The Future of Oil? NL's Offshore Oil and Climate Change

Harris Centre, Memorial University
October 5, 2021

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The University of Waterloo is on lands that are deeply connected to Indigenous Peoples who have historically lived and who currently live in this territory. These groups include the Neutral, Anishinaabeg, and Haudenosaunee peoples. The university is situated on the Haldimand Tract, the land promised to the Six Nations, also known as the Haudensaunee people. This land includes six miles on each side of the Grand River.

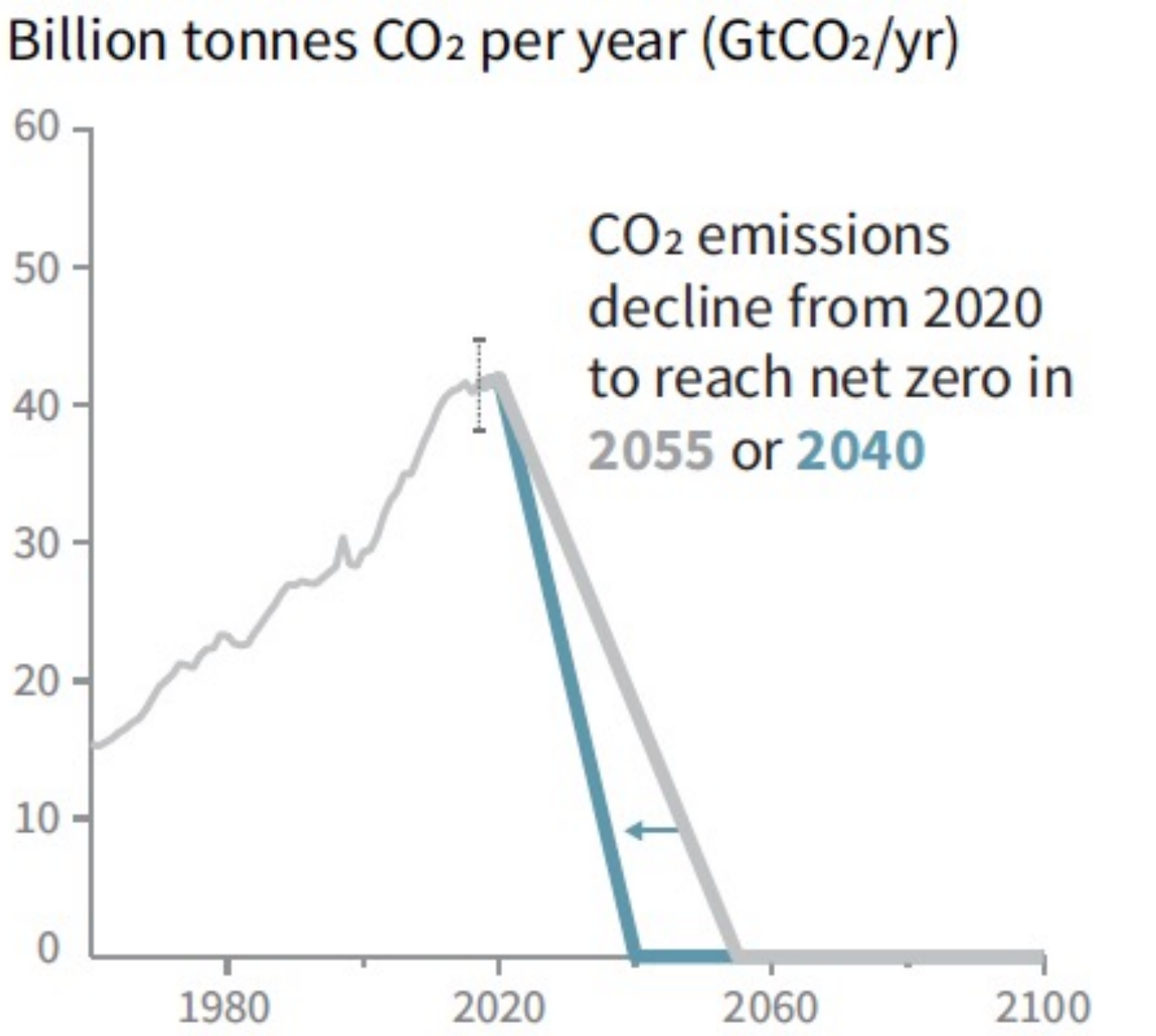
UNIVERSITY OF WATERLOO | FACULTY OF ARTS

Point 1.
Oil = Climate Crisis


Climate crisis. Code red for humanity.
EPA

Our astounding challenge:

reducing emissions to stay within 1.5°C of global warming



IPCC 2018 “Global Warming of 1.5°C”

Climate *health* crisis

Globally

- 5,083,173 deaths/year due to extreme heat and cold (The Lancet)
- Climate change = mass illness and death (World Health Organization)
  - Extreme heat and cold
  - Increased disease transmission, ie. water-related diseases and vector-borne infections like malaria
  - Impacts on food production (malnutrition)

In Canada

- 570 heat-related deaths in BC during June heat dome week, triple the average weekly number of deaths
- Northwest Ontario: hit hard by wildfires; at least 6 First Nations evacuated
- 58% increase in avg annual heat-related mortality for those 65+ between 2014-2018 compared to 2000-04

Paramedics and firefighters place a man in an ambulance after responding to an SRO in the Downtown Eastside during a heat wave in Vancouver on June 29, 2021.

DARRYL DYCK/THE GLOBE AND MAIL

Medical Journals Call Climate Change the 'Greatest Threat to Global Public Health'

