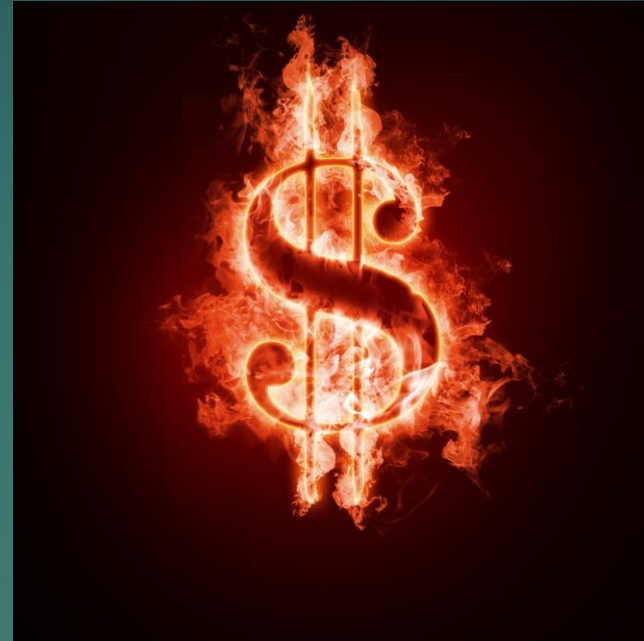


Prosperity Foregone

THE INCOME AND EMPLOYMENT LOST DUE TO CANADIAN CLIMATE POLICIES

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Purpose

- ▶ To document the estimated losses to Canada due to governmental climate and related environmental policies in terms of
 - ▶ Foregone investment
 - ▶ Foregone employment
 - ▶ Additional costs to consumers



Outline of Presentation

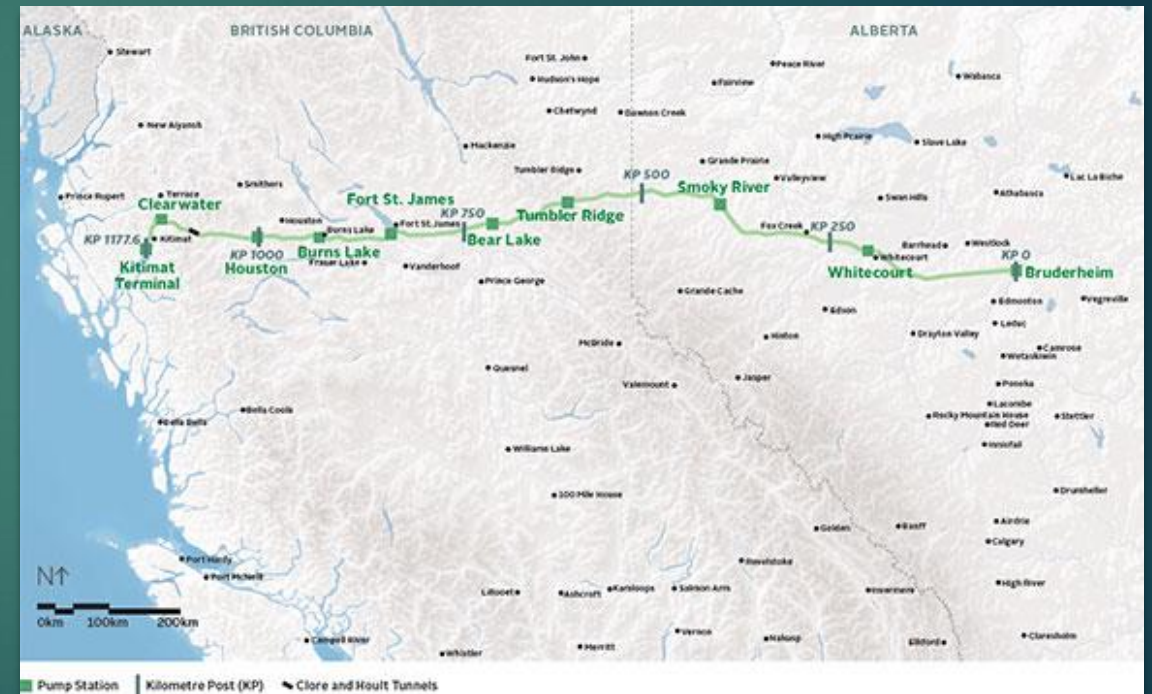
- ▶ Purpose
- ▶ Climate policy framework
- ▶ Pipeline and resource projects cancelled
- ▶ Moratoria imposed
- ▶ Effects of pipeline constraints
- ▶ Regulatory changes and caps
- ▶ Carbon dioxide taxes and emissions trading systems
- ▶ Mandated conversion from coal to wind/solar generation
- ▶ Conclusion

