

Aug 31, 2018

Canadian Environmental Assessment Agency
Attention: Alex Bolton Chair, Joint Review Panel
160 Elgin Street, 22nd Floor
Ottawa ON K1A 0H3
Frontier.Review@ceaa-acee.gc.ca

Dear Mr. Alex Bolton and the Joint Review Panel,

Enclosed is the Council of Canadians' written submission to your hearings for the Frontier Oil Sands Mine. We believe public participation in government decisions is critical to democracy and thank you for inviting requests to intervene in these hearings.

A cross-cutting theme to the evidence we present in this document is the need to fully consider the cumulative impacts of this project. The Frontier Mine is going forward in a regulatory context that has failed to adequately consider the aggregate impacts of oil sands developments. We argue that while there are significant oversights in the design of federal and provincial environmental assessment process, a diligent application of CEAA 2012 and in particular the March 2018 Interim Technical Guidance on Assessing Cumulative Environmental Effects¹ would still find that this project would make a significant detrimental contribution to this ongoing degradation driven by the oil sands.

In practice oil sands project reviews have almost always found that any single oil sands project is not driving significant environmental or social damage on its own. And yet, as will be detailed here and in submissions from other intervenors, there are multiple local, regional, and global environmental systems that are severely degraded due to oil sands development, and the Frontier Mine would further perturb them to potentially catastrophic ends. This overloading of environmental capacity has direct implications for Indigenous rights and livelihoods as the Athabasca Chipewyan, Mikisew Cree, Northwest Territory Métis Nation, Deninu Kue First Nation, Smith's Landing First Nation, and Kátl'odeeche First Nation have repeatedly stated in their communications with the Joint Review Panel. We urge the Joint Review Panel to correct this past tendency of our federal and provincial regulatory systems to consider each new oil sands project in a silo and weigh the evidence for the Frontier Mine in the context of multiple environmental systems (or 'valued components' under CEAA 2012) and the rights of Indigenous nations already under duress.

In **section one**, of this document we address Teck Resource's 'Marketing and Transportation Analysis' and 'Project Justification' from the Project Overview section of the 2015 Project Update.² We present evidence that counters Teck's assertion that the Frontier Oil Sands Project, "is in the public interest and

¹ Assessing Cumulative Environmental Effects under the Canadian Environmental Assessment Act, 2012, Interim Technical Guidance March 2018, Version 2. <https://www.canada.ca/en/environmental-assessment-agency/services/policy-guidance/assessing-cumulative-environmental-effects-ceaa2012.html>

² 1.3.7 Marketing and Transportation and 1.4 Project Justification from the Project Overview in Teck's 2015 Project Update. Available here: <https://www.ceaa-acee.gc.ca/050%20/document-eng.cfm?document=101878>

will yield substantial net benefits to residents of the Athabasca Oil Sands Region, to Alberta and to Canada.” In reality Teck is proposing an economically risky project with little guaranteed benefit for the public.

As stated in the Guidelines for the Preparation of an Environmental Impact Statement, “the predicted environmental, economic and social benefits of the project will be considered in assessing the justifiability of any significant adverse residual environmental effects as defined in section 5 of CEAA 2012, if such effects are identified.” While we maintain that the significant adverse environmental effects associated with this project would not be in the public interest even if it were more likely to yield monetary and employment benefits, in the face of a poor overall economic prognosis such sacrifices are even less acceptable.

Next, in **section two**, we present evidence on the detrimental, long-lasting, and irreversible impacts of this project on:

- Indigenous rights under UNDRIP,
- our climate commitments under the Paris Agreement, the federal targets for 2030, and the Alberta Oil Sands Emissions Limit Act,
- the health of the Athabasca river watershed,
- the health and World Heritage Site status of Wood Buffalo National Park

About us: Founded in 1985, the Council of Canadians is Canada’s largest social action organization, mobilizing a network of 60 chapters and over 100,000 supporters across the country. We advocate for clean water, fair trade, green energy, public health care, and a vibrant democracy. Through our grassroots volunteer network, staff, board, and partners we have access to a wealth of expert research on the impacts of this project on our environment, society, and economy which we have leveraged for this submission.

Presentation of Evidence and Panel Availability: We estimate we will need approximately one hour to present this evidence including cross-examination and intend on having a panel of two people. We will not be available September 27, 28, or the morning of October 1 due to prior commitments and respectfully request to be scheduled outside of these dates.

We thank you in advance for your careful review of the Frontier Oil Sands Project, and comprehensive consideration of its contribution to Indigenous sovereignty and the health of environmental systems.

Sincerely

<Original signed by>

Bronwen Tucker
Prairies-NWT Regional Organizer
The Council of Canadians

1: Questioning Teck's Market Analysis and Project Justification

Here we present evidence contrary to Teck's assertion that the Frontier Oil Sands Project is "in the public interest and will yield substantial net benefits to residents of the Athabasca Oil Sands Region, to Alberta and to Canada."³

An Environmental Impact Statements's 'Project Justification,' as stated in the CEAA Guidelines for the Preparation of an EIS, should "describe the predicted environmental, economic and social benefits of the project. This information will be considered in assessing the justifiability of any significant adverse residual environmental effects as defined in section 5 of CEAA 2012, if such effects are identified." The information below will counter specific parts of Teck's Project Overview that provide this justification and show there will be little benefit from this project for our workers or economy and so it can in no way be seen to justify the significant adverse residual environmental effects and violations of Indigenous rights the Council of Canadians and other intervenors detail to the Joint Review Panel.

