Mapping Fossil Fuel Lock-In and Contestation in Eastern Canada

By Darin Brooks, Angela Carter, Emily Eaton, Éric Pineault and J. P. Sapinski

JUNE 2023

CORPORATE MAPPING PROJECT

CCPA
CANADIAN CENTRE for POLICY ALTERNATIVES
NOVA SCOTIA OFFICE

Mapping Fossil Fuel Lock-In and Contestation in Eastern Canada

By Darin Brooks, Angela Carter, Emily Eaton, Éric Pineault and J. P. Sapinski

June 2023

This paper is part of the Corporate Mapping Project (CMP), a research and public engagement initiative investigating the power of the fossil fuel industry. The CMP is jointly led by the University of Victoria, Canadian Centre for Policy Alternatives and the Parkland Institute. This research was supported by the Social Science and Humanities Research Council of Canada (SSHRC). For more information visit corporatemapping.ca.

Layout: All Caps Design, Emily Davidson, designed by ED:CFU
Cover photo: Stop Alton Gas Camp at the Shubenacadie River, NS, 2016. Council of Canadians / Flickr

ISBN 978-1-77125-641-4

CCPA
CANADIAN CENTRE for POLICY ALTERNATIVES NOVA SCOTIA OFFICE

PO Box 8355, Halifax, Nova Scotia B3K 5M1
902.579.9555 | ccpans@policyalternatives.ca

policyalternatives.ca

We acknowledge that the CCPA-NS office is located in Kjipuktuk in Mi'kma'ki, the unceded, unsurrendered ancestral land of the Mi'kmaq people. We recognize that we are all treaty people and have responsibilities to each other and this land. We also recognize the 400+ years of history of communities of African descent and the 50 African Nova Scotian communities throughout the region today. We commit to actions that will move the work of truth, reconciliation, justice and equity forward.

ABOUT THE AUTHORS

Darin Brooks is a full-time faculty member in the GIS post-diploma program at College of the North Atlantic and a PhD student in the Boreal Ecosystems and Agricultural Sciences program at Memorial University (Grenfell Campus), Newfoundland and Labrador. His research interests include ecological modeling, geovisualization, and application of remote sensing / GIS to both the natural and social sciences.

Angela Carter is an associate professor at the Department of Political Science and Balsillie School of International Affairs, University of Waterloo, and an Energy Transitions Specialist with the International Institute for Sustainable Development. A white settler from Ktaqmkuk (the island of Newfoundland), she focuses on environmental policies/politics surrounding Canadian oil development as well as new international approaches to climate policy relating to winding down oil extraction.

Emily Eaton is a professor of geography and environmental studies at the University of Regina. She is a white settler doing community-based research, teaching and service devoted to addressing the climate and inequality crises at local and national scales. She is also a Research Associate of CCPA-Saskatchewan.

Éric Pineault is a Professor in the Department of Sociology and the Institute of Environmental Sciences at the Université du Québec à Montréal. His research focuses on social metabolism, extractive economies, the issue of ecological transition and degrowth as well as the general macroeconomic and social transformations of advanced capitalism.

J. P. Sapinski is Assistant Professor of Environmental Studies at Université de Moncton, located on unceded Mi'kmaq and Wolastoquey territories, in New Brunswick. He is interested in how the structures of capitalism and corporate power mediate the social metabolism between human societies and the ecosphere, and how we can transform and decolonize this relationship to make it just and sustainable.

ACKNOWLEDGEMENTS

Thanks to Alex Birrell, Louis Couillard, Karine Godin, Emily Lorenz, Cecilia Pérez-Plancarte and Saikou Thiam, who provided invaluable research assistance at different points in this project. Deep gratitude to Susan O'Donnell and Nicolas Viens who commented on report drafts, and to David Hughes and another anonymous reviewer for their invaluable feedback. This work was funded by the Corporate Mapping Project and the Social Sciences and Humanities Research Council of Canada.

Contents

Figures and Tables

Summary

This report looks at the state of carbon lock-in in Eastern Canada, a region often neglected regarding energy conversations.

WHEN TALKING ABOUT OIL AND GAS PRODUCTION IN CANADA, most of the attention focuses on Western provinces, especially Alberta and British Columbia. Yet, the whole country is deeply locked into carbon extractivism. This report looks at the state of carbon lock-in in Eastern Canada, a region often neglected regarding energy conversations.

Carbon lock-in refers to the technological and institutional blockages to energy transition that can be traced back to economic and political choices made in the past. Despite the urgent need for energy transition, Eastern provinces – the four Atlantic provinces plus Québec – are still highly dependent on existing fossil infrastructure for electricity generation, heating, transportation, and industrial activity. Some provinces also depend on this infrastructure for employment and governmental revenue. Since 2010, 19 additional carbon extractive projects have been proposed across all five eastern provinces. These projects, some still being discussed, would have further entrenched the region in carbon lock-in were it not for the strong resistance from Indigenous and settler civil society groups.

Carbon lock-in crucially stems from the material infrastructure of the oil and gas commodity chain – from extraction sites, through pipeline, rail or ship transportation, to refining sites, and to end consumption sites where oil and gas are burned, releasing energy and greenhouse gasses. Large corporations control all stages of this chain, some of the most profitable in Canada, to benefit their national and international shareholders. This report maps out this infrastructure to emphasize the material aspects of fossil dependency and the struggles to break away from it.

In the face of climate catastrophe and local environmental destruction, grassroots activists and environmental NGOs have been mobilizing across Eastern Canada to oppose further entrenchment of fossil dependency. Most of these struggles have been successful: most of the proposed fossil expansion has been blocked, moratoriums on shale gas exploration were put in place in all provinces, PEI legislated a ban on hydraulic fracturing in 2017, and Québec put an end to all oil and gas extraction in its territory in 2022. All provinces have also put forth climate action plans with quantified emissions reduction targets that are updated regularly. These targets are often designed to be easy to reach or are simply not respected. Still, activists in all provinces are pressuring governments to keep to their commitments to various degrees. In Québec, out of the strong movement that emerged from the struggles against fracking and the Energy East pipeline came a broad-ranging just transition plan based on social justice principles and is now pushing to wind down fossil gas dependency.

But there is pushback: New Brunswick partially lifted its fracking moratorium and is dragging its feet to implement transition; Newfoundland and Labrador strongly supports expanding offshore oil extraction and, up to now, has been given the green light from the federal government to do so. Additionally, while *new* infrastructure projects have been successfully challenged, there needs to be more campaigns directed at existing fossil infrastructure, which nonetheless needs to be dismantled to achieve decarbonization. Other challenges include coordinating movement responses to new energy sources, especially to hydrogen, which is being touted as a technological solution for decarbonizing hard-to-abate sectors, but which has significant environmental and carbon impacts.

Where do things stand today for organizing against further carbon lock-in and just transition?

Where do things stand today for organizing against further carbon lock-in and just transition? This report assesses the state-of-play of carbon lock-in in early 2023 and contributes to the discussion about achieving decarbonization and just transition in Eastern Canada.

Introduction

Indigenous people and student groups have been at the forefront of many struggles across Canada to prevent further carbon lock-in.

DEBATES ABOUT FOSSIL FUELS IN CANADA predominantly focus on Western provinces. Indeed, fossil fuel extraction and infrastructure—as well as the immense impacts of carbon extractivism, notably social and environmental consequences—is concentrated in BC, Alberta and Saskatchewan. Yet, Eastern Canada, which includes Québec and the four Atlantic provinces, are also deeply entrenched in carbon lock-in, in various ways. Newfoundland and Labrador is the third-largest oil-producing province in the country,[1] New Brunswick is home to the largest refinery, electricity in Nova Scotia and New Brunswick is largely dependent on coal, and transportation and industry are highly fossil dependent in all five provinces. Over the last decade and a half, a long list of carbon-extractive projects have been proposed, to pull more hydrocarbons out of the ground, or to transport western bitumen and fossil gas across the country for export to foreign markets. On the other hand, thanks to highly mobilized movements opposing new carbon extractivism, some developments have taken place for a managed wind-down of the fossil fuel industry and a just energy transition, with the deepest measures seen in Prince Edward Island, where fracking is now legally banned, and in Québec, which completely banned all fossil fuel extraction. Nonetheless, with higher oil prices signalling a possible new extractive boom, fracking and fossil gas exports are being promoted again in the region. This report presents initial findings from an investigation of the situation surrounding carbon extractivism and just transition in Eastern Canada, with a focus on socio-ecological movements who have been organizing to oppose to the expansion of carbon extractivism since 2010 while advocating for transition..

Carbon lock-in conveys the idea that there are technological and institutional blockages to climate action that can be traced back to economic and political choices made in the past. Ultimately, today's climate crisis is the product of past investments in fossil fuel infrastructure built over the last two centuries or so. Carbon-extractive installations such as mines, pipelines and refineries lock-in certain technologies lasting for decades. They also embody a specific institutional purpose, which is to generate profits for the companies that build, operate and own them, and for their shareholders. Using carbon lock-in as a starting point, this report focuses attention on the infrastructures that constrain our energy choices, and that have become so many flashpoints of contention around which socio-environmental activists have come together over the last decade and more to challenge the hegemony of fossil capital.

1 "Canada Oil and Natural Gas Production," Economy, Canadian Association of Petroleum Producers (CAPP), accessed March 2, 2023, https://www.capp.ca/economy/canadas-oil-and-natural-gas-production/.

Over the last decade or so, opposition to the expansion of carbon-extractive infrastructure has reached an all time high. Indigenous people and student groups have been at the forefront of many struggles across Canada to prevent further carbon lock-in. Many of these fights were successful, and the majority of new carbon-extractive projects have now been abandoned. Some of the groups who led these struggles have also developed proposals to move away from carbon lock-in, to unlock fossil fuel dependency by enacting just transition policies to wind down the fossil fuel industry in a way that's fair to industry workers, community members and Indigenous governments and communities alike.

