The Enbridge Northern Gateway Project: Grand Vision, Missed Opportunity

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The Northern Gateway Project was an ambitious proposal to create a new transportation route between Canadian oil production in northeast Alberta and world oil markets. In 2009, Enbridge Inc. and its partners made their project plans public by announcing their intentions to seek federal regulatory approval. During a five-year review period (2009 – 2014), social and environmental risks were identified, and estimations of economic benefits were evaluated and presented. This period of time also saw the rise of considerable political opposition and resistance by some of the aboriginal communities impacted by the project proposal. The vast majority of the criticism was related to what was perceived as a sensitive location for the proposed marine terminal, pipeline crossings at important watercourses, the potential for a catastrophic spill, and the project's contribution to the effects of anthropogenic climate change.

Northern Gateway presented Canada with a potential economic boon, with estimated gross domestic product (GDP) gains on the order of 312 billion Canadian dollars (CAD). The project was supported by a majority of the aboriginal communities located along the proposed pipeline right-of-way (RoW), and both the National Energy Board (NEB) and the Federal Court of Appeal lauded it for its efforts. Nonetheless, federal cabinet rejected the proposal in November of 2016. This response raised many questions about Canada's regulatory review process, its duty to consult, whether or not the project was denied for appropriate reasons, and the impact of this decision on future investment. This paper examines these concerns by beginning with an overview of Northern Gateway and the regulatory review process used to evaluate the project proposal. Risks and benefits associated with construction and operation of Northern Gateway are then presented. Finally, the paper concludes with a discussion on the winners and losers that emerged after Northern Gateway's rejection, and an opinion piece that challenges the justifications for its cancellation.

Introduction

In October 2005, Northern Gateway Pipelines Limited Partnership (NGPLP), or Northern Gateway, proposed to build and operate a marine terminal at Kitimat, British Columbia (B.C.), and two pipelines between Bruderheim, Alberta, and the marine terminal (Figure 1) (Enbridge, 2005; NEB, 2013a).

Northern Gateway's project scope involved three major components:

1) One 91.4 centimetre (36 inch) diameter pipeline that would transport an average of 525,000 barrels of oil products per day west from Bruderheim to Kitimat;
2) A parallel pipeline, 50.8 centimetres (20 inches) in diameter that would carry an average of 193,000 barrels of condensate per day east from Kitimat to Bruderheim; and,
3) The Kitimat terminal, consisting of two tanker-mooring positions, three condensate storage tanks, and 16 oil storage tanks.

