Carbon Pricing Consequences for Alberta

Responding to Environmental Defence

Friends of Science Society

February 4th, 2019

CONTENTS

RESPONDING TO ENVIRONMENTAL DEFENCE – ALBERTA'S CARBON TAX

RED INK + SORROW

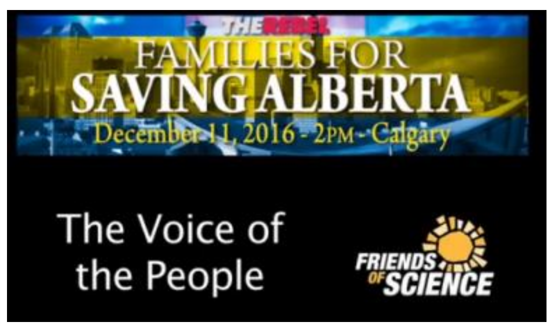
Environmental Defence issued a report at the end of December 2018 entitled ***"Carbon Pricing in Alberta – A Review of its Successes and Impacts"***.[1]

They paint a rosy picture, claiming:

> *"The aim of the levy is to reduce carbon pollution which causes climate change, while minimising any negative impacts to the province's economy or to lower-income Albertans."*

This report will demonstrate that Environmental Defence is misinformed and is misleading the public.

We will evaluate the billions wasted on coal phase-out, the continued downward-slide in investment, the faulty premises underlying carbon taxes and climate change claims. However, **no one can put a price on the human wreckage** – the lives ruined, small business dreams on the rocks, farmers up against a financial wall, citizens sliding into heat-or-eat-poverty – all thanks to an imposed carbon tax burden and climate change plan driven by foreign-funded ENGOs, acting as proxies for green crony capitalists.



"I have friends and family who are living on the street right now…this is not appropriate for our government to be doing this to our people…"
youtu.be/f4G0Akr3K_I

[1] environmentaldefence.ca/report/carbon-pricing-alberta/

LIFE IN FREEFALL

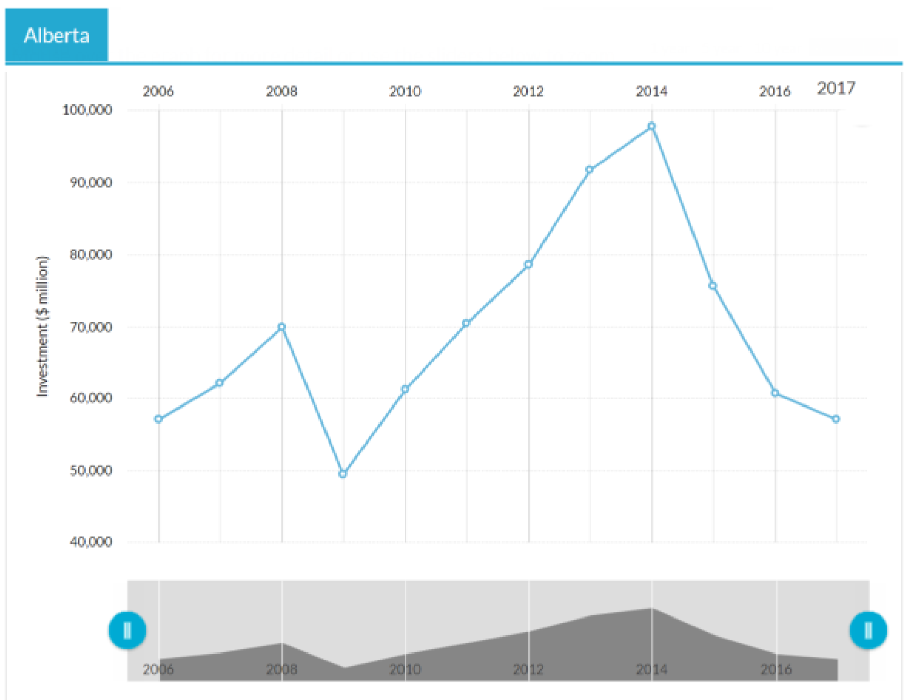
On Sept. 8, 2015, NEI Investments delivered a letter to Premier Rachel Notley, signed by 120 sovereign wealth funds, foundations, institutional investors and pension funds, most of which have no relation to Alberta.[2]

They claimed: *"In conclusion, we reiterate that the undersigned investors not only support the Government of Alberta taking substantive steps to strengthen its climate policy but feel that such steps are necessary to ensure the long-term success of Alberta as a* ***favourable investment jurisdiction****."*

By January 2016, NEI was pleased at the influence they had had on provincial and federal governments, leading the *"Transition to a Low-Carbon Economy."*[3]

Alberta Economic Investment Dashboard graph:

In 2017, non-residential capital investment in Alberta fell by 6.0% from 2016 to $57.2 billion. (This estimate excludes residential investment.) Spending on machinery and equipment fell 9.8%, while construction spending fell 4.8%. Most of the 2017 decline was the result of lower oil and gas extraction investment which fell 6.7% to $22.5B billion, while manufacturing declined 30.7% to $1.5B.[4]



Investment ($ million)

TREND	2016	2017	% CHANGE
⬇	60,827	57,165	-6.0%

---

[2] blog.friendsofscience.org/wp-content/uploads/2016/08/107-submission_nei-investments_-investor-collaboration_signatories.pdf
[3] blog.friendsofscience.org/wp-content/uploads/2016/08/transitioning-to-a-low-carbon-energy-system-nei.pdf
[4] economicdashboard.alberta.ca/Investment

EIGHT WAYS CARBON TAXES MAKE YOUR LIFE HARDER

Environmental Defence explicitly acknowledges that carbon taxes are economically damaging saying: *"minimising any negative impacts to the province's economy or to lower-income Albertans."* The impacts have only begun to hit home in Alberta.

Devastating For Poor And Vulnerable – Heat Or Eat Poverty

Carbon pricing has a disproportionate impact on those with low incomes.

According to the U.S. Bureau of Economic Research, carbon prices, depending on how broadly applied, place cost burdens 1.4 to 4 times higher on the lowest fifth of the income earners than it does on the highest fifth.

A $15 per tonne tax adds about $325 per year in energy costs.

Taxing natural gas for home heating will affect those on low incomes including the elderly.

Harmful To Canadian Competitiveness

Carbon prices harm competitiveness.

They add to the input costs of firms, making it more difficult to compete with others that are not taxed in either the Canadian or export markets.

The situation is made worse because of tax changes in the USA.

Between 2015 and 2017, Canada ranked 16th out of top 17 OECD countries for business investment.

Deadweight Loss On Economy

Carbon taxes impose a *"deadweight loss"* on the economy; that is a cost to the economy over and above the amount raised by the government.

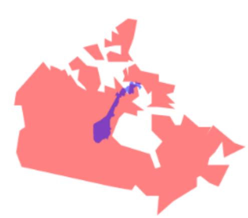
Production costs rise, and real wages decline, imposing at least a $1.30 loss in economic welfare from $1.00 in tax revenue.

The effect is worse in countries that already have large existing taxes.

Ineffective In Reducing Demand

Carbon prices do little to reduce demand.

Gasoline and diesel fuel demand have traditionally been very unresponsive to higher prices, especially in the short term. In Norway, gasoline prices are equivalent to Cdn $2.61 per litre, yet demand is rising.



How Norway fits into Canada.
Map source: [mapfight]

Unlike Norway, Canada's distances are much greater; industry, agriculture, and general life require substantial travel. Canadians have no choice.

To reach the higher emission reduction targets would require the complete elimination of oil and gas use.

Burdened With Existing Fuel Taxes

Carbon pricing ignores the effect of pre-existing taxes and regulations.

Federal and provincial excise and sales taxes on gasoline in Ontario averaged 42 cents per litre in 2017. Carbon taxes will add 12 cents per litre by 2022, or about $200 per year to the annual gasoline bill.

Due to regulation, vehicle fuel efficiency will already increase by 50% over 2008 models by 2025.

Instituted With No Cost-Benefit Analysis

Carbon tax rates bear no relationship to either the *"costs"* of climate change or the prices that, in theory, would attain the emissions reduction targets.