The New York Times

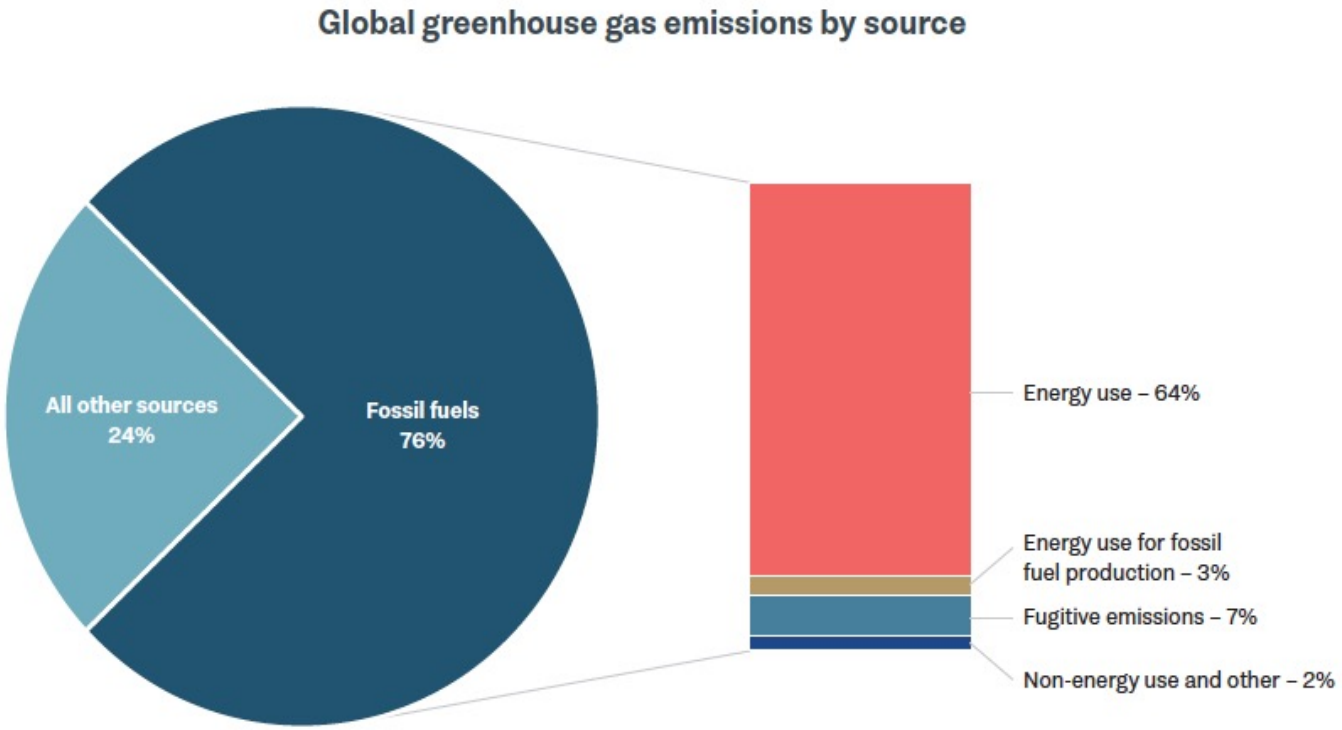
Climate crisis here at home

- Heavy rain and snow falls, flooding, extreme storms, coastal erosion, risk to fisheries (due to acidification, deoxygenation), rising food costs….
- Labrador is most exposed

  Example:
  - Worst sea ice in 50 years this year
  - Loss of ice = loss of transportation routes, access to hunting and fishing, more dangerous conditions
  - Threatening the lives and the cultures of Indigenous communities
  - Worse to come: by 2050, average winter temperatures in northern Labrador communities expected to rise to 7.4°C

"Why Lost Ice Means Lost Hope for an Inuit Village" [Rigolet] 2017 *The New York Times*

Primary Driver of Climate Change: Fossils Fuels



SEI, IISD, ODI, Climate Analytics, CICERO, and UNEP. (2019). The Production Gap

Intergovernmental Panel on Climate Change

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change.

SIXTH ASSESSMENT REPORT

WORKING GROUP I (LATEST REPORT)

WMO UNEP

Nobel
2007 PEACE PRIZE
© THE NOBEL FOUNDATION

The burning of fossil fuels—oil, gas, and coal—has been responsible for about **86% of global emissions** over the last decade.

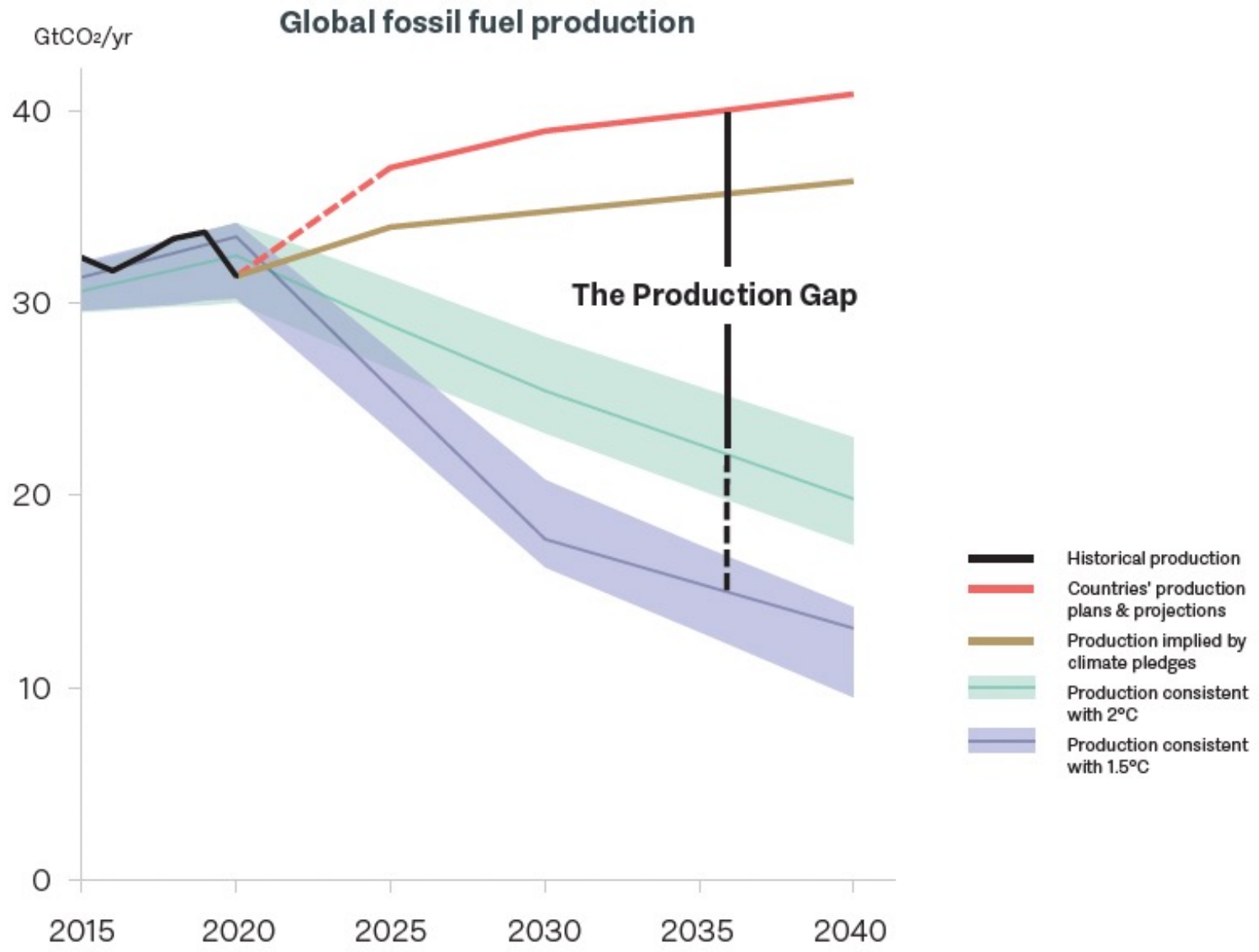
United Nations | Secretary-General

New York

09 August 2021

Secretary-General's statement on the IPCC Working Group 1 Report on the Physical Science Basis of the Sixth Assessment