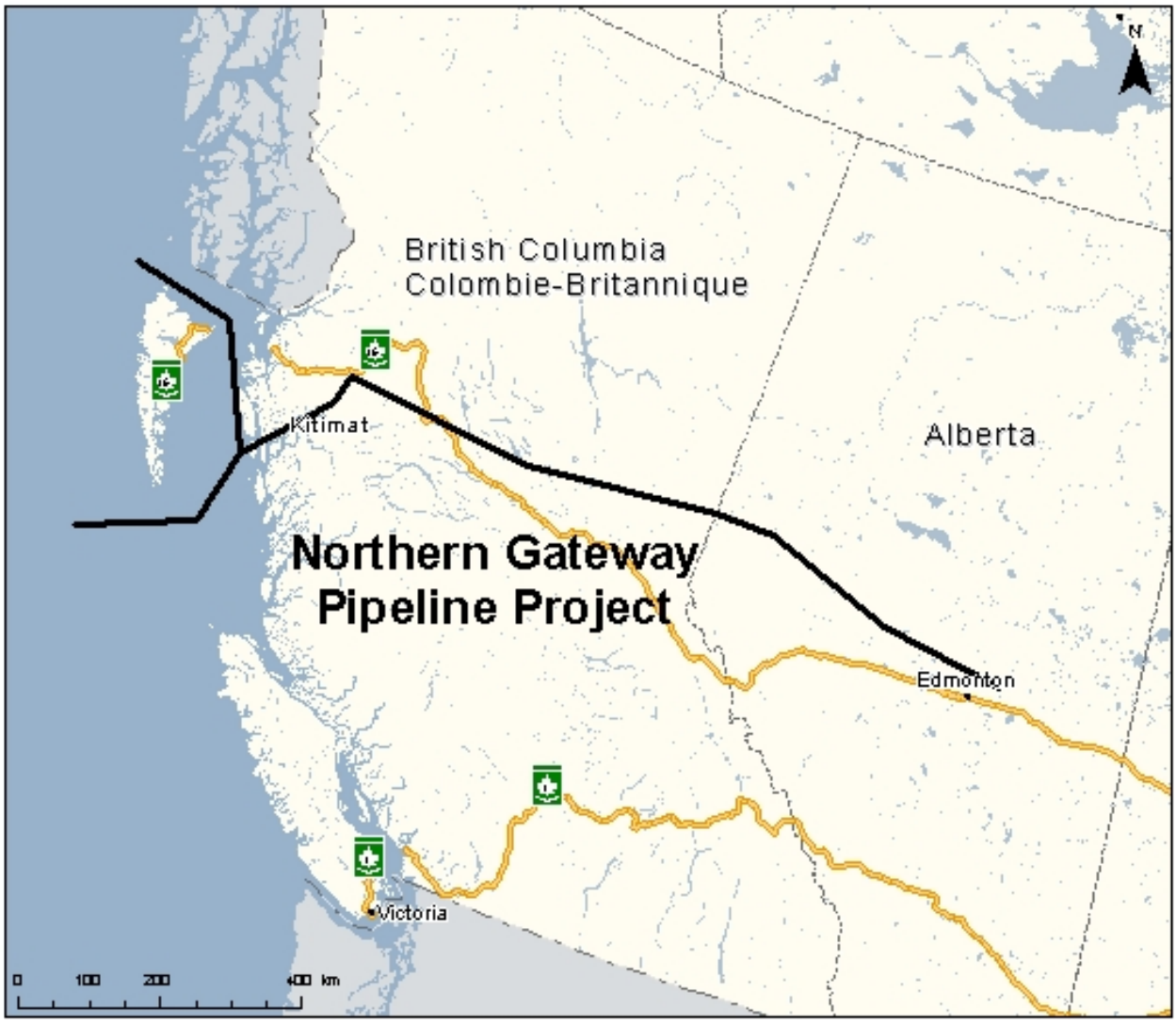

Figure 1. Map of the proposed Northern Gateway Pipeline project. Source: Enbridge

NGPLP's application with the NEB identified a one kilometre-wide corridor for the proposed 1,178-kilometre route. Within this corridor, the pipelines would share a 25-metre wide RoW. Additionally, ten electric-powered pumping stations would be constructed along the route in order to facilitate the movement of products.

NGPLP estimated that the Northern Gateway would cost 7.9 billion CAD to build, including pre-development costs and the costs associated with marine navigation enhancements (NEB, 2013a). Northern Gateway was scheduled for completion in late 2018, and once in operation, roughly 220 tankers would dock at the Kitimat terminal on an annual basis (NEB, 2013a). Studies prepared for the project indicated that the majority of the shipments would consist of diluted bitumen (or "dilbit"), which is a blend of condensate and bitumen from the oil sands region of eastern Alberta (Figure 1) (NEB, 2013a).

Enbridge and the ten other companies comprising NGPLP (four of which were Canadian based) invested more than 450 million CAD to develop their project proposal. An equity package representing a maximum of 10 per cent of the project costs was offered to 40 aboriginal groups. 65 per cent of the groups accepted the offer in order to become participants in the project (NEB, 2013a).

Regulatory Review and Current Status of Northern Gateway

Mr. Gaétan Caron, Chair of the NEB, and Mr. Jim Prentice, federal Minister of the Environment, referred Northern Gateway to a Joint Review Panel on September 29, 2006. In early 2009, the formal review process began when NGPLP indicated that it intended to seek regulatory approval of its project proposal (Figure 2). On January 20, 2010, the NEB appointed three members to the Joint Review Panel. These members included Ms. Shelia A. Leggett, Vice-Chair of the NEB; Mr. Hans Matthews, professional geologist with over 25 years of experience in the mining, minerals and resource management industries; and, Mr. Kenneth M. Bateman, lawyer and former senior executive in the Canadian energy sector. Panel members were chosen based on their diverse backgrounds and their extensive experience in fields relating to aboriginal community development, academia, law, regulations, and the Canadian resource sector.

During the regulatory review, panel members considered environmental, social, and economic effects arising from construction and operation of the pipelines, the Kitimat Terminal, and tanker traffic within B.C.'s coastal waters. The panel was responsible for determining the sufficiency of the project application, hosting public hearings, conducting a technical analysis of the project, and ultimately making a recommendation on whether or not it should be approved (NEB, 2013a).