Ontario conducted no cost-benefit analysis either of its recent climate policy or of carbon pricing. Alberta did no cost-benefit analysis. The Federal Government's paltry carbon tax report and Gender-Based Analysis had no hard figures for valid analysis – just platitudes.

Carbon Taxes Do Not Replace Other Taxes – They Pile-On More

Carbon prices do not replace the other regulations and programs to reduce emissions.

Across Canada there are 272 different programs in place at the provincial level alone, with more added every year.

Instead of allowing the market to determine the lowest cost of emissions reduction, the Alberta government wants to choose the winners and losers, as did the Liberal Wynne government of Ontario.

It's A Revenue Grab For Big Government

It's a revenue grab.

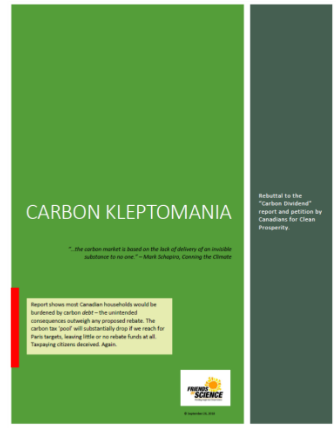
The federal and several provincial governments claim the carbon tax will be revenue neutral and most monies would be rebated to those most in need. This claim ignores the cost of a new layer of bureaucracy to collect, count and disseminate funds. UK carbon pricing has driven up heat-or-eat poverty.[5]

[5] spectator.co.uk/2014/04/let-them-eat-carbon-credits/

According to the Institute for Climate Economics, of the 40 carbon pricing regimes in places in the world today, only 29% of the revenues were recycled back into the economy. The rest was spent on other climate programs or simply added to the treasury.

Carbon taxes are extremely costly and pointless virtue signaling.

Read more in *"Carbon Kleptomania"* blog.friendsofscience.org/wp-content/uploads/2018/09/Carbon-Kleptomania.pdf



IMPACT OF CARBON TAX ON ALBERTA AND CANADA

Environmental Defence claims that 2017 was a *"good year for Alberta's economy."*

Compared to what? Let's review crucial changes in policy.

CARBON TAX

Implementing a broad-based, economy-wide carbon tax had cascading negative impact on Alberta.

Coal

Being a high emitter of carbon dioxide, coal became a liability for investors and a perceived liability for the province in terms of GHG reduction targets. Though the oldest coal-fired power plants had been legislated to close by 2030 by the federal government under the late Jim Prentice (at no cost to taxpayers),[6] coal power generation industry investors had relied on the stability and integrity of federal legislation that allowed the six newest, low-emissions/high-efficiency coal-fired power plants to operate up to 2060; they were shocked to find a sub-sovereign, provincial government overturned federal legislation and demanded complete coal phase-out by 2030.

Power Purchase Agreements

The institution of a carbon tax triggered a *"change of law"* clause[7] that allowed companies with coal-related Power Purchase Agreements (PPA) to dump those contracts back into the Balancing Pool.[8] This in turn triggered a lawsuit by the province against the companies who were acting according to the

---

[6] TransAlta Corporation reported in a power point for CIBC Whistler Institutional Conf. Jan. 23-25, 2019, distributed on Seeking Alpha that it will receive $37million/yr. for 13 years for off-coal compensation.

[7] ppp.worldbank.org/public-private-partnership/sector/energy/energy-power-agreements/power-purchase-agreements *"Change of law - PPA should address impact on tariff in event of a change in applicable law and the mechanism for tariff adjustment. Lenders will be anxious to ensure that the cash flows of the project required for debt service are protected against changes in law."*

[8] calgaryherald.com/business/energy/balancing-pool-moves-to-cut-losses-by-cancelling-ppas

legislation. There are multi-billion-dollar consequences to these complex issues – but the greatest harm was to **investor confidence**. Investors like _stability, clear regulations, clear legalities and business-friendly governments, willing to engage in negotiated settlement, not litigation_. This situation continued unresolved for many months. The Independent Power Producers Society of Alberta (IPPSA) noted the following on its website.

5) The Balancing Pool's losses are being paid by a loan from the Government of Alberta.

6) The loan is estimated in the 2017-2018 Government of Alberta budget to reach $2.25 billion. The interest alone is estimated at ~$400 million.

Replacing Coal With Natural Gas

More than 70% of the power generated in Alberta is used by industry and commerce. Alberta's coal reserves are abundant (~800 to 1,000 years), we own the mineral rights, and the coal is high quality (low sulfur) and surface mineable. This gave us an inherent *"Alberta advantage"* – **affordable, reliable, always accessible power**. Coal is a *"price stable"* energy source – it has a slow, incremental price rise over decades, meaning this provides forward security in pricing business operations. Often, the Alberta power grid *baseload* (the *"general"* large supply of power required for daily activities) was over 70% reliant on coal. Going to natural gas (which has a somewhat lower carbon dioxide footprint, and few trace mineral emissions) meant:

Build New Or Convert Existing Plants

To build new natural gas plants would take about a decade, not to mention costing about $1.4 billion per plant (of which we would need about 8 new natural gas plants to replace coal-fired capacity, if Shepard Energy Center is used as a typical gas plant). Not only would this be extremely expensive, it would also take a long time. In the interim, coal-fired power producers' revenues would be severely impacted by the carbon tax. So, coal plants are being converted to natural gas, a faster and cheaper option (said to be about $50 million each). However, modern combined cycle plants like Shepard are extremely efficient in reducing carbon dioxide – the whole point of the exercise. One industry expert's opinion is that by trying to put ~5,000 Megawatts (MW) of renewables (wind and solar) on the Alberta power grid, there will not be much reduction in carbon dioxide (especially not with conversion plants) – explaining it this way:

> *"The problem with wind is its randomness, wind is completely uncorrelated with demand. If the Alberta gov't adds another 5,000 MW, then the total wind capacity would be ~6,500 MW. Typically this amount of wind would randomly experience 80% or higher ramps one or more times per week. This would be the equivalent of ramping 6.5 Shepard natural gas plants from off to full to off again.* ***These plants are unable to do this over the long term. They may end up having to put in simple cycle units instead which, from a CO_2 perspective, would pretty much defeat the***

__purpose of adding wind.__ But it’s never really been about reducing CO_2, it’s all about building wind. And now solar, with the new government statement about going 50% solar.”