However, while they all call for an end to the fossil fuel era, transition projects vary as to the actual policies deemed necessary to enact the social and economic changes needed. The sociologist René Audet groups these proposals into two broad categories.[2] On the one hand, proposals that seek to transform the energy system from fossil fuels to renewable energy sources can be said to represent a *technocentric* transition project. A technocentric view of transition focuses on technologies that increase energy efficiency in buildings, industrial production and transportation, and that can replace fossil-fuelled engines and processes with electricity generated from renewable sources. These can include improved building materials and systems, electric vehicles, solar panels and wind turbines, as well as "green" hydrogen produced using renewable energy to decarbonize industrial processes and modes of transportation that cannot be electrified, such as airplanes and steel production. A technocentric transition project is supported by liberal governments such as the Trudeau government in Canada and the Coalition Avenir Québec government in Québec, by a large section of the corporate sector, by many trade unions, by a vast number of environmental NGOs and by a growing proportion of the public. On the other hand, Audet identifies a set of transition proposals that he terms *localist*. Proponents of a localist transition project, while they see the importance of renewable electricity generation, see action at the local and regional scale as primordial. They argue that re-centring economies on communities' needs by supporting local, smaller-scale production increases people's control and reduces the dependency on emission-generating commodity imports.

Investing in universal, accessible public transportation, rather than converting private automobiles to electric vehicles, has the potential to reduce the material throughput required for transportation while addressing a key component of social inequality.

In addition to technocentric and localist approaches to transition are proposals for state-led transition that focus on building out public infrastructures for collective consumption. Movements leading such approaches have often used the language of the Green New Deal (GND) to signal their calls for large investment by the state into universal programs that would improve the conditions of life while decarbonizing the economy.[3] For example, investing in universal, accessible public transportation, rather than converting private automobiles to electric vehicles, has the potential to reduce the material throughput required for transportation while addressing a key component of social inequality. Beyond public transportation, GND-type movements have called for eco-efficient public housing, a jobs guarantee, investments in the "caring economy," and much more in order to build a society that has emancipated itself from carbon lock-in. Overall, both localist and state-led transition projects work to move beyond the focus on new technologies, and put forth proposals to transform economic structures to supersede capitalism's need for infinite growth and fossil fuel dependency.

To understand carbon lock-in in Eastern Canada, and the possibilities for just transition in the region, this report presents data from several sources. First, we listed all existing fossil infrastructure in the area, as well as projects that have been proposed since 2010. We tracked down

2 René Audet, "Transition as Discourse," *International Journal of Sustainable Development* 19, no. 4 (2016): 365–82, https://doi.org/10.1504/IJSD.2016.080512.

3 Emily Eaton, "Approaches to Energy Transitions: Carbon Pricing, Managed Decline, and/or Green New Deal?" *Geography Compass* 15, no. 2 (2021): e12554, https://doi.org/10.1111/gec3.12554.

the corporations in charge of each infrastructure or project as well as their shareholders. Second, we constructed a list of all the socio-ecological groups who expressed a public position opposing an existing infrastructure or a proposed project. This list was assembled through internet searches as well as direct communications with key groups over email and telephone. We geocoded the location of each project, as well as each corporate headquarters and each socio-ecological group. This allows us to understand concretely both the physical and economic aspects of lock-in, opposition to lock-in, and its territoriality. Third, we conducted focused interviews with those directly involved in resistance to fossil expansion and advocating for just transition. Initial interviewees were found through a media review of new infrastructure proposals going back to 2010 and identifying the actors most often mentioned. We snowballed from that initial sample to cover all constituencies involved in opposing fossil infrastructure.

In the next section, we present the state of carbon lock-in in Eastern Canada, including existing infrastructure and proposed expansion. We then discuss the potential new flashpoints of resistance to fossil developments; critically analyze the provincial positions on transition and dig deeper into each province's climate action plan; and envision ways to move beyond carbon lock-in to enact a just transition in the region. We conclude by reflecting on the new challenges that might come ahead in this rapidly changing field.

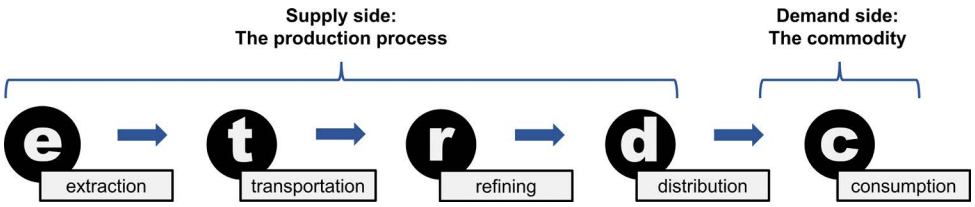
"Lay of the land"

Existing infrastructure in Eastern Canada

FOSSIL FUELS MOVE FROM THEIR EXTRACTION FROM THE GROUND to consumable end products through a series of steps that together form what can be referred to as the fossil fuel commodity chain. This chain comprises six main stages: exploration followed by extraction, transportation, refining, distribution and consumption (Figure 1).[4] Thinking of the fossil fuel infrastructure in terms of commodity chains sheds light on both the different corporate interests as well as activist interventions at each stage of the chain.[5] It provides an overarching view of carbon lock-in: the infrastructure at each stage constitutes fixed capital that its owners and their shareholders anticipate will return profits over its expected lifetime.[6] The fossil fuel commodity chain thus highlights key sites of resistance to fossil fuels as well as the assets that risk being stranded, as energy systems decarbonize and demand for fossil fuels decreases.

The fossil fuel commodity chain highlights key sites of resistance to fossil fuels as well as the assets that risk being stranded, as energy systems decarbonize and demand for fossil fuels decreases.

Figure 1: The fossil fuel commodity chain



Source: Gavin Bridge, "Global Production Networks and the Extractive Sector: Governing Resource-Based Development," *Journal of Economic Geography* 8, no. 3 (2008): 389–419, https://doi.org/10.1093/jeg/lbn009; and Noel Healy, Jennie C. Stephens and Stephanie A. Malin, "Embodied Energy Injustices: Unveiling and Politicizing the Transboundary Harms of Fossil Fuel Extractivism and Fossil Fuel Supply Chains," *Energy Research & Social Science* 48 (2019): 219–34, https://doi.org/10.1016/j.erss.2018.09.016.

4 Gavin Bridge, "Global Production Networks and the Extractive Sector: Governing Resource-Based Development," *Journal of Economic Geography* 8, no. 3 (2008): 389–419, https://doi.org/10.1093/jeg/lbn009.

5 James Lawson, "Power, Political Economy and Environmental Governance: Staple Chains as Media of Power," *International Journal of Green Economics* 3, no. 1 (2009): 28–47; and James Lawson, "'Everywhere in Chains': Work, Commodity Chain Analysis, and the Subversion of Accountability," *Work Organisation, Labour and Globalisation* 5, no. 1 (2011): 40–57.

6 Andreas Malm, *Corona, Climate, Chronic Emergency: War Communism in the Twenty-First Century* (London: Verso, 2020).

Limiting global temperature rise to 1.5°C requires that 90% of current fossil fuel reserves be kept in the ground.[7] So far, climate action and policy are typically directed at reducing consumption of fossil fuels. Governments and environmental groups alike encourage individuals and institutions to calculate their carbon footprints and take actions to reduce it, sometimes providing financial incentives to do so. This is a "demand side" focus on the end use of fossil fuels. In contrast, a commodity chain approach focuses on the supply of fossil fuels, while providing a fuller account of their climate impacts. In this view, fossil fuel producers are brought to the foreground (Figure 1). This is essential, since, governments and companies must "prematurely decommission" ongoing production and leave in the ground almost 40% of recoverable reserves from existing projects in order to attain current decarbonization targets.[8]

Figures 2 and 3 map out the commodity chain of Eastern Canada's existing carbon-extractive infrastructure as well as infrastructure that has been decommissioned and proposed developments that have been cancelled in the period of 2010–2022. This is the physical infrastructure of fossil fuel activity—sites of large capital investments and, therefore, primary locations of carbon lock-in in the region.

Governments and companies must "prematurely decommission" ongoing production and leave in the ground almost 40% of recoverable reserves from existing projects.

Existing infrastructure includes the following:

