



KING CARBON

How Enbridge Damages Our Climate as the World's Largest Tar Sands Shipper



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We are Canada's most effective environmental action organization. We challenge, and inspire change in government, business and people to ensure a greener, healthier and prosperous life for all.

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INTRODUCTION

Enbridge Inc. carefully cultivates a green, responsible image for itself. Yet, when you scratch below the surface of annual reports decorated with pictures of wind turbines, and company-sponsored community barbecues, the simple fact is that Enbridge is the largest shipper of tar sands oil in the world. And, at a time when scientists are begging us to go in the opposite direction, Enbridge has plans to help dramatically expand climate-damaging tar sands production and consumption.

While many people only know Enbridge as the company that delivers natural gas to heat their home, Enbridge is mainly in the business of building pipelines to transport oil and gas from where it's produced to where it's consumed. It maintains the longest oil pipeline network in the world, and has reach from the Northwest Territories to the tar sands in Alberta to Texas.

Enbridge is responsible for shipping enough of Canada's oil and gas each year to equal, when burned, half of Canada's entire annual release of global warming pollution.

Furthermore, if the company has its way with new pipeline projects, its role in keeping North America and Asia hooked on dirty fuels will only increase. Enbridge wants to be the first company to send tar sands oil to Asia by constructing a massive pipeline across northern B.C., and carrying oil via supertankers through fragile and pristine coastal waters for the first time. Enbridge's plans would also result in hitching Ontario's energy future to the tar sands by cutting off access to oil from the east, undermining the energy security of Canada's most populous province.

Enbridge is banking on shipping ever more carbon pollution. Does this make it a responsible corporate actor that is reducing its risk profile? No. It's time to shine a light for the public and investors on a company heading in the wrong direction.



A burst Enbridge pipeline spilled more than 800,000 gallons of oil into the Kalamazoo River in Michigan. (Detroit News)

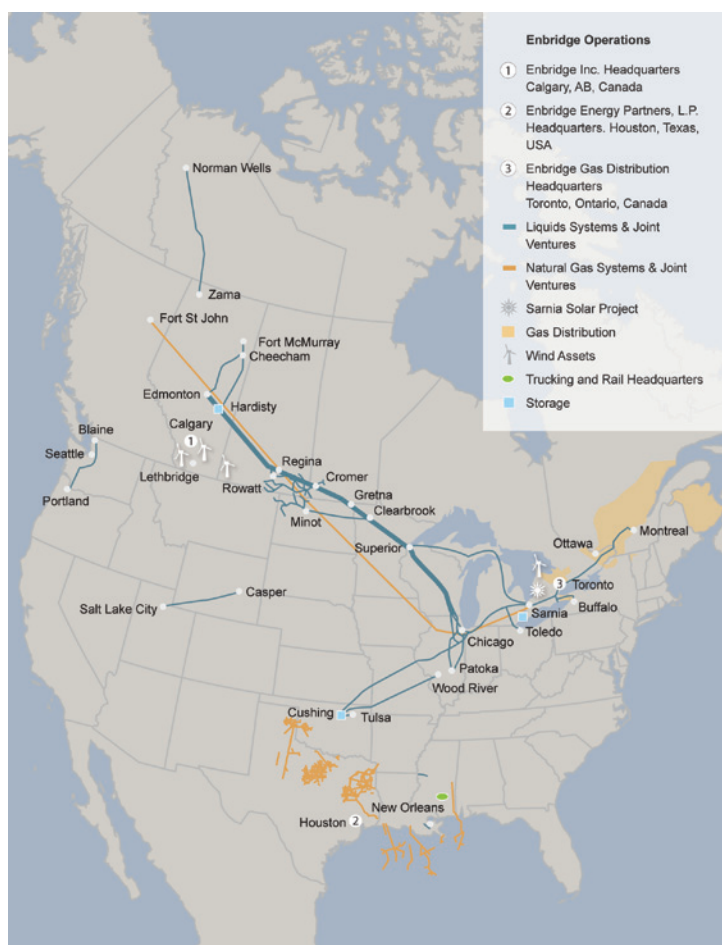
SUMMARY OF COMPANY

Enbridge and its subsidiaries (including Enbridge Energy Partners, Enbridge Gas Distribution, Enbridge Offshore Pipelines, Noverco Inc. and Enbridge Gas New Brunswick) gather and transport fossil fuel from the tar sands, offshore drilling in the Gulf of Mexico, and conventional oil and gas sources across Canada and parts of the United States. Overall, Enbridge's footprint spans twenty states, five provinces and one territory.¹ In total, Enbridge is responsible for 8,000 kilometres of fossil fuel pipelines in Canada and 5,600 kilometres in the United States.²

