Megaproject Review and Environmental Assessment: An Evaluation of the Enbridge Northern Gateway Application Review Process

by

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Abstract

There are a number of major pipeline projects proposed or under construction in Canada. In order to ensure long-term sustainability, Canada must have an effective pipeline environmental assessment process. This study assesses the current review system through a case study of a high-profile environmental assessment, the Enbridge Northern Gateway Project's joint review process. I administered a survey on the process' effectiveness to intervenors who cross-examined and provided evidence during the process (96 intervenors total) and I received responses from 40 intervenors, (completion rate of 42%). The majority (62%) of survey respondents felt that the joint review process was very poor overall and most respondents (73%) would not recommend modelling future reviews after the Enbridge Northern Gateway review process. Respondents also showed support for a number of reforms, such as requiring proponents to have comprehensive compensation plans, creating more specific decision-criteria, and hiring independent scientists financed by the applicant.

Keywords: environmental assessment; impact assessment; Northern Gateway Project; pipelines; sustainability

To my Mother, Maureen Alice Acheson (1952-2010),
your love and encouragement is my greatest
inspiration.

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When I first started this program I expected to learn some practical skills that would make me a better candidate in the workforce. By completing this project I have learned so much more than just practical skills. It has been an adventure in patience and perseverance and I have learned a number of lessons that I can apply to all aspects of my life. I must first thank my senior supervisor, Dr. Tom Gunton for giving me the opportunity to work on such a timely and fascinating project. I learned so much from his wisdom on the environmental assessment process. I want to also thank my secondary supervisor, Dr. Murray Rutherford, whose comments and feedback on my survey and this research project provided fresh perspectives that hugely contributed to making this an academic paper. I must also thank my survey participants, who gave their time to make this research possible. Their responses give incredible insight into the inner workings of environmental assessment in Canada.

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List of Acronyms

AEPEA	Alberta Environmental Protection and Enhancement Act
BC	British Columbia
BC EAO	British Columbia Environmental Assessment Office
bpd	barrels per day
CAD	Canadian Dollar
CAPP	Canadian Association of Petroleum Producers
CEAA	*Canadian Environmental Assessment Act 2012*
CEA Agency	Canadian Environmental Assessment Agency
EA	Environmental Assessment
e.g.	example
ENGP	Enbridge Northern Gateway Project
FEARO	Federal Environmental Assessment Review Office
GIC	Governor in Council (federal government cabinet)
JGPA	Jobs, Growth and Prosperity Act
JRP	Enbridge Northern Gateway Joint Review Process
JR Panel	Joint Review Panel
km	kilometres
MO	modus operandi
NEB	National Energy Board
NEB Act	*National Energy Board Act*
NG	Northern Gateway Pipelines Limited Partnership
NT	Northwest Territories
PNCIMA	Pacific North Coast Integrated Management Area
SFU	Simon Fraser University
TERMPOL	Technical Review Process of Marine Terminal and Transshipment Sites
TOR	Terms of Reference
US	United States
WCSB	Western Canada's Sedimentary Basin

Chapter 1.

1.1. Introduction

The Canadian Association of Petroleum Producers (CAPP) forecasts that oil production in Western Canada's Sedimentary Basin (WCSB) will double from 3 million barrels per day (bpd) to just over 6 million bpd from 2012 to 2030 (CAPP 2012). This forecasted expansion has resulted in a number of pipeline proposals to transport oil from the WCSB to markets. Given the significant environmental, social and economic effects that these projects can have, it is important to ensure that the approval process effectively assesses and manages project impacts.

The objective of this research project is to evaluate the Canadian pipeline approval process through a case study analysis of one of the most high profile cases, the Enbridge Northern Gateway Project (ENGP). Enbridge Incorporated, an energy transportation and distribution company, submitted their ENGP proposal to the National Energy Board (NEB) for approval in May 2010 (ENGP 2010). On January 15th, 2010 two federal agencies, the Canadian Environmental Assessment Agency (CEA Agency) and the NEB, signed a Joint Review Panel Agreement for the ENGP. The Governor in Council (GIC) approved the ENGP on June 17th, 2014. The ENGP includes a twin pipeline system between Edmonton and a new marine terminal in Kitimat, British Columbia (BC). The 36" diameter pipe will transport 525,000 barrels of oil per day to Kitimat and the 20" diameter pipe will transport 193,000 barrels of condensate per day to Edmonton (Enbridge 2010a). Each 1,177 km of pipeline will run through First Nations' territory and ecologically sensitive land. In addition the ENGP will increase tanker traffic in the region where the two pipelines will terminate at the new marine port. These components will affect a variety of industries, local people, Aboriginal communities, and the environment locally and worldwide. Thus there are major economic, environmental and social implications for BC and Alberta.

1.2. Background Context

Major pipeline projects must undertake regulatory review and approval processes required by both the federal and provincial governments under several legislatively prescribed processes. For pipelines between Alberta and BC the relevant legislation is the *Canadian Environmental Assessment Act 2012* (*CEAA*), the *National Energy Board Act* (*NEB Act*), *the Alberta Environmental Protection and Enhancement Act* (*AEPEA*) and the *BC Environmental Assessment Act* (*BCEAA*). In order to reduce overlap between federal and provincial EAs, the governments agreed to assess the ENGP through a single joint review process (JRP) that is supposed to meet the requirements of all relevant legislative review processes.

The Canadian Environmental Assessment Agency (CEA Agency) regulates federal environmental assessments in an effort to support sustainable development. The comprehensive environmental assessments (EA) must include:

- environmental effects of the project (and their significance), including cumulative effects and environmental effects from malfunctions or accidents resulting from the project;
- purpose of the project;
- comments from the public or any interested party;
- technically and economically feasible measures that would mitigate adverse environmental effects;
- alternative means of carrying out the project that are technically and economically feasible and the environmental effects of these alternatives;
- changes to the project that may be caused by the environment;
- study results conducted by a committee established by the Minister; and
- any other factors that the minister of the environment requires to be considered (*CEAA 2012*, SC 2012, c 19, s. 52).

The National Energy Board (NEB) is a regulatory body that is responsible for the international and interprovincial oil, gas and electricity industry, trade and regulation. The NEB also examines environmental aspects of proposed projects, prescribes conditions for project certificates and conducts environmental assessments in accordance with the *CEAA 2012* (*NEB Act* R.S.C. 1985, c N-7, s. 52). The NEB must consider the *NEB Act*

and the *CEAA 2012* when evaluating projects. For pipeline proposals the NEB examines:

- the purpose of the pipeline;
- pipeline design;
- potential environmental and socioeconomic impacts of the project;
- existing or proposed public consultation programs;
- any land rights requirements;
- adequacy of supply;
- demand and other market factors;
- economic considerations;
- proposed corridor route and;
- any other relevant factors including the public interest.

In addition, for projects longer than 40 km in length, the NEB must conduct public hearings. In order to receive a certificate, the applicant, under the *National Energy Board Act* (*NEB Act*) must show that the pipeline is in the public interest and will be required by "present and future public convenience" (*NEB Act* 52(1)(b)).

On January 20th, 2010 Canada's Environment Minister and the NEB chair and CEO announced that environmental effects and public concern for the ENGP were large enough to warrant a comprehensive EA that would be overseen by a Joint Review Panel (JR Panel) conducted under both CEA Agency and NEB requirements (CEA Agency 2010). The JRP is meant to give a voice to people from all viewpoints (ENGP JRP 2011). The public process allows any person, who wishes to participate, to engage in the process by either submitting a letter of comment, making an oral statement, becoming an intervenor, or becoming a government participant (ENGP JRP 2011).

In addition to the CEA Agency and NEB reviews, projects that include marine terminals and tanker routes trigger a voluntary Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL), under the jurisdiction of Fisheries and Oceans Canada and Transport Canada. The process requires proponents to work with a review committee formed by the federal government and other

stakeholders. The TERMPOL review is out of the scope of this paper. For more information see the Marine Safety section within the Transport Canada website.

1.3. Purpose and Objectives

The School of Resource and Environmental Management at Simon Fraser University (SFU) is currently studying EA good practices for megaproject application review. In 2005 Timothy Van Hinte examined the impacts of major projects by giving an overview of potential environmental impacts, socioeconomic effects and institutional issues associated with the ENGP (Van Hinte et al. 2007). In addition, Chris Joseph evaluated oil sands project review processes through good practice criteria (Joseph 2013), and Sean Broadbent (2014) evaluated the ENGP's costs, benefits and risk.

The purpose of this report is to contribute to a growing body of research by determining, through a stakeholder survey, the degree to which the JRP for the ENGP met the good practice criteria for reviewing large energy projects. This paper evaluates the review process for ENGP by surveying stakeholders who participated in the review process. The survey was conducted immediately following the completion of the NEB's public consultation and hearings process and before the JR Panel's recommendation. However, some participants responded after the recommendation but before the final government decision. Specifically this paper:

- describes the ENGP
- details the EA agencies that have jurisdiction over the ENGP
- outlines the review process for the ENGP;
- identifies good practices principles that can be applied to the ENGP;
- evaluates the strengths and weaknesses of the JRP relative to the good practice criteria based on a survey of stakeholders engaged in the review process;
- provides recommendations for assessment and management of major pipeline projects.

1.4. Case Study Overview

Enbridge, operating under its subsidiary, Northern Gateway, (NG) proposed new pipelines to transport Alberta oil production to the BC coast for shipment by tanker to overseas markets and to bring condensate to Alberta. Many Aboriginal groups, such as Coastal First Nations have spoken out against the ENGP (Coastal First Nations 2013). Although Enbridge has discussed the ENGP with Coastal First Nations, Coastal First Nations remain opposed because the risk of oil spill threatens their traditional way of life. In addition, environmental non-governmental organizations such as ForestEthics Advocacy, Living Oceans Society, and Raincoast Conservation Foundation are opposed to the ENGP because pipeline and port construction and increased tanker traffic will impact sensitive ecosystems in BC and Alberta and along the BC coast (2013). On the other hand, the federal and Alberta governments support the ENGP because they want to diversify Canadian oil markets away from relying solely on the US and they want to create more employment opportunities.

The EA process exposed a number of potential risks. During construction local air quality and the acoustic environment will change with increased noise from oil transport activities, and the pipeline's construction will disturb wildlife, cause erosion, deterioration, and loss of soils (Van Hinte 2005). Once constructed, the regions surrounding the pipelines will be at risk for small and large terrestrial oil spills. The new marine terminal also poses environmental risk from ballast discharge, acoustic pollution and small and large marine oil spills. Tanker spills are particularly dangerous because the tanker traffic must navigate fragile ecosystems in the Pacific North Coast Integrated Management Area (PNCIMA). Approximately 44% of the PNCIMA is considered ecologically and biologically significant (Clarke and Jamieson 2006). The area is a critical habitat for numerous species and marine resources that contribute to coastal economies and communities (PNCIMA Initiative 2013). Coastal communities use the area for aquaculture, ecotourism, utility and communication lines, ports, ferry landings and community harbours. In addition, local First Nations have used and continue to use that region for fishing and food gathering.

1.5. Rationale

As stated earlier, there are a large number of new pipeline proposals in Canada that will have significant environmental, social, and economic impacts. It is essential that a well-designed and effective evaluation process assess these projects to ensure that they are in the public's interest. The ENGP provides an excellent case study for evaluating the Canadian review process for pipelines and large energy projects. The timing for my evaluation of the ENGP is opportune because the evaluation occurred shortly after the hearing process was completed. The findings from this evaluation can be used to improve the review process for future projects.

Van Hinte et al. (2007) evaluated the CEA Agency/NEB project assessment process and found that it does not meet most EA good practices. This demonstrated that decision-making criteria and evaluation methods are not clearly outlined and the evaluation processes do not consider alternative projects. Additionally, they showed that the process does not adequately address equity and compensation issues (Van Hinte et al. 2007). Van Hinte et al. explain that an appeal process for regulatory decisions is available and First Nations may bring their right to consultation and accommodation to the court. Both of these legal remedies are costly and lengthy. The results of their study are important because the findings highlight flaws in the JRP. Van Hinte's evaluation was done prior to the ENGP assessment process. In addition the enactment of the *CEAA 2012*, changed the EA process in Canada. Evaluating the recent assessment process ex poste will make a significant contribution to understanding its strengths and weaknesses and identify ways to improve the process for future assessments.

1.6. Methodology

This case study uses primary and secondary data associated with environmental impacts, socioeconomic effects, and institutional issues associated with pipeline projects and good practices for EA. Specifically this report uses a methodology based on the following steps:

1. Describe NG's proposed Project and its potential impacts;

2. Describe the current approval and regulatory process for major pipelines;

3. Evaluate the joint review process used to evaluate the ENGP in terms of good practices based on a survey of participants in the ENGP process;

4. Identify key findings and make recommendations on how to conduct EAs.

1. Describe NG's proposed Project and the ENGP's potential impacts.

I describe the ENGP and its potential impacts by using the JR Panel's Gateway Panel website and draw specifically on the ENGP's application and the responses and evidence submitted within the Documents section of the website. I also use the ENGP website to obtain information on the ENGP.

2. Complete a literature review related to the approval and regulatory process.

Next, I describe the approval and regulatory review process for the EA of major pipelines in BC and Alberta. This research explains why the ENGP implicates multiple review processes and how the provincial and federal governments attempt to avoid redundancy by conducting joint reviews. I use the Gateway Panel website to obtain information about the approval and regulatory process. In addition I use the CEA Agency's website for information on the federal environmental assessment process. I use the Alberta Environment and Sustainable Resource Development website to describe Alberta's Environmental Protection and Enhancement Act. Additionally I outline the EA process in BC using information gathered from the Province of BC (2015) website. Finally, I describe joint review processes and look specifically and the structure of the ENGP's JRP.

3. Evaluate the Joint Review Panel process against good practice themes for project review.

Chapter Four draws on good practice criteria developed by Van Hinte et al. (2007) and Joseph (2013), to identify criteria for the evaluation of the ENGP JRP. The survey that is used to evaluate the JRP in this report is inspired by a questionnaire compiled by Joseph (2013) who used a survey to evaluate the review process for large-scale oil sands projects. Joseph identified good practices for EA review processes. I use

a modified version of Joseph's questionnaire to ask respondents to evaluate the JRP for the ENGP against good practice themes.

The participants in my survey were all intervenors in the ENGP hearings and have a variety of backgrounds including academia, First Nations, government, industry, non-governmental organizations and environmental non-governmental organizations, among others. Although the proponent was invited to complete the survey, it did not respond to requests to participate. I identified the survey recipients from a database of registered interveners in the public registry maintained by the NEB for the ENGP. The survey included statements that asked respondents to rate their level of agreement on a Likert-type scale and sections with optional open-ended questions that asked participants to elaborate on their answers.

4. Identify key findings and make recommendations on how to conduct EAs.

To accommodate the nature of the ENGP's unique JRP, I altered Chris Joseph's good practices and created a list of good themes. The survey questions corresponded to at least one of the good practice themes and therefore the survey respondents indicated how well the JRP met the good practice themes. The survey respondents identified strengths and weaknesses of the JRP and provided suggestions for improvement. This information supports recommendations on how to design the most effective EAs.

1.7. Report Outline

This report has five chapters, which give the regulatory context for EA, look specifically at the Enbridge application and then evaluate the JRP based on results from a survey. Chapter One describes the background context for the Enbridge pipeline and EA process. In addition Chapter One outlines the purpose and objectives of the research. Chapter Two describes the ENGP project, including an overview of the ENGP's key components, location, timing, investment and employment opportunities. Chapter Three describes the approval and regulatory process for projects that implement a review from the NEB and CEA Agency and from the BC Environmental Assessment Office (BC EAO) and the Alberta Environment and Sustainable Resource

Development agency. The Chapter then provides detail on the ENGP's JRP. Chapter Four evaluates the review process for the ENGP by discussing the survey results. Chapter Five provides recommendations and concluding comments.

Chapter 2.

2.1. Introduction

Enbridge has considered building a bitumen pipeline across Alberta and BC to Kitimat for many years (Enbridge 2010a). The Canadian company, which was founded in 1949, has eleven pipelines and seven pipeline systems. This equates to 24,738 km of crude oil pipelines (Enbridge 2012). In addition, Enbridge has $34 billion (Enbridge 2014) in commercially secured growth investments in infrastructure. Arguably, the Northern Gateway Pipeline is Enbridge's most recognizable project due to the ENGP's size and the environmental risks that have drawn the attention of First Nation communities and the public.