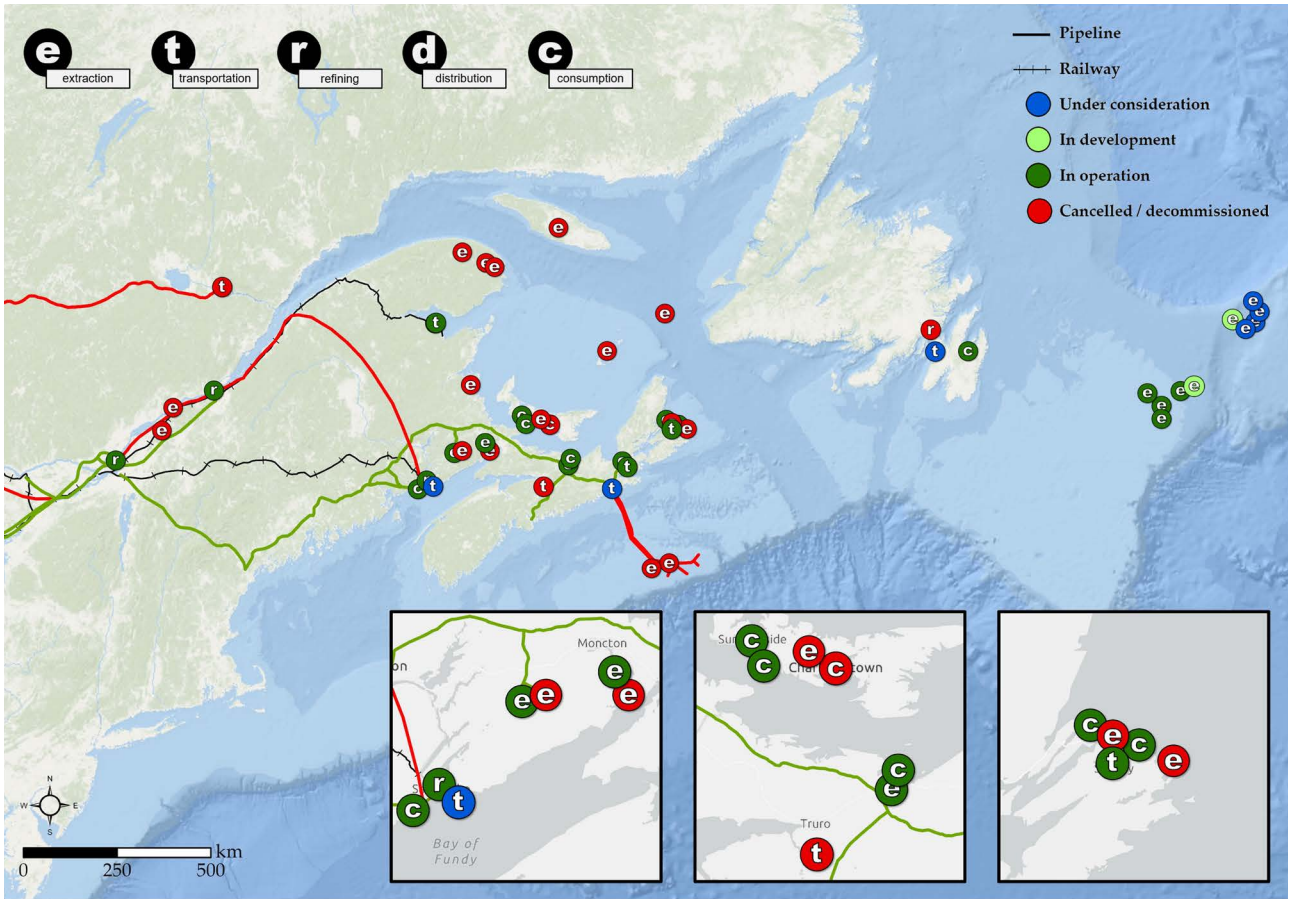
- EXTRACTION: The most important extraction takes place off the island of Newfoundland, where four offshore rigs produced 95 million barrels of oil in 2019, accounting for about a quarter of Canada's conventional oil production. On a much lesser scale, New Brunswick is home to 32 fracking wells in Penobsquis, while a small quantity of gas is also being extracted from old oil wells from the Stoney Creek field in the south of the province. In Nova Scotia, the Donkin coal mine has reopened in 2022.
- REFINING: Eastern Canada is home to three of the four largest refineries in the country, located in Montréal, Québec City and Saint John (NB). These refineries represent major hubs where crude oil from different regions is brought in, processed and then distributed for domestic consumption or exported to foreign markets. Together these three refineries account for 37% of Canada's refining capacity (672,000 barrels per day). Newfoundland and Labrador's Come By Chance refinery, once the fifth largest in Canada, stopped processing oil in 2020.[9]

7 For a 66% chance to stay under 1.5°C. Thom Allen and Mike Coffin, *Unburnable Carbon: Ten Years On; The Financial Markets Are Still Enabling a Carbon Bubble* (London: Carbon Tracker Initiative, 2022), 50.

8 For a 50% chance to stay under 1.5°C. Kelly Trout et al., "Existing Fossil Fuel Extraction Would Warm the World beyond 1.5 °C," *Environmental Research Letters* 17, no. 6 (2022): 064010, https://doi.org/10.1088/1748-9326/ac6228.

9 "Canadian Refineries," *Oil Sands Magazine*, last modified March 9, 2023, https://www.oilsandsmagazine.com/projects/canadian-refineries.

Figure 2: The infrastructure of carbon lock-in in Eastern Canada

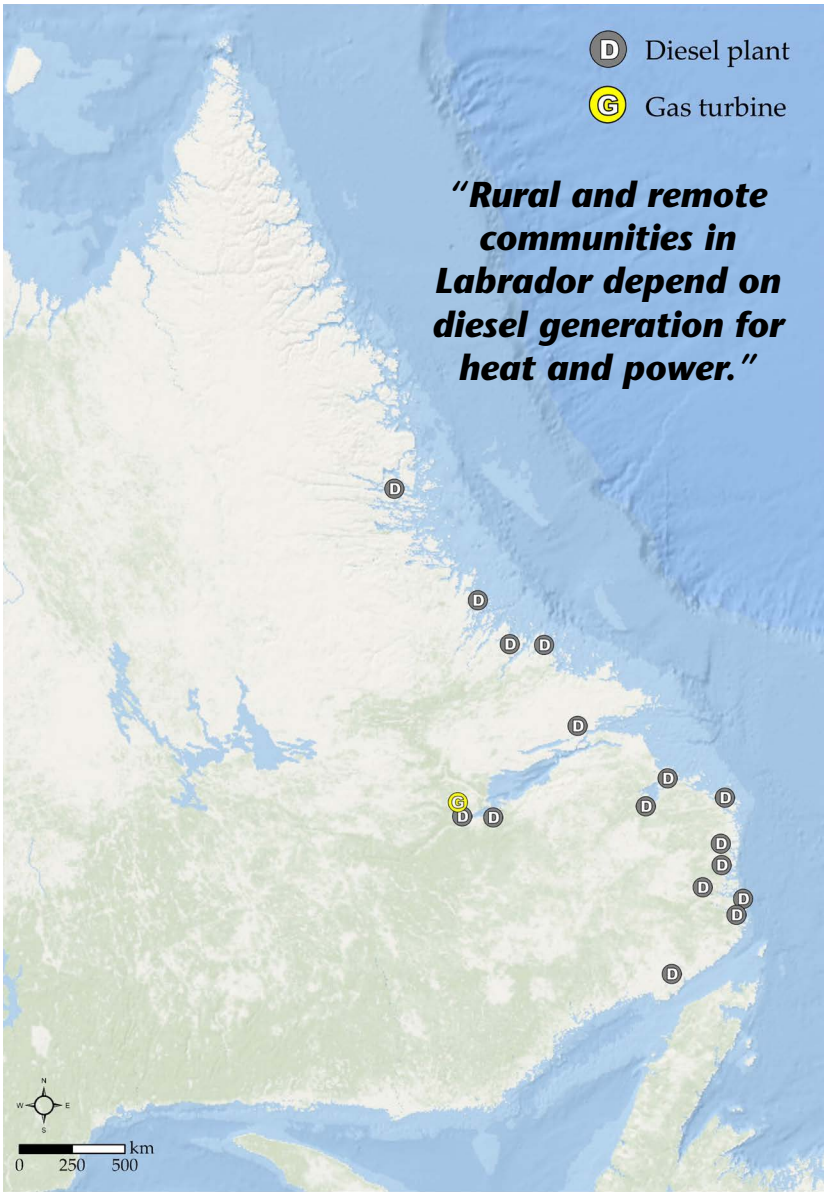


Note: This map excludes all sale points and industrial end consumption points (except generating stations). Those should nonetheless be considered part of the carbon lock-in infrastructure as well.

Source: Authors' data, current as of 2022.

- TRANSPORTATION AND DISTRIBUTION: Oil and gas are transported by pipelines, rail and ship. The St. Lawrence river is a major shipping corridor. Since the 2015 reversal of Enbridge's Line 9, some production from Western Canada is processed at the Montréal Suncor refinery, together with crude imports from the US and overseas. Transformed petroleum products from the Suncor refinery, including gasoline, diesel, heating oil and jet fuel, are then distributed for domestic consumption and exported by ship through the Atlantic. Western production also transits through Line 9 and then by ship from Montréal to the Lévis Valero refinery, which produces for domestic and international markets as well. Finally, western conventional crude oil is also transported by rail to the Saint John refinery in southwestern New Brunswick for processing with foreign crude shipments coming in the nearby Canaport terminal.

Figure 3: Diesel plants and gas turbines, Labrador



Source: Data from Government of Newfoundland and Labrador, current as of 2021.

- CONSUMPTION: The majority of Nova Scotia's electricity is generated from coal in four generating stations, three of them located on Cape Breton Island using imported coal. New Brunswick also relies on fossil fuels for over 24% of its yearly electricity consumption. Most of this power comes from the Coleson Cove and the Mills Bank generating stations, which run on oil, the Belledune generating station that burns coal and petcoke, as well as the Bayside gas plant. In Newfoundland and Labrador, the Holyrood generating station uses heavy oil and diesel to produce between 15% and 30% of electricity used on the island of Newfoundland, and a couple of small gas turbines also operate on the island. Rural and remote communities in Labrador depend on diesel generation for heat

and power (Figure 3). PEI imports the majority of its electricity from New Brunswick, but also relies on two oil generating stations that provide under 1% of its electricity.[10] For its part, Québec generates 98% of its electricity from hydroelectric dams. However, in Québec like in all other provinces, fleets of internal combustion engine vehicles and machinery, as well as heating systems based on fossil gas, and industrial processes dependent on coal, gas and oil (such as cement factories, smelters and fertilizer facilities) account for a large portion of fossil fuel consumption.[11]

The majority of Nova Scotia's electricity is generated from coal in four generating stations, three of them located on Cape Breton Island using imported coal.

Figure 2 maps out this infrastructure across the commodity chain to show the geographical extent of carbon lock-in in the region. Figure 3 shows the diesel generators and gas turbine that power remote communities in Labrador. All stages of the commodity chain are represented in the area, though they do not all link together in a regionally cohesive fossil energy system. For example, the Saint John refinery processes oil from Saudi Arabia, the United States and Western Canada (approximately one-third from each region in 2016),[12] while over 90% of crude oil extracted off the coast of Newfoundland is directly exported, mostly to the United States.[13] Meanwhile, the different generating stations across the region burn imported and domestic petroleum products, gas, and coal.