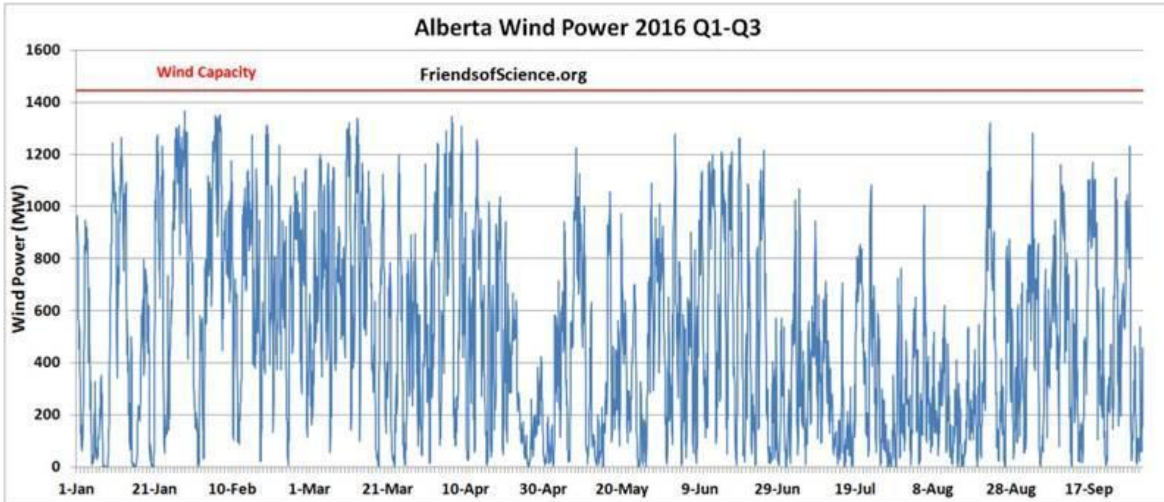
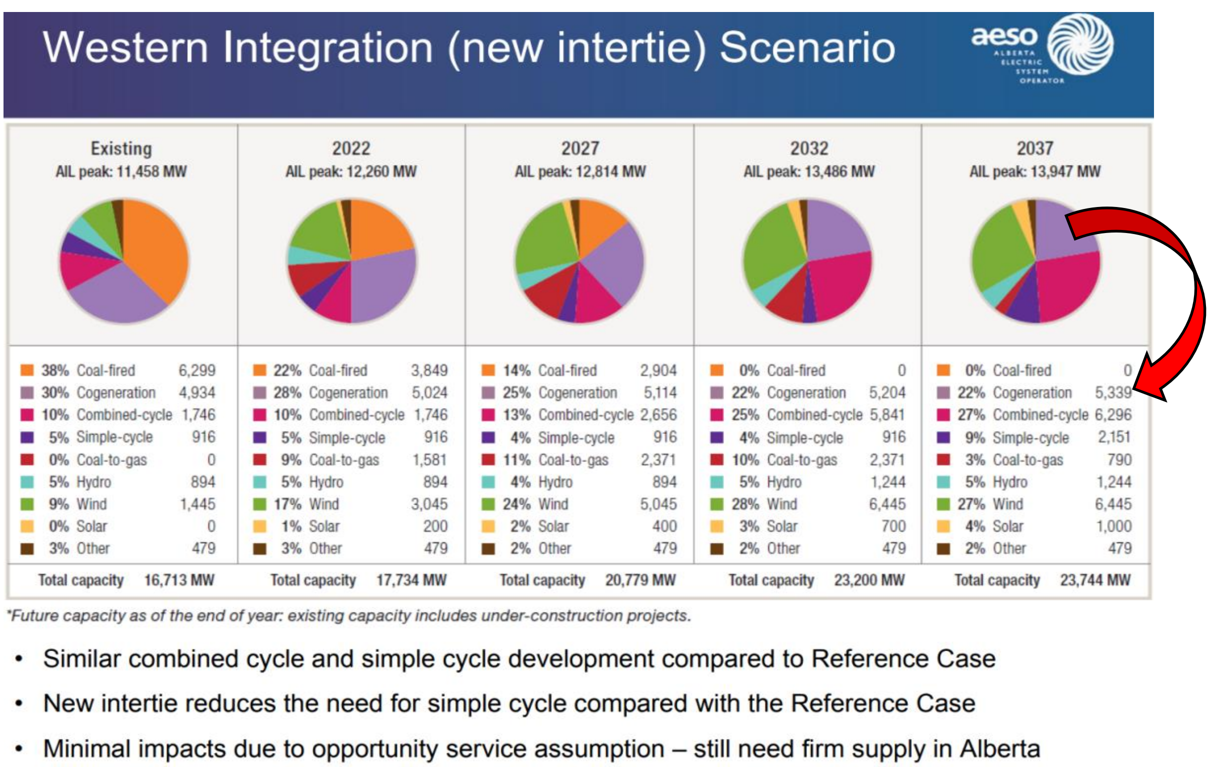


Figure 1 Wind power output in Alberta

Upgrade Gas Pipeline Infrastructure To Serve Converted Coal Power Plants

Unlike coal, an inert substance that comes from the ground and can be stored safely on the ground, natural gas requires high quality, pressurized supply pipelines, storage facilities and sources of supply. While there is no shortage of natural gas in Alberta at present, and prices are low, the infrastructure costs millions of dollars and must be designed and built with redundancy of supply lines in case any fail.



Source: aeso.ca/download/listedfiles/2017-LTO-Information-Session-FINAL.pdf

Reliance On A Mono-Fuel

Though there are different natural gas suppliers in Alberta, the near-future power grid will effectively be almost solely reliant on natural gas. Natural gas is a market commodity, subject to wild price swings. Much of the future source of *"renewable"* energy (some 22%) also relies on cogenerated power from natural gas-fired waste heat from oil sands projects. But with a cap on the oil sands, it is unclear if the same output of cogenerated power will be available. (See foregoing *"Western Integration (New Intertie) Scenario"*)

Alberta Will Move To A Capacity Market

Where once Alberta's power market relied on real time price bids, a capacity market provides a virtual income guarantee for dispatchable (on-demand) power producers like natural gas and hydro. Wind and solar are not dispatchable because they rely on Mother Nature – but when dispatched, they could bid a price of *"zero"* because they have no fuel input costs (compared to conventional power plants).

Wind And Solar Alone Cannot Power 'Households' Because Households Need Power 24/7

Wind and solar **never meet their nameplate capacity in output/generation**. To date, the Brooks Solar facility ($33 million/$15 million from taxpayers) performs at about 17% of its rated capacity over the past year; wind typically performs around 23%, but frequently at the wrong time of day (i.e. night, after peak demand). When there is no wind or no sunshine, it doesn't matter how many wind or solar farms you have, you must then rely on conventional natural gas (or coal) back-up. Alberta's hydro is very limited. New wind and solar industrial plants also require additional new transmission lines. The upgraded Information Technology (IT) to manage fluctuating renewables is said to be in the nine figures. This is all a tab of billions of dollars to citizens who keep hearing that wind is *"free"*. That is the fallacy.

> *"What makes renewables expensive is integrating these technologies into the grid. Grids can handle small amounts of renewables, but the levels proposed by governments with environmental ambitions are overwhelming. These require massive expenditures in transmission, peaking power, and possibly storage.* ***Even if wind and solar were free, the integration expenses could cost more than all other forms of generation once you pass a certain tipping point."***

It is unknown but could be assumed that the companies advocating for wind may have vested interests in mutual funds related to all aspects of the entire infrastructure upgrade. For instance, NEI Investments, a pivotal player in this transition in Alberta, states they have interests in natural gas and offsets (the carbon credits produced by wind and solar).[9] Further, wind/solar contracts are typically set for decades. The subsidies are said to be paid from the *"carbon tax"* – but that means from YOUR wallet – you, the carbon taxpayer.

---

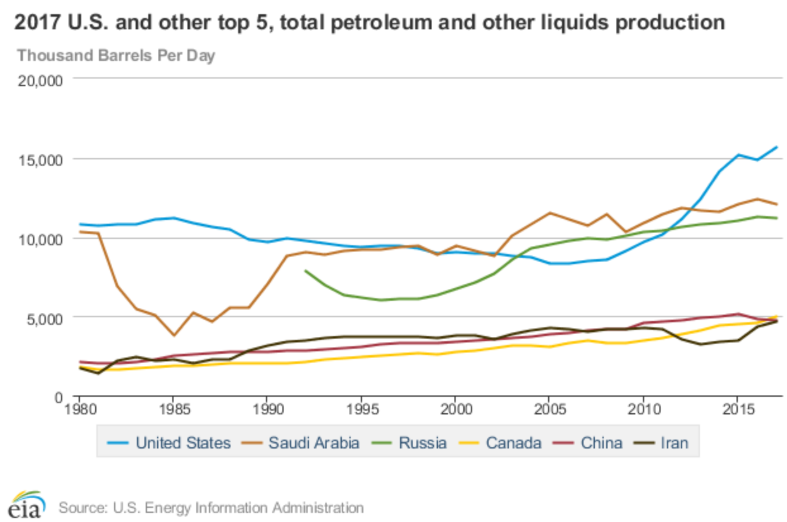
9 neiinvestments.com/documents/FlippingBooks/CSR and ESG Investing Program Report 2014/files/assets/common/downloads/CSR and ESG Investing Program Report 2014.pdf "Expanding our relationship with Bullfrog Power to include our natural gas consumption."

THE TAR SANDS CAMPAIGN

Environmental Defence has been identified as one of the *"Tar Sands Campaign"* fundees,[10 11] a foreign-billionaire funded plan to implement global cap and trade, a price on carbon, a push to put $12 trillion in vested interest renewables on the grid and the denigration/demarketing of fossil fuels.

Consequently, it is not surprising to see a misleading statement in the Environmental Defence report that Alberta never had a climate or energy efficiency program – it had an excellent one.[12] Environmental Defence also mislead with this: *"…there are still many thousands of Albertans out of work, men and women who trained for an industry that will likely no longer require their skills."*

Canada Is One Of The Top SIX Providers Of Petroleum To The World



Environmental Defence is funded in part by New Ventures, which the 2016 ClimateWorks report stated New Ventures had received $685,000 for the *"Moving Beyond Oil"* campaign. environmentaldefence.ca/about-us/our-supporters/

Clearly Environmental Defence is misleading the public. The world runs on 3 Cubic Miles of Oil (CMO) equivalent energy every year, oil makes up one of these CMOs.