Enbridge transports 70 per cent of Western Canadian crude oil to the U.S., or 12 per cent of all U.S. oil imports.³ It also gathers and ships oil from within the U.S., bringing the total oil shipments the company is responsible for to 2.5 million barrels per day.⁴ Enbridge is the largest mover of tar sands oil. The company is looking to expand this by building new pipelines in the tar sands region and across northern B.C. to Kitimat, where the oil would be shipped by supertankers to Asia.

Enbridge also ships vast amounts of natural gas around the continent and into peoples' homes. One major pipeline runs from Fort St. John in Northern B.C. to Chicago and then up to Sarnia, Ontario. Enbridge also owns or partially owns natural gas pipelines in the U.S. Gulf, where it is the biggest transporter of natural gas, and Texas. It also delivers natural gas to more than 1.9 million customers in Ontario, Quebec, New Brunswick and parts of New York State.⁵

Enbridge also produces 813 MW of green energy in Canada and the U.S., primarily from wind and solar.⁶ Green energy investment is a good move for Enbridge, and the company should be encouraged to make more of this type of investment. However, to put this into perspective, the energy produced in a day by Enbridge's 700 MW of wind generation is roughly one-tenth of one per cent of the energy contained in the 2.5 million barrels of oil shipped.



Source: Enbridge Inc.



“We intend to leave no net environmental impact from our future activities...that means planting a tree for every tree removed” - Patrick Daniel, Enbridge President and CEO⁷
(Photo credit: David Dodge, CPAWS)

KING CARBON: HOW ENBRIDGE DAMAGES OUR CLIMATE

There are companies that are in the business of getting dirty fuels like tar sands and shale gas out of the ground, like Suncor, Shell and Imperial Oil. And then there are the companies that collect that dirty fuel where it's produced and ship it to the buyers who eventually burn it. Enbridge falls into the latter category, as do several other large companies that operate in Canada like TransCanada and Kinder Morgan.

Enbridge's entire business is based on expanding fossil fuel use at a time when the science is clear: we need to rapidly transition away from fossil fuels to clean energy in order to avoid climate changes that will hurt our children. Enbridge is responsible for the impacts not only of its pipelines themselves, but what goes through them. And, out of the companies shipping Canada's oil and gas around the continent, Enbridge moves the biggest amount of carbon pollution through its pipes.

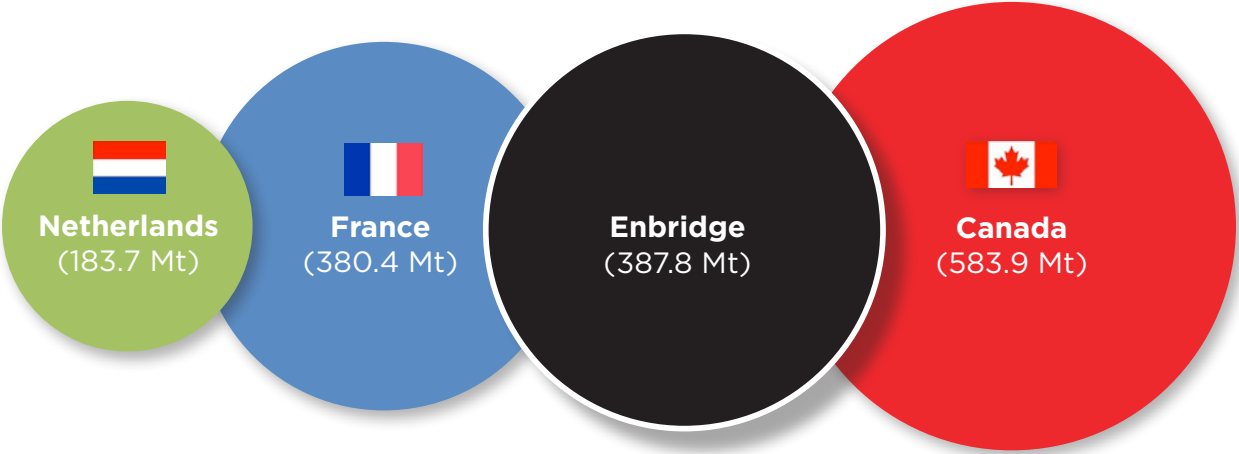
Table #1 provides an estimate of the greenhouse gas emissions that are produced by the Canadian oil and gas shipped by the three largest pipeline companies in Canada: Enbridge, TransCanada and Kinder Morgan. The full calculations are available upon request. These are conservative estimates based on the main big pipelines originating within Canada for the three companies.