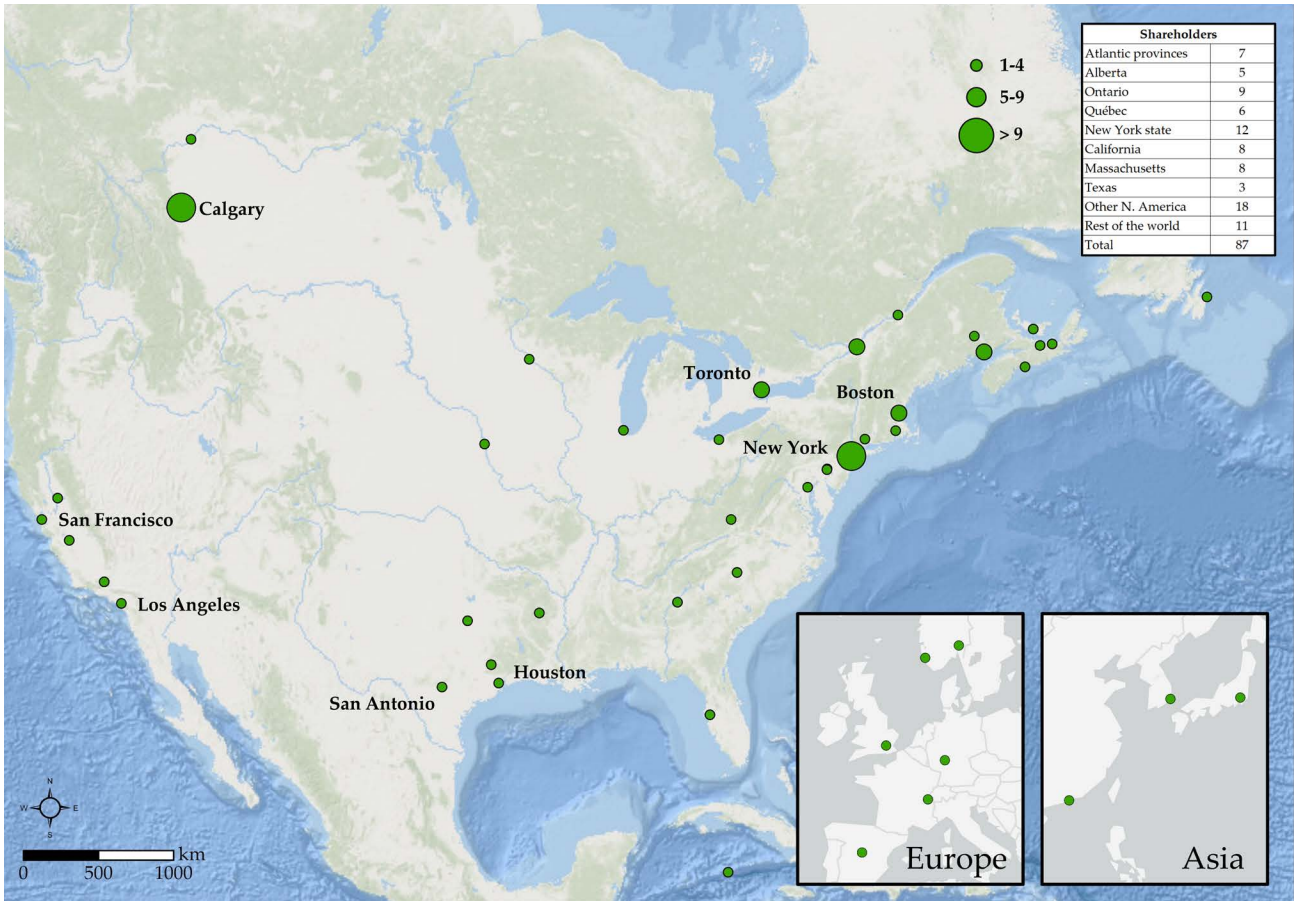
10 "Provincial and Territorial Energy Profiles—Prince Edward Island," Canada Energy Regulator, last modified March 3, 2023, https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/provincial-territorial-energy-profiles/provincial-territorial-energy-profiles-prince-edward-island.html.

11 Québec is the largest gasoline market in Canada, with 21% of national consumption in 2018. "Market Snapshot: Quebec's Gasoline Market Is One of the Largest in Canada," Canada Energy Regulator, last modified June 30, 2022, https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/market-snapshots/2019/market-snapshot-quebecs-gasoline-market-is-one-largest-in-canada.html.

12 Claudia Cattaneo, "Irving Oil's President Says It Would Keep Saudi Imports Even If Energy East Goes Ahead," *Financial Post*, April 12, 2016, https://financialpost.com/commodities/energy/irving-oils-president-says-it-would-keep-saudi-imports-even-if-energy-east-goes-ahead.

13 "Market Snapshot: Canadian Exports of Crude Oil to Destinations Other Than the United States Are Mainly from Newfoundland and Labrador's Offshore," Canada Energy Regulator, last modified February 26, 2021, https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/market-snapshots/2020/market-snapshot-canadian-exports-crude-oil-destinations-other-than-united-states-are-mainly-from-newfoundland-labradors-offshore.html.

Figure 4: Eastern Canada's fossil infrastructure shareholders across the world



Shareholders	
Atlantic provinces	7
Alberta	5
Ontario	9
Québec	6
New York state	12
California	8
Massachusetts	8
Texas	3
Other N. America	18
Rest of the world	11
Total	87

Source: Orbis database, current as of 2021.

Most of the profits generated by the sector are funnelled outside Eastern Canada to the private corporations who own the infrastructure and to their national and foreign shareholders.

The economic importance of the fossil fuel sector varies widely between provinces, from a recent high of 6,000 jobs and, in 2008, 40% of GDP in Newfoundland and Labrador,[14] to a net economic loss in Québec that depends almost entirely on imported fossil fuel products. Overall, most of the profits generated by the sector are funnelled outside Eastern Canada to the private corporations who own the infrastructure and to their national and foreign shareholders. Figure 4 shows the geographical dispersion of the ultimate shareholders of the projects mapped in Figure 2, Those shareholders are the corporations or individuals who primarily benefit from fossil fuel extractivism in Eastern Canada.

The vast majority of shareholders of Eastern Canada's carbon infrastructure are based outside the region, most of them in fossil finance centres like Calgary and Texas and global financial centres like Boston, New York and Toronto. Some shareholders are located as far as Europe, Hong Kong and Tokyo.[15]

14 Based on data from David Hughes using Statistics Canada table 14-10-0202-01 ("Employment by industry, annual") and Petroleum Labour Market Information (PetroLMI).

15 See also Gordon Laxer, *Posing as Canadian: How Big Foreign Oil Captures Canadian Energy and Climate Policy* (Ottawa: Council of Canadians, CCPA BC Office and CCPA Saskatchewan Office, 2021), https://canadians.org/BigForeignOil.

Expanding fossil fuel infrastructure since 2010

PROPOSALS FOR EXPANDING FOSSIL FUEL infrastructure intensified across North America after 2010. This occurred in Eastern Canada as well, where 19 infrastructure projects (Table 1) have been proposed since then (indicated in red, blue and light green on Figure 2), to open new sites of extraction or transportation corridors, largely motivated by high oil and gas prices in the first half of the 2010s. The 2022 dramatic increase in oil and gas prices following the Russian invasion of Ukraine spurred still more projects. The Bay du Nord offshore oil project, located approximately 500 kilometres off the coast of Newfoundland and requiring ultradeep drilling of 1.2 kilometres, received federal environmental approval in April 2022. Project promoters anticipate production will start in 2028, continuing until 2058. Additionally, several other prospects in the same area that could be developed later (see Figure 2). Further, as Germany and other European countries seek non-Russian gas sources, liquefied natural gas (LNG) export terminal projects in Eastern provinces have resurfaced in the media, including liquefaction plants and export terminals in Goldboro, NS; Saint John, NB; Placentia Bay, NL; and Saguenay, QC. However, the federal government has shown rather tepid interest after a 2022 visit by German chancellor Olaf Scholz, as none of them would come online in time to replace Germany's gas supply, and thus face the risk of becoming stranded assets.[16] After being floated for a few months by the New Brunswick government, the Saint John project was abandoned in March 2023 by facility owner Repsol, citing high costs.[17] There is also the possibility that coal-fired generators, being phased out through federal regulations, will be replaced by fossil gas, moving the production of electricity from one fossil fuel to another in Nova Scotia and New Brunswick.

A new high in prices is increasing pressure across the region to expand fossil fuel activity.

After a brief lull in fossil fuel developments in Eastern Canada following the drop in the price of oil after 2014, a new high in prices is increasing pressure across the region to expand fossil fuel activity. Notably, this most recent oil boom has prompted massive new oil-extraction projects in Newfoundland and Labrador, and all provinces except PEI did consider building new gas-export terminals, even though, in the end, the federal government did not lean in that direction. But even without the addition of new fossil fuel projects, Eastern Canada is already tightly "locked" into fossil fuels, given existing infrastructure.

16 Nia Williams and Steve Scherer, "Winter Is Coming but Germany's Scholz Leaves Canada with No Promises for LNG," *Reuters*, August 25, 2022, https://www.reuters.com/business/energy/winter-is-coming-germanys-scholz-leaves-canada-with-no-promises-lng-2022-08-25/.

17 Brian Platt, "Repsol Scraps Bid to Ship Canadian Gas to Europe, Citing Costs," *Bloomberg News*, March 16, 2023, https://www.bnnbloomberg.ca/repsol-scraps-bid-to-ship-canadian-gas-to-europe-citing-costs-1.1896646.

Table 1: Proposed expansion of carbon lock-in infrastructure, 2010–2021

Project	Location	Type of infrastructure	Main promoter	Status[a]
Extraction				
Bay du Nord offshore platform	Offshore Newfoundland	Offshore platform	Equinor	In development
West White Rose offshore platform	Offshore Newfoundland	Offshore platform	Cenovus Energy	In development
Hydraulic fracturing of Frederick Brook shale	Elgin, NB	30 additional hydraulic fracturing gas wells	Headwater Exploration[b]	On hold
Hydraulic fracturing exploration	Kent County, NB	Hydraulic fracturing gas wells	SWN Resources	Cancelled in 2014
Old Harry offshore platform	Offshore NL and QC	Offshore platform	Headwater Exploration[b]	Cancelled in 2021
Quebec Clean Gas initiative	Bécancour and Lotbinière, QC	Gas wells	Questerre Energy	Legislated ban
Hydraulic fracturing in the St. Lawrence valley	Joly, Saint-Flavien, Val-Alain, Dosquet, Lyster and Notre-Dame-de-Lourdes, QC	Hydraulic fracturing gas wells	Utica Resources[c]	Legislated ban
Galt Wells oil project	Gaspé, QC	Conventional oil wells	Utica Resources[c]	Legislated ban
Projet Haldimand	Gaspé, QC	Shale oil wells	Pieridae Energy[d]	Legislated ban
Projet Bourque	Bourque, QC	Oil wells	Pieridae Energy[d]	Legislated ban
Oil and gas extraction on Anticosti Island	Anticosti Island, QC	Hydraulic fracturing oil and gas wells	Hydrocarbures Anticosti[e]	Legislated ban
Hydraulic fracturing exploration	PEI	Hydraulic fracturing gas wells	Multiple companies	Legislated ban
Transportation/distribution				
Canaport LNG export terminal	Saint John, NB	Onshore liquefaction plant and export terminal	Repsol	Cancelled in 2023
Goldboro LNG export terminal	Goldboro, NS	Floating liquefaction plant and export terminal	Pieridae Energy	Proposal
LNG Newfoundland and Labrador	Placentia Bay, NL	Floating liquefaction plant and export terminal	LNG Newfoundland and Labrador	Proposal
Energy East	Québec and New Brunswick	Pipeline between Hardisty, AB, and Saint John, NB	TransCanada Corporation[f]	Cancelled in 2017
Gazoduq	Abitibi, Haute-Mauricie and Saguenay–Lac-Saint-Jean, QC	Gas line between Montney shale, AB, and Saguenay, QC	Gazoduq	Cancelled in 2021
Énergie Saguenay	Saguenay, QC	Gas liquefaction plant and export terminal	GNL Québec	Cancelled in 2021, lobbying resumed in 2022
Alton Gas	Alton, NS	Gas storage caverns	AltaGas	Cancelled in 2022

a Status of projects as of August 2022.

