to examine the scientific evidence presented to the Court in that case which explains why GHG emissions released within one province in Canada will impact on all the other provinces. The Court concluded:

*“It is uncontroversial that GHG emissions cause climate change. It is also an uncontested fact that the effects of climate change do not have a direct connection to the source of GHG emissions; every province’s emissions contribute to climate change, the consequences of which will be borne extra-provincially across Canada and around the world”*<sup>11</sup>

— References re *Greenhouse Gas Pollution Pricing Act*,  
March 25, 2021, para. 187 (emphasis added)

Whether they are released by cars and trucks in Texas or Shanghai, emissions from our exported oil will contribute directly to climate breakdown in B.C. and Northern Quebec.

This catastrophic outcome, which crosses all national borders, is being driven by the physics of climate change. Nothing in the national emissions accounting rules cited by Simon Donner and Mark Jaccard will slow that down or protect us from the consequences of the downstream emissions from our oil exports. Bureaucratic accounting rules about which emissions we count, and which emissions we do not count, should not be used to stop the Advisory Panel from looking at the full story of the emissions implications of Canada’s increasing oil production.

The role of the Advisory Body is defined by s. 20 of the *Canadian Net-Zero Emissions Accountability Act*, with a mandate “to provide the Minister with independent advice with respect to achieving net-zero emissions by 2050”. The mandate includes advising on “greenhouse gas emissions reduction plans under section 9, including measures and sectoral strategies that the Government of Canada could implement to achieve a greenhouse gas emissions target”. Taken in its narrowest sense, that might appear to limit the Advisory Body’s

role to merely looking at targets for Canada's *domestic emissions* and therefore excludes looking at the consequential downstream emissions from our exported oil and gas.

But the detailed Preamble of the legislation clearly sets out the crucial global context which is essential to assess whether Canada's domestic climate policies are adequate. The Preamble explicitly identifies the temperature targets and *global* net-zero emissions goal which, under the terms of the December 2015 Paris Agreement, Canada has bound itself to work towards:

*Whereas the Paris Agreement seeks to strengthen the global response to climate change and reaffirms the goal of limiting global temperature increase to well below 2°C above pre-industrial levels, while pursuing efforts to limit that increase to 1.5°C;*

*Whereas the Intergovernmental Panel on Climate Change concluded that achieving net-zero greenhouse gas emissions by 2050 is key to keeping the rise in global-mean temperature to 1.5°C above pre-industrial levels and minimizing climate-change related risks;*

— *Canadian Net-Zero Emissions Accountability Act*, Preamble (emphasis added)

In terms of the Advisory Body's responsibilities, it seems clear that if a "sectoral strategy" designed to achieve a domestic target (i.e., a plan by Canada to reduce its oil and gas sector emissions) is plainly inconsistent with achieving the internationally agreed 1.5° goal and insufficient to achieve net-zero greenhouse gas emissions by 2050 on a global scale, it is the responsibility of the Advisory Body to examine that concern and advise the government accordingly. Advising on a proposed policy aimed to achieve a domestic emissions target in Canada cannot exclude a responsibility to advise the government that the proposed policy is inconsistent with our international obligations cited in the Preamble.

If the Advisory Body's mandate is so narrow that it is precluded from raising that concern, the members should resign. Any climate plan governing Canada's oil and gas sector that is truly aligned to meet the Paris Agreement's ambition of limiting global temperature rise to 1.5°C must incorporate a plan to "cap production" and substantially reduce oil production by 2030, and to achieve deeper production cuts by 2040 in the order of 50% below the 2019 level. Measures that are focused only on reducing *upstream emissions during the oil extraction process in Canada* will not mitigate the imminent climate peril. It is the duty and responsibility of the Advisory Body "to talk about production".



## NOTES

1. November 1, 2021, Letter from Ministers Guilbeault and Wilkinson to the Net-Zero Advisory Body:  
<https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050/advisory-body/2021-letter.html>.
2. Carbon intensity is a metric commonly used to measure the amount of GHGs emitted through a portion of the oil supply chain (i.e., emissions that occur during the extraction process alone, or covering both extraction and refining, etc.) and it is also used to calculate a total life-cycle analysis of the fuel including extraction emissions, transporting the crude oil, refining, and the emissions from the final stage of fuel combustion in a vehicle's engine (the full life-cycle is called a "well-to-wheels" analysis). It is measured in kilograms of carbon dioxide per barrel of crude oil (kg CO<sub>2</sub>). As the sources cited below indicate, for Canada's oil sands the extraction process emissions ("upstream emissions") are 80 kg CO<sub>2</sub> per barrel and total well-to-wheels emissions are in the range of 550 kg CO<sub>2</sub> per barrel. Therefore, the downstream emission released by every barrel we export are about 470 kg CO<sub>2</sub>.