This chapter describes the Enbridge organization and then examines the ENGP's components. For clarity, Northern Gateway Pipelines Limited Partnership (NG), a division of Enbridge, is the official proponent of the ENGP project. I refer to the proponent in this chapter, and in the rest of this thesis, as NG. After describing the organization's history, this chapter will briefly outline the permits and regulatory framework that apply to the ENGP. I also use NG's application filed under Section 58 and under Part IV of the *NEB Act* and the subsequent submissions to the JR Panel to give an overview of the ENGP including: the ENGP's components and their location; the ENGP's historic timeline; and the scope of the JRP assessment. Finally, this chapter examines the ENGP's environmental risks and mitigation of those risks using information mentioned in the JR Panel's final report.

2.2. Company Overview

Northern Gateway Pipelines Partnership Limited is a division of Enbridge Incorporated. The larger company, Enbridge, is an energy transportation company that

owns Canada's longest oil and liquids pipeline system and Canada's largest natural gas distribution company (Enbridge 2010a). This organization was founded in 1949 (as Interprovincial Pipeline and Lakehead Pipeline) and its headquarters are in Calgary, Alberta. Enbridge employs approximately 6,500 people worldwide and transports 2.2 million barrels per day of crude oil and liquids (Enbridge 2010a).

Enbridge has 23 pipeline projects that are in the planning or construction stages. These projects and their status are outlined in Table 2-1 below and clearly display the fast pace of Enbridge's proposed pipeline developments.

Table 2-1 Enbridge's Projects

Pipeline Project	Status
Athabasca Capacity Expansion Project	Under construction
Athabasca Pipeline Twinning Project	Under construction
Bakken Pipeline Project (Canada and US)	In service
Eastern Canadian Refinery Access Initiative	First phase complete. Application filed with NEB November 2012
Edmonton Terminal (South Expansion) [1]	Applied
Edmonton to Hardisty Pipeline Project	Application filed with NEB December 14 2012
Line 78 Pipeline Project	Public consultation
Line 79 Pipeline System Project	Application filed with Michigan PSC in January, 2012. In-service date projected early 2013
Mainline Enhancement Program	Application with NEB
Norealis Pipeline Project	Approved by ERCB 2011
Norlite Diluent Pipeline Project	No application filed
Northern Gateway Pipeline	Application under review
Seaway Pipeline Project Expansion	Construction underway
Southern Access Extension	Completed 2009
Stonefell Pipeline Project	Approved by ERCB 2007
Stonefell Terminal Project	No application filed
Waupisoo Capacity Expansion Project	Approved by ERCB 2007
Wood Buffalo Crude Oil Pipeline	Under construction

Pipeline Project	Status
Woodland Pipeline Extension Project	Approved October 2012

NGPLP (May 2010)/ Alberta Canada (2013)/ Enbridge 2012/ Enbridge (US) 2013

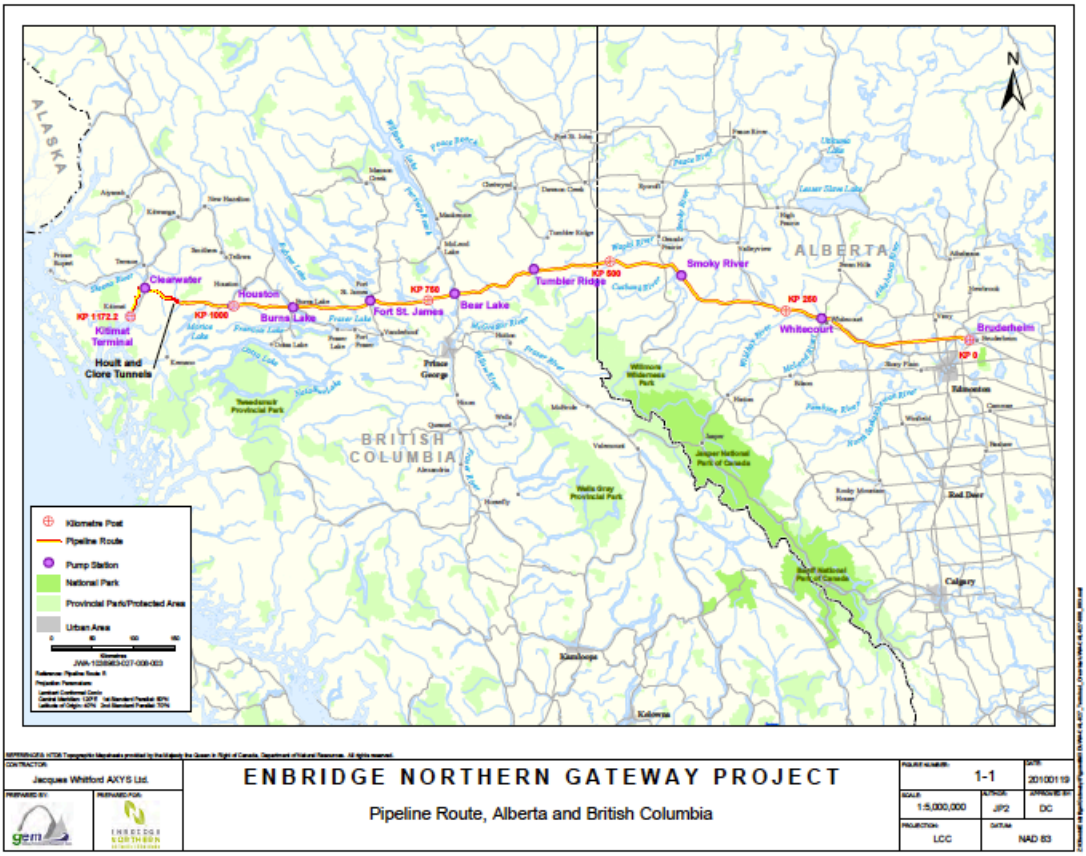
2.3. Project Description

Enbridge submitted an application for the ENGP to the Canadian government through the CEA Agency and the NEB on May 27, 2010. After a lengthy review, the pipelines were approved on June 17th, 2014. Enbridge is preparing to build the ENGP, which will traverse Alberta and British Columbia and ship oil around the Pacific Ocean using tankers. This energy transportation Project includes an oil export pipeline, a condensate import pipeline, a tank terminal and a marine terminal near Kitimat, BC. The oil will be transported from Bruderheim, Alberta to the new Kitimat terminal in BC. Condensate will be imported to Alberta from the new port. The ENGP will transport the oil from the port to overseas markets using 220 tankers per year, which could increase to 331 tankers per year with the pipeline operating at full capacity (Broadbent 2014). In its application, NG predicted that the ENGP will cost about $5.54 billion (Enbridge 2010). However, Wright Mansell (2012) estimates that construction will cost $6.39 billion (2012 CAD). The JR Panel estimates capital costs of $7.9 billion (ENGP JR Panel 2013).

2.4. Location

As shown in Figure 2-1, the Enbridge pipeline will be located in a 25 m wide right-of-way from Bruderheim, Alberta to Kitimat, BC (Enbridge 2010a). There are ten pump station sites along the way. Three are located in Alberta: Bruderheim, Whitecourt, and Smokey River. Seven are located in BC: Tumbler Ridge, Bear Lake, Fort St. James, Burns Lake, Houston, Clearwater and Kitimat. The tunnels will pass through Clore River Valley and Hoult Creek Valley under Hope Peak and Nimbus Mountain respectively. The pipeline will enter six physiographic regions including Eastern Alberta Plains, Southern Alberta Uplands, Alberta Plateau, Rocky Mountains, Interior Plateau and Coast Mountains (Enbridge 2010). In addition the pipeline will cross 773 watercourses of which 669 contain fish (Enbridge 2010).

Figure 2-1 Pipeline Route



Enbridge 2010

The tank terminal will be located on the western side of Kitimat Arm and will connect to the proposed Kitimat marine terminal. The Kitimat terminal includes 1500 m of land on the western side of the Kitimat Arm portion of Douglas Channel. The site is about 282 ha next to deep water and therefore the terminal will not require dredging. Kitimat is unusual in that it does not have a port authority and terminals can be located primarily on provincial crown land.

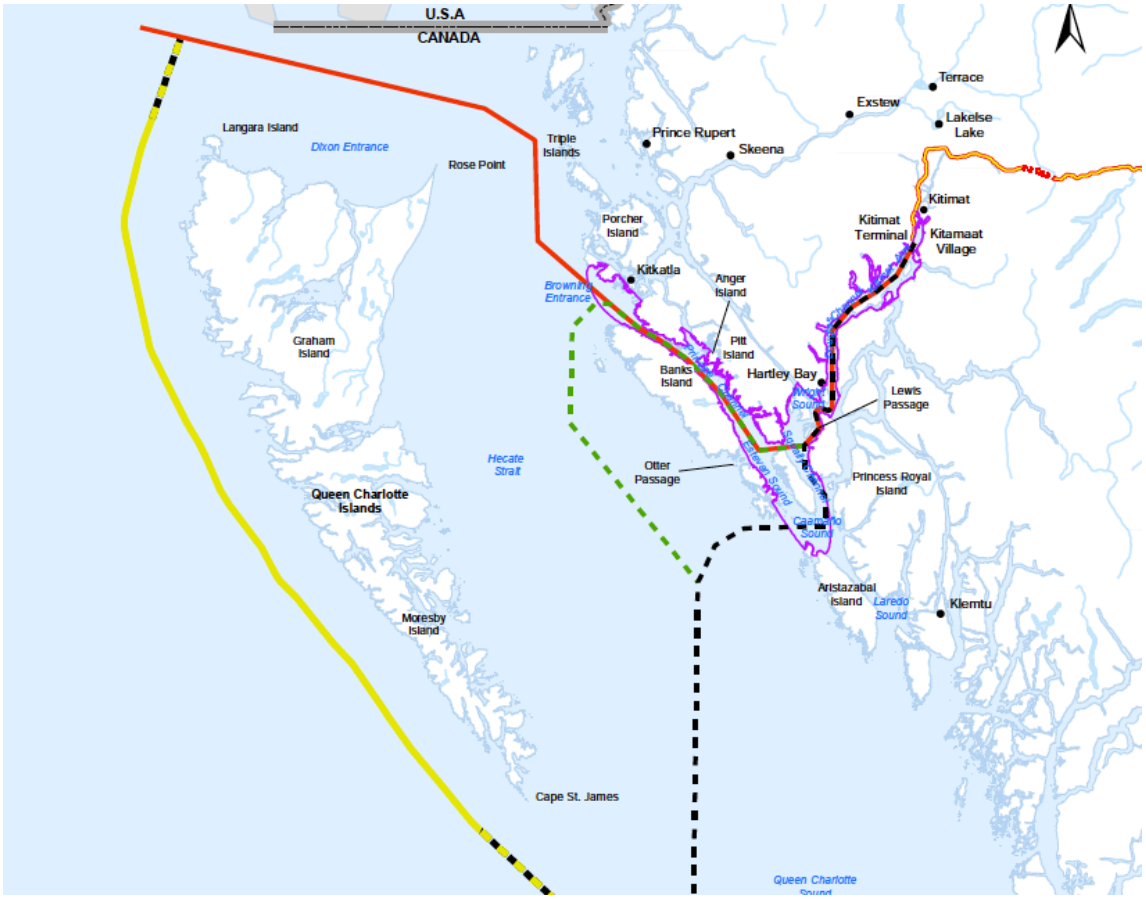
The terminal site's history has implications for Enbridge's approval process. The *Oceans Act* and the *Canada Marine Act 1998* created federal port authorities for large ports. For smaller ports, the federal government divested responsibility for these ports to local governments. However, the Kitimat port is unique because the federal government relinquished responsibility for the harbour. As a result Kitimat is overseen by a Transport

Canada appointed harbour master but there is no port authority to apply dues or review expansion or operational proposals. In addition, by using land owned by Enbridge adjacent to the port, NG may not have to pay longshoreman union wages to workers operating the terminal.

Enbridge is not the only company looking to send tankers through Douglas Channel. A condensate terminal, Methanex, which is operated by Encana Corporation, sends condensate incoming from tankers to trains. In addition, Kitimat LNG received export permit from the NEB in 2011 and is redeveloping a former Eurocan pulp and paper mill site as a storage area and construction camp (Bish Cove). There are other potential or existing liquid natural gas exporters in the planning stages.

The ENGP's tankers will enter through Douglas Channel using one of three approaches (ENGP 2010a). Tankers from Asian ports will navigate the Northern route. These ships will pass Haida Gwaii through Dixon Entrance through Hecate Strait, Browning Entrance, Principe Channel, Nepean Sound, Otter Channel, Squally Channel, Lewis Passage, Wright Sound and Douglas Channel and then to the Kitimat terminal (Figure 2-2). Tankers approaching from the south can take one of two routes. One approach that will only be used during moderate weather is to pass through the Queen Charlotte Sound and continue through Hecate Straight, and then Caamaño Sound, Campania Sound, Squally Channel, Lewis Passage, Wright Sound and Douglas Channel. Alternatively, tankers from the south can go through Principe Channel and then Douglas Channel. In order for ships to make it through the narrow sections of Douglas Channel, radar and weather stations will be built in Kitimat.

Figure 2-2 Map of Tanker Routes



Enbridge 2010

2.5. Components

The pipelines will generally be buried with a minimum depth of cover that complies with applicable codes and Enbridge standards ranging from 0.6 m in rock in uncomplicated locations or under watercourses and 3.05 m under railway rail beds (Enbridge 2010b). The pipeline will not be buried in the Clore and Hoult tunnels and will be bridged across several rivers. The pipelines will require a 24 m wide right-of-way and a 25 m wide temporary workspace that will be cleared of vegetation (Enbridge 2010a). The pipeline will also include all-weather road access and electrical power infrastructure for the pump stations and the Kitimat Terminal, and fourteen 496,000-barrel capacity tanks. Block valves will be located at pump stations. Block valves have no effect on movement when they are turned off and stop oil or condensate movements when they

are engaged. Scraper trap facilities, which will be located at either end of the pipeline, isolate and pump out of the pipeline contaminated fluids picked up from “pigs” which clean the pipeline’s internal walls. The ENGP will also include a cathodic protection system for pipelines and tanks, which is an electrical method of preventing corrosion on metallic structures (Enbridge 2010a). Intermediate pump stations will be built at eight locations along the pipeline route. Two of the locations will have pumps only for the condensate pipeline but the other stations will pump both oil and condensate. The pump stations will occupy about four ha each (Enbridge 2010a).

The marine tanker port will include oil tanks, condensate tanks and the associated tank infrastructure, and two tanker berths and one utility berth. It will contain an initiating condensate pump station and oil receiving facilities. The terminal will also include a 150 m safety zone seaward from the berth.

2.6. Project Phases and Timing

Enbridge first considered building a pipeline from Alberta to the BC coast in 1998. In 2002, Enbridge felt that a new oil export pipeline and a condensate import pipeline was needed in the Pacific Northwest and began more extensive research. In 2005, under the division Northern Gateway, Enbridge submitted a Preliminary Information Package (more commonly referred to as a project description) to the NEB and CEA Agency, (Enbridge 2010a). In 2006, the federal Minster of Environment referred the ENGP to a JR Panel and produced a draft Joint Review Panel Agreement. Shortly afterwards, NG suggested that the NEB and CEA Agency delay the EA process due to a lack of demand (ENGP JR Panel 2013). In 2008 Enbridge requested that the NEB and CEA Agency finalize a JR Panel Agreement. In 2009, the federal government held a public comment period on the Joint Review Panel Agreement. On December 4th, 2009 the CEA Agency and the NEB produced the *Joint Review Panel Agreement*, which contained the Terms of Reference and Scope of Factors for the environmental and regulatory review of the proposed Project.

On January 20th, 2010 the CEA Agency and the NEB established a three-member joint review panel. Community hearings were held in January 2012 to January

2013. The final hearings began September 4th, 2012. The JR Panel issued their final report on December 19th, 2013. Table 2-2 outlines the construction timeline included in the application. On June 17th, 2014, cabinet approved the ENGP with the JR Panel's conditions. The pipeline construction is scheduled to occur over four construction seasons with clearing activities occurring a year prior to pipeline construction.

Table 2-2 Construction Timeline

Construction Component	Start Date (by quarter)	End Date (by quarter)
Tunnel Construction	Q2, Year 1	Q4, Year 4
Kitimat Terminal Construction	Q2, Year 1	Q3, Year 5
Oil and Condensate Pipeline Construction	Q4, Year 1	Q4, Year 4
Pump Station Construction	Q3, Year 2	Q4, Year 4
Project In-Service	Q4, Year 4	

2.7. Need for the Project

The Enbridge application says that the ENGP will create 558,000 person-years of employment (Enbridge 2010a). Enbridge forecasts that Canadian oil production will triple by 2035 and the ENGP is needed to transport this oil to market and to help diversity Canadian exports by accessing the growing Asian market via tankers from BC. NG argues that the pipeline will produce $81 billion in tax revenue.