b Corridor Resources was the initial company involved, acquired by Headwater Exploration in 2020.

c Junex conducted the initial exploration, before being acquired by Cuda Oil and Gas in 2018, which in turn was acquired by Utica Resources in 2019.

d Pieridae Energy acquired the project initiator Pétrolia in 2017.

e Hydrocarbures Anticosti SEC was a joint venture between Investissement Québec, Corridor Resources, Saint-Aubin E&P and Pétrolia.

f TransCanada renamed itself TC Energy in 2017.

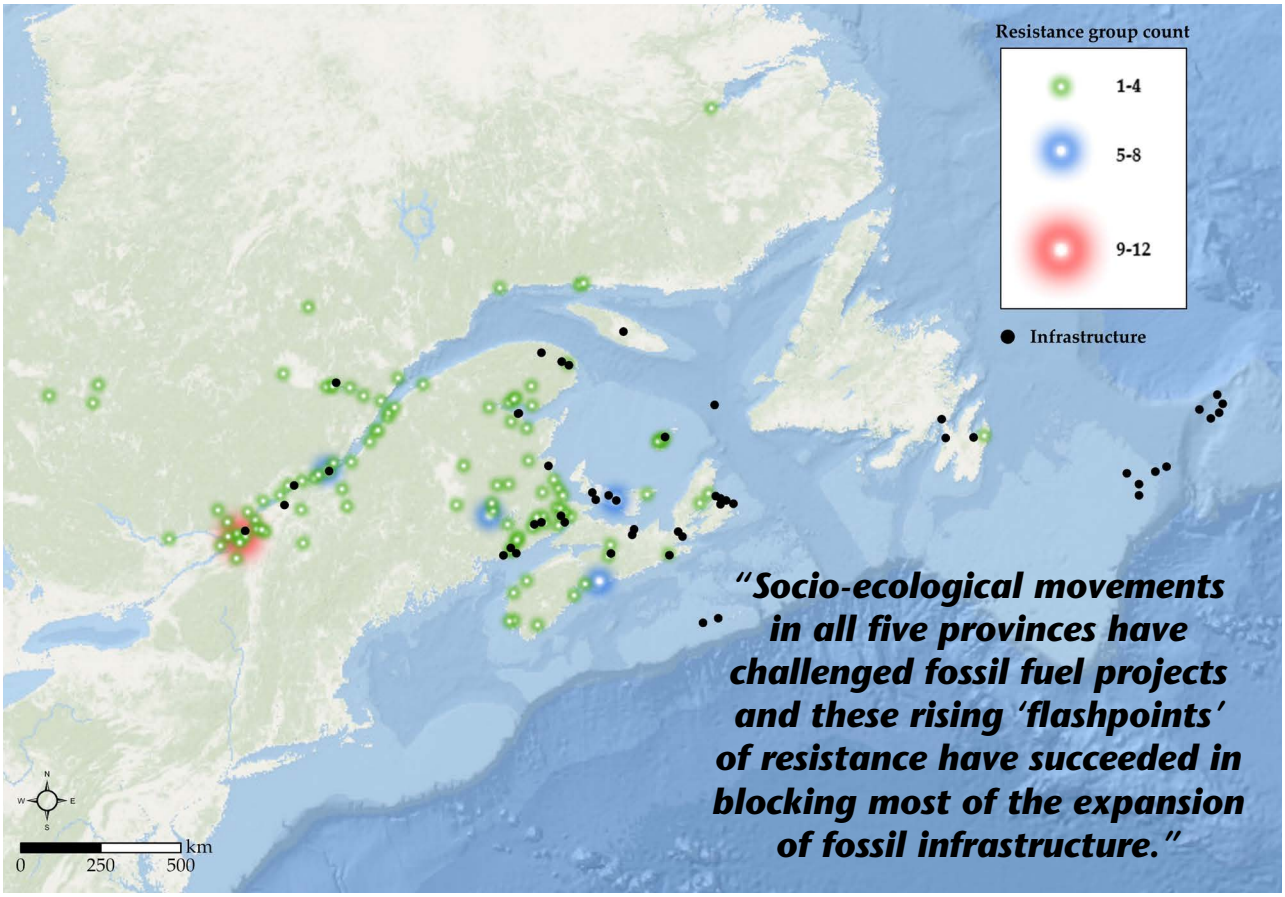
(Re-)Emerging flashpoints of resistance to fossil fuel expansion

SOCIO-ECOLOGICAL MOVEMENTS in all five provinces have challenged fossil fuel projects—and these rising "flashpoints" of resistance have succeeded in blocking most of the expansion of fossil infrastructure.[18] In some cases, extractive sites happened to close because of market or reserve conditions, without any large scale opposition. For example, two of Nova Scotia's three coal mines were shuttered following a drop in international prices, and the Sable Island gas deposits were exhausted in 2018. The Come By Chance refinery in Newfoundland and Labrador closed down in 2020 (now being refurbished to produce green hydrogen), and the Charlottetown diesel generating station, at the end of its useful life, is scheduled to be decommissioned in 2022–2024. Yet, movements vociferously contested fossil fuel expansion and posed a key challenge to new fossil infrastructure in this region over the 2010–2021 period (Figure 5). However, existing refineries and generating stations did not draw the attention of movements, except for a campaign by Nova Scotia's Ecology Action Centre for the closure of the province's coal-fired plants. However, new projects were vociferously contested across the region.

Movements vociferously contested fossil fuel expansion and posed a key challenge to new fossil infrastructure.

18 On fossil fuel flashpoints, see Fiona MacPhail and Paul Bowles, "Toward a Typology of Fossil Fuel Flashpoints: The Potential for Coalition Building," in *Regime of Obstruction: How Corporate Power Blocks Energy Democracy*, ed. William K. Carroll (Edmonton: Athabasca University Press, 2021), 429–52; and Karena Shaw, "Flashpoints of Possibility: What Resistance Reveals about Pathways toward Energy Transition," in *Regime of Obstruction*, ed. Carroll, 399–428.

Figure 5: Resistance to carbon-extractive expansion, 2010–2021



Source: Authors' data, current as of 2021.

There were significant struggles against fracking in each province leading to several moratoriums or bans.

The first wave of struggles against fossil fuels in Eastern Canada during this period focused on resisting shale gas fracking. There were significant struggles against fracking in each province leading to several moratoriums or bans:

- In Québec, local citizen committees organized provincially to oppose shale gas in the St. Lawrence valley, and forced the provincial government to adopt a moratorium on exploration and extraction of shale gas in 2014.
- In New Brunswick, Indigenous, Francophone and Anglophone groups mobilized across the province to stop shale gas exploration in Kent County and the expansion of production in Sussex and Albert County. Coordinating via the New Brunswick Anti-Shale Gas Alliance (NBASGA), and after sustained resistance by members of the Elsipogtog Mi'kmaq community and water protector organization Kopit Lodge, opponents secured a moratorium on shale gas exploration and extraction after the Liberals came to power in 2014. However, this ban was partially lifted in 2019 by a decree of the Progressive Conservative government.
- In 2014 the Nova Scotia government also announced a moratorium on fracking after an expert-led review of the practice and widespread public consultations. Social movement groups such as the Ecology Action Centre, the Nova Scotia Fracking Resources and

Action Coalition (NOFRAC) and the Council of Canadians, as well as local residents of northern East Hants, where five fossil gas wells had already been fracked, were key to the resistance, as was Indigenous opposition, especially through the Assembly of Nova Scotia Mi'kmaw Chiefs.

- In PEI, an anti-fracking campaign started in 2013 under the lead of Don't Frack PEI, a grassroots initiative that mobilized people and organizations across the island. The campaign resulted in a fracking moratorium, and then a legislated ban that was included in the 2017 Water Act after a period of public consultations and intense public mobilization around the issue of water.
- Finally, in Newfoundland and Labrador, starting in 2012, diverse community groups coordinated on a range of local and provincial actions to contest a company's proposal to use hydraulic fracturing to drill for shale oil on the west coast of the island. In response, the provincial government placed a de facto moratorium on fracking and established an external review, the results of which were inconclusive. The provincial government's "pause" on fracking continues.

The cooperation and mobilization within and across these Eastern Canadian provinces, developed in response to the threat of fracking, fostered subsequent notable movements against other forms of fossil fuel lock-in.

Joined by settler and environmental organizations, Mi'kmaq Grassroots Grandmothers led the struggle.