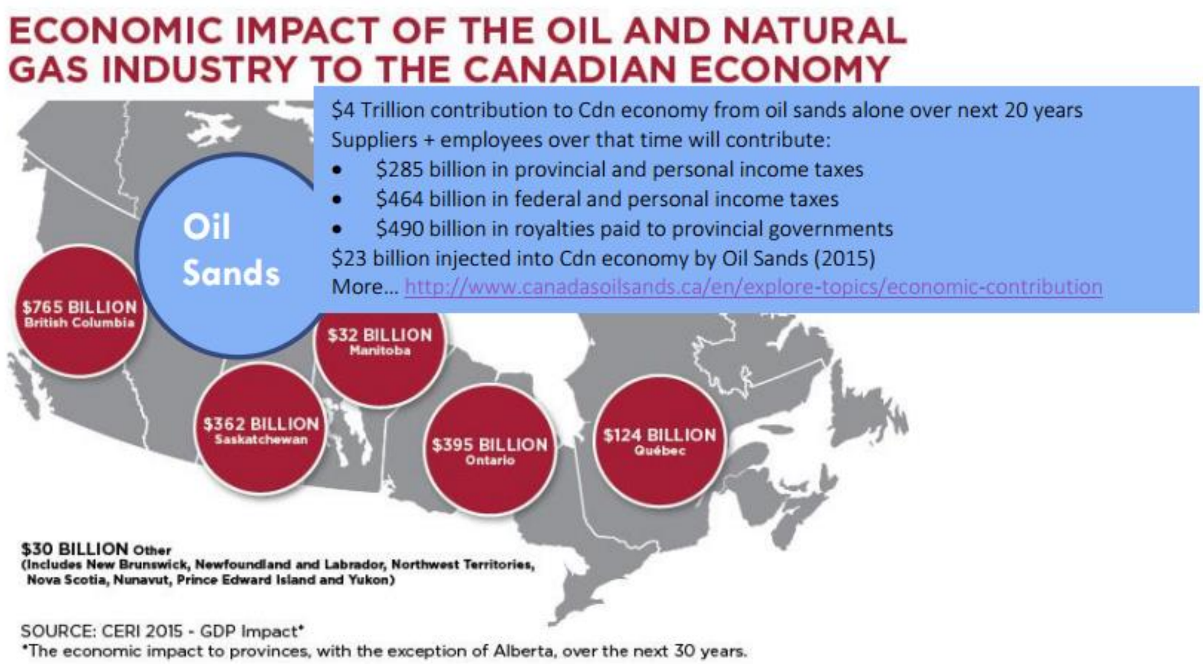
---

[10] business.financialpost.com/opinion/vivian-krause-new-u-s-funding-for-the-war-on-canadian-oil
[11] corpethics.org/the-tar-sands-campaign/
[12] blog.friendsofscience.org/2016/10/20/albertas-first-climate-leadership-plan-was-established-in-2002/

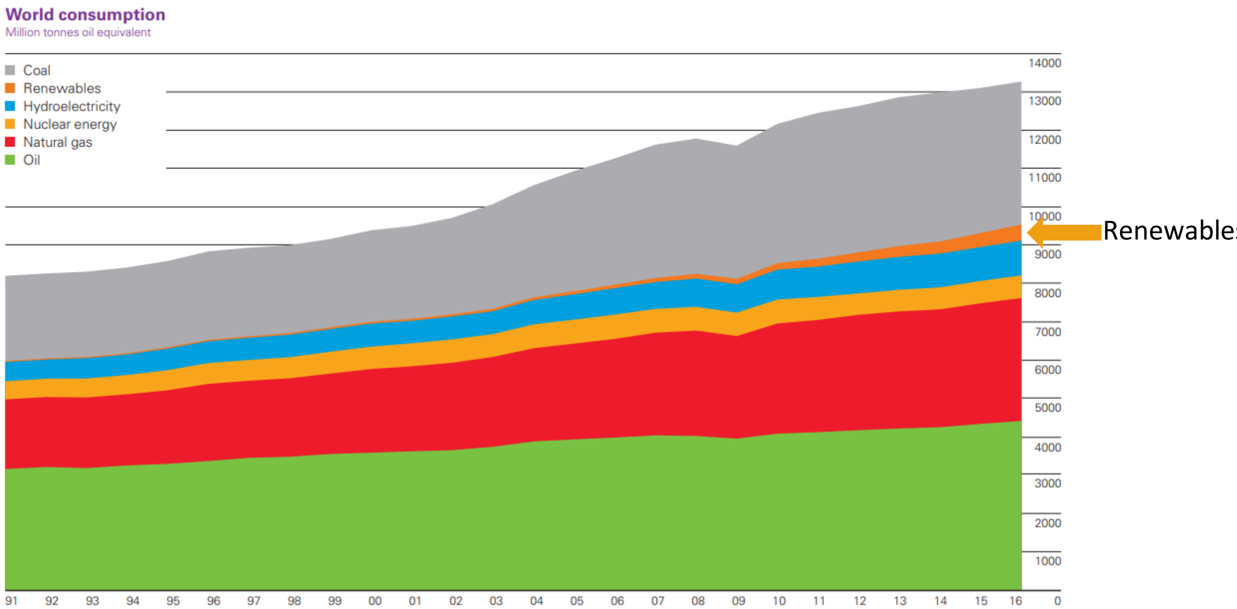
VI. THE CAMPAIGN FUNDING PRIORITIES

There are a number of NGOs involved in this campaign and funding to support their work is considered a very high priority. In Canada, Pembina Institute, Environmental Defense-Canada, ForestEthics-Canada, Ecojustice, Greenpeace-Canada, Sierra Club-Canada, Canadian Boreal Initiative, World Wildlife Fund-Canada, and Polaris Institute are all key players. In the U.S., Natural Resources Defense Council, Rainforest Action Network, ForestEthics-U.S., Ceres, Oil Change International, Earthworks/Oil and Gas Accountability Project, Boreal Songbird Initiative, Global Community Monitor, Sierra Club-U.S., and Indigenous Environmental Network are the leading national groups with a host of regional groups playing an indispensable role to block specific infra-structure projects. Several sovereign Indian Nations, both in the U.S. (e.g., The Sioux Nation) and Canada (e.g., the Mikisew Cree, Athabasca Chipewyan First Nation) will also be critical to this campaign, as they are directly impacted by proposed infrastructure or existing production operations, and in some instances are the entities with standing to pursue legal action.

Source: offsettingresistance.ca/TarSandsCoalition-StrategyPaper2008.pdf



Despite the constant messaging of environmental groups about the days of oil and gas and coal being numbered, attempts to demoralize Albertans won't succeed. After 40 years of trillions of dollars in subsidies to renewables, wind and solar barely figure on the graph of world energy consumption.



World primary energy consumption grew by 1.0% in 2016, well below the 10-year average of 1.8% and the third consecutive year at or below 1%. As was the case in 2015, growth was below average in all regions except Europe & Eurasia. All fuels except oil and nuclear power grew at below-average rates. Oil provided the largest increment to energy consumption at 77 million tonnes of oil equivalent (mtoe), followed by natural gas (57 mtoe) and renewable power (53 mtoe).

Not to mention, wind turbines and solar panels are made from vast quantities of oil, natural gas and coal, and are backed up by natural gas plants. Wind and solar are a great niche market for *"Big Oil"* – not a competitor! As energy expert Vaclav Smil writes, *"To get wind power, you need oil."*[13] Lots of it. At present, there is no equivalent replacement energy source for fossil fuels. Albertans' oil/gas/coal will be in demand for the foreseeable future. The province just needs access to world markets by way of pipelines, which groups like Environmental Defence are actively blocking.