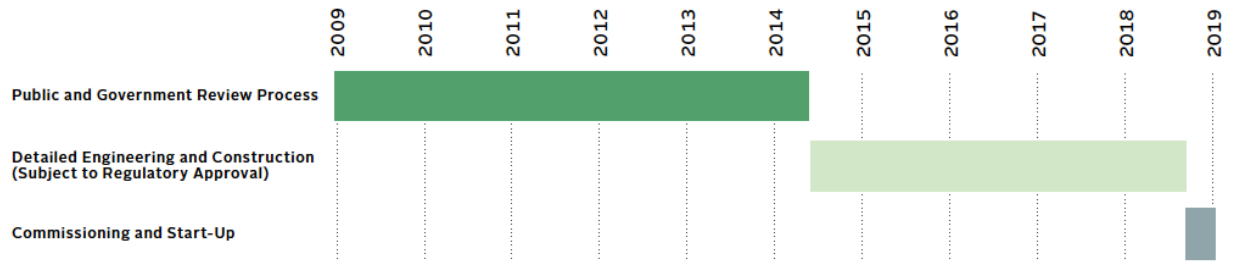

Figure 2: Project timeline. The review process began in early 2009 when Northern Gateway indicated that it intended to seek regulatory approval of its project proposal (NEB, 2013a).

In June 2014, the Joint Review Panel recommended approval of Northern Gateway, subject to 209 conditions and additional consultation with aboriginal communities (NEB, 2013a; CBC, 2014). The panel concluded that the project, if constructed, would be in the public interest of Canada, and that the project's potential benefits outweigh its potential burdens and risks (NEB, 2013a). A few months after the recommendation, the project received approval by the Harper government. In June 2016, the Federal Court of Appeal overturned this approval after finding Ottawa had failed to adequately consult the First Nations affected by the pipelines (CBC, 2016a). In November 2016, the Trudeau government opted not to pursue further consultations and rejected Northern Gateway arguing that "the project is not in the best interest of the local affected communities, including Indigenous Peoples," and that "the Great Bear Rainforest is no place for a pipeline and the Douglas Channel is no place for oil tanker traffic" (Figure 3) (CBC, 2016b). Currently, Bill C-48, an act regulating vessels that transport crude oil from marine installations along B.C.'s north coast is receiving second reading in the Senate (Open Parliament, 2018). The bill is expected to receive royal assent during the fall 2018 sitting of parliament, and once passed, tanker activity off the coast of northern B.C. will not be permitted.

Figure 3: Flanked by members of his cabinet, Prime Minister Justin Trudeau announces that the federal government has rejected the Northern Gateway project proposal (photo credit: Sean Kilpatrick, Canadian Press).

Economic Case

Northern Gateway would have provided a direct route to rapidly growing, energy hungry markets in the Asia-Pacific region. Once constructed, the project could have supported increases in Canadian oil exports, allowed for diversification to markets beyond North America, and eased demand for the condensate that is used to dilute bitumen produced in western Canada in order to facilitate its long-distance transport to market (NEB, 2013a).

Growing bitumen demand resides with complex refineries that are able to produce a higher proportion of transportation fuels by refining bitumen. By virtue of the fact that western Canadian bitumen production is growing at a pace faster than its upgrading capacity, the Government of Alberta argues

that in order to obtain full value, bitumen needs to reach complex refineries beyond those currently served by the north-central and Gulf Coast regions of the United States (NEB, 2013a). The next-nearest concentration of complex refineries exists in east Asia, mainly in China.

Inadequate takeaway capacity in recent years has resulted in depressed prices for western Canadian crude relative to the United States and global benchmarks. This manifests itself as lost revenue for oil producers, as well as the entire economy (Aliakbari and Stedman, 2018). According to the Fraser Institute, the discounted price for Canadian crude has resulted in a revenue loss of 20.7 billion CAD between 2013 and 2017.

A study conducted by Wright Mansell Research Ltd. (2012) determined that the economic impacts of Northern Gateway over a 30-year period, including its direct, indirect, and induced effects are widely distributed. These include:

- A 312 billion CAD gain in GDP;
- Increases of 70 billion CAD in labour income;
- Government revenue gains of 98 billion CAD, including expected federal government accruals of 44 billion CAD, and gains of 54 billion CAD by provincial and territorial governments; and,
- Increases of 907,000 person years of employment.