The Energy East pipeline, proposed to connect the Alberta tar sands to the Irving-owned Canaport deep-water export terminal, was a primary focus of anti–fossil fuel mobilizations in the region during this period, with intense opposition in Québec, New Brunswick, and Nova Scotia. In Québec, groups that had mobilized against shale gas were remobilized and supported by the province's large environmental NGOs (ENGOs) in the *Coule pas chez nous* (Don't spill in our home) campaign by the *Regroupement vigilance hydrocarbures du Québec* (Québec's fossil fuel watch group). In a matter of months, 130 local committees were formed. The *Front commun pour une transition énergetique* (Common Front for an Energy Transition) was established in 2015 to organize and coordinate these local groups and widen the coalition to contest the Energy East pipeline, while also bringing the focus on the need for just transition. Groups in New Brunswick and Nova Scotia also mobilized strongly against Energy East. The pipeline was defeated in 2017 when TransCanada pulled out of the project following a federal announcement that the pipeline would have to pass a climate test.[19]

Another example of successful resistance was civil society opposition to the Alton natural gas storage project in Nova Scotia, proposed to store up to 10 billion cubic feet of fossil gas in flushed-out salt caverns. In 2014, Mi'kmaq water protectors of Sipekne'katik lit a sacred fire on Highway 102 and began a long campaign against the project. Joined by settler and environmental organizations, Mi'kmaq Grassroots Grandmothers led the struggle, grounding their resistance in the 1752 Peace and Friendship Treaty and their inherent rights and responsibilities to protect their territories. The movement was ultimately successful: in 2020 the Nova Scotia Supreme Court ruled that Alton Gas had not adequately consulted with Mi'kmaq peoples, and in 2021, the corporation announced it was cancelling the project.

Social movements in Eastern Canada also successfully contested LNG export terminals. In 2019 and 2020, a wide coalition of groups that had opposed Energy East mounted a campaign in Québec and fought successfully against the Énergie Saguenay LNG export terminal and pipeline.

19 "Energy East: A Timeline for How We Won," 350.org, accessed March 21, 2023, https://350.org/energyeast-win/.

The Énergie Saguenay project was rejected by the provincial government, which cited concerns for biodiversity, climate and the project not being given "social licence" after an unprecedented level of citizen participation in the environmental assessment process. And in Nova Scotia, local groups resisted Pieridae Energy's 2014 proposal of an LNG processing plant and export terminal in Goldboro. Advocates in Nova Scotia worked in collaboration with international allies—notably groups in Europe, the main market for the LNG—to secure a temporary win: Pieridae announced in 2021 that it was not proceeding with the project. However, the project was unearthed prior to a visit in August 2022 by the German chancellor to discuss alternative energy supplies to replace Russian fossil gas. Pieridae proposed a scaled-back version (400 million instead of 1.5 billion cubic feet of gas per day) of the Goldboro terminal that would float offshore. At the time of writing, the federal government does not seem to be entertaining new LNG projects, though it might still decide to support projects that could pivot to the export of green hydrogen in the future.[20]

As a final example, offshore oil and gas is emerging as a key site of struggle against fossil fuels in the region. For the first time in Newfoundland and Labrador's 25-year history of offshore oil development, there is coordinated local opposition, with support from national movement actors, to a proposed project, the Bay du Nord project in the Flemish Pass basin, which could become the province's fifth producing field. Notably, in May 2022, Ecojustice filed a lawsuit with the Federal Court on behalf of Équiterre, Sierra Club Canada Foundation, and Mi'gmawe'l Tplu'taqnn Incorporated (MTI) contesting federal approval of the project given the government's failure to consider downstream emissions and to fulfill its constitutional duty to consult with affected Indigenous governments and communities. Meanwhile, even with the renewal of the Georges Bank moratorium on offshore oil and gas and the exit of BP from offshore drilling, communities in Nova Scotia continue to contest offshore oil development. In November 2019, 12 Nova Scotia municipalities together called for a federal inquiry into the impact of offshore oil and gas drilling and demanded a moratorium be put in place until the inquiry could report its results. The Offshore Alliance, the Ecology Action Centre, Save Our Seas and Shores, and the South Shore Chapter of the Council of Canadians are the more active groups opposing offshore development.

20 Mitchell Beer, "Exclusive: Bid to Revive Doomed Nova Scotia LNG Project Collides with Germany's Net-Zero Plans," *Energy Mix*, May 16, 2022, https://www.theenergymix.com/2022/05/16/exclusive-bid-to-revive-doomed-nova-scotia-lng-project-collides-with-germanys-net-zero-plans/.

Burgeoning provincial transition movements

THESE SUCCESSFUL FLASHPOINTS against expanding fossil fuel extraction and transportation are now seeding broader efforts by socio-environmental and climate justice movements to decarbonize Eastern Canada's energy systems via a just transition.

At a minimum, these movements are urging provincial governments to boost their climate policy ambition. Each of the five Eastern provinces have adopted climate action plans over the last decade that establish emissions-reduction targets and report on their actions and progress. All provinces have recently updated their plans to reflect increased ambition and align their commitment to the federal net-zero-by-2050 target. Since 2019, Nova Scotia has been legally bound to reduce provincial emissions by 53% below 2005 levels by 2030.[21] Québec, despite not being on target for its last emissions-reduction commitment, reiterated its 37.5%-by-2030 target in its *2030 Plan for a Green Economy*.[22] PEI increased its commitment in a creative way, from a 30% reduction by 2030 to a goal of "net zero energy" by 2030 and net zero emissions in 2040.[23] The government of Newfoundland and Labrador established a net-zero-by-2050 target in 2020, yet province's emissions continue to rise and are anticipated to continue doing so as new offshore oil projects come online. Finally, New Brunswick published its updated plan in September 2022, which also aligns with the federal net zero target by 2050.[24] The province's apparently ambitious 2030 reduction target in fact requires a reduction of emissions by less than 3 megatonnes, from the reported emissions of 12.7 megatonnes in 2020 to a goal of 10 megatonnes by 2030. Table 2 summarizes governmental targets in each province.

Since 2019, Nova Scotia has been legally bound to reduce provincial emissions by 53% below 2005 levels by 2030.

21 Nova Scotia House of Assembly, Sustainable Development Goals Act, Assembly 63, Session 2 (2019), https://nslegislature.ca/sites/default/files/legc/PDFs/annual%20statutes/2019%20Fall/c026.pdf.

22 Government of Québec, *2030 Plan for a Green Economy: Framework Policy on Electrification and the Fight Against Climate Change* (Québec City: Government of Québec, 2020), https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/environnement/publications-adm/plan-economie-verte/plan-economie-verte-2030-en.pdf.

23 Government of Prince Edward Island, *2040 Net Zero Framework: Accelerating Our Transition to a Clean, Sustainable Economy* (Charlottetown: Government of Prince Edward Island, 2022), https://www.princeedwardisland.ca/en/publication/2040-net-zero-framework.

24 Province of New Brunswick, *Our Pathway Towards Decarbonization and Climate Resilience: New Brunswick's Climate Change Action Plan 2022-2027* (Fredericton: Province of New Brunswick, 2022), https://www2.gnb.ca/content/dam/gnb/Corporate/Promo/climate/climate-change-action-plan.pdf.

Table 2: Summary of provincial emissions-reduction targets

Province	2030 target	2050 target
Québec	37.5% below 1990	Net zero
Nova Scotia	53% below 2005	Net zero
Prince Edward Island	Net zero energy	Net zero
New Brunswick	47% below 2005	Net zero
Newfoundland and Labrador	30% below 2005	Net zero

Socio-ecological movements in all provinces advocate bold climate policies and bending the fossil fuel *production* curve.

Provincial-level action diverges greatly, even among provinces with similar targets. On the one hand, Québec, Nova Scotia and PEI have started implementing a strong "green growth" program that includes mass electrification, shutting down coal electricity generation, increasing renewable electricity production and improving commercial and residential buildings' energy efficiency. Of this trio, Québec took the most aggressive action to wind down fossil fuel supply when it legislated a province-wide ban on fossil fuel extraction in April 2022. Meanwhile, the government of Québec is also funding sectors linked to electrification, including lithium mining, battery production and the eventual development of hydrogen production for export.

On the other hand, the governments of New Brunswick and Newfoundland and Labrador have actively obstructed transition, pushing for further fossil development, as well as for nuclear nuclear development in the case of New Brunswick, while moving slowly on implementing their climate action plans. The New Brunswick government lifted the moratorium on fracking in the Sussex area, where 32 wells are currently being exploited by Alberta-based Headwater Exploration in the McCully field. Headwater would like to open 30 more wells in the nearby Frederick Brook shale, though the company made clear it will not invest in the project unless there is a clear social licence and consent from Indigenous groups. For its part, the government in Newfoundland and Labrador has vowed to more than double oil production by 2030 and forecasted tripling it by about 2047, to be achieved by working closely with the oil industry to drill one hundred new exploration wells.[25] Overall, of all five Eastern provinces, only Québec and PEI address the extraction and production stages of the oil and gas commodity chain in their climate policies, with a focus on fossil gas in the case of PEI. To achieve their targets, the three other provinces only rely on a green growth approach that seeks to reduce internal *consumption* of fossil fuels, at the tail end of the oil and gas commodity chain.

In stark contrast to governmental action, socio-ecological movements in all provinces advocate bold climate policies and bending the fossil fuel *production* curve, and in some cases phasing out fossil fuel extraction, to align with international climate responsibility. The Québec transition movement that emerged from the struggle against fracking and the Energy East pipeline produced a *Road Map for Québec's Transition toward Carbon Neutrality* that addresses the issue of

25 Government of Newfoundland and Labrador, *Advance 2030: A Plan for Growth in the Newfoundland and Labrador Oil and Gas Industry*, Department of Natural Resources (St. John's: Government of Newfoundland and Labrador, 2018).

infinite economic growth and strongly gestures toward a post-capitalist future.[26] This move away from the green growth agenda resulted from the coordination between grassroots opposition to fossil infrastructure, large environmental NGOs, social justice groups and the main federations of unions. In other provinces, several organizations are also coordinating to push the discourse toward deeper changes than the governmental plans, though nowhere is the movement as broad ranging and forward looking as that of Québec.

Yet governments face intense lobbying by the fossil fuel industry for a very slow transition and, in the case of Newfoundland and Labrador in particular, are motivated to expand extraction given revenues from oil. Focusing on demand-side climate action allows governments to have their cake and eat it too: they are able to showcase climate action and emissions reductions while at the same time benefiting from oil revenue and avoiding making deeper and, in the case of Newfoundland and Labrador, less popular changes to the economy.

The questions raised by social movements about the need for pairing energy transition with enhanced social and economic equity do not feature in mainstream climate policy debates. The province of Québec, where climate justice is at the heart of transition discussions, is perhaps the exception.