But Environmental Defence appears to be enacting the foreign ClimateWorks plan to push a price on carbon and then global cap-and-trade and vested interest renewables. One grant from the ClimateWorks partner Oak Foundation of US$426,857 to Environmental Defence in 2010 was provided:

> *"To call for the passage of legislation mandating a reduction of tar sands emissions and introducing additional regulatory requirements for the industry. The project aims to secure agreement to implement and fund incentives for investment in renewable energies and energy efficiency. EDC seeks to ensure that Canada's cap and trade system is as strong as possible and to close off loopholes for the tar sands industry (such as intensity targets and weak compliance options). It seeks a federal permit system for tailings ponds and new incentives for renewable energies and energy efficiency from federal and state governments."* Source: FDO.

[13] spectrum.ieee.org/energy/renewables/to-get-wind-power-you-need-oil

Clearly This Is Not About The Environment. It's A Green Trade War.

Thanks to pipeline *"Blockadia"* and vast government spending during a tim e of low oil prices, the government of Alberta has had to go to the international bond market to manage its debt load in order to pay for education and health care and general revenues, according to James Redpath.

"Alberta used to be net positive…" says James Redpath, a fixed income portfolio officer. He explains why Alberta issued a first-time benchmark euro-denominated $2-2.5 billion Canadian dollar-equivalent bond issuance.[14] Redpath answers why they [Alberta] issued a bond four to five times the average deal size in Canada, and what it may mean for the overall Canadian debt market. Redpath notes that ***"Budget deficits are hard – they are like cockroaches, hard to get rid of"*** adding that the Alberta budget won't be balanced until 2023. Redpath notes that one way to raise money to retire the debt is to raise taxes. There is a lot of debt to retire.[15]

"Within their [Alberta] debt management programs, they have to borrow about 15 billion CAD per year at the moment which is a significant amount, so when they can issue in other currencies, it alleviates the pressure on the Canadian market." – James Redpath

As Robert Lyman, Ottawa energy policy consultant, former public servant and diplomat explains, the future of carbon taxes is alarming. As there is no definitive cap or objective with carbon taxes, the *"sky's the limit"* which may be why investors have fled Alberta.[16]

The few investors that have entered the market are those rent-seekers interested in the tax-subsidized green crony capitalist opportunities that meet the objectives of the larger ClimateWorks Foundation campaign, the umbrella organization of the Tar Sands Campaign.[17]

It is not clear to what extent entering the foreign bond markets in euros might further obligate Alberta and Albertans to abide by the unilateral French 2°C climate risk law regarding foreign investments, Article 173-VI.[18]

---

[14] mawer.com/the-art-of-boring/podcast/supersize-me-province-of-alberta-goes-large-and-issues-first-time-benchmark-euro-denominated-bond-james-redpath-ep05/
[15] alberta.ca/assets/documents/investor-relations-alberta-term-debt-outstanding.pdf
[16] blog.friendsofscience.org/2018/09/29/the-alarming-scope-of-future-of-carbon-taxes-in-canada/
[17] ClimateWorks Foundation - WikiLeaks
wikileaks.org/podesta-emails/fileid/57594/16165
Nisbet onlinelibrary.wiley.com/doi/full/10.1002/wcc.524
[18] frenchsif.org/isr-esg/wp-content/uploads/Understanding_article173-French_SIF_Handbook.pdf

UNDUE INFLUENCE

"As a holder of Province of Alberta bonds, and an investor in Alberta energy companies, in June 2015 we wrote to the new Premier of Alberta to indicate our support for the province's plans to update its climate policy. We highlighted the importance of a credible and broad-based price on carbon, the role that Boreal conservation should play in climate strategy, and the opportunity to incent innovation in low carbon technologies."[19]

- NEI Investments

Albertans did not vote for a carbon tax, nor did they vote for NEI Investments. It appears that external parties have foisted the carbon tax upon Albertans. Environmental Defence does not mention the undue influence of foreign funding or Canadian corporate/government buy-in, thanks to activist investor NEI Investments pushing the vision of the Ecofiscal Commission. Both NEI and Environmental Defence are part of the Clean Economy Alliance.[20]

Albertans strongly protested the implementation of a carbon tax. However, it appears that the *"ethical"* investors at NEI Investments had other plans for Alberta, though it is not clear what legal authority a bond holder has to direct government policy in a democracy. Ironically, NEI is based in the credit union system of Canada,[21] which historically was known for its commitment to building, not destroying communities.

"Every credit union is owned by its members – the people who bank with them – and the Board of Directors consists of ***democratically elected*** *members from their local community."*[22]

Alberta Wide Rally Nov. 5, 2016 – 9,000 people protested across Alberta in 13 communities-McDougall Center Calgary

---

[19] neiinvestments.com/documents/FocusList/Focus List 2015 July Update EN.pdf

[20] cleaneconomyalliance.ca/members-list/

[21] neiinvestments.com/documents/FlippingBooks/CSR and ESG Investing Program Report 2014/files/assets/common /downloads/CSR and ESG Investing Program Report 2014.pdf NEI Investments (NEI) is owned 50% by Desjardins Group and 50% by the Provincial Credit Union Centrals

[22] ccua.com/

ENGOS AND INVESTORS DIRECTING PUBLIC OPINION

> *"We met with Rogers in June 2015 to follow-up on our climate change dialogue. In light of the upcoming Paris Climate Conference and negotiations on global climate policy,* ***we encouraged Rogers to take a leadership position by expressing public support for climate policy and carbon pricing in Canada****. We highlighted several initiatives, including* ***the work of the Ecofiscal Commission and CDP's Road to Paris commitments,*** *and the company indicated it would consider such opportunities. We discussed the progress industry and provincial governments are making on advancing climate policy."*[23]

– NEI Investments [bold emphasis added]

NEI Investments has also *"engaged"* with the major banks of Canada.

In 2014, an organization called the UNPRI established the *"Montreal Pledge."*[24] UN Principles for Responsible Investment (UNPRI) is a climate-obsessed, transnational, unelected, unaccountable body of institutional investors. It is voluntary to join, but once in, signatories must *"comply or explain."* Founders of the UNPRI include Al Gore's Generation Investment Management and many major pension funds like the Canada Pension Plan. The Montreal Pledge encouraged UNPRI signatories, like NEI Investments, to become activist investors. NEI Investments was noted as one of the 22 most active institutional investors in the UNPRI 2016 Annual Report.

One must question the propriety of a major financial player in virtually dictating public policy – a bond holder leaning on the elected government of Alberta, to bend to its climate and low-carbon ideology – and directing public opinion – an investor leaning on a major media corporation like Rogers to comply and advocate for climate change and carbon price ideology in its communications.

This *"conversation"* is detached from changing climate science findings and detached from due diligence on the effectiveness of *"low-carbon"* energy. Dissenting views are blocked in the media.

On September 1, 2015, the law firm Koskie Minsky issued: *"Climate Change and the Fiduciary Duties of Pension Fund Trustees"* claiming that *"climate change denial is not an option"*[25] and that pension fund trustees can/must do *"anything"* to protect beneficiaries. This report was funded from a research fund of West Coast Environmental Law, an organization that is funded by several of the 120 signatories to the NEI letter to Premier Notley of Sept. 8, 2015.

> *"In June 2015 we also organized a webinar to inform investors about the work of the Ecofiscal Commission, a group of Canadian economists with support from across the political spectrum that explores fiscal policies with ecological benefits, and which recently released a report supporting*

---

[23] neiinvestments.com/documents/FocusList/Focus List 2015 July Update EN.pdf

[24] sdg.iisd.org/news/pri-major-institutional-investors-to-disclose-carbon-footprint/

[25] share.ca/documents/educational_resources/2015/Fiduciary_duty_and_climate_change.pdf

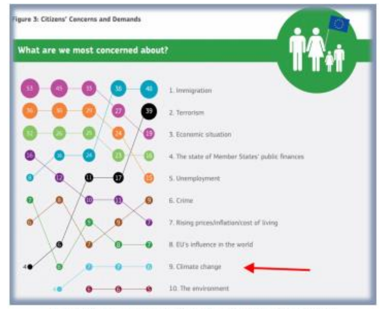
carbon pricing in Canada. The webinar was intended to increase awareness and support for the work of the commission and highlight the importance of carbon pricing for long-term investors.[26]

- NEI Investments

The Ecofiscal Commission of Canada released a report advocating for carbon price and claimed that a recent ABACUS Data survey showed that climate change was a priority for Canadians.