2.8. Scope of the Project

The ENGP's scope of assessment as defined by the Terms of Reference includes:

- the pipelines,
- pump stations,
- pipeline right-of-ways,
- pressure letdown stations,
- a pressure initiation station,

- tunnels through Hope Peak and Mt. Nimbus,
- a tank terminal,
- all-weather road access and electrical power requirements for the pump stations,
- tank terminal and marine dock,
- pigging facilities,
- cathodic protection,
- two marine loading and unloading berths,
- transport of oil within the confined channel assessment area and shoreline area of the Kitimat Arm, Douglas Channel to Caamaño Sound, Principe Channel to Browning Entrance and Hecate Straight, and proposed shipping routes within twelve nautical miles of the Territorial Sea of Canada.

The ENGP is unusual for a Canadian pipeline EA in that NG included some aspects of marine transportation as part of their scope of assessment. The ENGP as defined by the JR Panel includes the pipeline and terminal but not the ships. The JR Panel also required NG to include in its EA marine traffic within the twelve nautical mile limit of the Territorial sea of Canada to address public concerns over tanker ships. Upstream oil production was excluded from the ENGP's scope on the grounds that the upstream activities were covered under separate EA processes. The Terms of Reference also included factors that the JR Panel must consider in their review. These included environmental effects and their significance, comments from the public and Aboriginal people, mitigation, the ENGP's purpose, ENGP alternatives, the need for follow-up programs, ENGP effects on renewable resources, need for the ENGP, community and traditional knowledge, measures to enhance beneficial environmental effects and environmental protection, monitoring, contingency and emergency response plans.

2.9. Alternatives

NG considered several alternative pipeline routes. Enbridge considered Fort McMurray and Edmonton as terminus locations for the pipeline, but shippers preferred Edmonton (Enbridge 2010a). For the marine terminal, Enbridge considered sites in Alaska, Washington and BC. The Alaska site was Bradfield Canal, whereas the

Washington sites included Ferndale and Anacortes. In BC, Enbridge examined Stewart, Alice Arm, the Mylor Peninsula, Port Simpson, Prince Rupert, Kitimat, Bella Coola, Squamish and Burrard Inlet, Roberts Bank and Fraser Port. A working group established by Fisheries and Oceans Canada in the 1970s examined eleven ports (including the ports cited above) and found that Port Simpson, Prince Rupert, Kitimat and Port Angeles have the lowest risks for accidental oil release (Enbridge 2010a). Northern Gateway eliminated Port Simpson and Port Angeles based on the following criteria:

- need for year-round ice-free access;
- sufficient access channel width and water depth;
- suitable turning basin for safe transit by large tankers;
- ship berth area sheltered from effects from open-wave conditions;
- feasibility of pipeline access to the terminal;
- area accessible from existing road system without major road construction;
- ease of access to and development of marine infrastructure;
- need to minimize environmental effects;
- availability of suitable land for tank and marine components of terminal;
- availability of nearby onshore and marine infrastructure (TERMPOL Surveys and Studies ENGP January 20 2010).

NG examined the pipeline feasibility to Prince Rupert and to Kitimat by comparing potential pipeline routes between Terrace and Kitimat, and Terrace and Prince Rupert. Kitimat was chosen because the route to Prince Rupert has steep topography and narrow river valleys and the pipeline would be susceptible to avalanches (ENGP 2010a).

2.10. Environmental Effects

Table 2-3 below describes each physiographic region, the main waterways and each area's largest environmental hazards using information from the ENGP application.

Table 2-3 Pipeline Regional Hazards (Enbridge 2010b)

Physiographic Region	Length (Km)	Description of region	Environmental Hazards
Eastern Alberta Plains	166	Flat or gently rolling Rivers: North Saskatchewan, Pembina and Paddle	Landslides
Southern Alberta Uplands	350	Rolling hills and river valleys Rivers: Athabasca, Simonette, the Smoky and Wapiti Rivers	Landslides
Alberta Plateau	44	Rolling –Steep Rivers: South Redwillow River	Favourable
Rocky Mountains	103	Alpine and valley terrain Pipeline route follows river valleys Rivers: Kinuseo Creek and the Murray and Messinka Rivers	Rock falls and rock toppling Shallow slides and poor travel conditions for vehicles and equipment Sedimentation and erosion Stability of cuts from grade construction Debris flows in locations where the pipelines cross steep mountain streams Avalanche runouts Detection, disposal and mitigation of potential acid generating rock
Interior Plateau	404	Rolling to rigid terrain Drumlins Rivers Parsnip, Crooked, Salmon, Stuart, Endako and Morice Rivers and Gosnell Creek	Slope instabilities Potential for acid generating rock, grading and slope stability Sedimentation and erosion Trench stability Equipment and vehicle movement
Coast Mountains	105	Rugged topography Rivers: Clore, Wedeene and Little Wedeene Rivers	Rock falls, rock toppling failures Debris flows along steep valleys Soil slope failures Control of sedimentation and erosion

			Avalanche runouts Detection, disposal and mitigation of potential acid generating rock from excavations Effects of potential seismic activity Effects of instability of the sensitive marine clays

The ENGP will affect the environment during its construction, operation and end-of-life stages. The JR Panel heard a number of concerns about the ENGP at all stages in its life. The purpose of this thesis is to analyze the assessment process and not the environmental risks associated with the ENGP. Therefore this section will only summarize the major issues as identified by the JR Panel in order to provide context to the respondents' perspectives examined later in this paper. For more details please see NG and the intervenors' final arguments on the ENGP Public Registry website.

A wide variety of opinion on bitumen demand was expressed during the review. Many intervenors suggested that upgrading capacity should be increased so that bitumen would be processed in Canada, rather than shipped overseas, while Northern Gateway and others forecast an increase in supply of bitumen in Alberta and an increase in demand by expanding Asian markets. NG said that the ENGP would create direct and indirect employment, increase tax revenue, diversify oil markets and increase condensate supply. Many intervenors also voiced concern that BC will not receive financial benefits from the ENGP but that fishing and other economic sectors are at risk from the ENGP. NG said that regional and Aboriginal people would receive employment, contracting and procurement opportunities (NEB 2013b).

The JR Panel recognized a number of potential issue areas in their report (NEB 2013b). Some hearing participants expressed a concern for potential damage to freshwater ecosystems and fisheries. NG said that trenchless crossings and bridges; industry best practices and route revisions will prevent impacts to freshwater ecosystems and fisheries. Marine ecosystems were another area of concern. Many hearing participants felt that tanker noise or vessel strikes on whales, salmon, herring and eulachon are important risks to marine ecosystems. NG said they will support more

research in some of these areas of concern, and they will reduce tanker speed, which will reduce underwater noise and vessel-marine mammal collisions.

Negative impacts on land and biological diversity were also a concern expressed by many hearing participants. In particular many participants were concerned about at-risk woodland caribou. NG committed to avoiding caribou habitat as much as possible, by scheduling construction during least-risk windows for caribou and using existing roads and seismic lines. Other participants were concerned that the pipeline corridor included old-growth forest areas, and NG said that this will be addressed during final route selection. Emissions and air quality was another area of concern but NG said that these effects will be limited, and short-term and that the ENGP will offset its greenhouse gas emissions with investments in renewable power generation.

Another major concern was accidental oil spills. Enbridge stated that the likelihood of significant spills was low, and if a spill did occur, spill management plans would mitigate adverse impacts. Many people were concerned about environmental recovery, which Enbridge said will depend on the size and the location of the spill. Enbridge stated that they have a new safety culture throughout their organization and that they examined each component of the ENGP to look for ways to mitigate spill risk. In response to questions raised about human errors as a risk factor, NG said that they would continue to improve management systems, training, and technology to reduce the risk of human error. In addition, many participants were concerned about spills from Very Large Crude Tankers in coastal waters. Enbridge said that they will use tethered tugs, slower speeds and navigation aids to reduce the risk of spills. In addition, the TERMPOL review that was conducted on the ENGP found that there were no regulatory concerns for the shipping components of the ENGP.

Another issue that was brought up during the review was whether diluted bitumen would sink in water. Research was conflicting and NG committed to participate and contribute funding to government-industry-academic research on the behaviour of diluted bitumen in water. The JR Panel found that diluted bitumen would behave similarly to other bitumen products that are physically and chemically similar, and that diluted bitumen is unlikely to sink exclusively due to natural weathering before an oil spill

response is able reduce the quantity of oil available to sink. In addition, the JR Panel said that if a diluted bitumen spill does sink, it would not sink as a layer. The JR Panel Report requires NG to have a detailed response plan for every 10 km of the pipeline. Also, the JR Panel Report requires NG to insure $950 million to cover potential costs of a spill (NEB 2013a).

2.11. Summary

As a megaproject, the ENGP comes with risks, environmental impacts, a high profit for NG and a large predicted increase in Canadian tax revenue. The ENGP will traverse Alberta and BC and send oil out on tankers while importing condensate into Canada via tankers. The size of the ENGP naturally draws controversial attention and requires unbiased, independent science that uses current and effective research methods. A project with this much risk also requires the diligence of a comprehensive and cautioned review process to ensure that the project does not get built unless risk has been reduced to acceptable levels, project effects are mitigated, First Nations are accommodated and the public interest is protected. The next chapter will look at the EA process for the ENGP.

Chapter 3.

3.1. Introduction

Several federal and provincial agencies are involved in EA. The main parties who have regulatory authority for the ENGP are the BC Environmental Assessment Office (BC EAO), Alberta Environment and Sustainable Resource Development, NEB, and CEA Agency. Because of inter-agency agreements, the NEB and CEA Agency were the responsible authorities for the ENGP review. The other government agencies contributed as government participants in the process. The ENGP underwent a JR Panel review, whereby the public and Aboriginal people participated with the goal of assisting the Governor in Council in making its final decision. This chapter will outline key legislation implemented through the joint review and describe the NEB, CEA Agency and then conclude with a description of the JRP for the ENGP.

3.2. The NEB and the *NEB Act*

The National Energy Board is a federal government agency that was established in 1959 as a federally appointed committee designed to regulate interprovincial and international oil and gas (NEB 2013c). The NEB's website states that the Board's purpose is to "regulate pipelines, energy development and trade in the Canadian public interest" (NEB 2013c). The NEB regulates construction, operation, traffic, tolls and tariffs for interprovincial or international pipelines.

The NEB must assess environmental and socio-economic effects of pipeline projects by:

- evaluating potential effects of constructing and operating projects;
- monitoring and enforcing terms and conditions;

- monitoring and regulating operations including decommissioning; and
- evaluating potential effects from project abandonment (NEB 2013d, p. 4A-18).

The NEB must complete its review and submit a report to the Governor in Council within fifteen months of the proponent filing its application. The Governor in Council has to make its decision within three months of receiving the report from the JR Panel (Section 54 *NEB Act*). The NEB review process has four objectives:

- thoroughly examine a project's potential effects before the project is permitted to proceed;
- confirm that approved projects are not likely to cause significant adverse effects or contribute to significant adverse cumulative effects;
- provide an opportunity for meaningful public and Aboriginal participation; and to
- ensure that the NEB's process and its decisions or recommendations are transparent and reflect the input received from those participating in the EA and regulatory review process. (NEB 2013c S.2.2).

The NEB is bound by the *National Energy Board Act* (*NEB Act*), the *Canadian Environmental Assessment Act 2012* (*CEAA* 2012), the NEB's Rules of Practice and Procedure, the NEB's Guidelines for Filing Requirements and the *Jobs, Growth and Prosperity Act* (*JGPA*).

The *NEB Act* sets standards for the NEB related to oil and gas activities and outlines criteria for assessing applications for proposed projects. The NEB makes recommendations to the Governor in Council about whether to approve or not approve a proposed project. Section 52 of the *NEB Act* deals with pipeline approvals. The *NEB Act* provides the following criteria for what the NEB should base their Section 52 recommendation on:

1. the availability of oil, gas, or any other commodity to the pipeline;
2. the existence of markets, actual or potential;
3. the economic feasibility of the pipeline;
4. the financial responsibility and financial structure of the applicant, the methods of financing the pipeline and the extent to which Canadians will have an opportunity to participate in the financing, engineering and construction of the pipeline; and
5. any public interest that in the Board's opinion may be affected by the issuance of the certificate or the dismissal of the application (*NEB Act* R.S.C. 1985, c. N-7, s. 52).

There is no definition of public interest in the *NEB Act* but the NEB has published *Pipeline Regulation in Canada: A Guide for Landowners and the Public* (NEB 2010). This guide for landowners includes a definition of the public interest. The Guide defines public interest as follows:

> The public interest is inclusive of all Canadians and refers to a balance of economic, environmental, and social interests that change as society's values and preference evolve over time. The Board estimates the overall public good a project may create and its potential negative aspects, weighs its various impacts, and makes a decision (NEB 2010, p.1).

The NEB then submits a report to the Governor in Council with recommendations. Section 54 of the *NEB Act* states that the Governor in Council can tell the Board to issue a certificate for a pipeline and to make that certificate subject to specified terms and conditions. The Governor in Council can also write a report or tell the Board not to approve the application (*NEB Act* R.S.C. 1985, c. N-7, s.54).

The NEB *Filing Manual* states that Section 52 applications should include:

- the purpose of the project;
- consultation activities of the applicant with potentially affected parties including local residents, government, and Aboriginal groups;
- engineering design of the project;
- environmental and socio-economic assessment of the project;
- economic and financial information on the applicant and the project; and
- lands information including the general pipeline route (NEB 2011).

The NEB holds hearings for project applications that involve the construction and operation of international or interprovincial pipelines, power lines, applications to abandon a pipeline, or for projects where the landowners in the proposed project location are opposed to the project. The NEB decides whether a hearing is required. The Governor in Council appoints the NEB's members. Panel members are selected from board members and their role is similar to judges in that they hear evidence and testimony and make final decisions.

There are eight main steps in the hearing process. First the proponent may request a pre-application meeting with the NEB to clarify the types of information the NEB will require in the application. If the project is subject to a hearing, the proponent must submit a pre-application project description (NEB 2013c). A project description gives an initial description of a proposed project, its location and the proponent's consultation program. This allows the NEB to initiate public and Aboriginal engagement activities and funding. Second, the company files an application with the NEB using guidelines outlined in the *Filing Manual*. The *Filing Manual* outlines the Board's responsibilities with regards to *CEAA 2012*, describes the filings needed for most NEB applications, and guides proponents as to when they should file and what type of information the Board needs to make a decision.

Third, a Hearing Order or process letter is prepared by the NEB and the public is notified about the hearing. The Hearing Order contains the List of Issues, which are the only issues that the Board will consider during their assessment. The hearing participants may only provide input that is related to the List of Issues. Fourth, any person wishing to participate in the hearing must apply to the NEB and the NEB decides who can participate and how. The *NEB Act* specifies that the Board may decide on a case-by-case basis whether individuals or groups who wish to participate are directly affected by the proposed project, or whether individuals or groups who wish to participate have relevant information or expertise. Only those with relevant information or expertise or who are directly affected by a project may participate in a NEB review process. The fifth step occurs when the proponent and the intervenors file written evidence. Sixth, information requests are submitted and answered based on evidence that is filed. Seventh, participants follow directions in the Hearing Order for their participation method. This may involve oral questioning of witnesses and a final argument if the EA has a hearing. Finally, for major pipeline project applications, the NEB prepares a report with its recommendations. This report is sent to the Governor in Council and made available to the public. For other types of applications or projects, the NEB makes the final decision on the application.

3.3. The CEA Agency and the *CEAA 2012*

The CEA Agency is a review body designed to help decision-makers make choices that are conducive to sustainable development (CEA Agency 2013). Members of the public can participate in CEA Agency reviews using the Registry Internet Site, which gathers public feedback and comments. In addition the CEA Agency has a Participant Funding Program that helps individuals, non-profit organizations and Aboriginal groups participate in EAs. This funding is also available for JR panels. In order to be eligible for funding, applicants must:

- have a direct, local interest in the project, such as living or owning property in the project area;
- have community knowledge or Aboriginal traditional knowledge relevant to the EA; or
- plan to provide expert information relevant to the anticipated environmental effects of the project (CEA Agency 2013).