In general, movements in all provinces are faced with governmental capture of the transition discourse. By adopting climate action plans, provincial governments publicly distance themselves from the fossil economy, albeit only symbolically. As oil and gas corporations are strongly associated with climate change denial, governments appear to be part of the enlightened group of jurisdictions who face the reality of climate change with action toward a transition away from fossil fuels. However, climate action plans are themselves part of what sociologist Pierre Bourdieu calls a representational struggle:[27] they contribute to defining transition as a move toward electrification of everything with non-emitting energy sources within a continued growth agenda, now labelled as "green."[28] Alternative views of transition that advocate relocalization, degrowth and post-capitalist alternatives to a fossil-dependent economy are thereby kept to the margins and their transformative potential effectively neutralized. In this context, environmental groups often organize their action around governments' net zero plans, whether focusing on aspects of their implementation or attempting to hold governments accountable to their commitments. Meanwhile, more transformative proposals that advocate for deeper structural changes to our economies, such as the Québec ZéN road map, often remain off the radar of social movement groups.

By adopting climate action plans, provincial governments publicly distance themselves from the fossil economy, albeit only symbolically.

26 Front commun pour la transition énergétique, *Projet Québec ZéN (zéro émission nette): Feuille de route pour la transition du Québec vers la carboneutralité*, version 2.0 (Montréal: Front commun pour la transition énergétique, 2020), https://www.pourlatransitionenergetique.org/feuille-de-route-quebec-zen/. An earlier version was translated to English; for the press release and a link to the translation, see "The Front Commun pour la Transition Énergétique: Uniting to Build a ZéN Québec," press release, September 30, 2019, https://www.pourlatransitionenergetique.org/press-release-the-front-commun-pour-la-transition-energetique-uniting-to-build-a-zen-quebec/.

27 Pierre Bourdieu, *Language and Symbolic Power*, trans. Gino Raymond and Matthew Adamson (Cambridge, MA: Harvard University Press, 1991).

28 This is independent of whether this "green growth" project is physically possible or not, an issue widely discussed since the 1970s.

Unlocking carbon lock-in

The window for viable development seems to be closing, given the little industry interest in Nova Scotia's offshore reserves.

WHAT WILL IT TAKE TO *UNLOCK* CARBON LOCK-IN in these provinces to foster a transition away from fossil fuel dependence? What opportunities are available for socio-ecological movements to foster an equitable transition?

Newfoundland and Labrador and New Brunswick face the highest barriers. In Newfoundland and Labrador, oil development looms large, culturally and politically/economically, as it is cast by dominant political actors as the province's only chance against poverty. There is forceful support for oil expansion among both main political parties, oil and environmental industry associations, university officials and some key unions. Government support for expansion is articulated in the provincial government's policy to double oil production by 2030 and develop commercial gas as well as in wide-ranging financial support offered to the sector. Meanwhile in New Brunswick, while coal power is being phased out following the federal decision to eliminate coal-fired plants by 2030, the province remains firmly "locked" onto oil. The largest provincial emitter, Irving Oil's Saint John refinery, is also the province's largest employer, while the Coleson Cove generating station used for winter peaks and back-up power is oil fired. The political dominance of the Irving family is a major barrier to change, and the new climate action plan reflects the current political will to maintain the economic and energy status quo.

In Nova Scotia, lock-in is ambiguous. The new Progressive Conservative government has sped up the timeline for the phase-out of coal-fired electricity, but the province remains open to natural gas-fired electricity, offshore oil and gas, and LNG projects. However, the window for viable development seems to be closing, given the little industry interest in Nova Scotia's offshore reserves. On new LNG terminals for export, the federal government seems uncertain about whether or not they should be supported and considered a transition fuel that can displace coal, with their position on the "business case" changing throughout 2022.[29]

Québec and PEI, however, are leading the energy transition among Eastern Canadian provinces. In Québec, while refining is prominent—the province's two refineries represent nearly 20% of Canadian refining capacity—and the province remains dependent on imported fossil gas and oil, fossil extraction is actively being challenged. This is most evident in the province's April 2022 ban on oil and gas exploration and commitment to wind down existing drilling within three

29 Contrast the positions of the Canadian government in the two following news reports: Williams and Scherer, "Winter Is Coming"; and Steve Scherer, "Canada Would Back 'Economically Viable' New LNG Terminals," *Reuters*, October 14, 2022, https://www.reuters.com/markets/commodities/canada-would-back-economically-viable-new-lng-terminals-energy-transition-2022-10-14/.

years. Even so, the ban legislation guarantees compensation to oil and gas firms, up to $100 million for compensation and well closure costs—though industry representatives demanded at least $500 million for lost profits. In the past, companies have used compensation windfalls to reinvest in new oil developments.

While there are formidable obstacles to transition in these provinces, there are clear signs of growing—and often effective—resistance to fossil fuel activities as well as burgeoning transition movements across the region.

Québec is the only province where movements are actively challenging existing infrastructure beyond coal-fuelled plants. Long-standing civil society resistance to fossil fuel extraction and transportation—built over 20 years and met with multiple key successes—has moved toward implementing a just transition. There is now an active province-wide public debate on energy transition and its social and ecological dimensions. Perhaps testimony to the strength of the movement, the provincial government is leveraging its bold effort to wind down fossil fuel extraction at the international level via the multilateral Beyond Oil and Gas Alliance, of which Québec was one of the original members. On the ground, the Coalition anti-forage and other groups are putting pressure on major institutional investor Caisse de dépôt et placement to now pull out of gas in the province.

There are clear signs of growing—and often effective—resistance to fossil fuel activities as well as burgeoning transition movements across the region.

In Nova Scotia and New Brunswick, civil society movements' experiences in resisting oil and gas projects, notably via Indigenous-settler collaborations (against Alton Gas in Nova Scotia and fracking for gas in New Brunswick) is boosting the capacity and ambition of local people to resist oil and gas development. In Nova Scotia, an expansive just transition movement that centres on social justice, anti-racism and Treaty responsibilities is building, one that envisions transition in much more expansive ways and centres Indigenous-led water and land protection. In New Brunswick, a broad-based anti-fracking movement, involving Indigenous, Francophone and Anglophone groups, as well as a wide diversity of NGOs, resulted in the 2014 moratorium, and provided a foundation for later resistance against the Energy East pipeline and the eventual revival of fracking projects.

Even in Newfoundland and Labrador, perhaps the most tightly locked-in province, there are clear signals of the potential for change. For the first time in the province's 25-year history of offshore oil development, there is coordinated opposition to a proposed project Bay du Nord. There is also growing awareness among the labour movement (led by the Newfoundland and Labrador Federation of Labour), civil society (via a burgeoning JustTransitionNL coalition) and the provincial New Democratic Party about the need to enact a gradual oil wind-down that also protects workers. Meanwhile, Indigenous governments and communities in Labrador are demonstrating the province's potential for clean energy development via large grid-tied solar installations displacing diesel dependence in Mary's Harbour, NunatuKavut; and in Makkovik, Nunatsiavut.

What is more, interviewees representing socio-ecological movements in all five provinces signalled that provincial efforts to resist fossil fuel development and build an equitable transition away from fossil fuels could be consolidated effectively in a cross-provincial movement. Until recently, this kind of collaboration across provinces has been taking place on a case-by-case basis. Back in the 2010s, groups from Québec opposed to the Old Harry offshore project reached out to communities around the the Gulf of St. Lawrence in other provinces, though no alliance

came out of their efforts.[30] More recently, the New Brunswick Anti-Shale Gas Alliance has been helping to coordinate action against the Goldboro LNG export terminal project in Nova Scotia and the Galt project in Québec. In 2022, in the context of renewed interest in building LNG terminals to supply Europe, the Stop Atlantic Gas Alliance emerged as a coordination of groups in New Brunswick, Nova Scotia, Québec and Alberta, with key partners in Germany to oppose LNG export. Further coordination could facilitate the sharing of capacity and insights across the region, particularly from Québec, where movements are leading in pushing for strong climate policy action.

30 Camille Turbide, "Le mouvement madelinot d'opposition au projet Old Harry" (master's thesis, Université de Moncton, NB, 2022).

Conclusion: Next challenges

WHILE PROVINCIAL GOVERNMENTS IN EASTERN CANADA have acknowledged the need to reduce emissions and adopted net-zero-by-2050 targets, all but the provinces of Québec and PEI remain open to new fossil fuel extraction infrastructure and projects that would further lock their economies in those non-renewable and highly polluting energy sources. The recent approval of the Bay du Nord offshore oil project in Newfoundland and Labrador and the renewed pressure to develop LNG export terminals in four provinces (with the exception of PEI) exemplify this irreconcilable tension between emissions-reduction goals and the drive to expand fossil fuel infrastructure.

The fossil fuel sector, threatened by the rise of renewables and mounting political pressure to curtail fossil fuel supply as the climate crisis intensifies, is now pivoting to hydrogen as one way to secure a place in the net zero future. This is now unfolding in the ongoing energy negotiations between the federal government and Germany on "clean" hydrogen exports that seem to allow for the possibility of developing "blue" hydrogen, which is produced using fossil gas with carbon capture. EverWind Fuels' environmental assessment for its Point Tupper "green" hydrogen project—produced from renewable electricity—was conditionally approved in early February 2023 by Nova Scotia. This would be North America's first commercial-scale green hydrogen facility, which would produce and export 200,000 tonnes of hydrogen per year to the EU by 2025.[31] Movements across the Eastern Canadian provinces that have clearly opposed the expansion of fossil fuel extraction are now challenged to respond to emerging fuels that are presented as "green" or "clean" yet might actually contribute to carbon lock-in, as is the case for carbon capture on LNG.[32] Other forms of "green" energy are equally contentious, as demonstrated in mega hydro developments in Labrador that can infringe on the rights of Indigenous Peoples. Large-scale renewable projects that depend on expanding the extractive industry, both nationally and abroad, are increasingly critiqued as well in that they pose serious socio-environmental consequences and serve to displace the climate crisis onto other sectors. As

Movements across the Eastern Canadian provinces that have clearly opposed the expansion of fossil fuel extraction are now challenged to respond to emerging fuels that are presented as "green" or "clean" yet might actually contribute to carbon lock-in.