The evidence does not support either the claim that carbon pricing was of value to Canadians or that climate change was a priority for Canadians.

Even though the ABACUS poll[27] was a *"push-poll"* (designed to get a pro-climate answer), climate change is last on the list of Canadian priorities, as it is for Europeans.



Recent European Union survey shows that climate change and the environment are low priorities.

Just as we dispute the claims of Environmental Defence, we dispute those of Ecofiscal and NEI. See Friends of Science report *"Let Them Eat Carbon"*[28] rebutting Ecofiscal's claims.

Video: youtu.be/xBYbtQRzV2k

COUNTERFACTUAL CLAIMS

It is disturbing that the foreign-funded Environmental Defence *"charity"* claims in their report that: *"There is no evidence the carbon levy has a negative impact on Alberta's economy."*

- A loss of investment - lower oil and gas extraction investment which fell 6.7% to $22.5B billion, while manufacturing declined 30.7% to $1.5B from 2016 to 2017.
- Loss of reputation as a stable investment market, operating with integrity and clear legislation.
- Billions wasted on coal phase-out and investor compensation.
- Loss of 7,000 coal jobs – destruction of 30 communities.
- Billions wasted to prop up Balancing Pool over PPA/change of law.
- Billions to pay the balance on the cap on retail power prices.
- $2.5 billion debt exposure on international bond markets for general operations, health care and education; within the debt management program, having to borrow about 15 billion CAD per year.

26 neiinvestments.com/documents/FocusList/Focus List 2015 July Update EN.pdf
27 blog.friendsofscience.org/2018/04/11/the-abacus-data-ecofiscal-push-poll-a-critique-of-methodology/
28 blog.friendsofscience.org/wp-content/uploads/2018/04/Let-Them-Eat-Carbon-FINAL-R-1-April-18-2018.pdf

The United States, our largest trading partner, has no carbon tax and milder weather. Canadian provincial and federal fuel taxes already reach a $170/t carbon tax equivalent. Alberta is not a competitive market; the Alberta advantage is no more.

"Social license" of the carbon tax and climate plan did not permit any pipeline construction – leaving over a hundred thousand skilled oil sands/oil patch workers in limbo – most of them jobless or underemployed. Hundreds of people ended their lives in despair.

Provincial acquiescence to the presumed *"climate change"* validity of a carbon tax to reduce emissions – despite there being no scientific or economic evidence to support this claim.

Alberta's Proposed Carbon Tax: A Burden with No Benefit

The Economic Impact of Climate Change in Canada and the World

The Panel forecast that the proposed measures will cause emissions in 2030 to be 50 Mt of CO2 equivalent less than the status quo case. The plan would reduce the CO2 concentration in the atmosphere by 0.026 parts per million. Using the TCR of 0.85 °C as given in Table 1, the **global temperature reduction would be 0.00007 °C by 2030**, which is insignificant and undetectable.

It is equally disturbing that a major market player like NEI Investments is promoting Ecofiscal Commissions' perspective on carbon pricing, and thus affecting Alberta public policy, when NEI claims it *"highlights the importance of carbon pricing for long-term investors*." Clearly traditional investors have fled Alberta, leaving rent-seekers behind to further drain the public's wallets with subsidies for wind, solar, biofuels and other *"eco"* projects, all drawn from the carbon tax pool which comes directly from the wallets of Albertans – for **no benefit to Albertans, the environment or the climate – only to the rent-seeking green crony capitalists and their proxy environmental groups**.

Research in Norway concluded that carbon pricing has virtually no impact on reduction of emissions (which is the conventional rationale sold to the public.)[29]

> *"While the partial effect from lower energy intensity and energy mix changes was a reduction in CO_2 emissions of 14 percent,* ***the carbon taxes contributed to only 2 percent reduction."***
>
> *"In the wake of the Brundtland commission (United Nations, 1987), Norway has been one of the most devoted advocates for more ambitious climate policies. Carbon taxes were implemented in 1991 and received broad attention in the policy debate. The highest carbon tax rate was US$51 per tonne CO_2 in 1999, and the average tax was US$21 per tonne CO_2. This is among the highest carbon taxes in the world, and average tax is three to four times higher than the most common estimates for the quota price in the Kyoto Protocol. Our study shows that* ***despite politically ambitious carbon taxes, this policy measure has had only a modest influence on GHG emissions****."*

Canada is 31 times the size of Norway with a much more extreme climate and limited sea freight/port access. Carbon taxes will be extremely detrimental to Canada. Read our report: friendsofscience.org/assets/documents/AB_Climate_Plan_Economic_Impact_Gregory_Tech.pdf

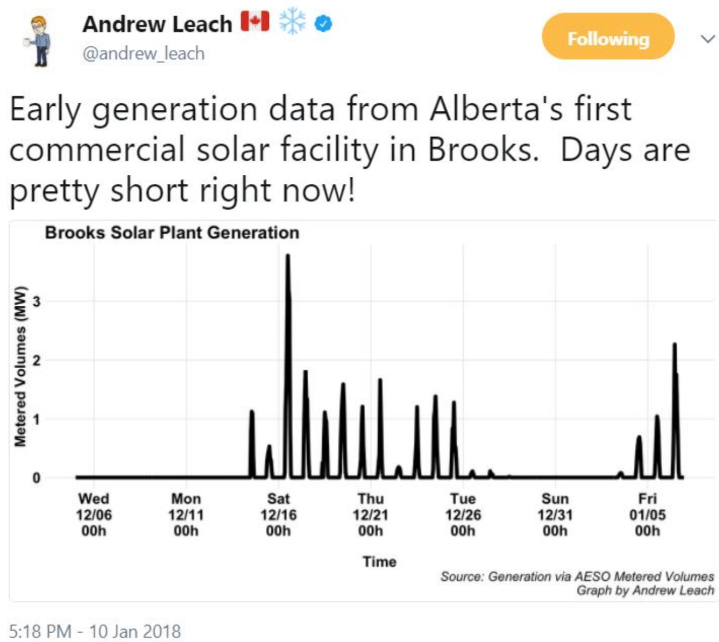
---

[29] Greenhouse gas emissions in Norway: do carbon taxes work? doi.org/10.1016/S0301-4215(03)00151-4

BROOKS SOLAR

Environmental Defence celebrates the Brooks Solar Farm as a renewables victory. This 15 MW utility scale solar farm, like much of Alberta, spends the winter months shrouded in snow – thus explaining the nominal output in the graph when it went online.

This graph shows that the solar farm generated ~3.7 MW at peak, of a possible 15 MW.



Sarcastic comment and image from Facebook

When shrouded in snow, there is still some generation, but not anywhere near full capacity.

The Brooks Solar Plant had a 17% output in 2018. The plant cost $33 million.

Despite Alberta being quite sunny, we are too far north. Any place north of about 35N Latitude that employs solar means it is an *"energy sink"* (due to a net loss of energy).

As energy critic Euan Mearns says of similar UK locations: *"The main reason for deploying solar PV in Europe is to lower CO_2 emissions. The European Commission and most European governments have been living in cloud cuckoo land allowing CO_2 intensive industries to move to China, lowering emissions in Europe while raising emissions in China and making believe that importing steel from China somehow is emissions free."*

Do solar panels cut carbon dioxide emissions? Not by much as they must be backed up by a natural gas plant 24/7. What do you do when it's night, or a cloudy day? Environmentalist Robert Kennedy tells it like it is:[30]

> *For all of these big utility scale power plants, whether it's wind or solar, everybody is looking at gas as the supplementary fuel. The plants that we're building, the wind plants and the solar plants are gas plants.*

So a relationship with Offsetters, Bullfrog Power and natural gas would be a nice fit [31] for influential investors. Unfortunately, Alberta taxpayers will be paying the premiums for a less effective, costlier grid.