We need immediate action on energy. Without deep carbon pollution cuts now, the 1.5-degree goal will fall quickly out of reach. This report must sound a death knell for coal and fossil fuels, before they destroy our planet. There must be no new coal plants built after 2021. OECD countries must phase out



SEI, IISD, ODI, E3G, and UNEP (2020)
The Production Gap Report

The future of oil, *aligned with climate science*

A 1.5°C-consistent pathway implies that coal production would decrease annually by 11% between 2020 and 2030, while oil and gas production would decrease by 4% and 3%, respectively.

SEI, IISD, ODI, E3G, and UNEP. (2020). Production Gap Report

Article

Unextractable fossil fuels in a 1.5 °C world

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Check for updates

Dan Welsby[1]✉, James Price[2], Steve Pye[2] & Paul Ekins[1]

Parties to the 2015 Paris Agreement pledged to limit global warming to well below 2 °C and to pursue efforts to limit the temperature increase to 1.5 °C relative to pre-industrial times[1]. However, fossil fuels continue to dominate the global energy system and a sharp decline in their use must be realized to keep the temperature increase below 1.5 °C (refs. [2–7]). Here we use a global energy systems model[8] to assess the amount of fossil fuels that would need to be left in the ground, regionally and globally, to allow for a 50 per cent probability of limiting warming to 1.5 °C. By 2050, we find that nearly 60 per cent of oil and fossil methane gas, and 90 per cent of coal must remain unextracted to keep within a 1.5 °C carbon budget. This is a

Furthermore, we estimate that oil and gas production must decline globally by 3 per cent each year until 2050. This implies that most regions must reach peak production now or during the next decade, rendering many operational and planned fossil fuel projects unviable. We probably present an underestimate of the production changes required, because a greater than 50 per cent probability of limiting warming to 1.5 °C requires more carbon to stay in the ground and because of uncertainties around the timely deployment of negative emission technologies at scale.

NL's emissions

"Every tonne of CO_2 emissions adds to global warming" (IPCC 2021).

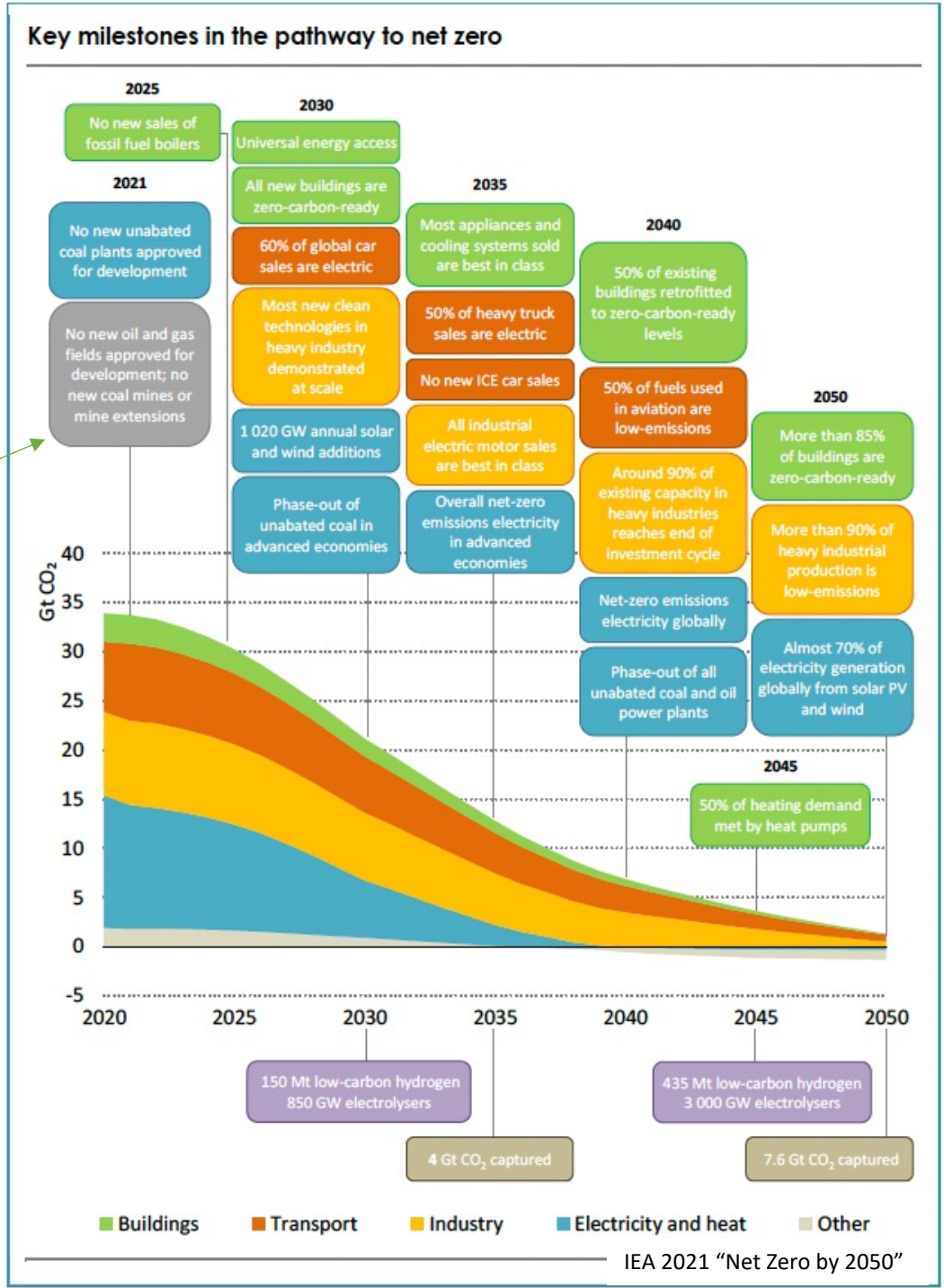
- Canada committed to **reducing emissions by 40-45%** below 2005 by 2030
- **NL's emissions <u>are up</u> 6%** over 2005 levels. *Moving in the wrong direction.*
- Largest sources: 90% from "energy" (42% from transportation; 25% from oil and gas extraction, refining, fugitive emissions)
- Offshore oil projects among largest emitters in Canada. Of the 1697 largest:
  - Hebron: #95
  - Terra Nova: #110
  - Hibernia: #144
  - Sea Rose: #176
- *Upstream* oil and gas emissions (just emissions from extraction):
  - 1.6 Mt (million tonnes) CO_2eq / year (avg for last 10 years)
- *Downstream* emissions of that oil consumed? (using EPA emission factor)
  - For over 2 billion barrels produced to date = over 890 MT CO_2
  - For "full potential," as desired by Oil & Gas Recovery Task Force (5.1 billion barrels?) = 