Canadian Climate Policy Framework

- ▶ Justin Trudeau's government has embraced greenhouse gas emissions reduction as the over-riding goal of public policy
- ▶ Under the "Pan-Canadian Framework" federal, provincial and territorial governments have implemented over 230 emission reduction measures; differences still persist over role and authority to impose carbon dioxide taxes
- ▶ The voluntary target of a 30% emission reduction by 2030 is being treated politically as mandatory
- ▶ Trudeau government has announced goal of "net zero" emissions by 2050

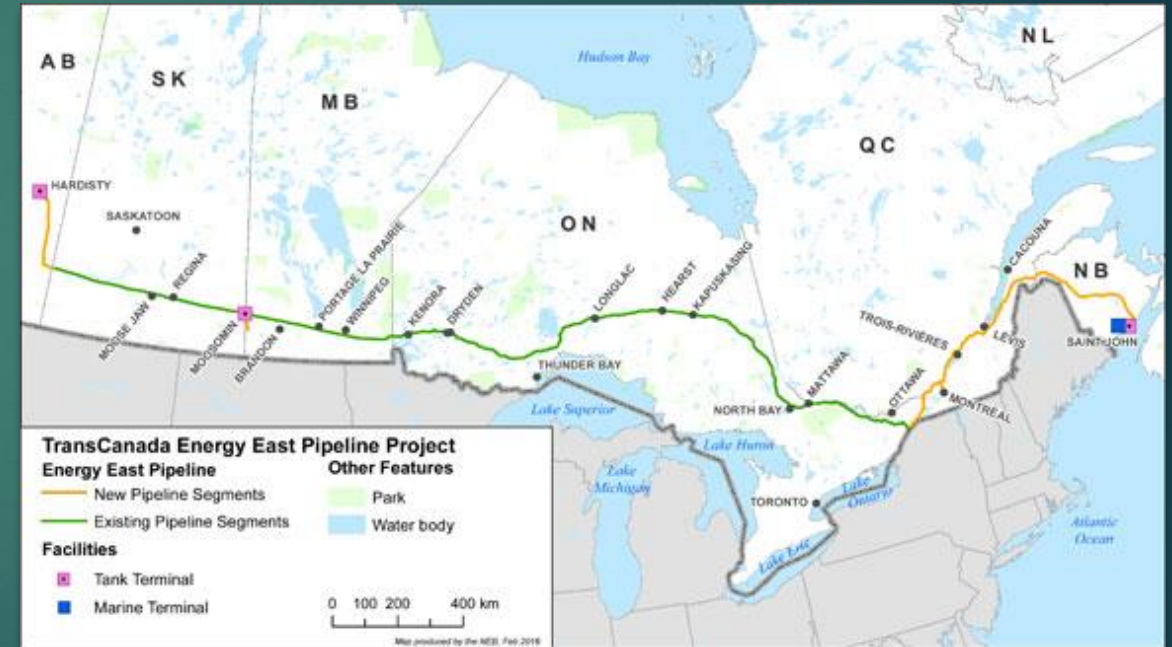
Northern Gateway Pipeline

- ▶ Estimated Capital Cost: \$7.9 billion
- ▶ Projected impact of GDP: \$30 billion over 30 years
- ▶ Projected impact on government revenues: \$2.6 billion
- ▶ Projected employment benefits: 1,560 long term jobs; 3,000 construction jobs
- ▶ Period spent under review: 4.5 years
- ▶ Reason for cancellation: Initially approved (June 2014) by Harper government; then cancelled in 2015 when Trudeau government imposed ban on Northern B.C. coastal tanker traffic