This story explains how solar panels on the prairies don't cut it.

blog.friendsofscience.org/2018/05/13/solar-panels-on-the-prairies-hope-and-disappointment/

This video demonstrates the problem of wind and solar in winter in Alberta: youtu.be/1oi5n1DKpC0

---

[30] atomicinsights.com/robert-f-kennedy-jr-tells-the-colorado-oil-and-gas-association-that-wind-and-solar-plants-are-gas-plants/

[31] neiinvestments.com/documents/FlippingBooks/CSR and ESG Investing Program Report 2014/files/assets/common/downloads/CSR and ESG Investing Program Report 2014.pdf

CO_2 IS NOT A CONTROL KNOB TO CONTROL CLIMATE

> *"To magnify the leverage of their political lobbying, Enron also worked the environmental groups. Between 1994 and 1996, the Enron Foundation donated $1-million to the Nature Conservancy and its Climate Change Project, a leading force for global warming reform, while Lay and other individuals associated with Enron donated $1.5-million to environmental groups seeking international controls on carbon dioxide."*[32]

In the late 1950's, the world was concerned about global cooling.[33] Temperatures had dropped from the 1940's (despite a rise in carbon dioxide – the greenhouse gas theory was not prevalent at the time).

In the late 1960's and early 1970's, scientists and society better understood the causes of smog and serious efforts were implemented to reduce noxious pollutants and improve air quality in the developed world. Canada was particularly successful in these efforts.[34]

However, few geoscientists (earth scientists) agreed with the carbon dioxide/GHG theory of Anthropogenic Global Warming – which is the underlying rationale for limiting human industrial emissions through a carbon tax.

To earth scientists who study the 4.5 billion years of earth's history that is *"written in the rocks,"* a span of just 20 years of correlation between the rise in carbon dioxide concentration and a rise in temperature is not enough to declare human causation for the nominal warming.

Indeed, by the late 1990's, temperatures began to flatline, despite a large increase in carbon dioxide concentration. By 2002, scientists convened to discuss other ways in which humans were affecting regional climates – such as land use (agriculture/urban construction), vegetation/deforestation, Urban Heat Island (heat is retained in urban areas which in turn skews surface temperature monitoring stations artificially with high temperature readings).[35] In 2005, another large group of scientists met to discuss why the *"radiative forcing"* (GHG theory) of human caused-climate change was failing as a metric.[36]

---

[32] ep.probeinternational.org/2009/05/30/enrons-other-secret/
[33] harpers.org/archive/1958/09/the-coming-ice-age/
[34] blog.friendsofscience.org/2018/10/06/prime-minister-trudeau-is-wrong-on-polluting-for-free-heres-why/
[35] springer.com/us/book/9783642623738
[36] nap.edu/catalog/11175/radiative-forcing-of-climate-change-expanding-the-concept-and-addressing

In 2013, the Intergovernmental Panel on Climate Change (IPCC) issued its Fifth Assessment Report (AR5) stating that there had been no statistically significant warming for the 15 years prior to publication (2012), which was before the Kyoto Accord had been ratified. No climate simulation (model) had predicted this *"hiatus."*

Dr. Judith Curry testified to the US Senate[37] that the IPCC AR5 report weakened the case for human-caused global warming and that carbon dioxide is not a control knob that can fine tune climate. She was not the only scientist to make such a statement. Many hundreds of peer-reviewed papers have followed showing that there is negligible or no effect of increasing carbon dioxide on warming; many hundreds of other papers illustrate the role of the sun and other external forces (i.e. planetary orbital conjunctions, etc.) in driving climate change. Other papers studying geothermal activity and internal variables on earth show that ocean heating and Arctic sea ice variability are affected by geothermal activity.[38]

However, in the interim, the institutional investment community has continued to push carbon pricing as a *"solution"* without reporting this material change, which is a violation of securities law in most countries. This on-going obsession has largely been driven by the Iron Triangle.[39]

The "science is not settled" and there is no scientific or economic reason for a carbon tax.

As noted by Matthew Nisbet's research, the ClimateWorks Foundation (which is funding groups like Environmental Defence though direct or indirect channels), was told in 2005 that we have the technology to phase out fossil fuels – **but that is patently untrue!** They also hoped by instituting a global cap and trade system, they would *"prompt a sea change in the global economy."*

These foundations proceeded on these unfounded assumptions, incorporating large pension fund investors into their wider circle of support for the *"climate crisis"* – and many of these pension funds have large unfunded liabilities.[40] Some of these stem back to the dot.com and sub-prime mortgage collapse; others are due to losses by investments in *"clean-tech"* – *"A noble way to lose money"* as Joseph Dear, past CIO of CalPERS called it.[41]

---

37 curryja.files.wordpress.com/2014/01/curry-senatetestimony-2014-final.pdf

38 blog.friendsofscience.org/2018/12/31/geothermal-heat-effects-on-oceans-and-arctic-sea-ice-variability/

39 jpands.org/vol18no3/lindzen.pdf

40 sacbee.com/news/politics-government/politics-columns-blogs/dan-walters/article90368532.html *"With the fund stuck at around $300 billion for two years, it's about $100 billion short of fully funding its pension obligations, and falling shorter each day. And that shortfall is based on its 7.5 percent discount rate, even though the average return has been under that mark for decades."*

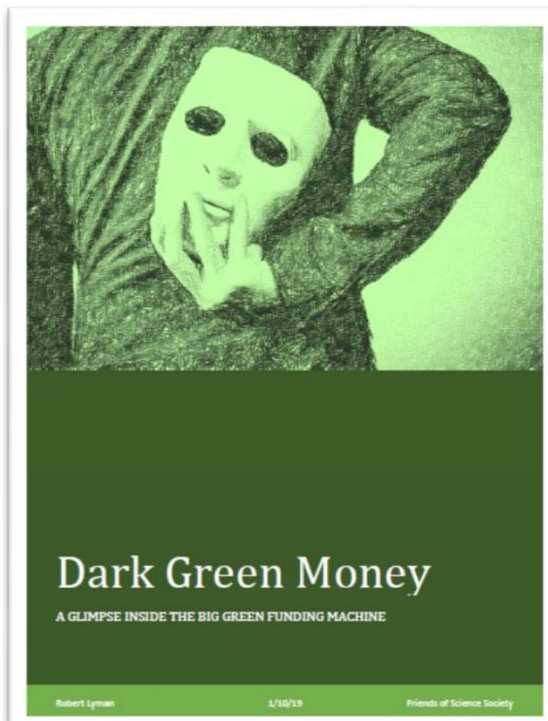
41 wsj.com/articles/SB10001424127887324557804578374980641257340

One method they have found to prop up investment is the stable, decades-long subsidy stream from wind and solar locked-in contracts. This is money from taxpayers, either via rate hikes in energy or carbon taxes.

Now with unelected, unaccountable, transnational groups like the UNPRI, whose members hold $100 trillion in assets under management, it is relatively easy to influence governments outside the democratic, electoral or traditionally transparent lobbying process because these institutional investors typically also hold the pension funds of government employees, most of which are unionized and driving government decision-making.

Consequently, we understand that the *"sustainability"* that is talked about is related to sustaining the pension plan funding – not sustaining the environment of the earth. The *"climate crisis"* that people like Bank of England Governor Mark Carney forecast is unrelated to the facts of climate science.[42] It appears it is instead related to propping up these markets in vested interest renewables – which are collapsing under the burden of subsidies drawn from taxpayers and the lack of performance of renewables.[43]

It appears that the way in which these financial entities, including the recent list of award-winning economists,[44] plan to create a *"sustainable"* system, is through a global carbon tax, claiming that this will save the planet, when it really will simply stave off the collapse of the system of pensions and banking – many of which are committed to green bonds or other artificial financial instruments that rely on *"carbon"* as a *"thing."* Thus the push for a *"price on carbon"* …with no ceiling and no tangible objective.



As is evident from our recent report *"Dark Green Money"*[45] – it is **government** that is the biggest funder of the gravy train for green crony capitalists and the ENGOs are the activist mouthpiece, skewing public policy, scaring and convincing the public of an alleged *"climate risk"* from carbon dioxide where there is none.

Alberta taxpayers are now entrenched in decades of fees and subsidies for unreliable, low-performance, low-energy density wind and solar, and carbon taxes all based on faulty scientific premises and market manipulation by the emissaries of the UNPRI.