Table 1. Greenhouse gas emissions produced by Canadian oil and gas shipped by Canada’s three largest pipeline companies.

Company	Enbridge	TransCanada	Kinder Morgan
Canadian crude oil (barrels per day)	1,687,413	435,000	580,000
Canadian natural gas (billion cubic feet per day)	1.6	10	0.003
Estimated greenhouse gas emissions per day (tonnes carbon dioxide equivalent)	1,062,372	866,645	336,008
Estimated greenhouse gas emissions per year (tonnes carbon dioxide equivalent)	387,765,885	316,325,266	122,642,756

Enbridge ships more carbon pollution from Canada than any other company. While these emissions never show up on any of their books because Enbridge doesn’t actually burn the fuel, the numbers show the huge role the company has in keeping North America hooked on energy sources that produce vast quantities of heat-trapping pollution. To put this into perspective, Enbridge ships an amount of oil and gas each year that contains the equivalent amount of carbon pollution as more than half of Canada’s annual emissions, roughly the size of all of France’s carbon emissions (not including land use change emissions).⁸

Figure 1: Comparison of annual greenhouse gas emissions Enbridge ships to annual emissions of several countries, measured in megatonnes (minus emissions from land use change).



Source: World Resources Institute Climate Analysis Indicators Tool:
<http://cait.wri.org/cait.php?page=yearly>



“For Enbridge, no spill is acceptable. We are committed to upholding the highest standards for pipeline safety and integrity.” -Patrick Daniel, Enbridge CEO

(Prepared Statement of Patrick D. Daniel President and Chief Executive Officer Enbridge Inc. to the House Transportation and Infrastructure Committee. Sept 15, 2010. Available at <http://response.enbridgeus.com/WorkArea/downloadasset/13272/Enbridge-Trans-and-Infra-Committee-Testimony.aspx>)

LEAKING PIPES, AGING PIPES

Enbridge operates a network of oil and gas pipelines that snake across Canada and the United States. These pipelines cross private land and government-owned land in twenty U.S. states, five Canadian provinces and one territory.

While Patrick Daniel, CEO of Enbridge, frequently touts concern about pipeline safety and claims that their objective is to have zero oil spills, the numbers tell a different story. Between 1999 and 2009, Enbridge racked up 713 spills, which equals more than one per week.⁹

Many of the accidents had significant impacts. For example, in January 2001, Enbridge was responsible for 23,900 barrels of oil leaking near Hardisty, Alberta, even though the company had been warned four months earlier that the site was a “high priority location.”¹⁰ In April 2003, a gas explosion leveled a strip mall in Etobicoke, Ontario and killed seven people.¹¹ Also in 2003, almost a million litres of tar sands oil leaked from a burst pipeline in Minnesota. In order to stop the oil from entering the Mississippi River, Enbridge set the oil on fire, creating a sulfuric black cloud a kilometre and a half high and eight kilometres wide (as shown in the photo above).¹² In November 2007, a pipeline exploded in Minnesota, killing two workers and sending a fireball 30 metres into the air.¹³ In many of these spills, Enbridge was either forewarned of a problem by regulators and failed to act or charged after the fact.¹⁴



“Enbridge knew about hundreds of defects in the line...PHMSA was made aware of them and failed to do anything to address Enbridge’s inaction. That is not a culture of safety.”
- James Oberstar, chairman of the Committee on Transportation and Infrastructure

Matthew McClearn, “Enbridge: Under Pressure”, Canadian Business Magazine, December 6, 2010. Available at http://www.canadianbusiness.com/markets/commodities/article.jsp?content=20101206_10023_10023&page=2

BATTLE CREEK

Enbridge’s biggest oil spill over the last decade happened on July 25, 2010, when more than three million litres of oil gushed from a ruptured pipeline into the Kalamazoo River in Michigan near Battle Creek. While local residents were subjected to toxic fumes and rescue crews tried to clean off oil-soaked wildlife, Governor Jennifer Granholm called Enbridge’s response “anemic”¹⁵ and residents and politicians accused the company of not acting quickly enough to contain the spill.