1.1 Industry-level risks

In Teck's 2015 Project Update, "section 1.3.7.3 Market Analysis" they state that the "forecasted global demand growth for petroleum products and transportation fuels will provide a robust and economical market for production from the Project, and that, "the North American pipeline and rail distribution systems are expected to expand and will provide sufficient capacity in a timely manner to transport Canadian heavy oil and blended bitumen to the U.S. and offshore markets."⁴

In fact, the long-term operation of any oil sands projects generally, and the Frontier Mine specifically are dependent on:

- i) a scarcity of oil with lower supply costs than the oil sands;
- ii) little serious international action to limit greenhouse gases;
- iii) little serious domestic policy or civil society action to curtail oil sands development.

As will be discussed in this section, all three of these conditions are highly tenuous.

³ 1.3.7 Marketing and Transportation and 1.4 Project Justification from the Project Overview in Teck's 2015 Project Update. Available here: <https://www.ceaa-acee.gc.ca/050%20/document-eng.cfm?document=101878>

⁴ Ibid

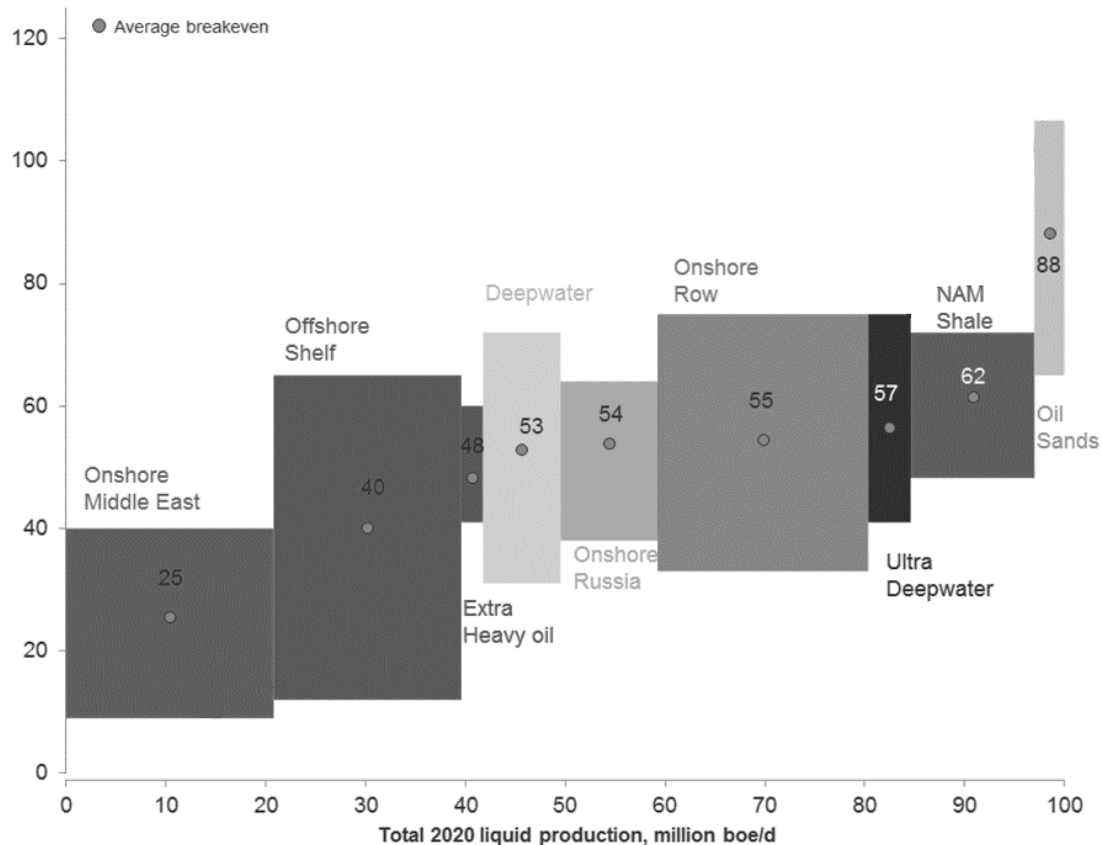


Figure 1: Projected 2020 global oil supply cost curve for non-producing assets, Brent \$USD equivalent, from Rystad UCube.⁵ The 88 USD average breakeven price shown is the average for non-producing oil sands assets in 2015 as projected for 2020. For context, independent estimates for a breakeven price for the Frontier Oil Sands Mine range from \$80 to \$140 depending on different economic assumptions.

As the 2016 Rystad UCube chart above shows, the oil sands are the most expensive category of reserves. Though breakeven prices in the oil sands have fallen slightly since 2016 due to cost-cutting largely through cutting jobs and site maintenance, this overall picture of the relative costs of different reserves remains unchanged. Alberta’s oil sands have always been a high-cost source of oil, and it was only in the context of sustained increases in oil prices in the early 2000s that production grew from some 0.6 million barrels of oil equivalent per day (boe/d) to the 2.4 million seen in early 2017.⁶

⁵ Rystad Energy. (2016). Global Liquids Cost Curve: An update. Retrieved from <https://www.rystadenergy.com/newsevents/news/press-releases/hidden-prs/2015-will-be-extraordinarily-tough-for-oil-companies/>

⁶ National Energy Board. (2017). *Annual (1999-2015) Estimated Production of Canadian Crude Oil and Equivalent*. Retrieved from <https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/stt/stmtdprctn-eng.html>.