Point 2.
Oil = Economic Risk

International Energy Agency 2021 *revised* energy outlook

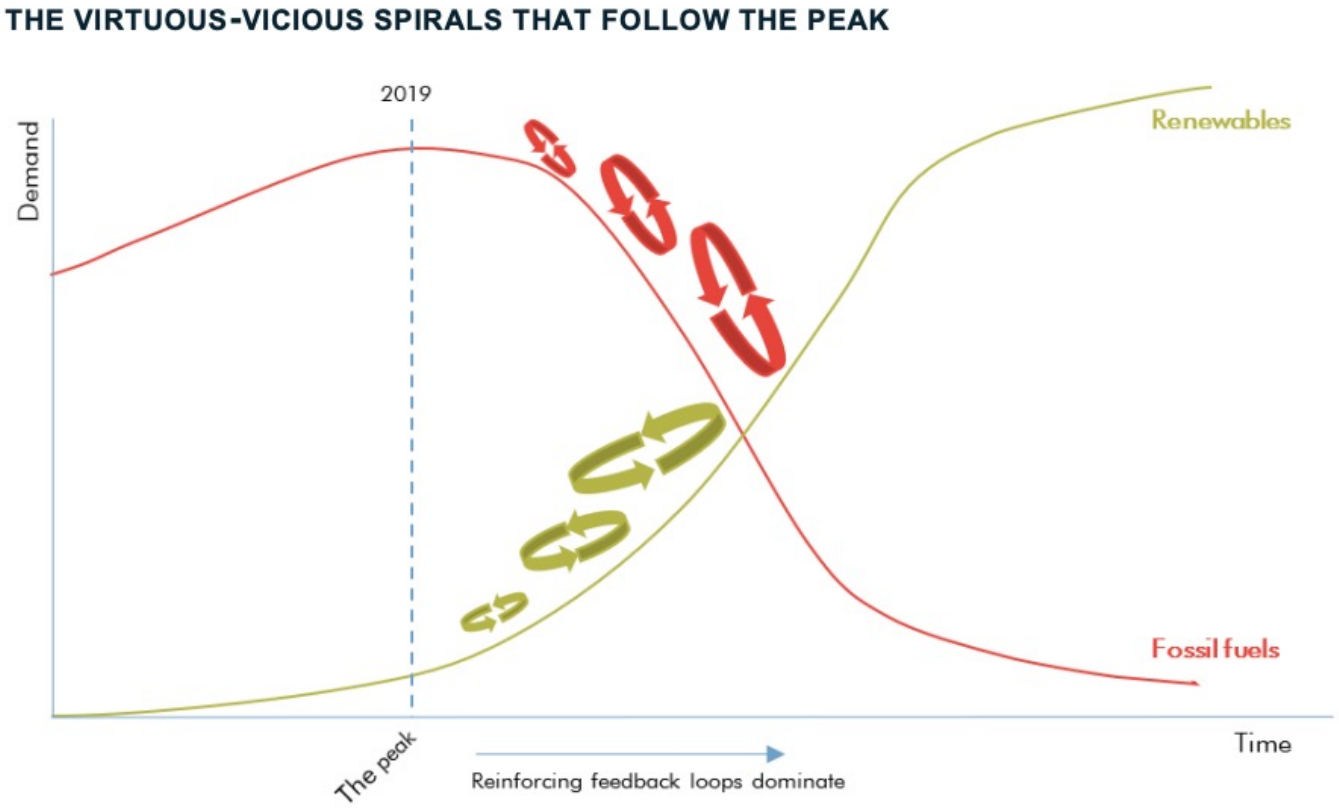
No new oil and gas fields approved for development; no new coal mines or mine extensions

There is no need for investment in new fossil fuel supply in our net zero pathway



IEA 2021 “Net Zero by 2050”

The fossil energy system is falling over the edge of the demand cliff. Peak fossil fuel demand likely occurred in 2019. This marks the beginning of runaway change: the tipping point where positive feedback loops start to dominate the system.