The disaster should not have come as a surprise to Enbridge. Line 6b, the pipeline that burst, contained 329 known defects. It is an older pipeline, and during the few years prior to the spill, Enbridge had run a series of tests that had detected spots of thinning, corroded pipe that posed a safety risk. Rather than fixing the problem quickly, Enbridge opted to reduce the amount of oil flowing through Line 6b to decrease the pressure.¹⁶

Furthermore, six months after the spill, a member of the clean-up crew accused Enbridge of covering up the oil rather than cleaning it up.¹⁷ Enbridge is being sued for the damage caused by the oil spill, with local residents alleging they have

experienced headaches, nausea, burning and itchy eyes, skin rashes, sore throats, ear aches and dizziness as a result of the oil spill.¹⁸ And, the U.S. Congress is investigating claims that Enbridge coerced local residents, particularly those that could not afford to vacate their homes, into signing waivers to reduce their legal liability for the costs of the spill in exchange for air purifiers for peoples' homes.¹⁹

MICHIGAN SPILL A “HARBINGER OF THINGS TO COME”

The spill in Michigan exposed a bigger problem with Enbridge's pipeline network – it's getting old and worn out. Since the Kalamazoo spill in July 2010, two other Enbridge pipelines have spilled oil in the U.S., one near Buffalo, New York and the other in Romeoville, Illinois. The State of Illinois is now suing Enbridge over the 970,000 litre oil spill, alleging that Enbridge caused danger to public health and created a public nuisance.²⁰ Much of the company's pipeline network is 40-50 years old, leading one pipeline expert to call the spill in Michigan a “harbinger of things to come.”²¹ Frank Cheng, the Canada research chair in pipeline engineering, has voiced concerns about the safety of aging pipelines and highlighted the need for industry and government to closely monitor them.²²

Aging pipelines is one reason to worry about increasing risk of oil spills along Enbridge's pipeline routes. Another reason is the rising portion of tar sands oil being pumped through the pipelines. Diluted bitumen from the tar sands is more acidic and corrosive than conventional oil and requires higher heat and pressure to move through pipelines, creating an increased risk of spills.²³ It has 5-10 times more sulfur content than conventional oil, and more chloride salts, both of which contribute to pipeline erosion. Tar sands oil will become a greater part of the oil mix as conventional supplies dwindle in Western Canada, creating a greater risk of spills along Enbridge pipeline routes within Canada and the United States.

EXPANDING DIRTY OIL'S REACH

Enbridge isn't stopping with being the largest shipper of dirty oil and the biggest carbon merchant in the country. Now Enbridge wants to become an even bigger pusher of tar sands oil. It's in the process of expanding three pipelines in the tar sands region to collect oil from new extraction projects, and has its eye on several other projects as the tar sands industry wants to expand over the next decade.²⁴

As Enbridge deepens its role in the tar sands, it also has plans to extend the reach of tar sands through two pipeline projects: Northern Gateway and the reversal of Line 9.



“The Enbridge pipeline would risk an oil spill into our rivers and lands that would destroy our food supply, our livelihoods and our cultures...Our laws do not permit crude oil pipelines into our territories. This project isn't going anywhere.”

- Chief Larry Nooski of Nadleh Whut'en First Nation, part of the Yinka Dene Alliance²⁶

NORTHERN GATEWAY

Enbridge wants to be the first company to feed massive supertankers with tar sands oil to carry to Asia by building a 1,200 kilometre pipeline from the tar sands across northern B.C. to Kitimat on the coast, where the oil would be shipped through pristine and fragile coastal waters. The project would have significant impacts on three areas:

1. At the source:

The pipeline would enable further expansion of the tar sands by providing an additional 525,000 barrels per day of pipeline capacity. The production of the tar sands oil that would fill the pipe would:

- Consume 200 million barrels of processing water each year;
- Destroy 12.5 square kilometers of land;
- Produce 6.5 million tonnes of greenhouse gas emissions each year, the equivalent to the emissions from 1.6 million cars; and
- Produce 25 million barrels of toxic tailings and contribute 2.7 million barrels of seepage from tailings lakes into groundwater and surface water each year.²⁵

2. Along the pipeline route:

The Gateway pipeline would cross the traditional territories of 50 First Nations. It would also cross earthquake and avalanche-prone landscapes and more than 1,000 streams and rivers, including many rivers that are important for salmon. Given Enbridge's record over the last decade equivalent to a spill per week, there is little reason to believe that these waterways will remain free from oil.