The downturn in oil prices from late 2014 caused 0.7 million boe/d worth of new projects being cancelled or deferred past 2020.⁷ The persistence of low oil prices also brought significant changes to the ownership structure of the oil sands between late 2016 and early 2017, with multinational companies Statoil, Royal Dutch Shell, Marathon Oil, ConocoPhillips, and Total having sold all or most of their stakes in Alberta's oil sands to Canadian companies (though it is important to note that most of these domestic companies, while traded on the Toronto Stock Exchange, are in fact owned by international subsidiaries).⁸

This recent restructuring of asset ownership in the oil sands has brought unprecedented, harsh assessments of prospects of the future of the oil sands. The five largest oil sands producers have all emphasized that large-scale investment in new projects is unlikely in the next few years. This means with investment-construction lag times expansion beyond the additional 0.4 million boe/day currently under construction is not likely to happen before 2026.⁹ It is expected that the domestic companies now holding most oil sands assets will be able to achieve modest near-term cost decreases through increased economies of scale, but these will largely apply to projects already in operation.¹⁰ ¹¹Observers have suggested that even these operating projects may be at risk because domestic producers will be poorly equipped to withstand prolonged shocks relative to more diversified global oil majors.¹²

Given the context presented above, there is widespread consensus that no greenfield oil sands projects are economically feasible in the current US\$50 per barrel (bbl) Brent environment even without consideration of the significant decarbonization and public accountability risks discussed below.¹³ As put by one industry analyst, "the guys at Cenovus are going to have a prayer meeting every morning hoping that oil prices rise from here."¹⁴

⁷ National Energy Board. (2017). *Annual (1999-2015) Estimated Production of Canadian Crude Oil and Equivalent*. Retrieved from <https://www.neb-one.gc.ca/nrg/sttstc/crdlndptlmpdct/stt/stmtdprctn-eng.html>.

⁸ Pineault, E., & Hussey, I. (2017). Restructuring in Alberta's oil industry. *Corporate Mapping Project*. Parkland Institute

⁹ Ibid.

¹⁰ Crooks, E. (2017 April 2, 2017). Canadian operators buy oil sands assets as foreign groups retreat. *Financial Times*. Retrieved from <https://www.ft.com/content/7120aa16-1794-11e7-9c35-0dd2cb31823a>

¹¹ Laxer, G. (2017). Act or be Acted Upon: The Case for Phasing Out Alberta's Oil Sands. . *Alberta Institute of Agrologists Annual Conference*.

¹² Berkow, J. (2017). March 2017: The month that changed the oil sands forever. Retrieved from <http://www.bnn.ca/march-2017-the-month-that-changed-the-oil-sands-forever-1.710528>

¹³ Millington, D. (2017). Canadian Oil Sands Supply Costs and Development Projects (2016-2036) Calgary Canadian Energy Research Institute

¹⁴ Crooks, E. (2017 April 2, 2017). Canadian operators buy oil sands assets as foreign groups retreat. *Financial Times*. Retrieved from <https://www.ft.com/content/7120aa16-1794-11e7-9c35-0dd2cb31823a>

High upfront investment costs for oil sands projects mean that companies will accept losses and continue to operate existing projects unless Brent prices fall below US\$35/bbl for approximately six months or longer.¹⁵ In a scenario like this, the Frontier Mine would be incurring significant long-term environmental damage and Indigenous rights violations without any economic benefits for the public.

Innovation to bring down oil sands supply costs is even less likely now that global players have exited. The smaller companies now holding most oil sands assets have a much smaller capacity for research and development relative to global oil companies.¹⁶ This means it will be difficult to improve or even maintain the oil sands' current relative standing in the global oil supply cost curve. Indeed, 2017 forecasts from BP and Shell both predict growing market share for the Middle East, Russia, and the US over the oil sands.^{17 18} These observations are in line with Helm (2016), who suggests that "the sustained fall in the oil price might well lead to stranded assets and a downward revaluation of fossil fuel companies well before carbon is properly priced and or alternatives to oil and gas have become cheap enough."¹⁹

Decarbonization Risks

Efforts to decarbonize the economy in the face of climate change have created a concept of the "end of oil" entirely separate from the out-dated concept of peak oil: one based on peak demand. The Intergovernmental Panel on Climate Change's AR5 report estimates that to have a 50% chance of avoiding a 2°C rise in temperature we cannot emit more than around 1100 GT CO₂ between 2011 and 2050.^{20 21} Any plausible pathway to this target means we must leave most fossil fuel reserves unextracted. In the case of the oil sands, a least cost scenario would mean leaving 85% of reserves in the

¹⁵ Millington, D. (2016). Low crude oil prices and their impact on the Canadian economy Canadian Energy Research Institute.

¹⁶ Laxer, G. (2017). Act or be Acted Upon: The Case for Phasing Out Alberta's Oil Sands. . *Alberta Institute of Agrologists Annual Conference*.

¹⁷ BP. (2017). *BP Energy Outlook: 2017 Edition* Retrieved from <https://www.bp.com/content/dam/bp/pdf/energy-economics/energy-outlook-2017/bp-energy-outlook-2017.pdf>

¹⁸ Katakey, R. (2 Nov 2016). "Oil demand could peak in five years, Shell says," *World Oil Magazine*. Retrieved from <http://www.worldoil.com/news/2016/11/2/oil-demand-could-peak-in-five-years-shell-says>

¹⁹ Helm, D. (2016). The future of fossil fuels—is it the end? *Oxford Review of Economic Policy*, 32(2), 191-205.

²⁰ Edenhofer, O., Pichs-Madruga, R., Sokona, Y., Farahani, E., Kadner, S., Seyboth, K., . . . Eickemeier, P. (2014). Climate change 2014: Mitigation of climate change. *Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 511-597.