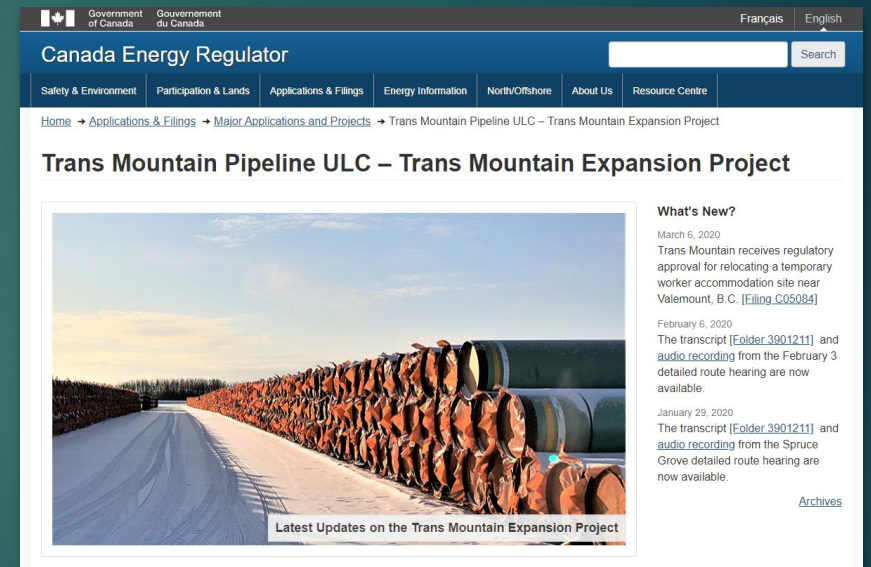
Energy East Pipeline Project

- ▶ Estimated Capital Cost: \$12 billion
- ▶ Projected impact on GDP: \$35.3 billion
- ▶ Projected impact on government revenues: \$10 billion
- ▶ Projected employment benefits: 10,000 full-time jobs during the development and construction periods; 1,000 jobs during operations
- ▶ Period under review: 4 years
- ▶ Reason for cancellation: Trudeau government, almost four years into the review (2017), directed National Energy Board to broaden the scope of review to include upstream and downstream GHG emissions



Trans Mountain Expansion Project

- ▶ Estimated capital cost: \$12.6 billion
- ▶ **Projected impact on GDP: \$18.5 billion**
- ▶ **Projected impact on government revenues: \$46.7 billion over 20 years**
- ▶ **Projected employment benefits: 5,500 jobs during construction period alone**
- ▶ Period spent under review: 6.5 years and counting
- ▶ Reason for delay: Delays in approval by Trudeau government; legal opposition by British Columbia, aboriginal and environmental groups, court decisions



The screenshot shows the Canada Energy Regulator website. The header includes the Government of Canada logo and navigation links for Safety & Environment, Participation & Lands, Applications & Filings, Energy Information, North/Offshore, About Us, and Resource Centre. The main content area is titled "Trans Mountain Pipeline ULC – Trans Mountain Expansion Project" and features a large image of a pipeline under construction in a snowy landscape. To the right of the image is a "What's New?" section with three entries: a March 6, 2020 update on regulatory approval for a temporary worker accommodation site, a February 6, 2020 update on transcripts and audio recordings from a detailed route hearing, and a January 29, 2020 update on transcripts and audio recordings from another detailed route hearing. An "Archives" link is located at the bottom right of the "What's New?" section.

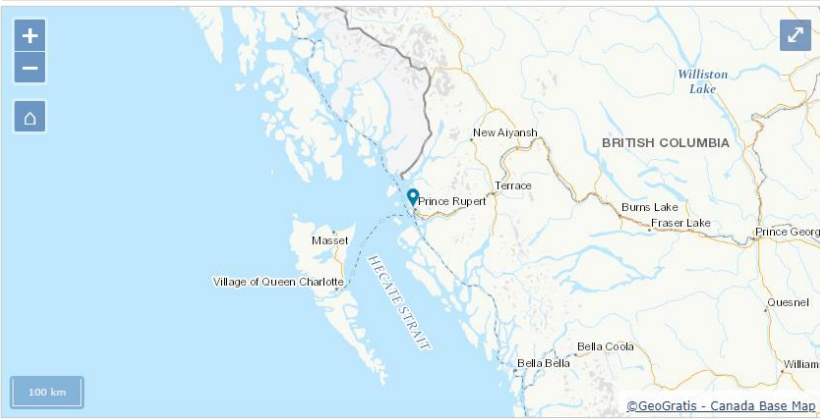
<https://www.cer-rec.gc.ca/ppictnflng/mjrpp/trnsmntnpxpsn/index-eng.html>