The *Canadian Environmental Assessment Act*, (S.C. 1992) was replaced on July 6th, 2012. The *CEAA 2012* mandates EA for designated resource projects in Canada. *CEAA 2012* contains project approval criteria that decision-makers must consider when deciding whether or not to approve a project. *CEAA 2012* has three associated regulations: *Regulations Designating Physical Activities* [SOR/2012-147], *Prescribed Information for the Description of a Designated Project Regulations* [SOR/2012 – 148], and *Cost Recovery Regulations* [SOR/2012 – 146]. *Regulations Designating Physical Activities* [SOR/2012-147] identifies which projects are "designated", and therefore require an EA by the CEA Agency, by the Canadian Nuclear Safety Commission or by the NEB. For example, pipelines are under the jurisdiction of both the CEA Agency and the NEB in the *Regulations Designating Physical Activities.* The Regulations require an EA for projects that involve the construction, operation, decommissioning and abandonment of a new pipeline more than 40 km in length on a new right of way.

The second associated regulation is the *Prescribed Information for the Description of a Designated Project Regulations* [SOR/2012 – 148], which requires proponents of designated projects that are not regulated by the Canadian Nuclear Safety Commission or the NEB, to submit a project description to the CEA Agency. This

regulation also outlines the type of information that proponents need to include in their project description. *Prescribed Information for the Description of a Designated Project Regulations* suggests that prior to submitting the project description, the proponent should communicate with the CEA Agency so that the project description is complete and the review process can move more efficiently. The third regulation, *Cost Recovery Regulations* [SOR/2012 – 146], allows the CEA Agency to recover some of the costs incurred during EA through a charge to the proponent.

> Section 4 of the *CEAA 2012* states that EA has nine functions:
>
> - protects components of environment within legislative authority of parliament from significant adverse environmental effects caused by a designated project;
> - ensures that designated projects that require the exercise of a power or performance of a duty or function by a federal authority under any Act of Parliament other than this Act to be carried out, are considered in a careful and precautionary manner to avoid significant adverse environmental effects;
> - promotes cooperation and coordinated action between federal and provincial governments with respect to environmental assessments;
> - encourages communication and cooperation with Aboriginal peoples with respect to environmental assessments;
> - ensures that opportunities are provided for meaningful public participation during an environmental assessment;
> - maintains completion of an environmental assessment in a timely manner;
> - ensures that projects, as defined in section 66, that are to be carried out on federal lands, or those that are outside Canada and that are to be carried out or financially supported by a federal authority, are considered in a careful and precautionary manner to avoid significant adverse environmental effects;
> - encourages federal authorities to take actions that promote sustainable development in order to achieve or maintain a healthy environment and a healthy economy; and
> - encourages the study of the cumulative effects of physical activities in a region and consideration of those study results in EAs. (*CEAA* S.C. 2012, c. 19, s. 52, s. 4).

Section 2 defines the environment as:

> Components of the Earth, and includes land, water and air, including all layers of the atmosphere; all organic and inorganic matter and living organisms; and the interacting natural systems that include these components. (*CEAA S.C. 2012*, c. 19, s. 52, s. 2)

Section 5 describes the environmental effects that must be considered in an EA. These include changes to:

- fish and fish habitat;
- aquatic species;
- migratory birds;
- Aboriginal people's health and socio-economic conditions, physical and cultural heritage;
- the current use of lands and resources for traditional purposes; or
- any structure, site or thing that is of historical, archaeological, paleontological or architectural significance or changes on federal lands in a province outside Canada (*CEAA S.C. 2012*, c.19, s 52, s. 5).

Section 31 describes the Governor in Council's role:

> (1) After the responsible authority with respect to a designated project has submitted its report with respect to the environmental assessment or its reconsideration report under section 29 or 30, the Governor in Council may, by order made under subsection 54(1) of the *National Energy Board Act*
>
> (a) decide, taking into account the implementation of any mitigation measures specified in the report with respect to the environmental assessment or in the reconsideration report, if there is one, that the designated project
>
> (i) is not likely to cause significant adverse environmental effects,
>
> (ii) is likely to cause significant adverse environmental effects that can be justified in the circumstances, or
>
> (iii) is likely to cause significant adverse environmental effects that cannot be justified in the circumstances; and
>
> (b) direct the responsible authority to issue a decision statement to the proponent of the designated project that
>
> (i) informs the proponent of the decision made under paragraph (a) with respect to the designated project and,
>
> (ii) if the decision is referred to in sub-paragraph (a)(i) or (ii), sets out conditions — which are the implementation of the mitigation measures and the follow-up program set out in the report with respect to the environmental assessment or the re-consideration report, if there is one

— that must be complied with by the proponent in relation to the designated project (*CEAA S.C. 2012*, c. 19, s. 52, s. 31).

Section 43 of the *CEAA 2012* specifies that the JR Panel must justify its recommendations and Section 47 requires the GIC to consider the JR Panel's recommendations. Section 126 requires that an EA process started under *CEAA 1992* continue under the new act. This applies to the ENGP.

Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects was prepared in 1994 for the Federal Environmental Assessment Office (which was the predecessor to the CEA Agency). These guidelines give decision-makers and proponents a method to determine the likelihood of significant adverse environmental effects. Predicted environmental effects should be compared to baseline conditions to determine whether the effect is adverse. Significant adverse environmental effects occur if the environmental effects are adverse and meet criteria in the following categories:

- magnitude
- geographic extent
- duration and frequency
- irreversibility
- ecological context (FEARO, 1994 p. 188-189).

The guidelines call for quantitative risk assessment with confidence limits to test the likelihood that significant adverse environmental effects could occur. The guidelines also suggest that the risks of different projects should be compared. Also, the guidelines state that decision-makers and proponents should use quantitative methods to weigh or rank the individual adverse environmental effects of different alternatives.

The Memorandum of Understanding (2011) pronounces that the NEB and the CEA Agency will conduct a single JRP for the projects that require a federal EA under *NEB Act* and *CEAA 2012* (CEA Agency and NEB 2011). The reviews use the NEB's public hearing review process under *NEB Act* for the panel assessment that is prescribed by *CEAA 2012*. The Minister of Environment and the NEB chair appoint an independent review body (the panel). The Panel is restricted to three members including

two permanent NEB members and one appointed by the Minister of Environment (NEB and Ministry of Environment 2009). The NEB conducts the panel review process to meet *CEAA 2012* requirements.

EAs conducted by the CEA Agency undergo a review process intended to meet the CEA Agency's legal requirements. First the CEA Agency receives a project description, which the agency uses to determine whether an EA is required. Similar to the project descriptions submitted to the NEB, project descriptions submitted to the CEA Agency outline general information, consultation activities and contact information. Once the CEA Agency receives a complete project description and formally accepts the project description, (CEA Agency 2013) the CEA Agency then determines using the *Regulations Designating Physical Activities* whether an EA is mandatory. The public has 20 days to voice their opinion on whether the project could cause significant adverse effects and require an EA. The CEA Agency posts a summary of the project description and the 20-day timeline on the Registry Internet website. Forty-five days after the CEA Agency receives the project description. The CEA Agency decides whether the project requires an EA. If the project requires an EA, the EA process starts with an announcement on the Registry Internet site. The proponent submits a draft environmental impact statement. The impact statement identifies and assesses the environmental effects of a project and the measures proposed to mitigate those effects.

Next, the CEA Agency posts this draft environmental impact statement on the Registry Internet website, where the public can comment. The CEA Agency issues a final environmental impact statement guideline based on the public's comments and input from federal agencies. The proponent then completes the environmental studies and submits the environmental impact statement, which may then go through several iterations based on feedback from the public and the CEA Agency. During the final stage, the CEA Agency drafts an environmental assessment report, receives public comments on the report and then submits a final version to the Minister of the Environment (CEA Agency 2013). If the Minister believes that the project is likely to cause significant adverse environmental effects, the Governor in Council decides if the adverse environmental effects are justified in the circumstances. The Minister issues the

environmental assessment decision statement, which includes legally binding conditions and the Cabinet's justification for the significant adverse effects (CEA Agency 2013).

3.4. Equivalency Agreements

Some project reviews, such as the ENGP, involve overlapping jurisdiction between provincial and federal governments, and the governments may agree to substitute one review for another or cooperation through a JRP. The next few pages will explain why the federal government agencies were the leads for the ENGP EA instead of the provincial governments.

BC EAO

The BC EAO manages the review of proposed projects in BC as required by the *Environmental Assessment Act* [S.B.C 2002]. If the proposed project falls under the *Reviewable Project Regulation* (B.C. Reg 370/200) proponents seek an EA certificate through the BC EAO. Reviewable projects include energy projects, pipelines, waste-disposal and transportation projects.

British Columbia's *Environmental Assessment Act* (SBC 2002) describes the environmental assessment process in British Columbia. The BC Environmental Assessment Office oversees the environmental assessment process. The minister determines whether a project requires an environmental assessment by deciding if the project has "significant adverse environmental, economic, social, heritage, or health effect, taking into account practical means of preventing or reducing to an acceptable level any potential adverse effects of the project" (*CEAA RSBC 1996* (s)). The EA process gives interested parties the ability to influence project review outcomes, and is where the proponent produces technical studies to identify and examine adverse effects, and presents strategies to prevent or reduce adverse effects. In addition, the Crown can fulfill its duty to consult First Nations through the EA process. At the end of the process the EAO develops a comprehensive report summarizing input and findings and makes recommendations to Minister of Environment and another minister responsible for the

specific type of project. The ministers then decide whether to approve the project and if the project is approved what conditions are attached to the approval.

Alberta Environment and Sustainable Resource Development

The Alberta Environment and Sustainable Resource Development administers the *Environmental Protection and Enhancement Act* [RSA 2000] and the *Water Act* [RSA 2000]. The *Environmental Protection and Enhancement Act* enhances and protects the Alberta environment through a variety of jurisdictional areas including container recycling, EA, and appeals. The *Water Act* promotes sustainability, one-window licensing and protects water licenses and existing agricultural water uses.

Alberta's *Environmental Protection and Enhancement Act* (R.S.A. 2000) is meant to manage industrial activity in order to protect environmental and human health. The EA provides information that will be used in the public interest decision and the approval process and is required where the complexity and scale of a proposed project, technology, resource allocation or siting considerations make the environmental effects uncertain or the project's effects uncertain. The EA process involves project evaluation; approvals; monitoring; enforcement; setting standards; objectives and guidelines; and decommissioning and reclamation. Proponents produce environmental impact assessment reports, which look at the activities in the project area and the project itself and a combination of economic, environmental and social issues as well as resource sustainability.

Canada-British Columbia Agreement for Environmental Assessment Cooperation (2004)

The *Canada-British Columbia Agreement for Environmental Assessment Cooperation (2004)* enables proponents to enter into a single EA when the project is within the provincial and the federal government's jurisdiction. This process is referred to as "cooperative EA", and occurs when a project only undergoes the lead party's assessment process. The purpose of the agreement is to promote cooperation, increase saliency, efficiency, effectiveness and predictability, outline the responsibilities of each department and describe how to carry out a cooperative EA.

Cooperative EA may take a number of different forms. The agencies may choose to enter into an agreement, which is unique to the specific project. Or a particular government agency may act as the lead authority and the other government may play a minor role in the process. The ENGP falls into this category. The lead party is defined as the government body whose lands contain the proposed project (s. 12). The federal government is the lead party when the project is located on federal lands. But the province is the party in charge if the project is located within the BC provincial boundary but is not on federal lands. However, if the project is located on both federal and provincial lands, and both levels of government are legislatively required to conduct an EA, the parties will enter into a mutual agreement. If the agencies decide to create a joint review panel as a result of the mutual agreement, the Terms of Reference for the joint review panel would generally contain:

- operation of the joint review panel;
- establishment of a panel secretariat;
- cost-sharing methods;
- assistance provided to the public and First Nations for participating in the process;
- time frame of completing work by the joint review panel; and
- other matters deemed necessary.

The ENGP JR Panel included the provinces as government participants rather than as responsible authorities because the federal government took the lead role.

Agreement between the NEB and the Environmental Assessment Office of British Columbia – Environmental Assessment Equivalency Agreement (2010)

The Agreement between the NEB and the Environmental Assessment Office of British Columbia – Environmental Assessment Equivalency Agreement (2010) states that if the BC EAO and the NEB have overlapping EA jurisdiction, the NEB retains authority. EAs conducted by the NEB can substitute for the BC EA process. However, the projects that receive Certificate of Public Convenience and Necessity from the NEB would need to apply for provincial permits and authorizations, if applicable.

Canada-Alberta Agreement on Environmental Assessment Cooperation (2005)

The *Canada-Alberta Agreement on Environmental Assessment Cooperation* describes how Alberta and the federal government can work together on EA for proposed projects. The Agreement is similar to the BC-Canada agreement in the definition of Cooperative EA. The lead party is the federal government on federal lands, and the provincial government on provincial lands. One difference between the Canada-British Columbia Agreement and the Canada-Alberta Agreement is that the Alberta agreement includes Senior One Window Contacts. Each level of government identifies their One Window Contacts for each major phase of the cooperative EA. The One Window Contact facilitates intergovernmental communication and cooperation with the proponent and the public. In addition, the contacts ensure that the assessment is aligned with the sub-agreement and the Canada-Alberta Agreement, the EA involves the public at the appropriate stages of assessment, and the parties meet the appropriate timelines. The lead party may establish a joint advisory team that advises the parties on the schedule, analysis of information, and whether the EA's substance meets requirements contained in the Terms of Reference. If both parties determine that a public hearing is necessary then a joint review panel will be established.

3.5. Joint Review Panel Reviews and the ENGP

This section will describe each component of a typical joint review process and then describe the ENGP JRP. A federal joint review panel will manage an EA when the NEB and CEA Agency both have jurisdiction over a proposed project. During a joint review, a panel is established that meets the requirements of both the NEB and the CEA Agency and their respective legislative mandates.

During a joint review the proponent first submits a Preliminary Information Package which contains an overview of the proposed project, a description of proposed facilities, a summary of planned and undertaken consultation activities and a description of the scope of the assessment (GPLP 2005). NG submitted their project description in October 2005, thus starting the ENGP review process. In 2006 Enbridge placed the review on hold due to a change in oil demand. In August 2009 the CEA Agency issued the *Scope of the Factors* guidance document. The *Scope of the Factors* guidance document discusses principles to consider in the application, project alternatives, study

area boundaries, baseline information, impact assessment, and follow-up and monitoring methods. The document included three principles, which NG had to incorporate into all components of their Project application. These principles are: community knowledge and Aboriginal traditional knowledge, sustainable development, and the precautionary approach. In 2009 the NEB and CEA Agency issued the Joint Review Panel Agreement, including the Terms of Reference to NG, while NG prepared the ENGP application. On December 4th, 2009, the NEB and the CEA Agency entered into a joint agreement whereby the parties established a Joint Review Panel that would conduct the EA for the ENGP. In joint reviews the Minister of Environment and the NEB administer Terms of Reference. They include a description of the scope of project, factors to be considered, and a description of the review process (NEB and Ministry of Environment 2009). The JR Panel's mandate was to review the ENGP in a precautionary manner, contribute information and coordinate an effective EA under the *CEAA 2012* and *NEB Act* that facilitates the public and Aboriginal people's ability to participate (CEA Agency and NEB 2010). The JR Panel was established on January 20th, 2010.

The Panel was composed of two permanent NEB members: a board chair, Ms. Sheila A. Leggett, and Kenneth Bateman (ENGP JR Panel 2012). The third member, Hans Matthews, was a temporary NEB member and was appointed by the Minister of the Environment. The CEA Agency and the NEB also appointed a Secretariat to the JR Panel. The Secretariat provided administrative, technical and procedural support. The Secretariat was meant to help the CEA Agency and the NEB avoid conflicts of interest with other activities and provide administrative, technical and procedural support. In addition the JR Panel created a public registry, which includes hearing transcripts and all submissions, correspondences, exhibits and other information that can be made public. The CEA Agency created a Participant Funding Program, which had funding designated for Aboriginal Groups, the public and not-for-profit organizations.

The public could participate in the hearing processes by either writing a letter of comment, giving an oral statement or becoming an intervenor. The letters of comment were sent to the Secretary of the NEB and the applicant (ENGP). The letters, however, were not sworn evidence. Oral statements were similar to letters only they are given orally at the hearing process. Intervenors could be: landowners; area residents;

government agencies; Aboriginal groups; companies; or any other individual or group. Intervenors formally participate in the hearing, submit evidence, cross-examine and give final arguments.