²¹ McGlade, C., & Ekins, P. (2015). The geographical distribution of fossil fuels unused when limiting global warming to 2 [deg] C. *Nature*, 517(7533), 187-190.

ground.²² It is high cost emissions-intensive reserves like the oil sands that are most likely to become non-viable for extraction.²³

The possibility of decarbonization has caused a recent schism in mainstream global energy forecasts.^{24 25} A growing number of forecasters have released scenarios with a peak in demand between 2020 and 2035.^{26 27 28 29} Currently none of Canada's domestic, publicly available oil sands production forecasts are conducted using a scenario where global demand peaks before 2040, which means the CAPP and Government of Canada forecasts employed by Teck for their market analysis are likely to be over-optimistic. An earlier peak in oil demand would mean a smaller portion of oil sands reserves are viable for extraction.

The impacts of global efforts to decarbonize on the oil sands are not necessarily limited to lower overall oil demand. In the context of any efforts on the part of Canada's trade partners to pursue or install a carbon price or other supply-side fuel-based mitigation policies, oil sands would face further cost barriers relative to other source of oil. Currently, oil sands extraction is 21% more GHG emissions intensive than both conventional crude and typical US shale oil production, the oil sands' closest competitor in both cost and geography.^{30 31}

Public Accountability Risks

Closely related to decarbonization risks are risks associated with public disapproval of the continued expansion of the oil sands in the face of climate change, Indigenous rights violations, and regional

²² Ibid.

²³ van der Ploeg, F. (2016). Fossil fuel producers under threat. *Oxford Review of Economic Policy*, 32(2), 206-222.

²⁴ Laxer, G. (2017). Act or be Acted Upon: The Case for Phasing Out Alberta's Oil Sands. . *Alberta Institute of Agrologists Annual Conference*.

²⁵ Helm, D. (2016). The future of fossil fuels—is it the end? *Oxford Review of Economic Policy*, 32(2), 191-205.

²⁶ Bloomberg New Energy Finance. (2016). New Energy outlook 2016. Long-term projections of the global energy sector. Executive summary.

²⁷ Citi Research. (2014). Catching the Knife—Finding Oil's Short-Term Equilibrium *Commodities*.

²⁸ Jaffe, A., & van der Veer, J. (2016). The future of energy *Global Agenda on the Future of Oil and Gas: World Economic Forum*

²⁹ Katakey, R. (2 Nov 2016). "Oil demand could peak in five years, Shell says," *World Oil Magazine*. Retrieved from <http://www.worldoil.com/news/2016/11/2/oil-demand-could-peak-in-five-years-shell-says>

³⁰ Cai, H., Brandt, A. R., Yeh, S., Englander, J. G., Han, J., Elgowainy, A., & Wang, M. Q. (2015). Well-to-wheels greenhouse gas emissions of Canadian oil sands products: Implications for US petroleum fuels. *Environmental science & technology*, 49(13), 8219-8227.

³¹ Ghandi, A., Yeh, S., Brandt, A. R., Vafi, K., Cai, H., Wang, M. Q., . . . Reedy, R. C. (2015). Energy intensity and greenhouse gas emissions from crude oil production in the Eagle Ford Region: Input data and analysis methods. *UC Davis Institute of Transportation Studies, Prepared for Argonne National Laboratory*.

environmental health impacts. Social movements taking a wide variety of tactics from lawsuits to civil disobedience to public awareness efforts have created material risk for all new oil sands developments. As found by an analysis by the Institute for Energy Economics and Financial Analysis, “Public accountability in the form of campaigns against pipelines has been a major factor in reducing revenues for oil sands producers. Overall, oil sands producers lost \$30.9 billion from 2010 through 2013 due to wider price differentials caused by transportation bottlenecks and the flood of crude coming from tight oil fields. Of that total, \$17.1 billion, or 55 percent, can be credibly attributed to the impact of public accountability campaigns.”³²

Teck’s 2015 Project Update section 1.3.7.5 on transportation includes the assumption that multiple proposed pipelines will be constructed by the time the Frontier Mine comes online. However, the success of public accountability campaigns against the oil sands have meant that sizeable pipeline projects are not likely to be constructed in the future. Of the seven pipeline projects over 100,000 bpd proposed since 2007, only Enbridge’s Line 67 and Line 9 are approved and in service, representing only 22% of the increases to oil sands bitumen transportation capacity these proposals would have facilitated combined. All others have experienced cancellations or delays that have meant they will not be operation as of the end of 2018, and face a poor overall future prognosis.

1.2 Project-specific risks

The Institute for Energy Economics and Financial Analysis (IEEFA) released a report in April 2015 that details many of the risks associated with the Frontier Mine and with Teck Resources:³³

- “The Frontier oil sands project, which is currently in the planning stages, does not appear to be economically viable. According to Oil Change International, the first phase of the Frontier project would require West Texas Intermediate (WTI) oil prices of at least \$140 per barrel. The project would not achieve a positive free cash flow anytime in the next 50 years. The long-term trajectory of oil prices is highly vulnerable to sluggish demand growth and the abundance of light oil supplies that have contributed to the recent decline in oil prices.” (p. 1)
- “While oil sands projects are quite a small part of Teck’s overall portfolio, they absorb a large and growing portion of the company’s shrinking resources. In short, the company appears to be financially vulnerable even without taking its oil sands ventures into account, and this downside is compounded by its continued oil sands participation.” (p. 1)
- “Analysis by Oil Change International, using Rystad data, concludes that the Frontier project is uncommercial even at relatively high oil prices. The first phase of the project requires WTI oil prices of at least \$140 per barrel. This high cost is because of built-in infrastructure costs. Phase 2 requires a lower price of \$118 per barrel (because infrastructure has been more or less completed), and Phase 3 requires the highest prices, \$150 per barrel, because the remaining resource is harder to access and is thus speculative. The current WTI price of oil is around \$50