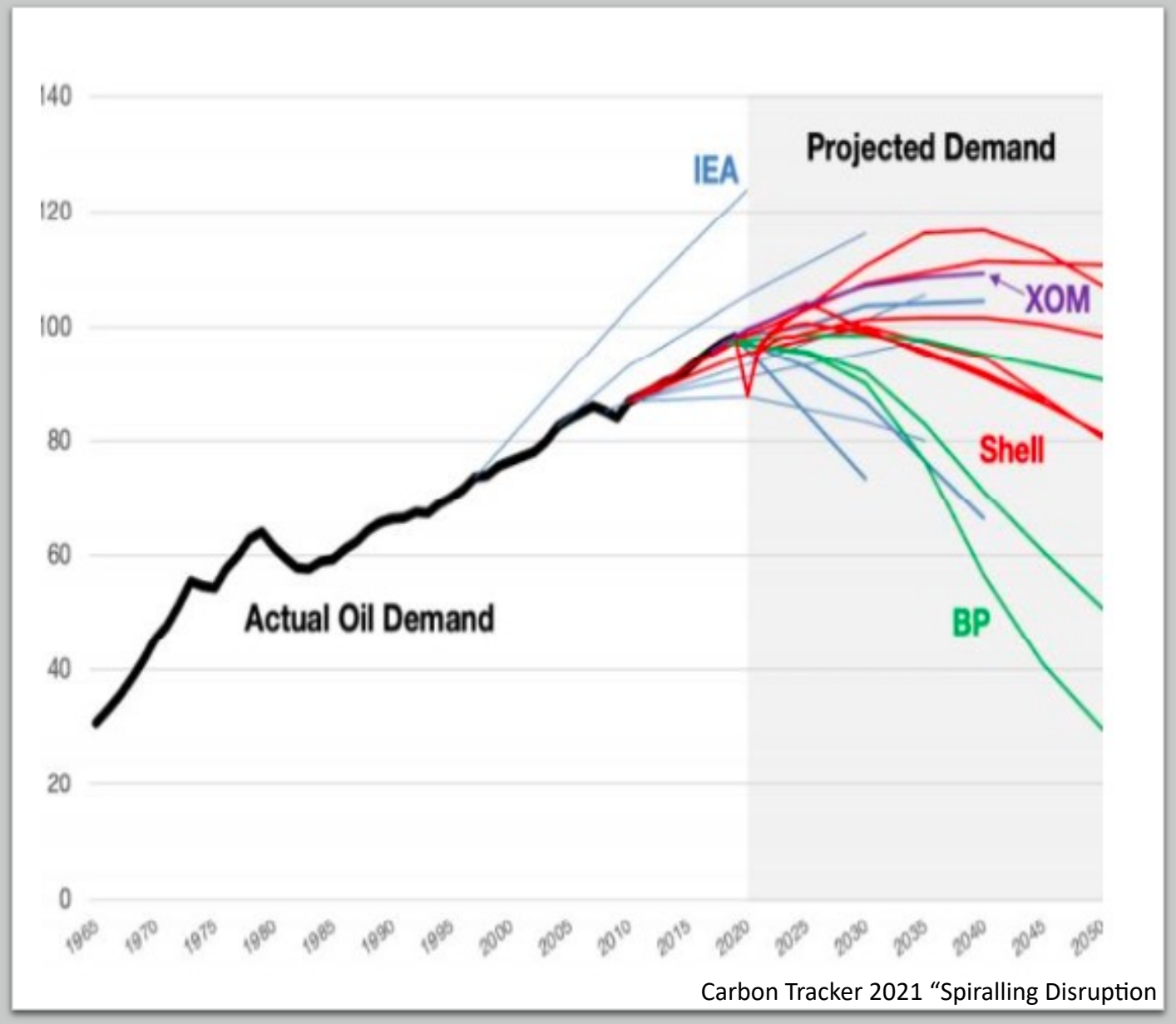


Carbon Tracker 2021 “Spiralling Disruption”

7 feedback loops cutting fossil fuel demand
AKA "stranding" assets

Carbon Tracker 2021 "Spiralling Disruption"

- **Volume-cost & tech**. As more renewable energies and EVs come on stream, costs drop, begetting more renewables and EVs, pushing out fossils.
- **Expectations**. As more people and institutions accept a net zero future is credible, the more likely it becomes. (ie. IEA and major oil firms revise oil demand forecasts, downward)
  - The IEA's Executive Director, Fatih Birol, has warned that investing in oil and gas is likely a "junk investment"
- **Finance**. As expectations shifts, investments flow to low carbon energy: "greed turns green." Meanwhile, fossil fuel sector performance on the stock market is in steady decline. Oil companies cut spending on fossil fuels; car companies go to EVs. + shareholder activism.
- **Society**. Growth in public support for climate action. Ever more demand for climate action. Legal challenges to fossil fuel firms. End to fossil fuel advertising.
- **Politics & policy.** Voters and politicians attuned to climate action (espec as climate crisis and protest intensify); growth of political clout of clean sector; falling political power of fossil incumbents. Fossil fuel bans.
- **Geopolitics**. States seek energy independence and economic benefits of leading the energy transition. China is way ahead in clean tech. US, India, EU… all would-be powers… race to catch up. Increasing international political pressure to reduce emissions and join the net zero club.



Carbon Tracker 2021 “Spiralling Disruption

Major energy agencies and oil firms revise oil demand forecasts

THE FOSSIL FUEL NON-PROLIFERATION TREATY

An initiative to phase-out fossil fuels and fast-track solutions

NON-PROLIFERATION

Preventing the proliferation of coal, oil and gas by ending all new exploration and production

GLOBAL DISARMAMENT

Phasing-out existing stockpiles and production of fossil fuels in line with the 1.5C global climate goal

PEACEFUL TRANSITION

Fast-tracking real solutions and a just transition for every worker, community and country

His Holiness the Dalai Lama and 100 other Nobel Laureates urge cooperation at Climate Summit to stop fossil fuel expansion

BOGA BEYOND OIL & GAS ALLIANCE

Strengthen global climate ambition by aligning oil and gas production with the Paris Agreement goal of well below 2°C, pursuing efforts for 1.5°C.

Raise the issue of fossil fuel supply on the international climate and energy agenda, and promote dialogue on the need for a managed and just phase-out of oil and gas production.

Capture and leverage momentum from first movers on oil and gas phase-out and encourage others to take action, by providing a home for those new commitments.

Create an international community of practice that can support governments in delivering their commitment to a managed and just phase-out of oil and gas production.

What does this moment of change mean for policymakers?

”It would be deeply irresponsible to try to build back the old system.

You may be certain that if you try to do so, the companies at the top end of the cost curve will dump their assets on the taxpayer, and you will have to pay to clean them up and close them down.