On May 27th, 2010, NG submitted their Section 52 application to the JR Panel. The application has eight volumes:

- Volume 1: Overview and General Information;
- Volume 2: Economics, Commercial, and Financing;
- Volume 3: Engineering, Construction, and Operations;
- Volume 4: Public Consultation;
- Volume 5A: Aboriginal Engagement;
- Volume 5B: Aboriginal Traditional Knowledge;
- Volume 6A: Environmental and Socio-Economic Assessment – Pipelines and Tank Terminal;
- Volume 6B: Environmental and Socio-Economic Assessment –Marine Terminal;
- Volume 6C: Environmental and Socio-Economic Assessment – Human Environment;
- Volume 7A: Construction Environmental Protection and Management Plan;
- Volume 7B: Risk Assessment and Management of Spills – Pipelines;
- Volume 7C: Risk Assessment and Management of Spills – Kitimat Terminal;
- Volume 8A: Overview and General Information - Marine Transportation;
- Volume 8B: Environmental and Socio-Economic Assessment – Marine transportation; and
- Volume 8C: Risk Assessment and Management of Spills – Marine Transportation.

Volume 1 describes the ENGP, the ENGP's need and purpose, ENGP alternatives and justification, economic feasibility and justification of the ENGP, the regulatory framework at the federal and provincial levels, as well as the precautionary principle for EAs. In addition, Volume 1 describes third party notification, land requirements and land rights and acquisition, Enbridge management policies, a description of the application structure and executive summaries for each volume. Volume 2 describes oil supply and demand, commercial support and describes benefits

of the ENGP. Volume 3 details the design, construction and operation of the entire ENGP, and ENGP alternatives. Volume 4 outlines NG's public consultation program and how feedback has influenced the ENGP's design. Volume 5A describes NG's Aboriginal engagement program and lists previous engagement activities. Volume 5B details the ENGP's Aboriginal traditional knowledge program's objectives, methods, and includes a summary of key findings and how these findings are incorporated into Project design.

Volume 6A gives a detailed assessment of routine activities of the pipelines, associated infrastructure, and tank terminal, and effects on the atmospheric and acoustic environment, soil, terrain, vegetation, wildlife, surface water resources, freshwater fish and fish habitat, hydrogeology, palaeontology, and effects of the environment on the pipelines and tank terminal. This includes mitigation and cumulative effects. Volume 6B looks specifically at the marine terminal and the area within the marine safety zone around the berths. This section focuses on marine sediment and water quality, marine vegetation, marine benthic invertebrates, marine fish and fish habitat, marine mammals, marine birds, marine fisheries, including commercial, commercial-recreational, recreational and food, social and ceremonial fisheries, ecological risk and human health and effects of the environment on the marine terminal. Volume 6C looks at the effects of routine activities on the human environment.

Volume 7A examines environmental protection and management measures that will be implemented during construction of the ENGP. Volume 7B outlines risk of accidents, malfunctions or spills from the pipeline and prevention measures. Volume 7C describes the risk of accidents, malfunctions or spills from the terminal and prevention measures. Volume 8A gives an overview of the marine transportation and marine terminal operations and Volume 8B assesses the environmental effects of routine marine transportation. Volume 8C describes how NG will prevent and reduce the impact of accidental spills in the marine environment.

Joint review panels issue hearing orders to define the joint review process and notify the public of the project. In August and September 2010 the ENGP JR Panel held sessions with the public to gather feedback on the application and hearing process. On January 19th, 2011, the JR Panel produced the Panel Session Results and Decision

document, which contained a draft list of issues, information requests for NG and oral hearing locations. Subsequently, the JR Panel produced a Hearing Order on May 5th, 2011, and this was updated on January 27th, 2012. The Hearing Order briefly described the ENGP, outlined the list of issues to be considered and detailed the hearing process steps including a schedule with deadlines. Table 3-1 summarizes the list of Issues contained in the Hearing Order.

Table 3-1 List of Issues (ENGP JR Panel 2011)

Issue Category	Issue	Specific Aspects of Issue to be evaluated
Need for the Proposed Project	Need for the Project as proposed by the applicant	• Supply and markets for the oil and condensate to be transported by the Project • Commercial support for the Project • Economic feasibility of the proposed facilities
Potential Impacts of the Proposed Project	Potential Impacts on Aboriginal, commercial, and landowners interests.	**Aboriginal interests** • Socio-economic matters • Asserted and proven Aboriginal rights • Treaty rights **Commercial interests** **Landowners and land use including issues related to** • Crossings of the pipeline with vehicles and farm machinery • Depth of cover for the pipeline • Impacts of the Project on agricultural soils
Environmental Effects	Potential effects on the environment	• Protected areas • Wildlife and wildlife habitat • Fish and fish habitat • Atmosphere including greenhouse gas emissions • Vegetation • Species at risk • Marine environment • Water, hydrology, and wetlands • Soils, terrain and geology • Cumulative effects • Effects of the environment on the Project, including geohazards
Socio-economic effects	Potential effects on socio-economic matters	• Human occupancy and resource use • Heritage resources • Traditional land and resource use

Issue Category	Issue	Specific Aspects of Issue to be evaluated
		• Social and cultural well-being • Human health • Infrastructure and services • Employment and economy
Consultation	Consultation	• Consultation with the public and Aboriginal groups on the Project
Financial and Tolling Matters	Financial and Tolling Matters	• Proposed differentiated tolling structure and tolling methodology • Proposed method of financing • Financial responsibility of the applicant
Routing	Routing	• General route of the pipeline (including the proposed 1 km wide general route corridor) and route selection criteria • General location of the proposed facilities and the siting of the marine terminal
Design, Construction and Operation	Design, Construction and Operation	• Suitability of the proposed design, construction, operation and abandonment of the facilities recognizing the project risks and challenges • Capacity of the applicant to safely build and operate the proposed facilities in the range of physical conditions along the Rocky and Coastal Mountains and at the Kitimat Terminal

Safety, Accident Prevention and Response	Safety, Accident Prevention and Response	**Risks of potential hydrocarbon releases related to the Project including:**
		  • likelihood of failures, accidents and malfunctions
		  • potential release volumes
		  • consequences of any release, including geographical extent
		• Safety measures in place to protect people, communities and the environment
		• Whether the proposed risk assessment, mitigation and prevention measures and programs are appropriate for the design, construction, operation and abandonment of the proposed facilities
		• Proposed plans and measures for emergency preparedness and response
		• Financial resources and other compensation measures available in the event of an accident or malfunction

Issue Category	Issue	Specific Aspects of Issue to be evaluated
Follow up Monitoring	Follow up and Monitoring	• Follow up and monitoring plans for the Project
Recommendations, Terms and Conditions	Recommendations, Terms and Conditions	• Recommendations to be included in the Panel report • Terms and conditions to be included in any decision to the Panel may issue

The ENGP includes the construction, operation, decommissioning and abandonment of the following components:

- an oil pipeline commencing near Fort Saskatchewan, Alberta and terminating at a new marine terminal located in Kitimat, British Columbia;
- a condensate pipeline commencing at a new marine terminal in Kitimat, British Columbia and terminating near Fort Saskatchewan, Alberta;
- the right-of-way for the two pipelines as well as any temporary workspace required for the construction;
- associated pump stations, a pressure letdown station (oil) and a pressure initiation station (condensate);
- tunnels through North Hope Peak and Mount Nimbus to facilitate crossing of the Coast Mountains by the pipelines;
- a tank terminal, including hydrocarbon tanks, pump facilities and other land facilities, adjacent to the marine terminal;
- all-weather road access and electrical power requirements for the pump stations, the tank terminal and the new marine terminal in Kitimat, British Columbia;
- block valves located at pump stations, selected watercourse crossings and other locations along the route;
- pigging facilities at either end of the pipeline system and in selected intermediate locations;
- cathodic protection system for the pipelines and tanks, including anode beds at selected locations along the pipeline route;
- two marine loading and unloading berths (one each for oil and condensate) including:
    - loading and unloading platforms;
    - breasting dolphins;
    - mooring dolphins;
    - gangway tower;

- walkway bridges between platform and breasting dolphins;
- utility boat floating dock;
- oil contingency deployment system with storage platforms;
- fire fighting systems;
- offshore anchorages in Kitimat Arm or elsewhere; and
- pipeline interconnects between the berths and the tankage.

- Marine transportation of oil and condensate within:
  - the Confined Channel Assessment Area, as defined by the proponent, which includes the marine and shoreline area of Kitimat Arm, Douglas Channel to Camano Sound, and Principe Channel to Browning Entrance;
  - Hecate Strait; and
  - the proposed shipping routes to be used for the ENGP that are within the 12 nautical mile limit of the Territorial Sea of Canada.
- All related works and activities including:
  - all temporary electrical power supply lines, such as those supplying energy for camps and worksites;
  - temporary work camps;
  - temporary access roads;
  - bridges and watercourse crossings (new or modified);
  - management and treatment of wastewaters and waste management;
  - water withdrawals;
  - borrow pits and quarries;
  - management of excavation material, including stockpiles (e.g. overburden);
  - log handling and storage facilities
  - construction worksites, storage areas and staging areas;
  - handling and storage of petroleum products and hazardous materials;
  - handling, storage and use of explosives; and
- Any other components described by the proponent in its Preliminary Information Package, filed with the National Energy Board on November 1, 2005 (ENGP JR Panel 2011).

The JR Panel also published online workshops to help the individuals or groups participate effectively by either writing a letter of comment, or participating as an

intervenor or a government participant (ENGP JR Panel 2012). Those individuals who participated by writing a letter of comment could not ask questions or make final arguments. The JR Panel received over 9,400 letters of comment (ENGP JR Panel 2013). Oral statements were made in person during community hearings. The individuals who gave oral statements also could not ask questions or make final arguments. Over 4,300 people or groups registered but only 1,179 people or groups gave statements.

Intervenors had to be approved by the Panel and they could direct questions to NG, intervenors and government participants. Intervenors also could submit written evidence and they could seek Panel approval to submit oral evidence (ENGP JR Panel 2012). Oral evidence had to be presented under oath or affirmation that the oral statement was accurate and truthful to the best of the witness' knowledge and belief. Evidence presented orally could not be scientific data. Instead oral evidence was restricted to personal knowledge or oral tradition. Intervenors could also make notices of motion and produce oral and written final arguments. During the final hearings intervenors had to respond to all of the questions asked of them. When the JR Panel generated its report there were 206 intervenors in the process (ENGP JR Panel 2013).

Government agencies at all levels could choose to participate as government participants. As a government participant they could ask written questions of NG and they could cross-examine NG during the final hearings. They could also ask other government participants and intervenors written questions and cross-examine during the final hearings but this had to be done with the JR Panel's approval. Government participants were also able to make final arguments. There were twelve registered government participants. Intervenors and government participants had to submit written evidence by January 4th, 2012. NG had to submit reply evidence by July 20th, 2012. The JR Panel did not allow new evidence to be presented during the final hearings. Table 3-2 below summarizes the key dates in the ENGP application and review.

The deadline to register to give an oral statement was October 6th, 2011. The deadline for registering as an intervenor was ninety days prior to the start of the oral hearings on July 14th, 2011. The oral hearings were separated into three phases.

Community hearings for oral evidence commenced January 10th, 2012 in Kitimat and ended April 17th, 2012 in Prince Rupert. During these hearings 380 witnesses provided oral evidence representing 64 intervenors for the portion of their evidence that needed to be given orally (Broadbent 2014). The JR Panel was required to approve the expert witnesses and expert testimony was given under oath or affirmation. The hearings for oral statements started in Grand Prairie, Alberta on March 26th, 2012 and ended in Vancouver on February 1st, 2013. Over 4,300 people registered to make oral statements and the JR Panel heard oral statements from 1,179 participants. Fewer than 1% were in favour of the ENGP (ENGP JR Panel 2013).

The final hearings, where intervenors could question evidence, began in Edmonton on September 4th, 2012 and ended on June 28th, 2013. Each session concentrated on a pre-determined issue. The oral questioning of evidence was meant to test the credibility of the evidence and lasted 91 days. During this process the expert witnesses (who had to be accepted by the Panel and sworn in under oath) were required to answer questions about their own evidence and about issues in their area of expertise and confirm their evidence. The expert witnesses during this part of the hearing could give their opinion on other participants' evidence based on their expertise. The JR Panel required participants to include exhibit numbers when referencing evidence during questioning. If an intervenor, government participant, or NG could not immediately answer the question they were asked, they could ask to undertake and look up the information to answer the question at a later time determined by the JR Panel. NG responded to 3,680 information requests from intervenors (ENGP 2013b).

The final hearings where each party could give their final argument took five days. Intervenors and government participants were given one hour and NG was given two hours. In addition during the final hearings, intervenors provided written and/or oral final arguments that summarized their position and their evidence.

The JR Panel submitted its report on December 19th 2013 to the Governor in Council recommending project approval with 209 conditions. On June 14th, 2014, the federal government approved the ENGP with the 209 conditions. In September 2014,

the Federal Court of Appeal gave eight First Nations standing to appeal the federal government's decision. Table 3-2 below describes the key dates in the ENGP review.

Table 3-2 ENGP Timeline

Event	Dates
Preliminary information package submitted	October 28 2005
Project put on hold	November 1 2006
Scope of the Factors released	August 2009
Joint Review Panel Agreement signed	December 4 2009
JR Panel established	January 20 2010
Section 52 application submitted	May 27th 2010
Hearing Order issues	May 2011
Information requests to applicant round one	August-October 2011
Oral statement registration deadline	October 6 2011
Information requests to applicant round one	November- December 2011
Community Hearings – oral evidence	January-April 2012
Information requests to intervenors	May-July 2012
Reply evidence from applicant	July 20 2012
Letter of comment deadline	August 31 2012
Final hearings – phase one	September 4 2012
Community hearings resume – oral statements	January–February 2013
Final hearings- phase two	February 4 2013
Final hearings- final argument phase	May-June 2013
JR Panel Report released	December 19 2013
GIC approves the ENGP	June 17 2014

Adapted from NEB 2013a p.400

3.6. Summary

This chapter describes the EA process in Canada and focuses specifically on the JRP for the ENGP. The ENGP review process was complex, lengthy and involved a large number of Aboriginal and public participants as well as government agencies. Although the Alberta and BC provincial governments also had jurisdiction over the review, previous agreements between the provincial governments with the CEA Agency

and the NEB allowed the provinces to take the role of government participants rather than responsible authorities or EA leads. As is common for projects of this nature, the two federal agencies with jurisdiction over the ENGP, the CEA Agency and the NEB, agreed to jointly review the ENGP using a panel process. The process met legislative requirements of the NEB and the CEA Agency but was conducted by the NEB using *CEAA 2012* requirements. Members of the public could participate in the JRP by writing a letter of comment, giving an oral statement or registering as an intervenor. As an intervenor, the participant could cross-examine witnesses and present their final arguments during the final hearings. All levels of government could participate as government participants as intervenors or by giving an oral statement or writing a letter of comment. The JRP was a quasi-judicial process led by a Hearing Order. The JR Panel gathered information from the hearings and made its final recommendation to approve the ENGP with conditions. The federal government agreed with the recommendation. The next chapter will evaluate the ENGP EA process by surveying the intervenors who participated in the JRP.

Chapter 4.

4.1. Introduction

An established method to assess an EA process is to evaluate the process relative to EA good practices (e.g., Joseph 2013, RIAS Inc. and Gartner Lee Ltd. 2000, Sadler 1990, Smith 1993, CEARC 1998, Ahmad and Wood 2002, Wood 1995, Barker and Wood 1999, Lee and Kirkpatrick 2006, Gibson and Walker 2001, Leu, Williams, and Bark 1996). This chapter will use themes to assess the ENGP JRP adapted from the list of good practices developed by Van Hinte et al. (2007) and Joseph (2013). I will evaluate the process by analyzing survey responses from participants in the ENGP hearings. Due to the large number of participants, it was not possible to survey everyone involved in the hearings. Therefore the survey was restricted to participants who fully engaged in the hearings by submitting evidence and cross-examining witnesses. This selection is based on the assumption that these participants are the most knowledgeable about the process and are the most capable participants to expertly evaluate the process' strengths and weaknesses.

The survey used for the evaluation is based on a modified version of a survey developed by Joseph that has been revised to meet the goals of this research project. Joseph (2013) compared the EA process for bitumen development in Alberta to a set of established good practices (Table 4-1). Each survey question for this research corresponds to a good practice theme identified by Joseph.

In this chapter I provide statistical summaries of the survey results and where applicable, I include relevant survey respondents' comments. The Likert-style data asked respondents to state whether they strongly agree, agree, feel neutral, disagree or strongly disagree. For the purposes of analysis, I combined the strongly agree and agree levels of support to report levels of agreement and I combine the disagree and strongly

disagree to report levels of disagreement. I augment the survey results with my own observations of JRP law and policy and relevant literature to contextualise the survey results and provide additional insight into the JRP.

4.2. Survey Methods

The survey questions are intended to evaluate the ENGP JRP by asking the respondents how well they felt the JRP met a number of good practices or themes. Table 4-1 summarizes the good practices established by Joseph (2013) that apply to this research. Before creating this survey I reviewed the literature that Joseph used to create the list of good practices.