3. At sea:

Enbridge is proposing that 225 supertankers would carry the oil from Kitimat each year, enough to fill 28,620 Olympic swimming pools.²⁶ The northwest coast of Canada is notoriously difficult to navigate. The impacts of the *Exxon Valdez* oil disaster north of Kitimat are still being felt more than twenty years later. A tar sands oil spill could devastate the coast for generations.

Opposition to Enbridge's plan is growing. In December 2010, sixty-one Indigenous Nations signed a declaration stating that "we will not allow the proposed Enbridge Northern Gateway Pipelines, or similar Tar Sands projects, to cross our lands, territories and watersheds, or the ocean migration routes of Fraser River salmon."²⁷ This followed an earlier declaration by the Coastal First Nations banning tar sands oil and Enbridge from their waters, and a resolution for the Union of B.C. Municipalities opposing the project.²⁸

Enbridge's proposal is expected to be reviewed by a joint panel later this year. However, despite the fact that British Columbians will be the most directly impacted by the pipeline and 80 per cent of them are opposed to it,²⁹ the panel that will make this important decision doesn't have a single British Columbian on it.

LINE 9 REVERSAL

Enbridge also has plans to hitch Ontario's oil supply to the tar sands with its proposal to reverse its Line 9 pipeline, which currently carries oil from the east to refineries in Sarnia. If approved, the reversal would mean that Line 9 would carry oil from Sarnia eastward, initially as far as North Westover, cutting Ontario off from sources of oil other than Western Canada.

This raises several issues regarding the security of Ontario's oil supply. First, it limits the province's options for oil supply and, therefore, undermines energy security for the province. If Line 9 is reversed, Ontario's refineries will lose a major supply route from the east, making them highly dependent on western oil coming from Line 9. This poses a risk that oil supply could be interrupted if a problem occurs with that line, as happened in 2010 when Enbridge's Line 6b, also supplying Sarnia, was shut down for roughly two months following the oil spill into the Kalamazoo River.

Second, it would force the province to rely more heavily on tar sands oil. Currently, approximately 22 per cent of Ontario's oil comes from the tar sands, and 40 per cent

comes from the North Sea, OPEC countries and Eastern Canada. By cutting off these latter sources of oil, Ontario will be immediately importing a greater portion of tar sands oil. With conventional oil in Alberta declining, over time Ontario would become dependent on tar sands oil.

Tar sands oil generates 15-40 per cent more greenhouse gas emissions on a life cycle basis than conventional oil. This means that, if approved, the reversal of Line 9 would hitch Ontario to a high-carbon fuel. This would undermine Ontario's commitment to reduce the emission from transportation fuel by developing a low-carbon fuel standard. As highlighted above, tar sands oil is also more corrosive to transport and, therefore, creates a greater risk of oil spills. It also has more sulfur, lead, aluminum and other metals than conventional oil, which may lead to increased air pollution from refining the oil.³⁰

Finally, the most alarming aspect of Enbridge's proposal is that it's happening without any discussion with Ontarians about what energy future they want, and whether people living in the province want to hitch themselves to the tar sands.

The first phase of the reversal project would tie Ontario to tar sands oil, but they are also proposing a second phase that would reverse the entire Line 9 and bring tar sands oil into Quebec for the first time. However, 72 per cent of Quebecers do not want to see tar sands oil brought into the province unless there are tougher laws in place to limit global warming pollution.³¹



Enbridge's green energy investment is a good start, but the energy produced each day from the company's 700 MW of wind power is roughly one-tenth of one per cent of the energy contained in the 2.5 million barrels of oil it ships each day.

RECOMMENDATIONS

If Enbridge truly wants to both become a responsible energy company and reduce its carbon risk, it will set a pathway to phase out its investments in shipping dirty tar sands oil and dramatically scales up its investments in sources of energy that don't contribute to catastrophic climate change.

Here are three actions Enbridge must take to become a responsible energy company:

1. Immediately withdraw the Northern Gateway proposal to become the first company to ship tar sands oil to Asia. The company is facing protracted legal and public license battles, making this pipeline proposal a litmus test of the company's seriousness about corporate responsibility. Withdrawing the Gateway proposal would also show respect for free, prior and informed consent for First Nations.
2. Establish a corporate strategy to reduce investments in shipping higher carbon fuels like tar sands oil and instead shift investments into clean energy sources.
3. Work proactively with governments and other businesses to adopt an energy strategy for Canada that transitions the country away from fossil fuels in order to avoid catastrophic climate change.

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