³² Tom Sanzillo and Deborah Lawrence. “Teck Resources: Rough Road on Oil Sands Investments.” Institute for Energy Economics and Financial Analysis. 2015. <http://ieefa.org/wp-content/uploads/2015/04/Teck-Resources-Rough-Road-on-Oil-Sands-Investments-April-2015.pdf>

³³ Ibid.

per barrel. While oil price outlooks remain quite volatile, most observers see medium-term prices returning to \$75 to \$85 per barrel. (p. 12)”

Other independent analyses of Teck’s breakeven price are lower than this \$140 estimate but have not delved as deeply into the project specifics that Teck has proposed. For example, Mark Oberstoetter of Wood Mackenzie has stated that “oil prices will need to rise to between US\$70 and US\$80 per barrel before large oil sands mines like the Frontier project can be economically viable”³⁴ and an analysis from the Stockholm Environmental Institute stated the project’s break-even was as least US\$80.³⁵ In any case the Frontier Mine is a particularly expensive project that’s already in the most expensive category of oil reserves, in an industry facing existential threats from the need to decarbonize. While we would emphasize that the scale of environmental degradation and Indigenous rights violations posed by this project are worth no level of economic benefit, they are certainly not justified by the paltry financial outlook of this project.

To summarize section one, the move towards nearer-term peak oil demand forecasts in global energy forecasts, the sale of oil sands assets by global oil companies, the political choke points posed by anti-pipeline civil society actors, and the unique risks and high costs of the Frontier Oil Sands Mine suggest that the project does not seem likely to produce sustained profits that could be seen to be in the public interest.

2. Indigenous rights violations and environmental degradation

2.1 Indigenous rights violations

The Athabasca Chipewyan First Nation, Mikisew Cree First Nation, Northwest Territory Métis Nation, Deninu Kue First Nation, Smith’s Landing First Nation, and Kátl’odeeche First Nation have all stated this project would harm their territories and livelihoods and thus violate their rights.

The Council of Canadians would urge the Joint Review Panel to consider these concerns in the context of two recent legal developments that underscore the need for consultation to be meaningful.

The first is the *Tsleil-Waututh Nation v. Canada (Attorney General)*, 2018 FCA 153 ruling which is the most recent in a growing body of court rulings wherein energy project approvals are quashed in the face of inadequate consultation with impacted First Nations, Metis, and Inuit communities.³⁶ As the decision states in paragraphs 499 and 500:

“Meaningful consultation is not intended simply to allow Indigenous peoples “to blow off steam” before the Crown proceeds to do what it always intended to do. Consultation is meaningless

³⁴ Nelson Bennett. Teck bets billions on Alberta oilsands. Business in Vancouver.

<https://biv.com/article/2017/04/vancouvers-teck-bets-billions-alberta-oilsands>

³⁵ Erickson, P. Confronting carbon lock-in: Canada’s oil sands. Stockholm Environment Institute.

<https://www.sei.org/wp-content/uploads/2018/05/confronting-carbon-lock-canadas-oil-sands.pdf>

³⁶ *Tsleil-Waututh Nation v. Canada (Attorney General)*, 2018 FCA 153 <https://decisions.fca-cf.gc.ca/fca-caf/decisions/en/item/343511/index.do>

when it excludes from the outset any form of accommodation (*Mikisew Cree First Nation v. Canada (Minister of Canadian Heritage)*, 2005 SCC 69, [2005] 3 S.C.R. 388, paragraph 54).

The duty is not fulfilled by simply providing a process for exchanging and discussing information. There must be a substantive dimension to the duty. Consultation is talking together for mutual understanding (*Clyde River*, paragraph 49)."

The second development we would present for the Joint Review Panel's consideration is the adoption of Bill C-262 by the House of Commons in May 2018.³⁷ This C-262 requires the Government of Canada to take all measures necessary to ensure that the laws of Canada are in harmony with the United Nations Declaration on the Rights of Indigenous Peoples. UNDRIP contains provisions requiring that Indigenous people have free, prior and informed consent when it comes to projects which affect their land, so the adoption of this law can reasonably be expected to bolster the existing provisions for the influence of Indigenous nations over energy projects that impact them.

These more stringent norms for consultation in an era of supposed reconciliation, and indeed even the more lackluster consultation standards of previous decades stand in stark contrast to Teck Frontiers' practices throughout this review process. As summarized in a 2014 article in Northern Journal:

"the ACFN and the Mikisew Cree First Nation (MCFN) have filed numerous concerns about the review process over the past two years, citing disorganization and inadequate information on the part of Teck as hindering their ability to effectively participate in the review. According to ACFN, delays in responses from the company left the two First Nations very little time to respond with followup questions or comments. Several submissions from ACFN to the joint review panel express further frustration that Teck's application lacks sufficient information on impacts to the environment and Aboriginal rights, from traditional land use to groundwater, wildlife, wetlands and air quality, among others."³⁸

Teck has blatantly shown little regard for these nations' concerns, even going as far to say they do not want to hold hearings in Fort Chipewyan where many of the community's members would be able to access them, because of 'health and safety concerns' for their staff.³⁹ Given this level of disrespect in the project approval process, we would say it is unlikely for Teck to be respectful of Indigenous nations' concerns if given the license to operate.

2.2 Incompatibility with climate change commitments under the Paris Agreement, Canada's 2030 climate targets, and the Alberta Oil Sands Emissions Limit Act

CEAA 2012 requires that an EA of a designated project take into consideration any cumulative environmental effects, which includes greenhouse gas (GHG) emissions associated with projects.