31 Christopher Bonasia, "Trailblazing Hydrogen Plant Could 'Cannibalize' Green Power from Nova Scotia Grid," *Energy Mix*, March 1, 2023, https://www.theenergymix.com/2023/03/01/trailblazing-green-hydrogen-plant-could-cannibalize-green-power-from-nova-scotia-grid/.

32 Alexander Dunlap, "End the 'Green' Delusions: Industrial-Scale Renewable Energy Is Fossil Fuel+," *Verso Books* (blog), May 10, 2018, https://www.versobooks.com/blogs/3797-end-the-green-delusions-industrial-scale-renewable-energy-is-fossil-fuel.

such, developing a common position around hydrogen and other "green" energies is urgently required so that movements can remain united around the common goals of ensuring the most rational and just use of energy and proposing alternatives to a green growth agenda that instead respects the earth's boundaries.

The development of "clean" or "green" hydrogen could fracture just transition movements in Eastern Canada. Given the enormity of the task of transitioning off of all forms of fossil fuels and that energy is lost at all stages of the hydrogen chain (starting from electricity to produce hydrogen, to storage, transportation and then final use), there are good reasons to reserve hydrogen for uses where there are simply no alternatives.[33] New developments like the major wind-hydrogen project proposed for Newfoundland's west coast[34] make no promises or distinctions about the end uses of their products and may well be used in sectors where there are better, less energy-consuming alternatives. As such, developing a common strategy around hydrogen and other "green" energies is urgently important.

Now is an opportune moment to develop an alternative Eastern Canadian vision of an energy transition.

In addition to saying no to fossil fuel lock-in, movement actors in Québec have demonstrated the power of creating the "yes"—that is, developing a vision and actions for building a just eco-centric energy transition. So far, federal and provincial governments have tackled the energy transition with financial incentives that are largely lining the pockets of green capital. This does nothing to make the lives of everyday people better, and instead drains public resources from investments that would improve the lives of most citizens. Now is an opportune moment to develop an Eastern Canadian vision of an alternative energy transition that supports Indigenous rights and sovereignty, protects and restores ecosystems, maintains the standard of living and dignity of fossil fuel workers, as they move away from the industry, and invests in collective goods and infrastructure that improve everyone's quality of life and economic well-being. Over the last decade, struggles against fossil fuels and the intensifying pressure to expand their extraction have laid a strong foundation for this work. The capacity to imagine this alternative and enact it through broad-based citizen-driven movements now exists across this region. This is a propitious moment for just transition organizing across Eastern Canada.

33 See Michael Liebreich's "clean hydrogen ladder" for a discussion of the hierarchy of potential uses for hydrogen and their economic feasibility: Liebreich, "The Clean Hydrogen Ladder," *Liebreich Associates* (blog), August 15, 2021, https://www.liebreich.com/the-clean-hydrogen-ladder-now-updated-to-v4-1/.

34 Mike Moore, "Timeline for Massive N.L. Wind Project 'Extremely Ambitious,' Consultant Says," *CBC News*, August 23, 2022, https://www.cbc.ca/news/canada/newfoundland-labrador/wind-energy-timelines-canada-germany-deal-nl-1.6558549.

Appendix: Operational, projected and inactive carbon lock-in infrastructures, 2010–2022

Infrastructure	Location	Status (2022)	Infrastructure type	Commodity chain stage
Newfoundland and Labrador				
Baccalieu prospect	Offshore	Proposal	Offshore oil platform	Extraction
Bay de Verde prospect	Offshore	Proposal	Offshore oil platform	Extraction
Harpoon prospect	Offshore	Proposal	Offshore oil platform	Extraction
Mizzen prospect	Offshore	Proposal	Offshore oil platform	Extraction
Bay du Nord offshore development	Offshore	Under construction	Offshore oil platform	Extraction
West White Rose project	Offshore	Under construction	Offshore oil platform	Extraction
Hebron	Offshore	In operation	Offshore oil platform	Extraction
Hibernia oil and gas field	Offshore	In operation	Offshore oil platform	Extraction
Terra Nova	Offshore	In operation	Offshore oil platform	Extraction
White Rose	Offshore	In operation	Offshore oil platform	Extraction
LNG Newfoundland and Labrador	Grassy Point	Proposal	LNG liquefaction and export terminal	Transportation
Come By Chance refinery	Come By Chance	Repurposed for biofuels	Oil refinery	Refining
Holyrood thermal generating station	Holyrood	In operation	Oil and diesel power plant	Consumption
Nova Scotia				
Stellarton surface coal mine	Stellarton	Closed	Coal mine	Extraction
Donkin mine	Donkin	In operation	Coal mine	Extraction
Point Aconi surface coal mine	Point Aconi	Closed	Coal mine	Extraction
Deep Panuke offshore gas development project	Sable Island	Decommissioned	Gas wells	Extraction
Alton Gas	Alton	Cancelled	LNG storage in salt caves	Transportation
Goldboro LNG plant	Goldboro	Proposal	Gas liquefaction plant	Transportation
Point Tupper marine terminal	Point Tupper	In operation	Coal and oil import terminal	Transportation
Sydney international coal pier	Sydney	In operation	Coal import terminal	Transportation
Lingan generating station	Lingan	In operation	Coal power plant	Consumption
Point Aconi generating station	Point Aconi	In operation	Coal power plant	Consumption
Point Tupper generating station	Point Tupper	In operation	Coal power plant	Consumption
Trenton generating station	Trenton	In operation	Coal power plant	Consumption

Infrastructure	Location	Status (2022)	Infrastructure type	Commodity chain stage
Prince Edward Island				
Shale gas exploration	Prince Edward Island	Legal ban	Gas fracking wells	Extraction
Borden generating station	Borden-Carleton	In operation	Oil power plant	Consumption
Harvard Street generating station	Summerside	In operation	Oil power plant	Consumption
Charlottetown thermal generating station	Charlottetown	Decommissioned	Oil and diesel power plant	Consumption
New Brunswick				
Frederick Brook shale	Elgin	On hold (moratorium lifted)	Gas fracking wells	Extraction
McCully field	Penobsquis	In operation	Gas fracking wells	Extraction
Shale gas exploration	Kent County	Moratorium	Gas fracking wells	Extraction
Stoney Creek field	Stoney Creek	Closed	Onshore oil wells	Extraction
Canaport LNG export terminal	Saint John	Proposal	Deep-water LNG export terminal	Transportation
Canaport	Saint John	In operation	Deep-water crude oil receiving terminal	Transportation
Canaport LNG	Saint John	In operation	Deep-water LNG receiving terminal, regasification plant, storage tanks	Transportation
Emera Brunswick pipeline	Saint John to Saint Stephen	In operation	Gas pipeline	Transportation
Port of Belledune deep-water terminal	Belledune	In operation	Deep-water coal import-export terminal	Transportation
Terminal Chaleur	Belledune	Cancelled	Oil export terminal	Transportation
Irving Oil refinery	Saint John	In operation	Oil refinery	Refining
Bayside generating station	Saint John	In operation	Fossil gas power plant	Consumption
Belledune generating station	Belledune	In operation	Coal power plant	Consumption
Coleson Cove generating station	Lorneville	In operation	Oil power plant	Consumption
Millbank Generating Station	Millbank	In operation	Oil power plant	Consumption
Québec				
Hydraulic fracturing in the St. Lawrence valley	Joly, Saint-Flavien, Val-Alain, Dosquet, Lyster and Notre-Dame-de-Lourdes	Legal ban	Gas wells	Extraction
Galt wells oil project	Gaspé	Legal ban	Onshore oil wells	Extraction
Gastem	Îles-de-la-Madeleine	Legal ban	Onshore oil wells	Extraction
Oil and gas wells on Anticosti Island	Anticosti Island	Legal ban	Hydraulic fracturing oil and gas wells	Extraction

Infrastructure	Location	Status (2022)	Infrastructure type	Commodity chain stage
Projet Bourque	Bourque	Legal ban	Shale oil wells	Extraction
Projet Haldimand	Gaspé	Legal ban	Shale oil wells	Extraction
Quebec Clean Gas initiative	Bécancour and Lotbinière	Legal ban	Gas fracking wells	Extraction
Ligne 9B	Connects Sarnia, ON, to Montréal	In operation	Oil pipeline	Transportation
Saint-Laurent pipeline	Connects Montréal and Lévis	In operation	Oil pipeline	Transportation
Trans-Northern's Ontario-Québec pipeline	Connects Nanticoke, ON, to Montréal	In operation	Oil pipeline	Transportation
Énergie Saguenay	Saguenay	Cancelled	LNG storage tanks, liquefaction plant, deep-water export terminal	Transportation
Gazoduq	Abitibi, Haute-Mauricie and Saguenay–Lac-Saint-Jean	Cancelled	Gas pipeline	Transportation
Jean-Gaulin refinery (Valero)	Lévis	In operation	Oil refinery	Refining
Suncor refinery	Montréal	In operation	Oil refinery	Refining
Multiple provinces				
Old Harry	Gulf of St. Lawrence, on the Québec and NL border	Cancelled	Offshore oil platform	Extraction
Canadian Prosperity Project pipeline	Crosses Québec and NB, to end in Saint John	Proposal	Oil pipeline	Transportation
Energy corridor	Crosses Québec and NB, to end in Saint John	Proposal	Oil and gas pipelines	Transportation
Maritimes & Northeast Pipeline	Connects NS, NB and northeastern US states	In operation	Gas pipeline	Transportation
Montreal, Maine and Atlantic Railway	Connects Montréal to Saint John, NB	Stopped carrying oil, partly decommissioned	Railway	Transportation
Energy East pipeline	Crosses Québec and NB, to end in Saint John	Cancelled	Oil pipeline	Transportation

This report is part of the Corporate Mapping Project (CMP), a research and public engagement initiative investigating the power of the fossil fuel industry. The CMP is jointly led by the University of Victoria, Canadian Centre for Policy Alternatives BC and Saskatchewan Offices, and Parkland Institute. The initiative is a partnership of academic and community-based researchers and advisors who share a commitment to advancing reliable knowledge that supports citizen action and transparent public policy making. This research was supported by the Social Sciences and Humanities Research Council of Canada (SSHRC).

www.corporatemapping.ca