Table 4-1 Established Good Practices for EA (adapted from Joseph 2013)

Good Practice	Description
Scoping	• If the proposal is accepted and requires detailed review, then government conducts scoping to determine the nature of detailed review and to narrow it to key issues. • Through scoping the proponent receives feedback from government and stakeholders regarding issues raised by the proposal. • The scope of detailed review is formally established in a contract such as Terms of Reference (TOR), and the contract specifies the content of the proponent's application and how it should be prepared. • Regardless of any narrowing of the scope of reviews during scoping, review covers four essential topics: (1) project justification, (2) potential impacts and planned mitigation measures, including cumulative effects (3) alternatives and which is the best performer, and (4) likelihood of project success.
Application Preparation	• Impact assessment work is done by an independent body with proponents and/or government paying, or by the proponent with proponent paying and safeguards in place to safeguard the quality of impact assessment. • There is good communication between impact assessors and project designers so that impacts are mitigated in manners that provide for the greatest net benefits. • Legal and procedural incentives, including the use of accredited impact assessors, exist to propel accurate, high-quality assessments without bias.
Scrutiny of Application	• Applications are checked for consistency with the TOR in terms of content and methods, and content (including significance conclusions) is scrutinized for quality and freedom from bias. Cumulative effects assessments are scrutinized especially carefully. • Reviewers have the legal capacity to request that deficiencies in applications

Good Practice	Description
	are addressed, and proponents are legally required to respond. Requests to proponents to address deficiencies are coordinated. • Once the application is deemed acceptable quality and review of the proposal is deemed sufficient to enable a decision, the review body announces that the final application is complete and publishes the final version of the application. • The review body writes a decision recommendation based upon the content of the final application and publishes the recommendation.
Final Decision-making	• Approval decisions are linked to the findings of the review process, and are justified by reference to society's objectives, values, and interests. • Approval decisions and their rationale(s) are expressed clearly in a decision statement. • Approval decisions are put on hold for a limited period of time to allow for appeals to be heard. If found to have merit, then approvals are suspended until the appeal is resolved. • If elected officials conduct final decision-making then protections are in place to address their potential bias. If an independent body makes final decisions, then mechanisms are in place to provide accountability. • Approvals specify terms and conditions which: describe allowable procedures and maximum permitted impact outcomes; are clear and specific; are supported by stakeholders, experts and empirical evidence; are consistent with high level policy; and are mandatory and backed by law.
Process Management	• Government employs strategies during reviews of applications to enhance the effectiveness of reviews such as work planning, budgeting, delineating roles and responsibilities, establishing timelines and milestones, and monitoring and reporting of progress.
Resources	• Process is provided with sufficient funding, staff, leadership and time. • Funding is sufficient enough to allow government to conduct a review process that follows all good practices. • Staff have expertise in all aspects of the process and the issues raised by the application. Staff are continuous across individual reviews. • Sufficient leadership exists to propel the process. • Sufficient time is provided to enable a fair and thorough examination of a proposal's merits.

Good Practice	Description
Methods of Impact Assessment	• Only sound methods of impact assessment are used in project review. • Sound methods: (1) are suited to the review context, (2) are flexible and adaptable, (3) are scientifically robust, (4) are minimally reliant upon subjective inputs, (5) are easy to understand, evaluate, and put to use, (6) create useful outputs, (7) are highly accepted by users and stakeholders,(8) are cost-effective, and (9) are participative in that stakeholders are involved in their use. • Reference class forecasting and cost-benefit analysis are highly recommended methods of impact assessment.
Consolidated Review Process Managed by Independent Review Body	• Review process consolidates all government reviews and decision-making into one single review instead of multiple reviews. • Review is led and managed by an independent review body (IRB) at arm's length from government. The IRB is focused on ensuring rational review. • The IRB has adequate resources, authority, and is unbiased, and publicly accountable.
Process Description	• The review process is fully and explicitly described in publicly-available documentation. • The description clearly outlines the purposes and objectives of the process, the roles, responsibilities, and authority of all involved, and how all parties may participate. • The purposes and objectives of the review process are oriented around rational decision-making that seeks to promote development in the public interest.
Structured Decision Procedures	• All major decision-making is structured and guided by clearly defined decision-making criteria. • Decision criteria are clear and follow from high-level policy. • There is minimal discretion given to decision-makers.
Communication	• Communication is clear, consistent, timely, precise, regular, ongoing, but limited to what is necessary. • Communication supports the participation of all parties in the process; confidentiality provisions do not inhibit participation. • Communication is made publicly available, free and easy to access, and is tailored to the audience. • Communication is run through a 'single window portal'.
Stakeholder Participation	• Mechanisms are in place providing stakeholders with the genuine capacity to influence outcomes. • All stakeholder groups are given the opportunity to be involved. • Involvement is extended to all steps in the process. • There are ample opportunities for learning. • Power imbalances among stakeholders are levelled. • The means in which stakeholders are involved facilitates conflict resolution.

Good Practice	Description
Expert Involvement	• Experts are involved in a manner that is wary of their limits and fallability. • Peer-reviewed inputs are favoured, and any research done for project review is opened to public scrutiny. • When experts are convened for input, the process is formal, structured, and transparent. Experts are hired by the review body for independence, and are vetted for true expertise. A range of opinions are gathered from multiple experts. The process probes assumptions and reasoning, examines areas of agreement and disagreement, and highlights strengths and weaknesses in understanding. Results of expert input sessions are documented and publicly reported. • Expert input is treated as one input alongside other valid sources of information.
Precautionary Process	• The process exhibits precaution in its procedures and practice to address the uncertainties and risks associated with megaproject development. • Precautionary practices include: (a) risk assessment, (b) adaptive management, (c) caution with new technology, and (d) transparent risk communication.
Obligations to Indigenous Peoples Met	• Government ensures that the project review process adheres to and promotes the principles in the *UN Declaration on the Rights of Indigenous Peoples* as well as any obligations established in the nation's constitution.

Because Joseph's list of good practices was intended for mega-project review in the context of the lifetime of the project, I needed to adapt this list to accommodate the nature of the ongoing ENGP JRP. I established ten key themes from Joseph's good practices that I could use to evaluate the ENGP's JRP. These themes include structure and efficiency; impartiality of JR Panel and participants; scoping and list of issues; methods; stakeholder participation; clear decision-making criteria; accountable decision-maker; high-quality objective information; strong legislative framework; and the outcome of the process. I then developed survey questions under each of these themes to test the degree to which the ENGP process met the good practices criteria. I also included questions asking respondents to assess potential reforms to the process and open-ended questions to allow for respondents to elaborate. The questionnaire is provided in Appendix 1. The survey was then pretested for length and clarity.

I obtained email contact information for intervenors using a registry published online. Although some intervenors listed multiple contacts, I only contacted one person from each intervenor group to ensure that some groups were not over represented. In

the event that I could not reach the first person I attempted to contact, I would contact the next person listed. To ensure consistency across survey respondents for experience with the JRP, I only attempted to contact intervenors who submitted written evidence and cross-examined witnesses during the hearings. Ninety-six of the 206 registered intervenors (47%) met this criterion for intervenor experience. In total 96 intervenors were contacted, and 40 completed the survey, for a completion rate of 42%. The confidence interval for the survey sample is +/-12% at a 95% level.

The survey instrument I used was FluidSurveys, a Canadian online server that hosts secure surveys. Using a FluidSurvey tool, I generated unique codes for each survey participant so that I could track who completed the survey and who did not. Confidentiality was guaranteed through a variety of methods. First, FluidSurveys uses computer servers located in Canada. Second, the survey host's servers are located in data centers that have biometric access controls, robust fire suppression and climate control monitoring. The data are secure in a location that is under constant surveillance, and includes redundant power feeds and generators. Third, all accounts are protected through encrypted passwords that are not stored in clear text and prevent individuals or robots from attempting to guess a password too many times. Fourth, the survey respondents' identity was protected using Secure Socket Layer Encryption and encrypted communications between the respondent's browser and the server. Fifth, I protected confidentiality by asking questions that did not identify the respondent. Sixth, I present the results of the survey in a consolidated manner, which communicates average responses across respondents in order to prevent identification. Seventh, I do not identify the respondents by name in my thesis or elsewhere. Finally, the data will be stored on a burned compact disc and kept in a locked filing cabinet in an SFU office for a period of two years following the completion of the survey, after which the data will be destroyed.

I contacted the intervenors requesting their participation through email. Inside each personalized email was a unique link to the survey. I continued to contact those who did not respond for six months. I set up my email correspondences so that I would receive "read" receipts from individuals who had opened up my emails. For the

participants that I did not receive “read receipts” from, I used the telephone number provided on the registry to follow up my emails with a telephone call.

The first page of the survey was a consent form that allowed participants to exit or continue the survey. The survey included multiple-choice questions, statements that asked respondents to rate their level of agreement on a Likert-type scale, and open-ended questions that asked participants to assess the JRP and make recommendations for improvement. After the first section, which asked respondents about their backgrounds, the questions in the survey were clustered according to their thematic topic: the quality of the ENGP review process, the criteria for evaluation, resources for project review, information and evidence, overall evaluation of the JRP, and respondent perspectives on pipeline review. At the end of each cluster of closed-ended questions, the survey included an open-ended question that asked participants to provide comments if they had more to say on the topic addressed within a particular cluster of questions. All questions were optional as the survey was voluntary. The survey took respondents 25 to 80 minutes to complete.

The survey was conducted between November 21st, 2013 and May 1st, 2014. Most of the respondents (83%) completed the survey before the JR Panel published their final report. The goal was to have the intervenors complete the survey before the final approval decision was made. Since the last participant responded May 1st and the decision was made on June 17th, I achieved this goal.

The data produced by the survey is both quantitative and qualitative. The quantitative analyses of data will include counting and averaging responses, and calculating percentages. The qualitative data was reviewed for patterns among respondents’ comments and in the following sections I identify the material that was mentioned frequently and/or explains respondents’ answers to the multiple-choice questions.

4.3. Limitations

This research has several limitations. The survey relies on participants' perceptions and as a result, the research findings may be limited by participants' varying definitions of certain concepts and discrepancies between each participant's level of prior experience in review processes (Frame et al. 2004). Each participant's unique prior experiences may alter how they view the current project. Also, given that this is a single case study, the findings may not be fully applicable to other project review processes. Additionally, the participants' personal biases, attitudes towards the proposed project, and heterogeneous prior experience with the NEB or CEA Agency may influence their responses. In addition, I was not able to obtain responses from all cross-examining intervenors. Despite these limitations the results of this study will be useful to those interested in the ENGP case and those wishing to improve review processes in the future.

4.4. Characteristics of Respondents

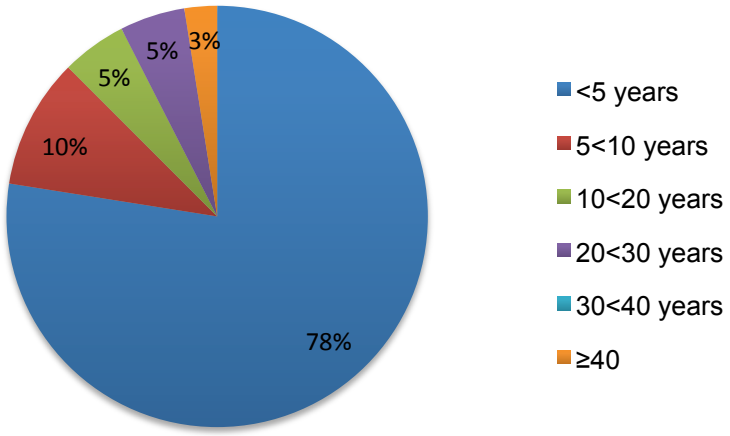
The survey respondents were all intervenors in the JRP, and their intervenor groups cross-examined witnesses. The respondents came from a variety of backgrounds (see Table 4-2). The majority of respondents were from Aboriginal groups or environmental organizations. Of the 96 intervenors who cross-examined and provided evidence during the hearings, 59 did not respond to the survey. Table 4-2 shows the background of survey respondents and the total population of cross-examining intervenors.

Table 4-2 Respondent versus Population Background

Background	% of Respondents	% of Intervenors
Aboriginal Group	30%	32%
Environmental Organization	22%	13%
Federal Government	0%	6%
Individual	24%	18%
Local Government	16%	9%
Oil Industry	8%	11%
Other Industry	5%	9%
Provincial Government	3%	2%

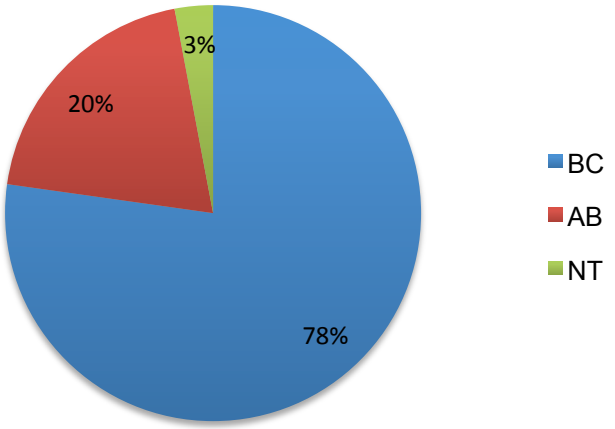
Participants were asked to indicate the number of years experience they had with pipeline project reviews (see Figure 4-1). The vast majority of respondents (78%) indicated that they had less than five years of experience while 10% of respondents had five to ten years experience. Only 13% of respondents had ten or more years experience.

Figure 4-1 Years of Experience with Pipeline Reviews



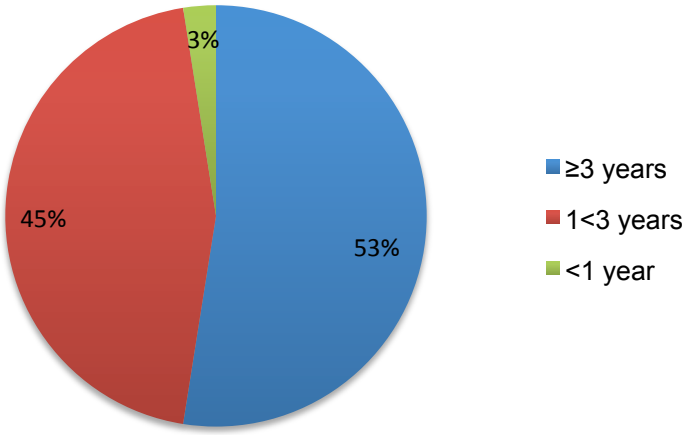
As shown in Figure 4-2, 20% of respondents resided in Alberta (AB), 78% live in British Columbia (BC), and 3% lived in the Northwest Territories (NT).

Figure 4-2 Respondents' Place of Residence



At the time of the survey, only 3% of respondents had been involved in the ENGP review for less than a year (see Figure 4-3). Forty-five percent (45%) of the respondents had been involved in the ENGP review for one to three years and 53% of respondents had been involved for three or more years.

Figure 4-3 Length of Experience with ENGP Review



4.5. Structure and Efficiency of the JRP

The JRP was structured like a judicial hearing, where those with an interest in the outcome and who obtained consent from the JR Panel could give a statement, write a letter of comment, or give evidence and cross-examine witnesses. As discussed earlier, the review process for the ENGP was a consolidated process between federal government agencies with three panel members who had familiarity with oil pipeline projects. As described in Chapter 3, harmonization agreements consolidated the review process by giving the NEB and the CEA Agency authority for the ENGP review. The JRP for the ENGP was conducted as a substitute for the Alberta and BC EA processes as directed by the harmonization agreements. As required by law the review body submitted the recommendation with conditions and the federal government (GIC) ultimately made the final decision. Consolidating or substituting the EA process is intended to save resources by reducing duplication, and increasing efficiency and transparency. *CEAA 2012* imposes a 15-month time-limit, with a possible 3-month extension, on the process. These legislated limits do not apply to proponents who have the right to pause the process.