Figure 4 (below) provides a province-by-province breakdown of the estimated total economic effects of Northern Gateway construction and operation (NEB, 2013a).

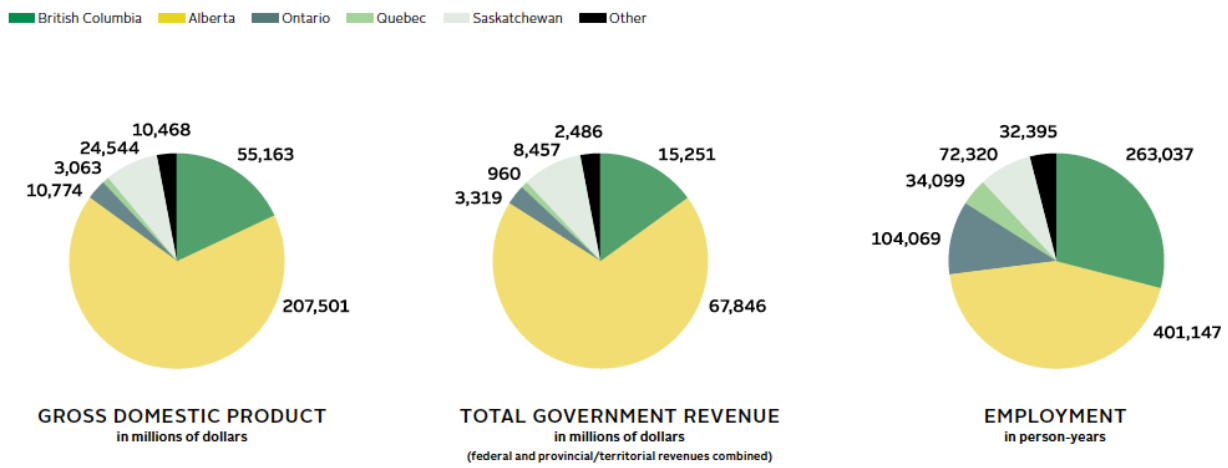

Figure 4: Regional breakdown of the direct, indirect, and induced benefits associated with Northern Gateway over a 30-year period (NEB, 2013a).

Considering that a GDP gain of 312 billion CAD is equivalent to approximately two months of output for the entire Canadian economy at 2012 levels, Northern Gateway presented a significant economic opportunity for Canada.

Detrimental Aspects of the Project

The Joint Review Panel determined that the largest potential effects on the environment would occur along the RoW during the three and a half years of construction, and that limited, short-term effects on local air quality were to be expected (NEB, 2013a). Post-construction routine operation of the pipelines, terminal, and tankers were estimated to have smaller effects throughout the project lifespan.

Detrimental aspects related to the project included linear forest clearings associated with pipeline construction and the fact that the proposed RoW included 527 hectares of old-growth forest. Enbridge admitted that the impact on these forests would depend on final route selection; however, the company estimated that 69 per cent of the RoW would be on land with a human footprint previously left by forestry, oil and gas activity, mining, roads, railways, and power lines (NEB, 2013a).

According to Enbridge, the proposed pipelines would have crossed hundreds of watercourses, the majority of which are unnamed, minor and ephemeral drainages. Be that as it may, crossings were to occur at several large rivers and important watercourses, namely, the headwaters of the Fraser and Skeena rivers (Enbridge, 2005; West Coast, 2012). Notably, these systems support all five Pacific salmon species, as well as trout, steelhead, and char. Traditional, commercial, and sport fisheries throughout coastal and interior B.C. all rely on the fish that originate from these areas (NEB, 2013a). Northern Gateway planned to cross the smaller, non-fish bearing watercourses by using conventional methods such laying pipe within a trench, temporarily diverting channels if necessary. The company proposed to use trenchless crossings on the larger, fish-bearing watercourses wherever possible (NEB, 2013a). This mitigation method would avoid surface disturbances by using horizontal drilling to bore and place pipe beneath the river channel (Figure 5) (NEB, 2013a). Enbridge said that trenchless water crossings would prevent silt and erosion issues that are potentially harmful to fish populations.