Totals for Three Pipelines

- ▶ **\$32.5 billion in capital investment foregone**
- ▶ **\$65.3 billion in national income foregone**
- ▶ **About 3,500 long-term jobs foregone**
- ▶ Approximately \$1.5 billion lost on expenses to prepare and present applications
- ▶ Additional billions of dollars in inflated costs due to regulatory delays

Aurora LNG

- ▶ Sponsor: Nexen Energy
- ▶ **Estimated capital cost: \$28 billion**
- ▶ **Projected impact on GDP: n/a**
- ▶ **Projected employment benefits: 4,000 to 5,000 person years during construction; 200-400 permanent jobs over 25 years**
- ▶ Period spent under review: 5 years
- ▶ Reason for cancellation: change in market conditions during review process (i.e. projects in other countries moved ahead faster)



The map displays the coastal region of British Columbia, Canada. A blue dot marks the location of the Aurora LNG project near Prince Rupert. Other labeled locations include Williston Lake, New Aiyansh, Terrace, Burns Lake, Fraser Lake, Prince George, Ouesnel, Williams, Bella Bella, and Bella Coola. The Hecate Strait is also labeled. The map includes a scale bar for 100 km and a copyright notice for GeoGratis - Canada Base Map.

[View detailed map](#)

Latest update

October 24, 2017 - The Canadian Environmental Assessment Agency [terminated the environmental assessment process](#) of the designated project at the request of the proponent.

<https://iaac-aeic.gc.ca/050/evaluations/proj/80075>

Prince Rupert LNG

- ▶ Project Lead: Royal Dutch Shell
- ▶ **Projected capital cost: \$16 billion**
- ▶ **Projected impact on GDP: n/a**
- ▶ **Projected employment benefits: n/a**
- ▶ Period spent under review: 4.5 years
- ▶ Reason for cancellation: Shell decided to cancel so it could focus on the other B.C. LNG project in Kitimat related to Coastal Gaslink- now being held up by opposition from five unelected natives



[View detailed map](#)


Latest update

May 25, 2017 - The Canadian Environmental Assessment Agency terminated the environmental assessment process of the designated project at the request of the proponent.

<https://iaac-aeic.gc.ca/050/evaluations/proj/80042>

WCC LNG

- ▶ Project Sponsor: Exxon Mobil Corp
- ▶ **Projected capital cost: \$25 billion**
- ▶ **Projected impact on GDP: n/a**
- ▶ **Projected employment benefits: 1,000-6,000 person years during construction; 250-300 permanent jobs during operations**
- ▶ Period under review: 4 years
- ▶ Reason for cancellation: Exxon stated that it wished to pursue other LNG investment opportunities elsewhere



The map displays the coastal region of British Columbia, Canada, with a focus on the area around Prince Rupert and Terrace. Key locations marked include Williston Lake, Burns Lake, Fraser Lake, Prince George, Ouesnel, Williams Lake, Bella Coola, Bella Bella, and the Village of Queen Charlotte. The Hecate Strait is also labeled. A scale bar indicates 100 km. The map is credited to GeoGratis - Canada Base Map.