³⁷ Bill C-262 <https://openparliament.ca/bills/42-1/C-262/?tab=mentions>

³⁸ Meagan Wohlberg. "First Nations question Teck oilsands review process." Northern Journal. <https://norj.ca/2014/04/first-nations-question-teck-oilsands-review-process/>

³⁹ "Joint Review Panel – June 6, 2018 Notice of Hearing ("Notice of Hearing") Teck Responses to Requests to Participate." (Page 4). Teck Resources Limited ("Teck") Frontier Oil Sands Mine Project (the "Project") - CEAA Reference No. 65505 <https://www.ceaa-acee.gc.ca/050/documents/p65505/123346E.pdf>

However, CEAA 2012 technical guidelines are deficient with respect to the adequate methodology for doing so, saying only that “EA practitioners seeking direction on the cumulative effects assessment of GHGs under CEAA 2012 are encouraged to contact the nearest Agency regional office.”⁴⁰

At this point, further expansion of the oil sands through the approval of new projects is incompatible with our commitments to the Paris Agreement, Canada’s 2030 emissions targets, and the Alberta Oil Sands Emissions Limit Act.⁴¹ Absent new and unforeseen provincial and federal action to get us on a pathway in line with these commitments, the Frontier Oil Sands Project at 40.4 kg CO₂e/bbl (not including emissions from combustion) and 260,000 bbl per day is not in the public interest. We are also interested in a more detailed methodology for Teck’s calculation of project GHG emissions, particularly with respect to the assumption that emissions will not increase over the project lifespan. This assumption runs counter to empirical findings for oil sands projects, where emissions increase as the bitumen becomes harder to reach, lower quality, and further from processing facilities.⁴²

While downstream (combustion) emissions are not currently considered under CEAA 2012, we consider this to be an oversight as emissions are global and do not respect domestic borders. As stated by Ecojustice, “when assessing the likely climate impacts of a project it is imperative that all of the project’s lifecycle emissions be assessed: upstream, direct, and downstream emissions. This will serve Canada’s moral imperative to promote domestic and international best efforts to reduce emissions.”⁴³

2.3 The health of the Peace-Athabasca river watershed

We will not provide detailed commentary on the health of waterways in the impacted region, but share significant concerns about this project that other intervenors have already raised with regards to:

- The amount of withdrawals from leading into the Wood Buffalo National Park and the rest of the Peace-Athabasca watershed
- Water quality and contamination – from tailings and other discharge into the PA watershed.
- Long-term tailings management plans of Teck. In existing oil sands developments, tailing pond infractions are frequent, enforcement is rare, record keeping is dysfunctional, and there is a chronic failure to disclose these incidents to the public.⁴⁴ There is no indication from Teck’s documentation that their tailings management plan would avoid these incidences. As the northernmost proposed or operating project, their proximity to the Wood Buffalo National Park and the Peace-Athabasca Delta means these chronic risks regarding tailings are of extra concern.

⁴⁰ Assessing Cumulative Environmental Effects under the Canadian Environmental Assessment Act, 2012, Interim Technical Guidance March 2018, Version 2. <https://www.canada.ca/en/environmental-assessment-agency/services/policy-guidance/assessing-cumulative-environmental-effects-ceaa2012.html>

⁴¹ Erickson, P. Confronting carbon lock-in: Canada’s oil sands. Stockholm Environment Institute. <https://www.sei.org/wp-content/uploads/2018/05/confronting-carbon-lock-canadas-oil-sands.pdf>

⁴² Benjamin Israel, Measuring Oilsands Carbon Emissions Intensity (Pembina Institute, August 2016), 1. <http://www.pembina.org/reports/measuring-carbon-emission-intensity.pdf>

⁴³ Keegan Pepper-Smith. “Environmental assessments must consider climate change.” Ecojustice. <https://www.ecojustice.ca/environmental-assessment-reviews-must-consider-climate-change/>

⁴⁴ Timoney, K., & Lee, P. (2013). Environmental Incidents in Northeastern Alberta’s Bitumen Sands Region, 1996-2012. *Draft for public review. Treeline Ecological Research and Global Forest Watch Canada.*

- Guarantees of nearby communities right to safe drinking water.

2.4 The World Heritage Site status of Wood Buffalo National Park

We would urge the panel to allow intervenors to comment on Environment Canada’s Wood Buffalo National Park plan that is expected to be ready by the end of the year. As other intervenors have already raised, there are significant adverse impacts on the park from existing oil sands development, and the scale and proximity of the Frontier Mine is incompatible with the short- and long-term ecological health of the Park.

2.5 Social impacts of Teck’s Fly-in fly out program

Teck has stated that their Project’s fly-in and fly-out program will limit the stresses on infrastructure and services in Fort McMurray. However, there is strong evidence that this has detrimental impacts on local governance and community safety.

Local governance

A 2010 analysis in the journal *Sustainability* found that “The nature and extent of mining company interventions in nearby communities constitutes a new problematic for these corporate actors. Drawing on research conducted in two remote areas in Australia, this paper undertakes an analytics of government to ask how mining companies have become leading actors in determining the future of local, mine-affected communities. It is suggested that their interventions arise from two processes: industry priorities for securing a ‘social license to operate’ by making a positive contribution to affected communities; and the restructuring of the state which has created an institutional void in these remote localities. As a result, mining companies are ‘filling the gaps’ in local service delivery through a mode of governing that takes the form of patronage rather than partnership.”⁴⁵

Community Safety:

A 2016 report by Amnesty International on fly-in fly-out practices in mining operations in Northern BC found they had severe community impacts, particularly for Indigenous women and girls:⁴⁶

“High wages for resource sector workers, and the large numbers of workers attracted to the region, have driven up local prices for essentials such as food and housing. However, not everyone has access to these wages. In fact, women’s wages in the northeast are well below the average for women in Canada. This has created sharp inequalities in the northeast. The consequence is that those without access to resource sector wages—particularly Indigenous women and girls—are forced into economically precarious conditions where they experience food and housing insecurity.