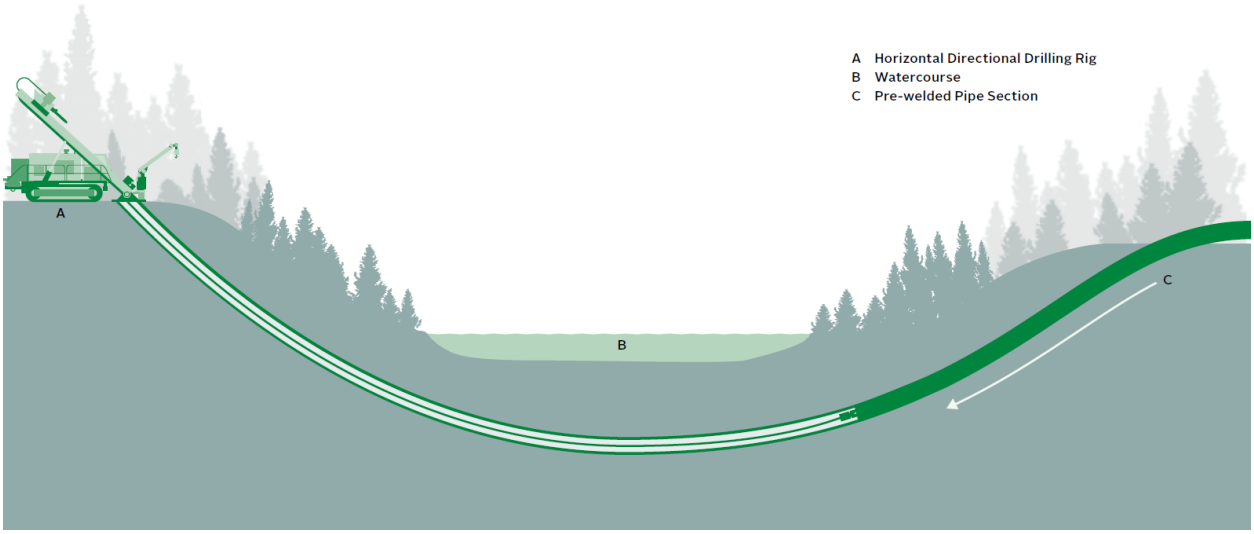

Figure 5: Directional drilling was proposed in order to prevent habitat destruction within fish-bearing watercourses (NEB, 2013a).

Although full life cycle considerations of greenhouse gas (GHG) emissions was beyond the scope of the NEB hearings, the panel determined that the main sources of emissions would be related to the routine use of diesel engines that power tankers and tugboats. Lee (2012) estimated that the carbon content of the products transported through Northern Gateway on a daily basis would translate into annual global emissions of approximately 70 megatonnes of carbon dioxide equivalent (Mt CO_2e). When including the emissions associated with resource extraction, the energy required to operate the pipelines, and GHG discharge from upgrading and refining bitumen, the total annual emissions yield ranges from 80 to 100 Mt CO_2e (Lee, 2012). At 2016 levels, this equates to nearly one seventh of the total annual GHG emissions produced in Canada (704 Mt CO_2e in 2016) (Government of Canada, 2018).

Opposition to the Project

Many risks and concerns were discussed during the NEB hearings. Participants raised the issue of human error as a risk factor for the proper operation of pipelines and marine traffic. Others were concerned that the combination of severe weather and the narrow, twisting channels near the Kitimat terminal could increase the likelihood of tanker collisions and spills (NEB, 2013a). Additional risks that were considered included the project's impact on local aboriginal businesses and traditional lifestyle, the chance that earthquakes or tsunamis could damage project infrastructure, the environmental consequences of a spill, and whether or not dilbit can be cleaned from coastal waters if released (NEB, 2013a; Steward, 2015).

Considerable opposition materialized after Enbridge and its partners announced their intention to seek regulatory approval. On Monday, October 22, 2012, thousands demonstrated in front of the B.C. legislature to protest the environmental merits of the project (Figure 6). In June 2014, Stewart Phillip, President of the Union of BC Indian Chiefs, encouraged attendees at an anti-Northern Gateway rally in Vancouver to "go out onto the land and onto the waters and physically stop any effort on the part of Enbridge to do preparatory work, site preparation, surveying while this matter is in the courts" (Bailey, 2014). In addition to those who opposed Northern Gateway for environmental reasons, opposition to the project was argued on protectionist grounds (Leach, 2013). These individuals contended that Canada would capture more value from the resource by selling refined products as opposed to exporting raw bitumen (Leach, 2013). Others argued that Canada should not be exporting oil from the west while remaining dependent on imported oil and/or refined products on its east coast (Leach, 2013).