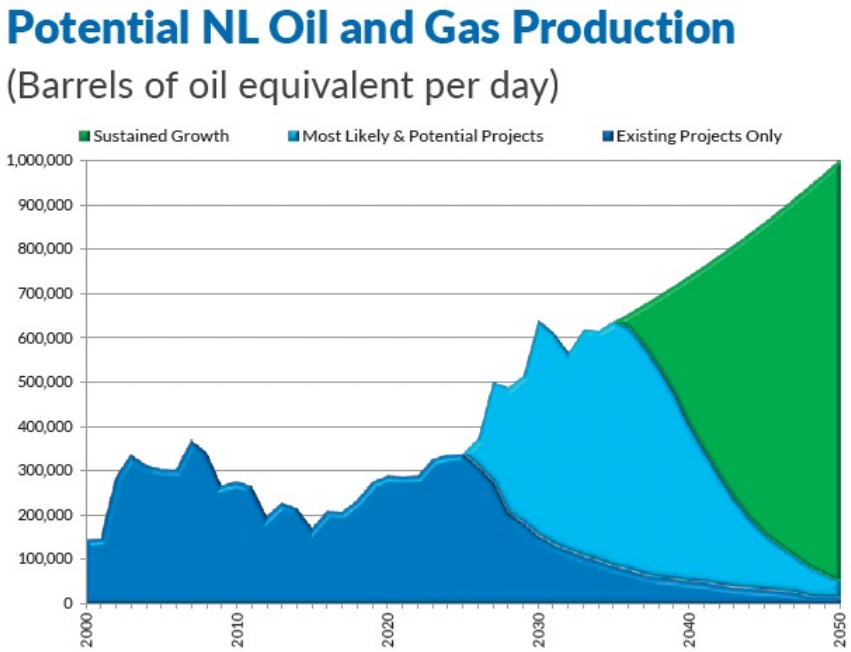
As you stimulate to drive economic growth, then invest in industries like solar, wind or electric vehicles, and flexibility to keep the lights on in all weather conditions. Invest in efficiency and clean up our cities. Now is precisely the moment to forge the industries of the future, to invest in the new areas which will create jobs, opportunity and growth.

Business as usual is well and truly over.”

- Bond 2020 “The Energy Transition — The Time is Now” *(emphasis added)*, Carbon Tracker

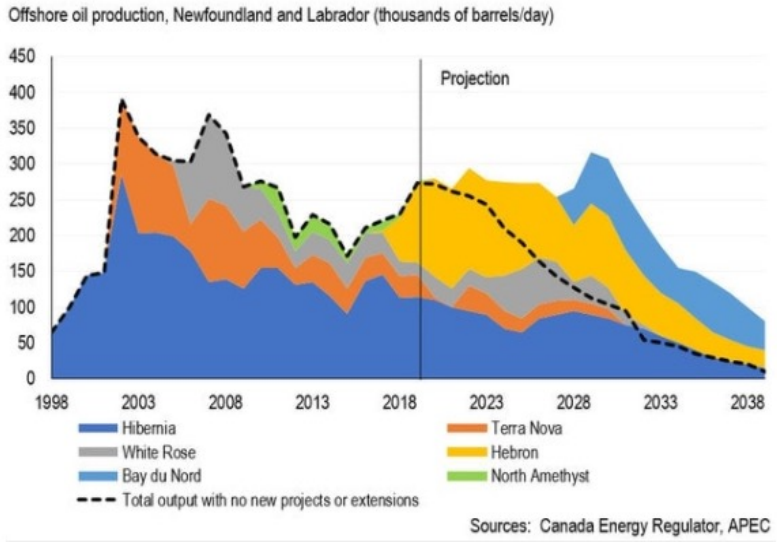
Competing views on the future of NL oil

Govt of NL's grand plan



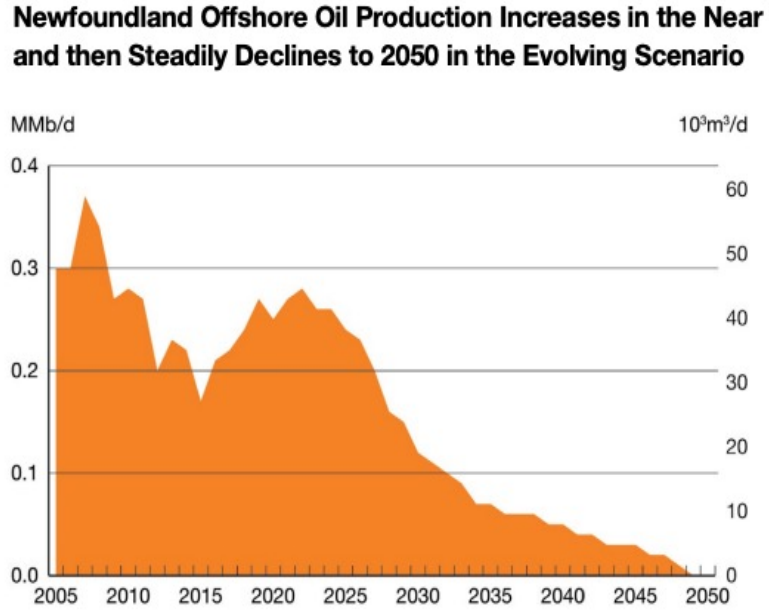
Sources: Govt of NL 2018 "Advance 2030"

Industry's aspiration



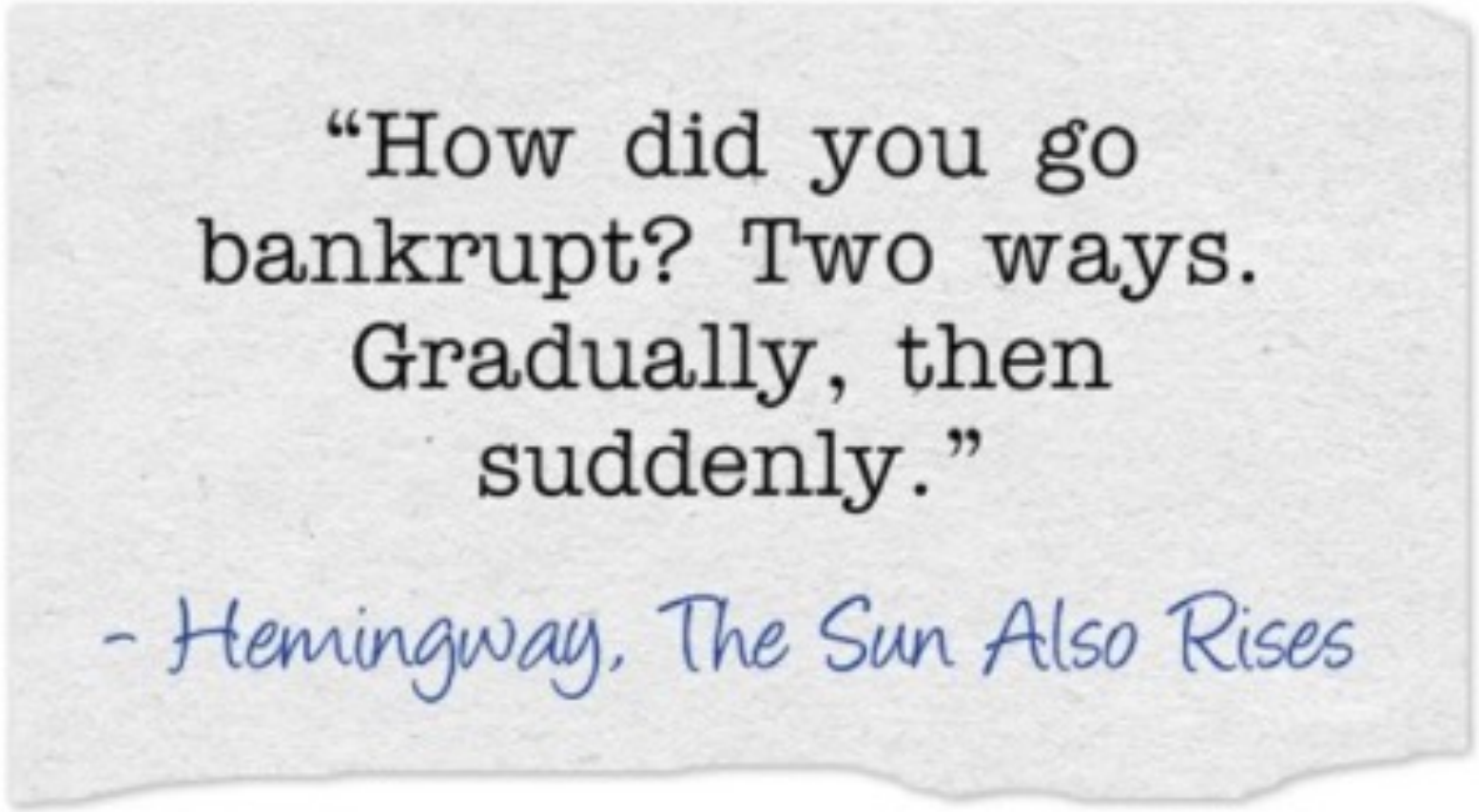
Source: Quan (CAPP) 2021 "New offshore development vital"