Oil sands emissions intensity during the oil sands extraction process in Canada has declined since 1990 from 116 kg CO<sub>2</sub> per barrel in 1990 to 80 kg CO<sub>2</sub> per barrel in 2019 (those are averages for all oil sands producers): see *National Inventory Report*, April 15, 2021, at pp. 55-56). Extraction emissions ("upstream emissions") are accounted for in Canada's annual reports that tabulate our total domestic emissions. The Canada Energy Regulator (CER) gives a lower number of 67 kg CO<sub>2</sub> in its *Canada's Energy Outlook 2020* report (November 24, 2020), which does not include upgrading emissions.

Comprehensive studies have examined the emissions intensity for different world oil producers. See, for example, *The oilsands in a carbon-constrained Canada*, Pembina Institute, Benjamin Israel et al., February 2020. The Pembina report shows that "well-to-wheels" emissions for all types of oil range from a low of about 450 kg CO<sub>2</sub> per barrel up to a high end of about 650 kg CO<sub>2</sub> per barrel. Canadian oil sands production is at the higher end of that range, above 550 kg CO<sub>2</sub>. Given that oil sands extraction emissions average 80 kg CO<sub>2</sub> per barrel, they account for less than 15% of the total life-cycle emissions released by each barrel Canada produces. The same point was examined ten years ago, when the U.S. government completed its *Final Supplemental Environmental Impact Statement* (SEIS) on the proposed Keystone XL pipeline, designed to carry 830,000 bpd of oil sands crude to the U.S. market. Chapter 4 of the U.S. study in 2012 examined the carbon intensity of Canada's oil sands production compared to four global sources, including a "U.S. Average" (emissions per barrel data is found in Table 4.14-3 of that report). In the U.S. study, extraction emissions intensity for Canada's oil sands was found to be 74 -105 kg CO<sub>2</sub> per barrel and overall well-to-wheels emissions were 533-568 CO<sub>2</sub> per barrel. The basic point is that emissions from the production process in Alberta are less than 15% of the overall total.

3. Lee, M. (2018). Extracted carbon and Canada's international trade in fossil fuels, 99 (2), 114-129. *Studies in Political Economy*, 99 (2), 114-129:  
<https://www.tandfonline.com/doi/full/10.1080/07078552.2018.1492214?needAccess=true> .  
This paper is an academic version of "Extracting carbon: Re-examining Canada's



contribution to Climate Change through Fossil Fuel Exports”, published in January 2017 by the Canadian Center for Policy Alternatives (CCPA). Using data for 2014 in the CCPA version of his study, Lee concluded that total downstream emissions from Canada’s exports of oil and natural gas in that year were 738 Mt, about the same as the total amount of all GHGs released in Canada from all our economic sectors combined (732 Mt) that year. The CCPA study is found at

[https://www.policyalternatives.ca/sites/default/files/uploads/publications/National%20Office%2C%20BC%20Office/2017/01/ccpa\\_extracted\\_carbon\\_web.pdf](https://www.policyalternatives.ca/sites/default/files/uploads/publications/National%20Office%2C%20BC%20Office/2017/01/ccpa_extracted_carbon_web.pdf)

4. May 18, 2021, International Energy Agency (IEA), *Net-Zero by 2050: A Roadmap for the Global Energy Sector*: <https://iea.blob.core.windows.net/assets/4719e321-6d3d-41a2-bd6b-461ad2f850a8/NetZeroBy2050-ARoadmapfortheGlobalEnergySector.pdf>  
In *World Energy Outlook 2021* (October 12, 2021) the IEA published a detailed report on its Net- Zero by 2050 Scenario and compared it to the “base case”, its STEPS Scenario.
5. *Production Gap Report 2021* (October 20, 2021): [https://productiongap.org/wp-content/uploads/2021/11/PGR2021\\_web\\_rev.pdf](https://productiongap.org/wp-content/uploads/2021/11/PGR2021_web_rev.pdf)
6. Submission to the Advisory Panel, December 20, 2021, David Gooderham and Jennifer Nathan, found at <https://gooderhamnathan.com/submission-to-the-advisory-body/>
7. On July 8, 2021, twenty-one energy economists and climate scientists, all deeply experienced and informed about Canada’s oil production projections and the emissions implications of continued expansion, sent a letter to the Prime Minister citing the findings of the IEA’s “Net-Zero by 2050 Scenario” publicly released on May 18, 2021. They sent copies to Canada’s Minister of Environment and Climate Change, to the Minister of Natural Resources, and to the Chair and CEO of the Canada Energy Agency: <https://www.linkedin.com/pulse/canadas-energy-regulator-should-develop-net-zero-letter-mark-winfield> . These twenty-one leading experts acknowledge the IEA’s “Net-Zero by 2050 Scenario” as “charting a path for the global energy sector to be in line with meeting the Paris Agreement’s ambition of limiting global temperature rise to 1.5°C above pre-industrial levels”.