---

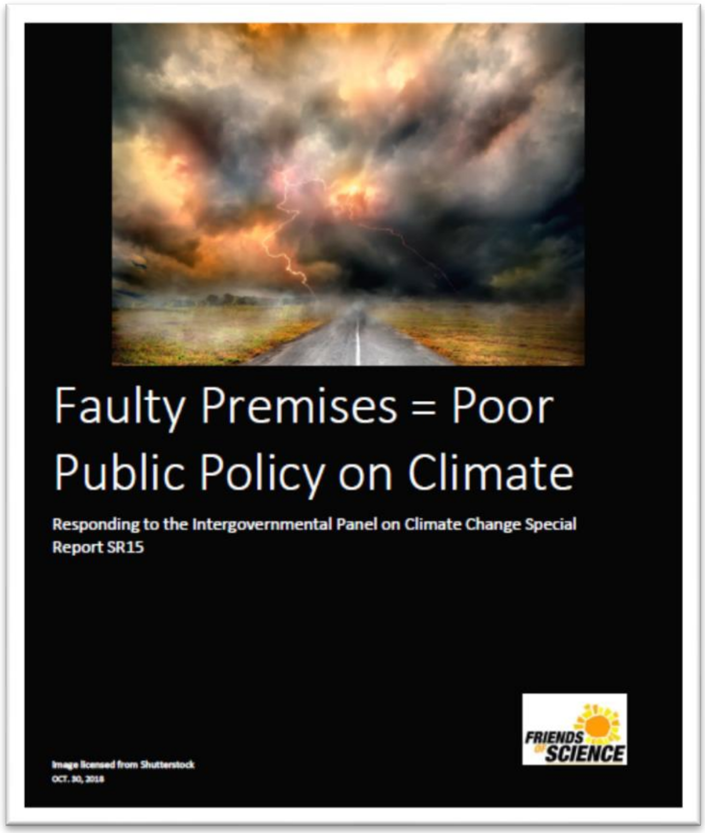
42 prienga.com/blog/2015/10/9/fact-checking-mark-carneys-climate-claims

43 powerengineeringint.com/articles/2018/02/iberdrola-chief-says-global-renewable-sector-facing-enron-style-endgame.html

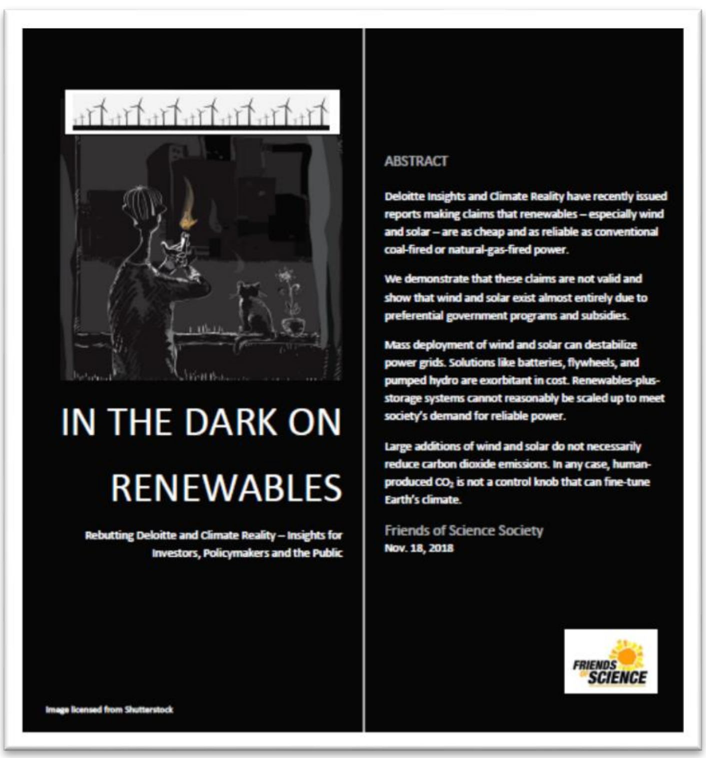
44 wsj.com/articles/economists-statement-on-carbon-dividends-11547682910

45 friendsofscience.org/assets/documents/Dark-Green-Money-Foundation-Funding-Jan-11-2019.pdf

Fundamental principles of democratic government have been overridden in the implementation of the Alberta Climate Plan and carbon tax.



blog.friendsofscience.org/wp-content/uploads/2018/10/Faulty-Premises-Poor-Public-Policy-on-Climate-Oct-30-2018-FINAL.pdf



blog.friendsofscience.org/wp-content/uploads/2018/11/In-the-Dark-on-Renewables-FINAL-Nov-18-2018.pdf

Fundamental science and performance parameters for renewables have been ignored or dismissed.

ALBERTA – LAND OF NATURAL RICHES-SHUNNED

MUSINGS FROM THE OIL PATCH

PAGE 27

For an industry that operates with decades-long planning and development timetables, this hostile attitude could cause long-term damage for Canada's economy

For the federal government, its support of certain energy projects, while fighting others, has allowed itself to be positioned as both pro-energy and anti-energy. This split political personality is seen by the global energy industry as a sign Canada has evolved into a hostile location to do business. For an industry that operates with decades-long planning and development timetables, this hostile attitude could cause long-term damage for Canada's economy, and especially its western provinces where the energy industry is centered. Energy hostility will also put the mining, timber and other extractive industries on notice that their growth may soon become challenged.

The view of Houston based PPHB Energy Investment bank is that Canada has become a territory hostile to investment.[46] The carbon tax is just part of that *"hostility"* as the US has zero carbon tax, while Canada's federal and provincial fuel taxes alone add up to a $170/tonne equivalent carbon tax – with an ever-increasing goal. In a country of vast distances, extreme cold and long, dark winters, a carbon tax makes for a huge competitive disadvantage.

Robert Lyman reports that according to Bloomberg as quoted in the Financial Post, the total stock of accumulated foreign investment in Canada at the end of 2017, including debt, was $704 billion. However, the total stock in the oil and gas industry was $120 billion, having fallen by $16.6 billion, or 12.2 %, in 2017, the largest decrease in 17 years.

The National Energy Board publishes annual data on total investment (i.e. domestic and foreign) in the upstream oil industry. Annual investment in 2017 was $40.9 billion, up from $34.9 billion in 2016. **Investment in oil sands was $13.6 billion, down 60% from the peak level of annual investment of $33.4 billion in 2014.**

[46] pphb.com/pdfs/musings/Musings041718.pdf

CAN CANADA SURVIVE CLIMATE CHANGE POLICY?

Robert Lyman

"Returning the Canadian economy to one in which people are left using horses and bicycles for transportation, wood for heating and whale oil or candles for lighting might have some romantic appeal for some, but it surely cannot be the future vision of those advocating stringent targets, one would think."

-Robert Lyman,
Climate Change Targets for Canada:
Examining the Implications June 2015[47]

At Friends of Science Society's 15th Annual Event, Robert Lyman asked whether Canada could survive climate change policy.[48] He discussed climate change policy as a threat to Canada.[49]

Alberta was the driver of about a third of the Canadian economy. Carbon pricing is just one of many climate policies introduced that have cost Alberta a fortune, for little benefit to citizens.

As we have shown here, in our opinion, Environmental Defence and colleagues in the Tar Sands Campaign have helped turn Alberta into a *"hostile"* investment territory and the economic damages are significant, contrary to their report *"Carbon Pricing in Alberta – A Review of its Successes and Impacts."*

Carbon dioxide is not a control knob that can fine tune climate. The sun and natural factors drive climate change. Albertans' lives are being ruined by foreign-funded climate activists and faulty scientific premises. This must stop.

"No nation has ever taxed itself into prosperity…we are rocketing toward the abyss, I feel…"

youtu.be/VtgL_IprJJE

[47] friendsofscience.org/assets/documents/climate_change_implications_Lyman.pdf
[48] blog.friendsofscience.org/2017/05/10/can-canada-survive-climate-change-policy/
[49] youtu.be/ByARMnv59pQ

About:

Friends of Science Society is an independent group of earth, atmospheric and solar scientists, engineers, and citizens who are celebrating its 16th year of offering climate science insights. After a thorough review of a broad spectrum of literature on climate change, Friends of Science Society has concluded that the sun is the main driver of climate change, not CO_2 (carbon dioxide).

Friends of Science Society
P.O. Box 23167, Mission P.O.
Calgary, Alberta
Canada T2S 3B1
Toll-free Telephone: 1-888-789-9597
E-mail: contact(at)friendsofscience.org
Web: friendsofscience.org
Web: climatechange101.ca