Figure 6: Demonstrators participate in a rally in front of the British Colombia legislature to protest the proposed Northern Gateway pipeline on Monday, October 22, 2012 (photo credit: Jonathan Hayward, Canadian Press).

When it comes to a project as complex as Northern Gateway, all concerns should be heard, evaluated and addressed. One of the major concerns related to the project involved the behavior of diluted bitumen when spilled. Northern Gateway argued that laboratory tests indicated that dilbit would float (NEB, 2013a). Local community members and other stakeholders disagreed saying that there is evidence that dilbit sinks, making it nearly impossible to cleanup should a spill occur. The only spill of a bitumen-based product in Canadian waters occurred on July 24, 2007. In this incident, a backhoe operated by a third-party contractor ruptured the Trans Mountain pipeline. This resulted in the release of 224 cubic metres (1,530 barrels) of crude oil onto Inlet Drive, and the surrounding residential area in Burnaby, B.C. (Figure 7). Some of the oil entered the storm drain system and was discharged into Burrard Inlet (Trans Mountain, 2018b); however, 95 per cent of the bitumen-based product was recovered, and none of it was observed to have sunk (NEB, 2013a).

Figure 7: Aerial view of Inlet Drive in Burnaby, B.C. A third party contractor ruptured the Trans Mountain pipeline while digging with a backhoe spilling 1,530 barrels of diluted bitumen (photo credit: Ian Lindsay, Vancouver Sun).

During the regulatory review, participants referred to the July 2010 Enbridge pipeline rupture near Marshall, Michigan. This event resulted in the release of 3,180 cubic metres (20,000 barrels) of dilbit into Talmadge Creek near the Kalamazoo River. In this case some oil reached the river, mixed with sediments in the water column, and sunk to the bottom. This proved more difficult to deal with during clean up efforts that continued more than three years after the spill. Enbridge was criticized by the United States National Transportation Safety Board for allowing the oil release to occur for 17 hours before the line was shut down (NEB, 2013a), and those in opposition to Northern Gateway referenced this event in order to argue that Enbridge cannot be trusted as a safe pipeline operator. However, taking

a look at the company's safety record reveals an operator that performs at a remarkably high standard. For instance, in 2017 Enbridge transported more than 3.7 billion barrels of oil. During that time the company experienced 11 leaks, spilling a total of 8,394 barrels, or 0.00022 per cent of the total volume transported during that year (Enbridge, 2017).

By far, the greatest concern related to Northern Gateway was the risk of a tanker spill in the coastal waters of northern B.C. There is no question that a catastrophic spill in this area would be devastating, but how likely is this scenario? Since 1956, vessels from Kinder Morgan's Westridge Marine Terminal have been transporting petroleum products safely through Port Metro Vancouver without a single spill from a tanker (Trans Mountain, 2018a). This impressive track record is noteworthy given that the Second Narrows of Vancouver are less than one-tenth as wide as the narrowest portion of the proposed sea routes to Kitimat (NEB, 2013a). Furthermore, the Pacific Pilotage Authority has stated that the weather conditions along the routes to Kitimat are no worse than the conditions that oil tankers currently encounter at ports along Canada's east coast (NEB, 2013a). A 2016 study published by the Council of Canadian Academies indicates that Canadian waters as a whole have been getting safer over the past decade (CCA, 2016). Some of the measures behind this trend include the implementation of visual, auditory and electronic aids that warn of obstructions, the regular deployment of marine inspectors in order to ensure that tankers are in safe operating condition, and the mandatory requirement that all tankers possess two watertight layers on the bottom and sides of the ships (in other words, double-hulled) (Clear Seas, 2018). While those opposed to Northern Gateway are justifiable in their concerns about the potential of a tanker spill, the volume and frequency of oil spills has been decreasing globally since the 1970s (Figure 8) (Clear Seas, 2018).