Govt of Canada's forecast



Source: CER "Canada's Energy Future 2020" projections, evolving scenario

The take-away: big change is happening fast in global energy systems



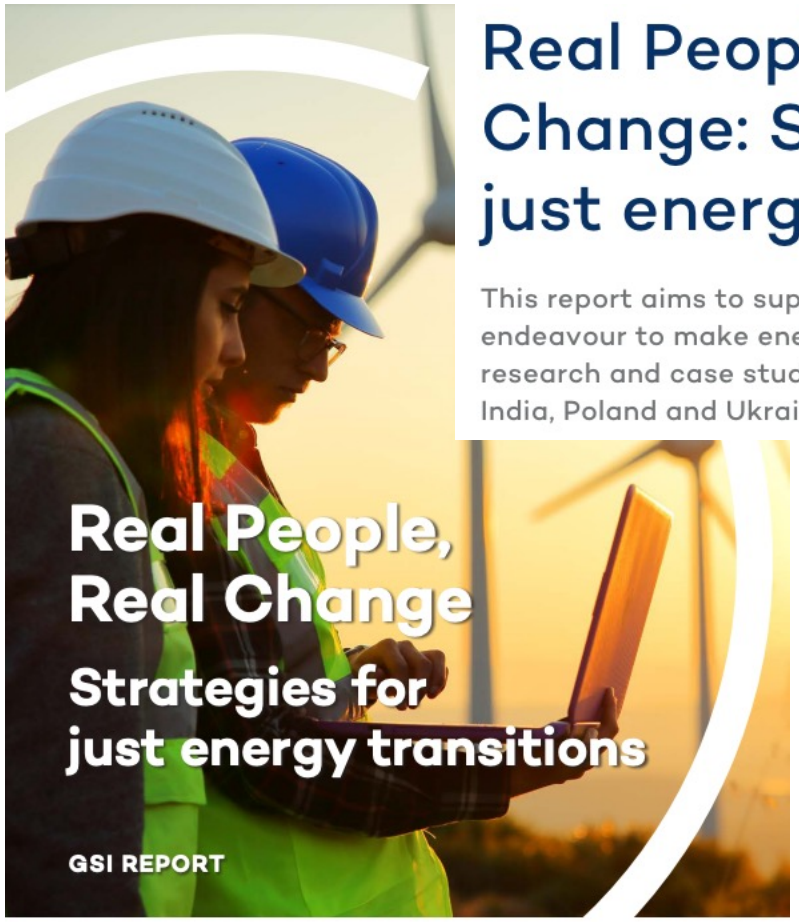
Just Transition

Our path to economic security & climate safety

Just Transition

- Social & economic justice
  - Respecting the rights of Indigenous Peoples throughout
  - Good jobs for workers
- Shift from fossil fuels to renewable energy
- Rooted in democratic participation
- Fostered by accountable governments investing in public infrastructure & services (transit, housing…)

Photo credit: Iron & Earth (CC BY-SA)



Real People, Real Change: Strategies for just energy transitions

This report aims to support governments in their endeavour to make energy transitions just, building on research and case studies in Canada, Egypt, Indonesia, India, Poland and Ukraine.

IISD International Institute for Sustainable Development

Global Subsidies Initiative

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December 2018

- Scotland
- Spain
- France
- Netherlands
- Germany
- Sweden
- Norway
- Egypt
- Indonesia
- India
- Poland
- Ukraine
- Canada (coal phase out)
- US states: New York, Illinois, Texas….
- ….

POLICY OPTIONS POLITIQUES

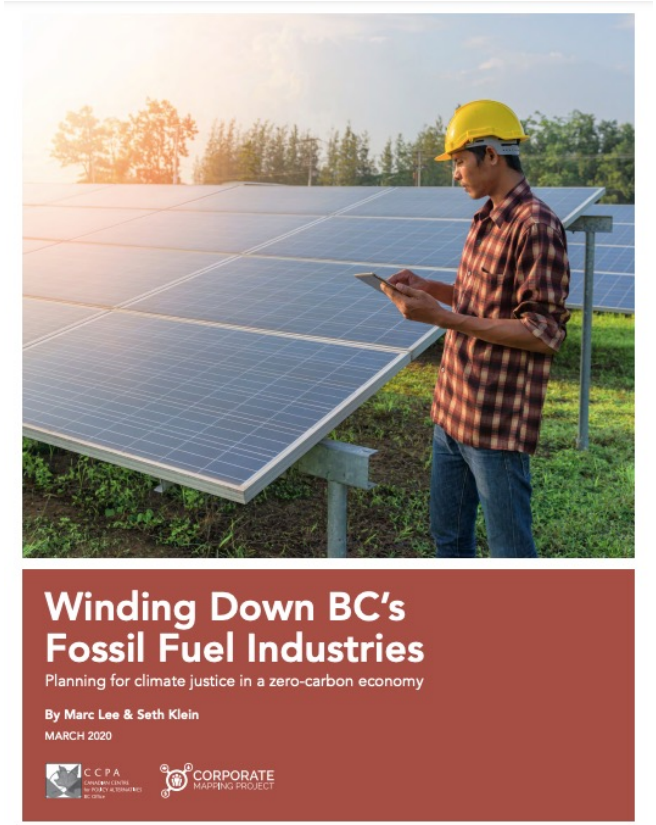
Five lessons for managing a just transition from environmentally destructive industries