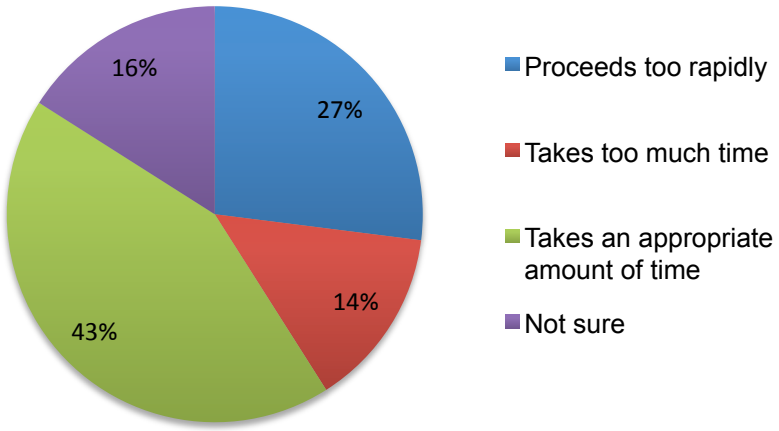
To be efficient JR Panels should consolidate the project review responsibilities of many agencies into one process while acting with precaution and employing strategies that structure the process to meet all of the legislated requirements within a prescribed and sufficient length of time. The decision-making should also be consolidated and the review should be led and managed by an independent review body at arm's length from government. During reviews of applications, the government should also employ strategies to enhance the effectiveness of EAs such as work planning, budgeting, delineating roles and responsibilities, establishing timelines and milestones and progress monitoring and reporting (Joseph 2013). The JR Panel should also provide sufficient time to enable a fair and thorough examination of a proposal's merits (Joseph 2013).

When asked to agree with the statement that the NEB and CEA Agency under the *NEB Act* and the *CEAA 2012* should conduct separate pipeline approval processes, 44% of survey respondents felt that the reviews should be separate, while 23% thought the consolidation of the review process under a single joint review worked well in the

ENGP review. Two-thirds (67%) of survey respondents agreed that the JR Panel communicated well with proponents and stakeholders. One respondent suggested, “it would have greatly helped if the federal government, in part through the CEA Agency, provided better and more informed guidance”.

When asked about the length of time it took from start to finish of the ENGP’s JRP, 27% of respondents felt that it proceeded too rapidly and 43% of respondents felt that it took an appropriate amount of time, while 14% of respondents felt that it took too much time (Figure 4-4).

Figure 4-4 Respondents' Opinion of JRP Duration



4.6. Impartiality of the JR Panel and Participants

The JR Panel should be impartial throughout the hearing process to ensure that the recommendation that is given to the federal government is based upon sound data and assumptions. The JR Panel should treat all participants with equal respect and all participants should be given equal opportunities to participate in the process. This is relayed in the *Hearing Order,* which requires the JR Panel to act fairly. The JR Panel Agreement requires the JR Panel to conduct the review in a manner that facilitates the public and Aboriginal peoples’ participation and the Agreement also requires the JR Panel to consider all evidence provided during the hearing. The CEA Agency and NEB

were also required to ensure that panel members and the secretariat to the JR Panel avoided conflicts of interest.

This review body should focus on rational review, have adequate resources, and authority, and represent a variety of interests. The review body should select and vet the expert witnesses to decrease bias and increase the public's trust in the process (Joseph 2013).

Slightly more than half (53%) of respondents felt that the JR Panel exhibited bias against intervenors opposed to NG during the hearing process. A quarter (25%) of respondents felt that the JR Panel did not exhibit any bias during the hearing process and 23% of respondents were not sure. Those who felt that bias was shown provided a number of examples in their responses. One respondent from an Aboriginal group commented that the "regulatory process is [biased] towards making the Project better, [and] not whether it should not go through". Other respondents said that intervenors were cut off during hearings but Enbridge representatives were not. In open-ended questions a number of respondents also gave examples of perceived biases present during the hearings. For example one respondent said that:

> What was supposed to be a response to a cross examination question was abused as an opportunity to provide evidence in chief and the Panel imposed no limitations on this.

Another respondent felt undervalued by the JR Panel because:

> Although the [JR Panel] said they wanted our personal experience with anything related to this project and its impacts on the environment or anything else, they shut me down and refused to let me speak to my personal experience of the economics of the project, my experience with the Chinese on economic projects and their MO, the sea conditions that would be involved, the effects of oil on sea life etc. etc. By turning a blind eye to these pieces of the project doesn't mean the results will change.

As Table 4-3 shows, most respondents (70%) felt that the federal government had already made up its mind on the ENGP before the review process commenced. Five percent (5%) of respondents felt that the federal government would fully consider all of

the evidence and make an unbiased decision on the ENGP. Less than one-quarter (22%) of respondents felt that the JR Panel would fully consider all the evidence and make an unbiased recommendation on the ENGP. Thirty-five percent (35%) of respondents felt that the JR Panel had already made up their mind on the ENGP before the review process commenced.

Table 4-3 Level of Agreement for Final Decision-Making

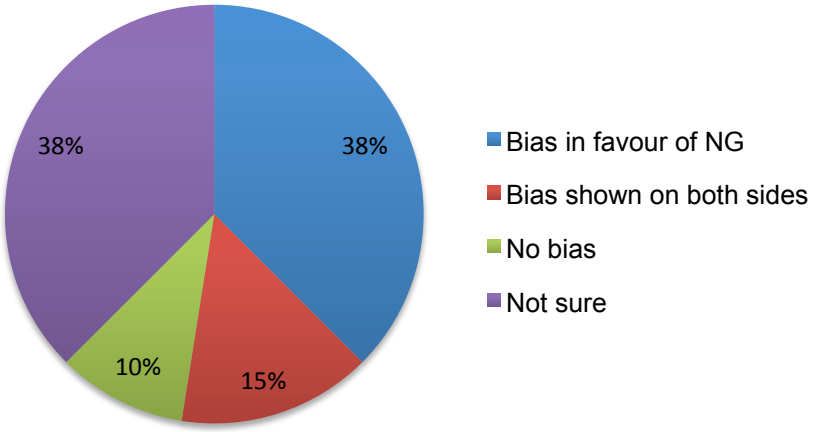
Survey Statement	Level of Agreement
The evidence submitted by NG was biased to exaggerate the benefits and understate the risks of the ENGP.	83%
The federal government had already made up its mind on the ENGP before the review process commenced.	70%
The JR Panel had already made up its mind on the ENGP before the review commenced	35%
The JR Panel will fully consider all the evidence and make an unbiased recommendation on the ENGP	22%
The federal government will fully consider all the evidence and make an unbiased decision on the ENGP	5%

The JRP included testimony from a number of experts representing a variety of opinions. Joseph (2013) suggests a number of good practices for including expert opinion. He suggests that the process for hearing experts should be formally structured, and transparent. The review body should hire experts to maintain experts' independence. The experts should be vetted for true expertise and the panel should gather a range of opinions from multiple experts. The process should probe assumptions and reasoning, examine areas of agreement and disagreement, and highlight strengths and weaknesses in understanding. Results of expert input sessions should be documented and publicly reported. Expert input should be treated as one input alongside other valid sources of evidence. And finally, peer-reviewed inputs should be favoured, and any research conducted for project reviews should be opened to public scrutiny. (Joseph 2013).

As shown in Figure 4-5, 38% of respondents felt that federal government agencies participating in the JRP hearing exhibited bias in favour of Northern Gateway.

Fifteen percent (15%) of respondents felt that some federal government agencies exhibited bias in favour of NG while others exhibited bias against NG in the JRP hearing. Ten percent (10%) of respondents felt that the federal government agencies did not exhibit bias while 38% of the respondents were unsure whether federal agencies exhibited any bias.

Figure 4-5 Perceived bias of Federal Government Agencies



A few respondents mentioned that the federal agencies were silenced or censored including one respondent from an environmental organization who said:

> We feel federal agencies just didn't show up [because] they were largely muzzled. We did request DFO presence on a number of issues and that was denied.

NG prepared their own EA. While having project proponents prepare the EA is accepted practice in Canada and has many benefits, it could lead to a bias in favour of the project (Joseph 2013). To counter this, NG provided the qualifications of impact assessors and their curriculum vitaes. Additionally, *CEAA 2012* prohibits proponents or consultants from knowingly providing false or misleading information (ss. 98 and 100). Despite these measures, 83% of respondents agreed that NG's expert witnesses showed bias in favour of NG. This is compared to just 37% of respondents who felt that

intervenors' expert witnesses showed bias in favour of their clients. Most respondents (83%) felt that the evidence submitted by NG was biased to exaggerate the benefits and understate the risks of the ENGP.

4.7. Scoping and List of Issues

As mentioned in Chapter 3, during the ENGP hearings intervenors and the proponent could only speak to issues on the list of issues and within the scope of the Project. The scope of the Project and List of Issues were determined by the JR Panel with intervenor input prior to the start of the review process. The NEB and the CEA Agency conducted scoping with NG, stakeholders, members of the public and Aboriginal groups. Through this process, NG, the NEB and the CEA Agency discussed how to prepare their application as well as the legally required content. The proponent and the JR Panel developed a list of valued environmental components, which were the focus of the EA. The ENGP JR Panel gathered stakeholder input during the scoping process and developed and finalized the Scope of the Assessment in the ENGP's Terms of Reference (TOR).

There are a number of good practices for scoping a project review and creating a list of issues (Joseph 2013). Governments should conduct scoping and create a list of issues prior to the review to determine the nature of the detailed review and to narrow it to key issues. Through scoping the proponent should receive feedback from government and stakeholders regarding issues raised by the proposal. The scope of detailed review should be formally established in a TOR, and the TOR should specify the content of the proponent's application and how it should be prepared.

Regardless of any narrowing of the scope of reviews during scoping, reviews should cover four essential topics: (1) project justification, (2) potential impacts and planned mitigation measures, including cumulative effects (3) alternatives and indicators of the best option, and (4) likelihood of project success.

As shown in Table 4-4, 31% of respondents were satisfied with the scope of the Project as defined by the JR Panel. When asked to indicate satisfaction with the process

for determining the list of issues in the ENGP hearing, 36% of respondents were satisfied with the process. Only 23% of respondents agreed with the statement that, “I am satisfied with the list of issues determined by the JRP for the ENGP hearing”. Survey respondents were also asked how the process for determining the list of issues could be improved. One citizen respondent stated the process could be improved by:

> Permitting greater latitude in submitting evidence. Pictures of tankers with broken backs due to wave periods were not allowed as not taken locally and not taken by intervenor. Of course there are no local photos... we're trying to stop it happening!

Other respondents said that the process should have been more collaborative, and flexible in order to permit the use of newly discovered scientific evidence. A number of respondents felt that the deadline for input on scope should have been more flexible so that issues arising from current and new research could be included. One respondent said:

> The NEB defined the scope based on their mandate. Asking the public for determination of issues was [deceitful] and misleading. Either open the list to all suggestions or state only those areas that they mandate.

When asked to state what issues were missing from the list of issues, the most common suggestions were:

- GHG emissions for oil sands;
- cumulative effects;
- community engagement;
- marine spills and tanker accidents (acceptable risk levels);
- holistic view of values and interactions;
- open water area environmental assessment;
- humpback whales;
- climate change;
- Kitimat estuary; and
- loss of cultural heritage/teachings.

Table 4-4 Level of Agreement for "List of Issues" and "Scoping" Survey Statements

Survey Statement	Level of Agreement
I am satisfied with the process that the JRP used to determine the list of issues to be considered in the ENGP hearing	36%
I am satisfied with the scope of the project as defined by the JRP for the hearing (i.e. components of the ENGP that were included in the assessment)	31%
I am satisfied with the list of issues determined by the JRP for the ENGP hearing	23%

4.8. Methods of Analysis

Impact assessment methods are the tools that the proponent uses to conduct the EA and calculate the environmental effects over the life of the project. The results from this analysis should inform the decision to approve or not approve a project. As previously mentioned, there are no laws or guidelines specifying which methods to use.

As Joseph (2013) points out sound methods of impact assessment should be:

- suited to the review context;
- flexible and adaptable;
- scientifically robust;
- minimally reliant upon subjective inputs;
- easy to understand, evaluate, and put to use;
- able to create useful outputs;
- highly accepted by users and stakeholders;
- cost-effective; and
- participative because stakeholders are involved in impact assessments.

Reference class forecasting, cost-benefit analysis, and multiple accounts analysis are highly recommended methods of impact assessment (Joseph 2013; Broadbent 2014). The ENGP EA used a variety of methods (Table 4-5).

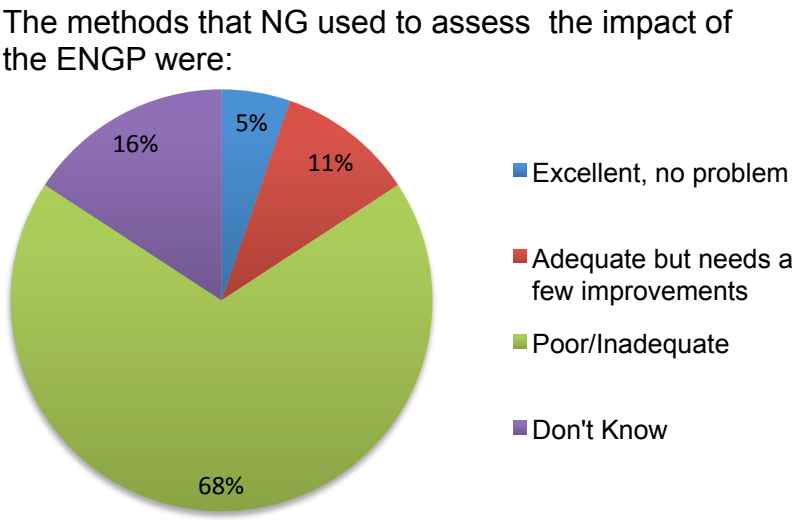
Table 4-5 Methods used in ENGP (Broadbent 2014)

Method	Description	Example from Application
Analogs	Impacts from similar projects (i.e. case studies) provide an analogy for predicting potential impacts of a proposed project	Comparing tanker spill impacts from the EVOS to a potential spill from the ENGP
Biophysical Impact Assessment	Estimating impacts from projects to the biological and physical environment	Potential injuries to humpback whales from a vessel strike
Checklists	Lists that contain items or impacts relevant to the proposed project. Checklists are ideal for the initial scoping stages	Terms of Reference for the ENGP that lists factors to be considered during the JRP
CBA	Estimating in monetary terms the value of all costs and benefits of a project to all members of society.	Monetary costs and benefits related to surplus pipeline and environmental impacts.
Cumulative Effects Assessment	Assessing the spatial and temporal impacts of a proposed project in combination with past, present, and future projects to determine the aggregate effect	Air pollution impacts from tanker operations combined with other projects in Kitimat
Demographic Analysis	Describing characteristics of populations including size and distribution across an area	Population, employment by industry sector, and labour force for areas impacted by the NGP
EconIA	Estimating the gross economic impacts of a project using input-output analysis that structures an economy based on economic linkages representing the relationships among various economic sectors	Economic benefits that increase GDP, employment, and government tax revenues
Expert Opinion	Developing information from professional judgment in structured or unstructured approaches	Expert workshops held for *Marine Shipping QRA*
Geographic Information Systems	Analyzing spatial impacts with computer mapping software	Mapping of proposed pipeline right-of-way
Heritage Impact Assessment	Estimating project impacts to cultural heritage resources such as historic buildings, and archeological and paleontological sites	Assessing the likelihood and consequences of unauthorized collecting of archaeological resources from increased human presence
Indicators	Identifying important information that describes the affected resource. Indicators often measure the quality/quantity of a resource before	National and provincial economic Indicators measuring GDP, employment, wages, etc.

	and after the proposed project	
Literature Review	Estimating impacts from reviewing existing academic and other literary sources	Identifying potential tanker spill impacts from existing research on oil spills
Mass Balance	Analysis of a physical system that accounts for material entering and leaving the system	Measuring the fate of oil spilled in various oil spill scenarios
Matrices	Identifying and linking project activities to potential environmental components and effects in a grid	Matrix characterizing residual effects from chemicals of potential concern
Modeling	Qualitative and quantitative simplifications of real systems that predict changes to the system from the proposed project	Dispersion modeling measuring air quality effects of air emissions from Kitimat Terminal
Negotiation	Resolving issues using conflict resolution methods and processes	Negotiations between ENGP and Aboriginal groups
Networks	Diagrams that demonstrate relationships and connections between proposed projects and impacts	Human health risk assessment conceptual model diagram
Remote Sensing	Collecting information using various remote data acquisition techniques	Aerial photographs mapping the proposed pipeline route
Risk Assessment	Analyzing information to determine if an initiating event, or hazard, might cause harm. There are different types (i.e. human health or ecological) and different techniques (i.e. quantitative or semi-quantitative) of risk assessment	Impacts to humans from consuming contaminated marine resources; Return periods for pipeline spills
Scenario Building	Using different underlying assumptions to develop alternative future scenarios	Scenarios for different oil spill sizes, types, region, etc.
Social Impact Assessment	Estimating the social effects of a proposed project such as impacts to culture, community, etc.	Increased stress from disturbance to traditional foods and medicines
Stakeholder Involvement	Gathering information through formal or informal methods from groups that have an interest in the outcome	Stakeholder engagement during hazard identification portion of risk assessment
Traditional Ecological Knowledge	Gathering information and data from Aboriginal or Indigenous groups that possess knowledge about local environmental resources	Completion of Aboriginal traditional knowledge reports with some Aboriginal groups
Trend Extrapolation	Estimating future conditions based on changing or continued historical trends	Assuming historical tanker spill rates continue to decline over the project life

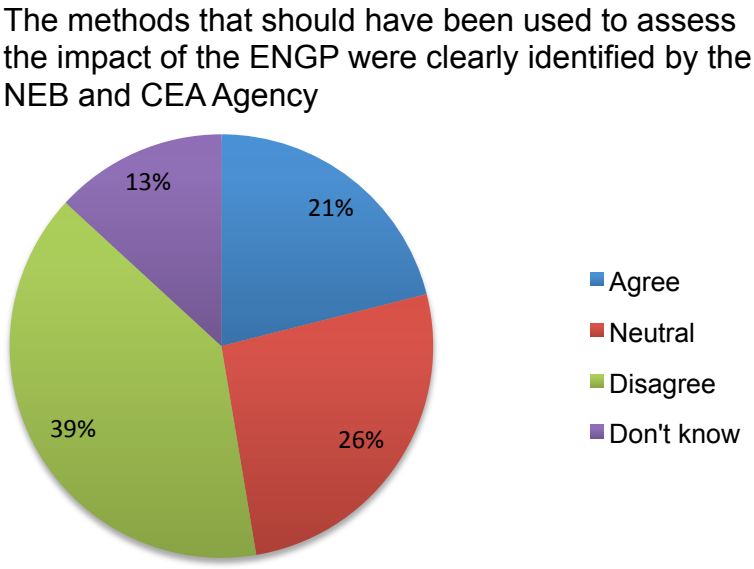
As displayed in Figure 4-6, 68% of respondents felt that NG's methods to assess the impact of the ENGP were poor/inadequate and 11% suggested that they were adequate but could benefit from a few improvements. When asked to elaborate one respondent suggested that NG should have been honest about the likelihood of oil spills and the condition of the pipeline in the future. Many respondents suggested that the marine assessment was done poorly and that the application should have been nearer to completion prior to the review process because the numerous supplements made reviewing the application difficult.