[View detailed map](#)

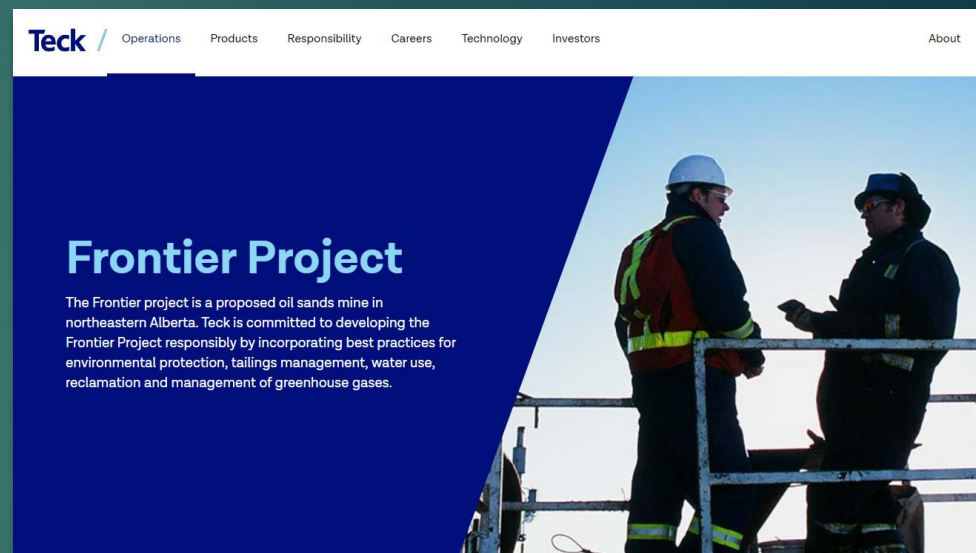
Latest update

January 25, 2019 - The Canadian Environmental Assessment Agency terminated the environmental assessment process of the designated project at the request of the proponent.

<https://iaac-aeic.gc.ca/050/evaluations/proj/80096>

Teck Frontier Oil Sands Mine

- ▶ Projected capital cost: \$20.6 billion
- ▶ **Projected impact on GDP: N/A**
- ▶ **Projected impact on government revenues: \$70 billion**
- ▶ **Projected employment benefits: 7,000 jobs during construction, plus 2,500 jobs for 41 years**
- ▶ Period spent under review: 8 years
- ▶ Reason for cancellation: Uncertainty engendered by federal energy policies



<https://www.teck.com/operations/canada/projects/frontier-project/frontier-project>

Moratorium on Northern Drilling

- ▶ In 2016, with no supporting analysis, the Trudeau government imposed a permanent moratorium on new offshore oil and gas exploration in northern Canada
- ▶ In July, 2018 again with no analysis, it expanded the moratorium to include all offshore oil and gas activities
- ▶ In response to pressures from territorial governments, in October 2018, the government began to consult on future “shared management” of the Beaufort Sea
- ▶ **There are 63 existing exploration and discovery licenses and billions of dollars in undeveloped resource potential.**

Pipeline Constraints

- ▶ In September 2018 western Canadian oil production reached 4.3 million barrels per day (b/d) but the takeaway capacity on existing pipelines was only 3.9 million b/d.
- ▶ This resulted in depressed prices for Canadian heavy crude relative to US crude and other international benchmarks. By November, 2018, Canadian heavy crude was selling in US markets at a 70% discount.
- ▶ Over the 2014-2018 period, Canadian producers' revenues declined by \$40.6 billion due to discounted heavy crude prices.
- ▶ The best long-term solution is the addition of pipeline capacity that will allow access to Pacific markets.

Regulatory Changes

- ▶ The average approval time for new pipeline projects in Canada increased from 357 days in 2009 to 831 days in 2013 and was still 681 days by 2016
- ▶ Several changes have been made that worsen the outlook for project approvals in future:
 - ▶ Expanded and more complex environmental assessment
 - ▶ Regulatory layering
 - ▶ Politicization of approval process
 - ▶ Imposition of of climate-related tests and caps
 - ▶ Significantly increased consultation requirements

Regulatory Caps

- ▶ Alberta has imposed a statutory cap on emissions from oil sands of 100 million tonnes per year
- ▶ Assuming continuation of current emissions intensity improvements, the policy could result in cumulative production losses between 2027 and 2040 of over 2 billion barrels of oil, **with a lost value of Cdn \$153 billion (2015 dollars)**
- ▶ During recent review of the Teck Frontier project, the panel interpreted the federal government's emissions target to be 150 million tonnes for the whole economy in 2050 (compared to 716 million tonnes in 2017)