The letter directs attention to the fact that Canada’s own energy agency (the CER) “does not currently model scenarios showing where Canada’s energy sector aligns with the government’s net-zero goal”. And they state: “*Specifically, we urge you to mandate that the Canadian Energy Regulator model scenarios consistent with the IEA’s Net Zero by 2050 report.*” In plain English, that means the government should immediately direct or instruct the CER to develop a scenario that will inform Canadians with complete honesty and candour what production levels for Canada’s oil production over the next 20 to 30 years would be safely aligned with an effective global effort to stay within the 1.5°C warming threshold.

Over the past decade, the government and its appointed panels and agencies have again and again refused to consider the emissions implications of increasing Canada’s oil production. On December 18, 2013, the National Energy Board (NEB) declared in its *Report of the Joint Review for the Enbridge Northern Gateway Project*.

*During our hearings and in written submissions many people urged us to include assessments of matters that were beyond the scope of the project and outside our mandate set out in the Joint Panel Review Agreement. They include both “upstream” oil development effects and “downstream” refining and the use of the products shipped on the pipeline and tankers.*

The NEB panel rejected those submissions in Volume 1 of its lengthy Report, at p. 17:

*We do not consider there is a sufficiently direct connection between the project and any particular existing or proposed oil sands development ... to warrant consideration of the effects of these activities”.*

On November 29, 2016, the Trudeau cabinet authorized the construction of the Trans Mountain Pipeline Expansion project (TMX) and the Line 3 project. The two pipelines together will add 900,000 bpd of new crude oil shipping capacity (Line 3 was in fact completed in 2021). The rationale for the approval of the projects in 2016 was to facilitate the continued growth of Canada’s oil production to 2040. Again, the government failed to examine whether Canada’s plans to continue increasing its oil production could be reconciled with any chance to stay within a 1.5°C or 2°C warming limit. The NEB’s environmental assessment of TMX, which recommended approval of that project in its report of May 19, 2016, refused to consider any scientific evidence about climate change or about the GHG emissions implications of oil sands expansion. Environment Canada’s separate *Review of Related Greenhouse Gas Emission Estimates for the TMX Project* (November 25, 2016) also completely excluded “downstream emissions”.

8. Mr. Wicklum’s testimony to the Natural Resources Committee was at Meeting 5 on February 9, 2022. His 5-minute opening statement starts at 13:12 on the video. At 13:29 he is questioned by Mario Simard, Bloc Quebecois MP, who expressed his concerns and misgivings about a plan that proposes to cap emissions released by the oil and gas industry from extraction activities but allows production to continue to increase:  
<https://parlvu.parl.gc.ca/Harmony/en/PowerBrowser/PowerBrowserV2/20220221/-1/36438>
9. Mr. McMillan’s testimony at the Natural Resources Committee was at Meeting 6 on February 9, 2022, which took place from 15:50 to 17:41. McMillan’s 5-minute opening statement starts at 15:59, and thereafter he responds to questions by various members of the Committee. His questioning by Charlie Angus starts at 16:46. At 16:48, Mr. Angus confronts McMillan with the significance of the IEA “Net-Zero by 2050 Scenario”, which McMillan had failed to mention in his evidence:  
<https://parlvu.parl.gc.ca/Harmony/en/PowerBrowser/PowerBrowserV2/20220221/-1/36426>
10. Tweet by Simon Donner on February 17, 2022:  
[https://twitter.com/simondonner/status/1494541394572034050?s=20&t=8kAp\\_OC-FKkk1BsSghiC1A](https://twitter.com/simondonner/status/1494541394572034050?s=20&t=8kAp_OC-FKkk1BsSghiC1A)
11. *Reference re Greenhouse Gas Pollution Pricing Act*, 2021 SCC 11 (March 25, 2021)  
<https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/18781/index.do>

**David Gooderham** practiced law in Vancouver for thirty-five years in civil litigation, retiring at the end of 2012. He attended the University of Toronto, taking an honours degree in economics and political science and an LLB from the University of Toronto Law School in 1970. Since 2013, he has been engaged in contesting the Government of Canada's approval process for the Trans Mountain Pipeline expansion project (TMX) in a number of forums, including making a written submission to Environment Canada in June 2016 critiquing the government's draft report *Review of Related Greenhouse Gas Emissions Estimates* for the TMX Project and oral and written submissions to the Ministerial Panel in August 2016.

**Jennifer Nathan** has a Science degree in biology and a Masters of Education Degree. She worked initially as a biotechnician and interpretive naturalist in Northern B.C. and the Yukon, and as the coordinator of a Scientists in the Schools program in the Yukon Territory. She subsequently provided professional development training to teachers on experiential science and was a teacher of high school science in B.C. She is deeply engaged in climate issues, advocating for the inclusion of climate literacy in schools and engaging with her municipal government and local community on transportation policy issues including car light streets.

Both were arrested in 2018 after peacefully disobeying an injunction relating to the construction of the Trans Mountain pipeline expansion. They raised the common law defence of necessity in a lengthy legal case. Their necessity defence was ultimately dismissed by the B.C. Court of Appeal in September 2020, after the appeal judges refused to consider or take into account any of the evidence on climate science and emissions presented to the Court.