Countries that have successfully transitioned had good industrial policy, leveraged community assets, cared about justice, and planned ahead.

by Tamara Krawchenko, Megan Gordon

August 25, 2021

Pathways in Canada



Steady Path video

1. The Wind Down

- Commit to winddown production, starting today, through to 2050—this means no more exploration, no expansions

- Redirect financial supports/subsidies from the oil sector toward low carbon transition

- Support workers:
. New public funds for training and apprenticeship
. Training and relocation allowances
. Improved income security programs for employment insurance
. Bridge financing for early retirement

- Ensure oil companies pay for carbon pollution & liabilities (well abandonment)

- Require oil companies reduce production emissions—not publicly funded

2. The Wind Up

Position NL to access federal just transition funds to:

- Electrify our electricity (Holyrood?) and transportation systems (marine, commercial, public, private)
- Improve industrial sector efficiency
- Build out decentralized, renewable energy
- Retrofit buildings; require net-zero new builds
- Improve infrastructure for climate adaptation (natural drainage basins, restored wetlands, coastal protections…)
- Remediate toxic sites
- Work toward ‘zero waste’ management and recycling
- Enhance economic diversification

Prioritize throughout*: worker support + community consent, involvement, ownership, local benefits, espec Indigenous Peoples’ right to Free, Prior, & Informed Consent*

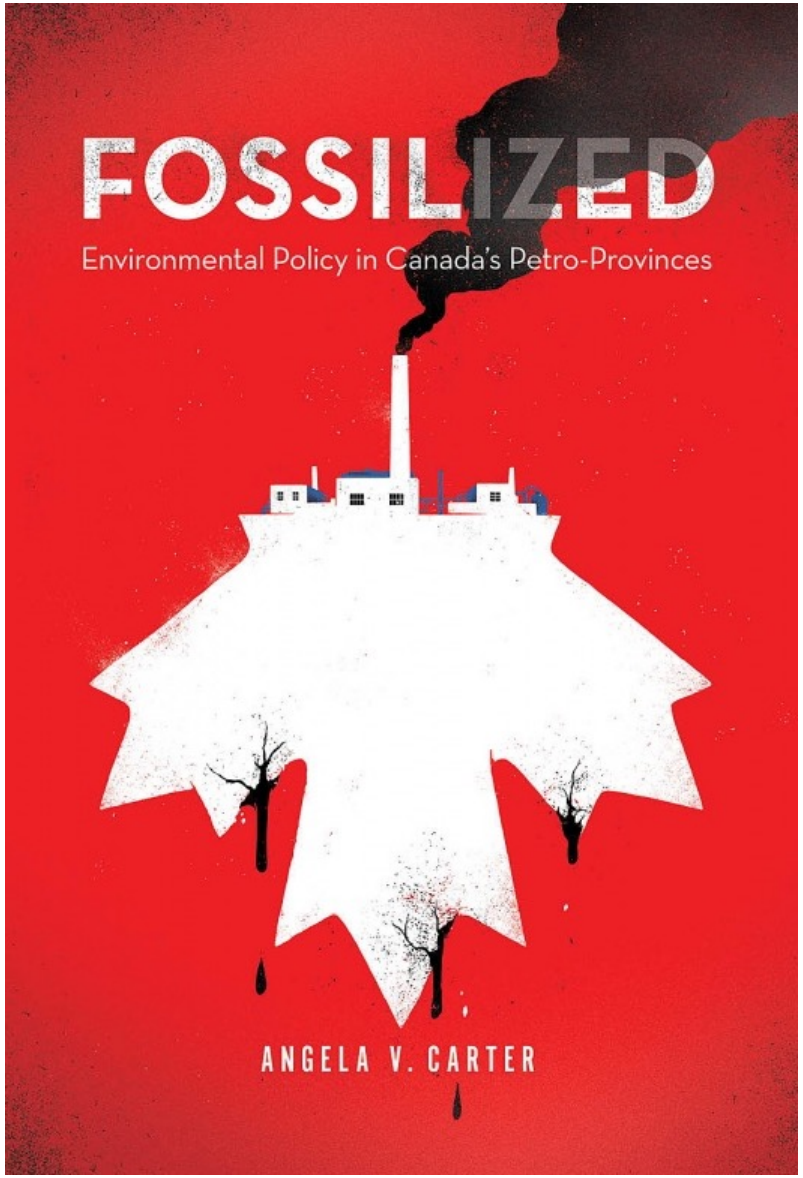
OPINION: Time for federal politicians to help Newfoundland and Labrador make a 'just transition' from oil and gas

Contributed | Posted: Sept. 16, 2021, 12:20 p.m. | Updated: Sept. 17, 2021, 8:08 a.m. | 7 Min Read

SaltWire article link

“What could a just transition from dependence on oil and gas in Newfoundland and Labrador look like? The Town of Makkovik's solar-pv project in Nunatsiavut is the largest grid-tied solar power installation in Labrador and Newfoundland.”

Is NL oil “clean”?



Fossilized, UBC Press

Location of offshore oil extraction is

"one [of] the most productive marine areas in the world"

(Wiese and Ryan 2003)

Threatened by oil industry: accidental spills, "routine" permitted waste "discharges" of hydrocarbons, marine noise, light pollution, flaring, seismic exploration, air pollution, GHG emissions….

Yet these threats were ineffectively regulated.

- environmental assessment process: **tendency toward less stringent assessments**, with **limited opportunities for public consultation**
- Environmental impact predictions in project assessments **founded on questionable data—or no data**
- **numerous substantial and longstanding gaps in research** re. industry's environmental impact
- **few marine areas protected** from oil activity, even those documented as sensitive and critical to the ecological integrity of the offshore
- **environmental monitoring** offshore was predominantly corporate self-monitoring; processes for verifying corporate regulatory compliance were unclear; the approach to enforcement appeared permissive, or even absent
- weak or simply nonexistent regulations on carbon emissions