⁴⁵ Storey, K. (2010). Fly-in/fly-out: implications for community sustainability. *Sustainability*, 2(5), 1161-1181.

⁴⁶ Amnesty International. (2016). *Out of sight, out of mind: Gender, indigenous rights, and energy development in northeast British Columbia, Canada*. London, UK: Author.

The economic insecurity experienced by many in the northeast is a concern in its own right. In addition, economic insecurity is also associated with increased risk of violence against women. The presence of a very large, young, mostly-male transient workforce adds to this risk, because young men are statistically more likely to be perpetrators of violent crime. These concerns are further compounded by patterns of drug and alcohol abuse among some resource industry workers which can fuel violence. Misogyny and racist attitudes toward Indigenous peoples, largely unaddressed in public life, have also made Indigenous women and girls more likely to be targets of violence.

Indigenous women and girls in northeast BC do not have access to adequate government supports and services to reduce the risk of violence. Frontline service providers supporting marginalized individuals, such as women's shelters and food banks, describe a situation of constant crisis, as needs outpace their capacity to respond. Amnesty International has also found law enforcement resources in the northeast, including the numbers of officers, as well as officer training and orientation, to be inadequate to meet urgent community needs.

A unique arrangement with the provincial government transfers additional funds to municipalities in northeast BC to offset the burden of hosting the resource industry, including the strain placed on social services and infrastructure by the many workers who temporarily migrate to the region for employment in the resource sector. However, no comprehensive and systematic assessment of the social service and infrastructure needs of communities in northeast BC has been conducted. There is also no accurate assessment of the actual size of the "shadow population" of temporary workers being served.

Traditions of hunting, fishing, and gathering berries and plant medicines are central to the cultural identity of the Dane-Zaa, Cree, Métis, and other Indigenous peoples in the northeast and are indispensable to the health and well-being of their communities. Indigenous elders and social workers describe the land as a source of individual and collective healing. The scale of resource development in the northeast has meant that Indigenous peoples, whose traditional territories are at the heart of the energy economy, now have very little land left that has not been directly impacted by some form of industrial development.

Decisions are made on a project-by-project basis with inadequate attention to the long-term cumulative social impacts, including the specific impacts on Indigenous women and girls. Land rights of Indigenous peoples protected in historic treaties and enshrined in the Canadian Constitution are not formally incorporated into the approvals process. Moreover, analysis of the distinct impacts of initiatives on people of all genders, in particular women and girls—which is a requirement for projects involving Canadian government-supported overseas development assistance—is almost never part of the decision-making process domestically and has never been part of the decision-making process for projects in northeast BC."

Bronwen Tucker

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Education

- University of Oxford, MSc in Environmental Change & Management** 2016-2017
- Concentrations in climate change economics and energy policy.
 - Graduated with distinction.
- McGill University, Honours BAsC in Environment & Economics** 2010-2014
- Concentrations in climate change policy and systems modelling.
 - Dean's Honours List & Dean's Multidisciplinary Undergraduate Research List.

Climate Policy Research Experience

- Stockholm Environment Institute & University of Oxford; Oxford, UK – Researcher** April 2017-Sept 2017
- As part of SEI's Fossil Fuels & Climate Change Initiative and the Oxford School of Geography & Environment, I investigated the impacts of recent public opposition to Canadian fossil fuel projects.
 - Built databases and provided timely, detailed feedback on a variety of energy policy publications.
- McGill Faculty of Law; Montreal, QC – Research Assistant** April 2014-April 2015
- Worked in a team to build a smartphone app for sustainability education.
 - Developed and maintained a database of the carbon dioxide equivalent emissions associated with energy, food, transportation, waste, housing, and consumer purchases in the Montreal context.
 - Integrated considerations of peak energy demand and energy efficiency into our emissions metrics.
 - Wrote public-facing briefs and a [journal article](#) on the life-cycle climate, water, and land use impacts of food choices relevant to Montreal's supply chains.
 - Created a long-term strategy for the project's funding, development, design, and marketing.
 - Coordinated the completion of project deliverables across different research teams.
- McGill Institute of Health & Social Policy; Montreal, QC – Research Assistant** Jan. 2014-Aug. 2014
- Conducted a comprehensive review of economic analyses of carbon pricing regimes in Canada, the EU, and United States to identify methods, best practices, and common findings.
 - Constructed a macroeconomic model based on Quebec's carbon market legislation to analyze its short- and medium-term implications on employment across household income levels, sectors, and regions.
 - [Published](#) an article using this model in the journal *Canadian Public Policy*, making recommendations to improve the market's ability to garner meaningful emissions reductions and equitable outcomes.
 - Met with the carbon market policy team at the Quebec Ministry of Sustainable Development, Environment, and Action against Climate Change to obtain data and share the results of our final analysis.
 - Translated research findings on a variety of other climate change policies into accessible briefing notes.
- McGill School of Environment; Montreal, QC – Research Assistant** Jan 2014-Dec 2014
- Reviewed municipal legislation in five Latin American cities pertaining to active transport infrastructure.
 - Published a spatial, statistical, and network [analysis](#) of bicycle lanes in these cities to assess the equity of access across income levels.
- Climate Focus; Amsterdam, Netherlands – Summer Student** May 2013-Aug 2013
- Conducted research for government and corporate clients on climate change mitigation programs, including carbon pricing, renewable energy, bus-rapid transit, and farm-level adaptation.
 - Worked in a team to prepare a comprehensive analysis of granting opportunities for climate mitigation in agriculture, including an examination of major trade flows, supply chains, institutions, subsidies, and sustainability initiatives.