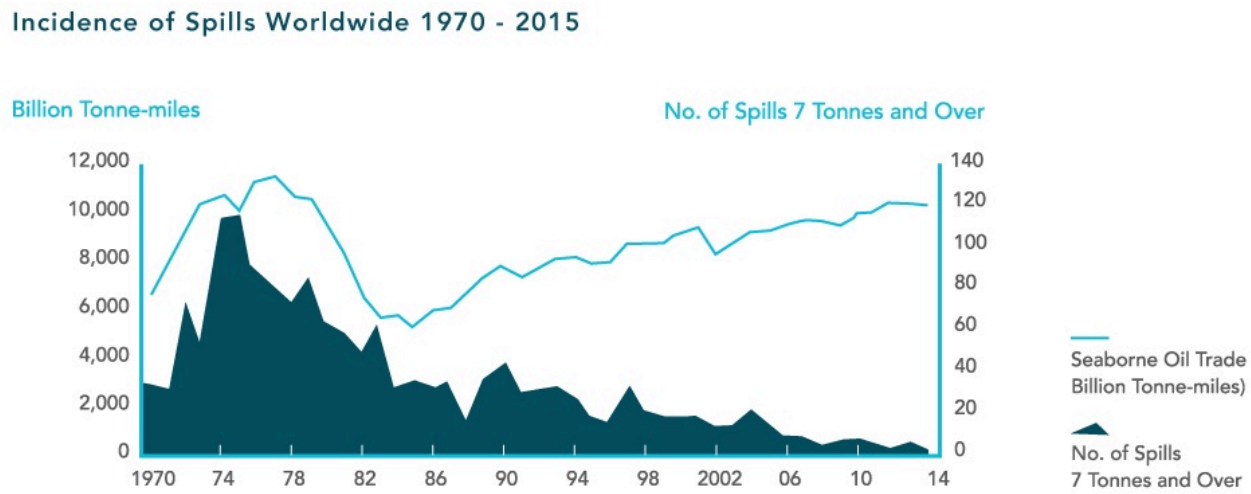

Figure 8: Worldwide seaborne oil trade and number of tanker spill incidents peaked between 1972 and 1985. Since that time seaborne oil trade has increased, while number of spills has decreased significantly (Clear Seas, 2018).

Winners and Losers

The federal government decision to reject Northern Gateway resulted in the emergence of clear winners and losers as far as the impact of the project is concerned. Winners can be considered all of the stakeholders that were opposed to the project. These include individuals and groups that disagree with tanker activity along the west coast of Canada. It also includes environmental organizations and a handful of B.C. coastal First Nations that waged relentless campaigns against the project, arguing that the risk of spills outweigh the economic benefits of opening a new market for Canadian oil. The creation of the Great Bear Rainforest by the B.C. government in 2016 (Figure 9), and the soon to be passed Bill C-

48 are wins for politicians that have attempted to demonstrate balance regarding resource development, aboriginal reconciliation, national commitments to the Paris Climate Accord, and their careers. Finally, foreign suppliers can be considered winners, as they will not be subjected to increased competition if Canada were to take a large step into the global oil market.

Figure 9: The Great Bear Rainforest (green polygon) was officially recognized in February 2016. This region hosts a highly diverse plant, animal, and marine faunal assemblage, along with equally diverse geography and climate. Within this area, 85 per cent of the old-growth forests are now protected from industrial logging. The proposed shipping terminal in Kitimat, B.C. (annotated) is located outside and to the east of the Great Bear Rainforest (modified from B.C. Government, 2018).

Northern Gateway ranks as one of the most significant Canadian infrastructure projects ever conceived. Rejection of this project is a tremendous loss to Canadian citizens, their economy, and to the governments that would have received considerable tax and royalty benefits as a result of its construction and operation. Most aboriginal communities impacted by Northern Gateway supported the project and were looking forward to sharing in the construction and long-term benefits. Elmer Ghostkeeper, a leader from the Buffalo Lake Metis Settlement said that more than 30 of the 42 bands along the Alberta to west coast pipeline RoW supported Northern Gateway (Cattaneo, 2017). The cancellation of this project was particularly crushing for Ghostkeeper and his community as their expectations “were really raised with the promise of 2 billion CAD set aside in business and employment opportunities” (Cattaneo, 2017). As of July 2018, communities within the Northern British Columbia economic region (where Northern Gateway would have been built) exhibited the highest unemployment

rate in the province (Government of Canada, 2018b). These communities have been left to investigate other methods of economic development in a region that has traditionally seen few opportunities.

The international investment community viewed the decision to cancel Northern Gateway as having been made for reasons that were political rather than economic (Yedlin, 2016). The combination of the overturned approval by the Federal Court of Appeal, the creation of the Great Bear Rainforest, and federal cabinet's rejection of the project proposal has resulted in a degradation of Canada's reputation as a business friendly environment. Canada has long relied on foreign capital in order to develop its natural resources; and therefore, failure to access these external sources of funding could have serious implications on the resource sector and the national economy.