Taxes

- ▶ Canadian carbon dioxide taxation regime is highly balkanized system that includes a mix of direct taxes, output-based pricing for industry, and emissions trading
- ▶ Tax rate is now generally Cdn \$30 per tonne and will rise to \$50 per tonne in 2022, with future rates uncertain
- ▶ Taxation regime does not substitute for direct action measures but adds another layer
- ▶ Partial rebate system has subdued public opposition
- ▶ Primary economic effect is to raise consumer energy costs and impair competitiveness of emissions-intensive firms in all regions

Consequences

- ▶ **Canada lost \$100 billion in energy projects in two years: C.D. Howe Institute**
- ▶ Investment in oil and gas upstream fell from \$125 billion in 2014 to \$75 billion in 2018, during a period in which investment grew globally
- ▶ **New planned investments in the energy sector fell from \$146 billion in 2015 to \$35 billion in 2018; this represents 4.5% of Canada's GDP**
- ▶ **New planned investments in pipelines declined from \$95 billion in 2016 to \$68 billion in 2018**
- ▶ Unemployment rate in Alberta surged to 9% and was 7.2% at end 2019, compared to 5.9% nationally

Phaseout of Coal-fired Generation in Favour of Wind and Solar Ontario

- ▶ Ontario's Green Energy Act (2009) required utilities to contract for wind and solar generation at above-market rates under fixed 25 – year contracts and to give these sources “first-to-the-grid” rights.
- ▶ **From 2004 to 2014, ratepayers' bills for generation costs increased by 80%, and the overall cost of electricity increased by 56%.**
- ▶ **Electricity consumers had to pay \$9.2 billion more than they should have; 75,000 jobs have been lost as a result.**
- ▶ Because of mismatch between renewables' supply and electricity demand, electricity had to be dumped on export markets at a net cost of \$3.1 billion from 2009-2014. That continues today.

Phaseout of Coal-fired Generation in Favour of Wind and Solar Alberta

- ▶ In 2015, the Alberta government decided to accelerate the phaseout of coal-fired power so all 18 plants would be closed by 2030 and to introduce carbon dioxide taxes.
- ▶ Subsequently, the largest utility investors left the province
- ▶ The cost of closing six plants that could have operated until 2061 has not been published.
- ▶ **The estimated cost of the wind and solar plants ranges from \$4 billion to \$8 billion**
- ▶ Wind plants to be viable require revenues above \$60-\$80 per MWh, and solar requires revenues above \$100 per MWh, compared to the previous average pool price of power of \$64 per MWh.

Renewable Energy Subsidies

- ▶ There are dozens of federal and provincial subsidy and tax exemption benefits now accorded to wind and solar energy projects by the federal and provincial governments; no one knows the total cost
- ▶ In Europe, the effective wind plus solar cost is nine times higher than electricity would cost without them
- ▶ The Federal Budget 2017 committed \$1.55 billion in subsidies to wind and solar over five years.
- ▶ Alberta 2016 Budget committed to \$3-4 billion of wind and solar projects over five years.

The Uncounted Others

- ▶ The federal government has 66 major programs to reduce GHG emissions; provinces and territories have 171 more; no one knows the total cost or degree of duplication and overlap.
- ▶ There has never been a benefit-cost analysis done to determine whether the advantages of these measures outweigh the disadvantages
- ▶ No one knows how cost-effective these measures are; some, like subsidies to electric vehicles and mass transit, cost more than \$1,000 per tonne
- ▶ *How does one tally the cost of impairing national unity?*

Conclusion

- ▶ Canadian climate policy is severely impairing the development of Canada's oil and gas resources, producers' access to new markets, and future investment and income prospects for the country
- ▶ The economic burden of these policies is falling most heavily on Alberta and Saskatchewan, but all regions will be increasingly affected in future
- ▶ It is also driving electricity rates higher for residences and industry.
- ▶ Only a fundamental realignment of current policies, supported by rigorous and well-informed opposition, can prevent severe strains in the economy and the federation.



About Robert Lyman

- ▶ Robert Lyman was a federal public servant for 27 years and a diplomat for 10 years.
- ▶ Much of his career was related to emissions reduction policy and related economic impacts.
- ▶ His full biography is here:
- ▶ <https://blog.friendsofscience.org/2019/05/29/robert-lyman-background-and-experience/>