- Created data visualizations, reports, briefing notes, presentations, and infographics with a variety of software.

Sustainable Barbados Recycling Centre – Researcher Sept 2012-Dec 2012

- Worked in a multidisciplinary team to produce analysis on the risks, costs, benefits, and implementation impacts of various policy strategies for minimizing greenhouse gas emissions from the island’s landfill.
- Consulted and integrated feedback from a variety of government departments and stakeholders.

McGill School of Environment; Montreal, QC – Teaching Assistant Jan 2013-Dec 2013

- Prepared and led tutorials for a 150-person climate science course emphasizing systems-thinking.

Other Work Experience

The Council of Canadians; Edmonton, AB – Prairies-NWT Regional Organizer May 2018-Present

Independent Consultant; various locations Dec 2016-Present

- Throughout my graduate degree and shortly after, I acted as a consultant for a variety of organizations.
- This included writing a paper on levers for a just transition to 100% renewable energy in Quebec for a provincial student association and preparing reports for four signatories to the UN Principles for Responsible Investment, with a specific focus on climate-related initiatives.

Greenpeace Canada; Edmonton, AB – Campaigner Sept. 2015-Sept 2016

- Used a variety of government, public, and media engagement strategies to ensure a more ambitious and equitable implementation of Alberta’s 2015 Climate Leadership Plan, with a focus on carbon pricing revenue spending, green job creation, energy efficiency, and community-owned renewable energy.
- Tracked the development and implementation of provincial climate change policies and initiatives.
- Established and maintained relationships with Indigenous communities, green businesses, labour unions, and environmental NGOs to facilitate the development of the Alberta Green Economy Network.
- Developed and promoted climate policy recommendations based on greenhouse gas reduction potential, distributional impacts, stakeholder concerns, best practices, and cost-effectiveness.
- Wrote reports, press releases, editorials, grant applications, memos, and reports to further campaign goals.
- Planned a wide variety of workshops, conferences, speaker’s panels, community forums, and other events.
- Coordinated project teams of up to 20 staff and volunteers.

Students’ Society of McGill University; Montreal, QC – Campaign Coordinator Sept. 2013-June 2015

- Planned and carried out the Society’s environmental and social justice campaigns, including a 150,000-member climate change advocacy coalition and an energy efficiency awareness campaign for student renters.
- Tracked the development and implementation of provincial legislation pertaining to the Society’s positions.
- Provided timely, high-quality analysis and advice on provincial legislation and university policies.
- Built relationships and negotiated with government representatives, McGill administration members, local businesses, and other student organizations to further campaign goals.
- Managed our departmental budget and doubled operational funds each year through grant applications.

Volunteer Experience

Canadian Youth Climate Coalition – Organizer & COP 20-21 Delegate May 2014-Present

- Sat as a civil society member of the Canadian federal government’s delegations to COP20 and COP21.
- Tracked progress, wrote reports, provided recommendations, made presentations, and spoke with media regarding Canada’s climate finance, adaptation, and mitigation commitments.
- Led the Ontario policy team in presenting recommendations to the premier and Minister of Environment.
- Coordinated a series of national for-youth by-youth conferences on climate change policy and advocacy.

McGill Student Sustainability Ambassadors – Board Member Dec. 2013-Sept 2015

McGill Science Undergraduate Student Environment Committee – Coordinator Dec. 2010-Sept 2014

Skills and Certifications

- Strong written and spoken French.
- High proficiency in Microsoft Office (including Excel macros and Access), STELLA, ArcGIS, R, SPSS, Adobe Creative Suite, Tableau, HTML/CSS, Python, and WordPress.

Selected Publications

Tucker, B. (under review). “Contentious carbon: Taking stock of the outcomes of resistance to Canadian fossil fuel projects 2007-2017.” *Stockholm Environment Institute Working Paper*.

Tucker, B., & Manaugh, M. (2017) [Bicycle equity in Brazil: Access to safe cycling routes across neighborhoods in Rio de Janeiro and Curitiba](#). *Journal of International Sustainable Transportation*. 11(1), 1-10

Tucker, B., Chen, D., Badami, M., Ramankutty, N., & Rhemtulla, J. (2016) [A multi-dimensional environmental impact metric for facilitating food choices in campus cafeterias](#). *Journal of Cleaner Production*. 135, 1351-1362.

Barrington-Leigh, C, Tucker, B., & Kritz Lara, J. (2015) [The short-run household, industrial, and labour impacts of the Quebec carbon market](#). *Canadian Public Policy*. 41(4)

Hauptf, F., Tucker, B., Stanley, L. & Parker, C. (2014). “Mitigating Climate Change in Agriculture – Supplementary Materials: [Finance in the Agriculture Sector](#), [Agricultural Trade Flows](#) and [Institutions in the Agriculture Sector](#).” *Climate and Land Use Alliance*.

Honours

- Oxford Environmental Change Institute Small Grant (2017)
- Sir Walter Raleigh Scholarship (2016)
- Starfish Canada Top 25 Environmentalists Under 25 (2015)
- McGill Catalyst Awards for Sustainability - Applied Student Research (2015)
- McGill Catalyst Awards for Sustainability - Lessons Learned (2015)
- Judith Mappin Scholarship in Environment (2013)
- Tomlinson Teaching Award (2013)