In 2014, WorleyParsons conducted a study that compared the environmental policies, law and regulatory systems of Alberta with other oil producing regions around the world. The study found that Alberta not only leads in these categories, it consistently sets standards for rigidity of environmental laws, the rules that enforce compliance, and industry transparency (WorleyParsons, 2014). The fossil fuel transported by Northern Gateway would have been obtained from the most highly regulated oil and gas jurisdiction on earth. Unfortunately, its cancellation can be viewed as a loss to the Canadian oil and gas industry and the practices, standards, and values that it tries to promote globally.

Opinion: Was the rationale behind Northern Gateway's rejection justified? Where do we go from here?

The lead up to a decision on the Northern Gateway pipeline project ensured that it would be controversial. In the end, the federal government decided that it was in their best interests to approve the expansion of the Kinder Morgan Trans Mountain pipeline and the replacement of Enbridge Line 3. Northern Gateway became the unfortunate casualty of a government that wanted to appear balanced in terms of resource development, aboriginal relations, and its commitment to addressing climate change. In effect, this decision saw the government side with a small group of peaceful protestors, and a minority of the aboriginal communities that were impacted by the project. This raises an important question on whether or not one or two aboriginal communities that are opposed to a project like this should be allowed to impose their will on an otherwise unified group of aboriginal communities. At a complicated time in Canadian history, with reconciliation underway, aboriginal consensus on a project the likes of Northern Gateway is probably not achievable. However, in this case, a strong majority of the indigenous groups impacted by the project proposal were supportive of Northern Gateway, and it was in the best interest of the entire region to have it built.

The Northern Gateway project proposal meandered through one of the most rigorous regulatory reviews in Canadian history. This review included 180 hearing days, 175,000 pages of evidence, 9,400 letters, 1,179 oral presentations, 389 witnesses, and 60 interveners (NEB, 2013b). A three-member panel with relevant expertise evaluated all of the material that was presented, and they determined that the project, if constructed, would be in the public interest of Canada. Unfortunately, the Joint Review Panel can only provide a recommendation. Final decision rests with the federal government. This raises the issue of authority. Should a federal cabinet, with less knowledge and expertise, have the right to vote against a recommendation from a panel of experts that has conducted an extensive review? It would be wise to move away from this structure in order to prevent political interference of important infrastructure decisions such as Northern Gateway.

The federal government justified its rejection of Northern Gateway by stating that the project is it is not in the best interests of locally affected indigenous communities, the environment of the Great Bear

Rainforest, and the Douglas Channel. As this paper has demonstrated, Enbridge has an excellent track record of transporting crude by pipeline. In terms of tanker safety, we are living in an era of unprecedented safety performance where tanker incidents are extremely rare. For example, the Westridge Terminal in Vancouver is much narrower than the Douglas Channel near Kitimat, yet it has never recorded a tanker incident. Given these data, there is a strong likelihood that Northern Gateway would operate incident free; and therefore, the government's environmental position does not seem justifiable. On the issue of indigenous communities, the Federal Court of Appeal chastised Ottawa for failure in its duty to consult. Although the court decision was not unanimous, it does highlight the fact that the interests of some of the communities may have been overlooked.

If energy infrastructure companies like Enbridge decide to return to Canada to pursue greenfield infrastructure opportunities, they should approach any project proposal in partnership with affected aboriginal communities. In the past, aboriginals have been treated as tokens; today they deserve to be treated as equals. Partnering on infrastructure projects presents strategic benefits to both companies and communities. Companies can look forward to faster regulatory reviews periods as community alignment and duty to consult issues can be avoided, while communities will have the opportunity to provide valuable input on the project, and participate in building a robust and sustainable local economy.

Enbridge and its partners proposed one of the most technologically advanced pipelines ever conceived. The company provided more than adequate mitigation responses to nearly every concern brought up during the regulatory review process. Although Northern Gateway was deemed to be in the public interest of Canadians, political intervention has prevented an amazing vision from becoming reality. This is a blow to an industry that is held to the highest standards on earth, and when Canada fails to get its resources to other markets, its values lose on the global scale. As global oil demand slowly surpasses 100 million barrels per day, the result is more supply from producers with far poorer corruption, social and environmental track records.

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