Figure 4-6 Respondents' Opinion of NG's Methods



Respondents were also asked whether the methods that should have been used to assess the impact of the ENGP were clearly identified by the NEB and CEA Agency. As shown in Figure 4-7, only 21% of respondents agreed that the methods were clearly identified.

Figure 4-7 Perception of Clarity of Required Methods



As shown in Table 4-6 only 11% of respondents felt that the evidence submitted by Northern Gateway was based on good science, while 50% felt that the evidence submitted by intervenors was based on good science. Only 20% felt that the evidence was adequately evaluated and tested during the JRP. In addition, only 9% of respondents agreed that the evidence submitted by NG provided an accurate assessment of the ENGP's costs and benefits. This can be compared to 20% of respondents who agreed that the evidence submitted by intervenors provided an accurate assessment of the ENGP's costs and benefits.

Table 4-6 Level of Agreement for "Evidence" Survey Statements

Survey Statement	Level of Agreement
The evidence submitted by intervenors was based on good science.	50%
The evidence submitted by intervenors provided an accurate assessment of the costs and benefits of the ENGP.	20%
The evidence was adequately evaluated and tested during the JRP hearing.	20%
The evidence submitted by Northern Gateway was based on good science	11%
The evidence submitted by Northern Gateway provided an accurate assessment of the costs and benefits of the ENGP	9%

4.9. Stakeholder Participation

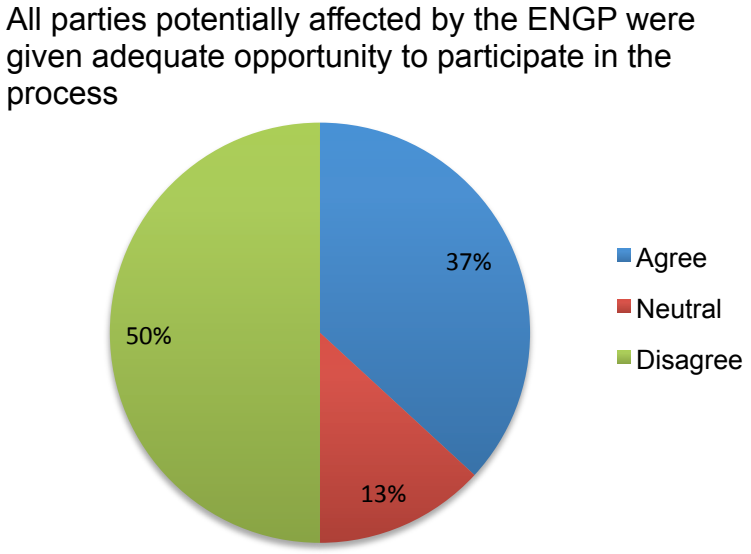
Stakeholders are individuals or groups who could be affected by a project and therefore stakeholders should be able to genuinely influence the final decision in an environmental assessment (Joseph 2013 Senecal et al. 1999, Lawrence 2003, Flyvbjerg, et al. 2003). There are a number of good practices that enable both stakeholders and the review body to get the most out of stakeholder participation:

- mechanisms are in place providing stakeholders with the genuine capacity to influence outcomes;
- all stakeholder groups are given the opportunity to be involved;
- involvement is extended to all steps in the process;
- opportunities exist for learning;
- power imbalances among stakeholders are levelled; and
- the means in which stakeholders are involved facilitates conflict resolution.

In addition, during the review process the panel members, support staff as well as hearing participants and stakeholders need adequate funding, leadership and fair levels of experienced and skilled personnel (Joseph 2013, Gunton et al. 2004, Van Hinte, Gunton and Day 2007). The JRP had a large range of opportunities for involvement that included writing a letter of comment, becoming an intervenor, or giving an oral statement.

Interestingly, as shown in Figure 4-8, only 40% of respondents felt that all parties potentially affected by the ENGP were given adequate opportunity to participate in the review process and 50% of respondents disagreed with that statement. One survey respondent commented that special interest groups could not be represented "…due to lack of funding and the volume of information put forth by Enbridge was too technical and cumbersome for the average citizen or group to understand."

Figure 4-8 Opinion of Participation Opportunities

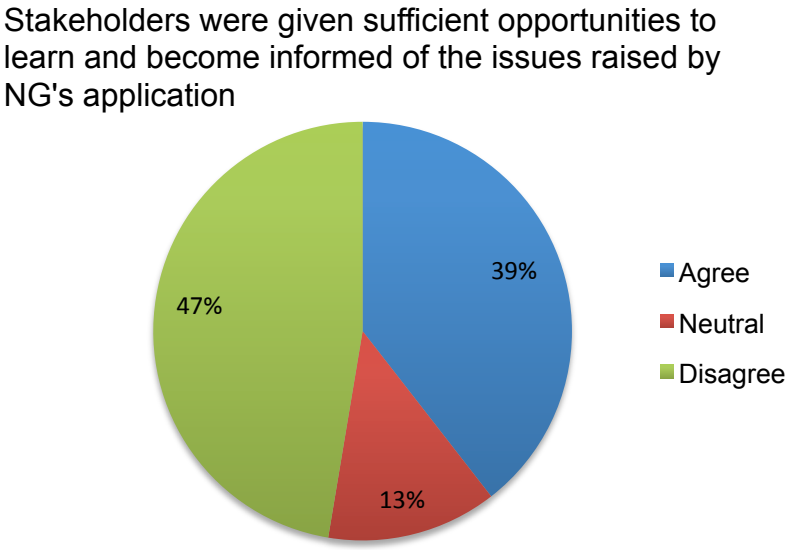


About half of the respondents (53%) felt that publicly available documentation on the JRP provided all parties with a clear description of the process and clear instructions on how to participate. One respondent from an environmental organization wrote that the legal process was

> so intimidating that ordinary people with much to share were just frightened and ineffective. The public wasn't really invited it was lawyers.

As indicated in Figure 4-9, 39% of respondents agreed that stakeholders were given sufficient opportunities to learn and become informed of the issues raised by Northern Gateway's application.

Figure 4-9 Perception of Opportunities to Learn about Issues



As shown in Table 4-7, 53% of respondents felt that government bodies and staff involved in the JRP had adequate resources to participate effectively. This is compared to 81% of respondents who felt that the proponent had adequate resources to participate effectively in the JRP. Only 8% of respondents felt that non-industry stakeholders such as First Nations, environmental and community groups had adequate resources to participate effectively in the JRP. Fourteen percent (14%) of respondents felt that the stakeholder group that they were involved with had adequate resources.

Table 4-7 Level of Agreement with "Participation Resources" Survey Statements

Survey Statement	Level of Agreement
The proponent had adequate resources to participate effectively in the JRP.	81%
Government bodies and staff involved in the JRP had adequate resources to participate effectively.	53%
Publicly available documentation on the JRP provided all parties with a clear description of the process and clear instructions on how to participate.	53%
The stakeholder group that I was involved with had adequate resources to participate effectively in the JRP.	14%
Non-industry stakeholders such as First Nations, environmental, and community groups had adequate resources to participate effectively in the JRP.	8%

4.10. Clear Decision-Making Criteria

The JR Panel was required to make their recommendation based on the decision criteria in the *NEB Act* and the *CEAA 2012.* The decision-making criteria are described in Chapter 3 of this paper. The federal government must also explain why their final decisions are consistent with, or go against, JR Panel recommendations. The ENGP JR Panel provided evidence and rationale for all of their decisions but the federal government cited the JR Panel evidence and rationale for their decision rather than providing additional information when they approved the ENGP.

Joseph (2013) states that decision-making criteria must be specific and transparent so that decision-maker discretion is minimized. Project approval must follow a transparent and logical formula that addresses both the application and the evidence that was provided during the hearings. Approval decisions should be linked to the findings of the review process, and should be justified by reference to society's objectives, values, and interests. Approval decisions and their rationale(s) should be expressed clearly in a decision statement. Approval decisions should be put on hold for a limited period of time to allow for appeals to be heard. If elected officials conduct final decision-making then protections should be in place to address their potential bias. Decision criteria should guide structured decision-making, follow high-level policy and give decision-makers little discretion.

As shown in Table 4-8 less than a quarter (19%) of respondents felt that the JR Panel's evaluation criteria provided clear guidance to decision-makers on whether to approve the pipeline applications and which conditions to apply if they did approve the pipeline. Almost half of respondents (46%) felt that the evaluation criteria were too vague and 53% of respondents felt that the evaluation criteria were deficient and needed to be revised. About a quarter (27%) of respondents felt that the scope of the NEB and CEAA evaluation criteria for project evaluation were appropriate,.

Table 4-8 Level of Agreement with "Evaluation Criteria" Survey Statements

Survey Statement	Level of Agreement
The evaluation criteria are deficient and need to be revised.	53%
The evaluation criteria are too vague.	46%
The scope of the NEB and CEA Agency evaluation criteria for project evaluation are appropriate (ie the criteria include all relevant considerations that should be taken into account)	27%
The evaluation criteria provide clear guidance to decision-makers for their deliberations on whether to approve applications or not and what conditions to apply if they do approve the pipeline.	19%

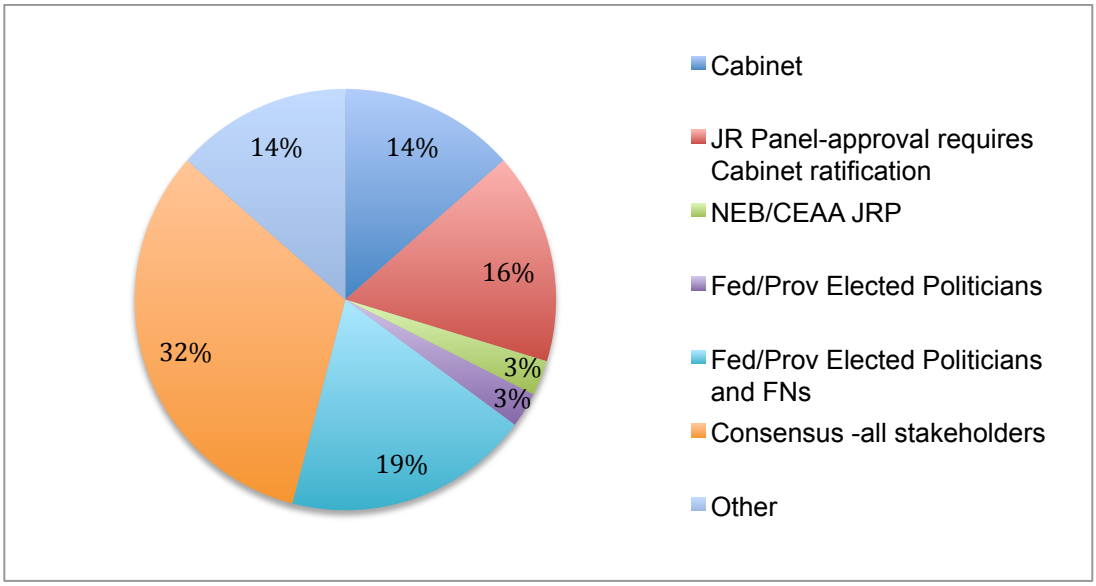
4.11. Accountable Decision-Maker

Final decision-making under the *CEAA* and the *NEB Act* is given to the Governor in Council. JR Panels are given the authority to make informed recommendations in report format to the GIC. Decision-makers must be accountable for their decisions so that the decision-maker has an incentive to make decisions that are not self-interested. If an independent body makes final decisions, then mechanisms should be in place to provide accountability.

Survey respondents were asked to choose among six decision-making options for EA joint review (Figure 4-10). Only 14% of the respondents supported the current process where the GIC makes the decision based on recommendations from the JR Panel (14%) and 16% chose the previous process with the JR Panel having final authority for rejection but requiring the Governor in Council's ratification for approval. The next highest support (19%) was for delegating decision-making power to elected politicians from the federal, provincial and First Nations governments. The two options

that received virtually no support were giving the JR Panel final decision-making authority (3%) or giving elected politicians in the federal and provincial government final decision-making authority based on recommendations from the JRP (3%).

Figure 4-10 Final Decision-Making Authority



4.12. High Quality Objective Information that Addresses Decision-Making Criteria.

A good decision-making process requires comprehensive evidence that addresses all of the key decision-making criteria and provides decision-makers with the information they need to make rational decisions. Respondents were strongly of the view that the process failed to provide adequate information on any of the key issues associated with the decision-making criteria. Depending on the issue, only 3% to 29% of respondents agreed that the evidence adequately assessed the key impacts (Table 4-9). The evidence was least satisfactory for cumulative impacts, and compensation and mitigation. The highest rating was for the evidence on the availability of oil and condensate to ship on the pipeline.

Table 4-9 Level of Agreement with "Application and Evidence" Survey Statements

Survey Statement	Level of Agreement
The application and evidence adequately assessed availability of oil and condensate to be shipped.	29%
The application and evidence adequately assessed costs of the ENGP	19%
The application and evidence adequately assessed the need for the ENGP	19%
The application and evidence adequately assessed benefits of the ENGP	18%
The application and evidence adequately assessed stakeholders negatively impacted by the ENGP	17%
The application and evidence adequately assessed existence of markets.	17%
The application and evidence adequately assessed adverse environmental impacts of the ENGP.	14%
The application and evidence adequately assessed economic feasibility.	14%
The application and evidence adequately assessed the public interest.	14%
The application and evidence adequately assessed alternative means of carrying out the ENGP.	11%
The application and evidence adequately assessed cumulative impacts.	6%
The application and evidence adequately assessed alternatives to the ENGP.	3%
The application and evidence adequately assessed compensation and mitigations measures to address negative impacts of the ENGP.	3%

Only one-quarter (25%) of respondents felt that the JR Panel obtained all of the information necessary to make an informed decision on the ENGP and only 20% felt that the evidence was adequately evaluated and tested during the JRP (see Table 4-10). A quarter of respondents (25%) felt that the testimony of expert witnesses was adequately evaluated and tested during the JRP. One respondent summarized the process as:

> A confrontational legal process rather than a collaborative science based process. As such, as any lawyer defending a murder suspect would attempt to manipulate the evidence received by the court to be most likely to get the defendant off of the charges. This process felt the same, where there was no effort to bring out the best of the science, values, risks, concerns and benefits, and to work to develop the best suite of approaches. Rather it was a battlefield to have good questions answered and to have good information formally accepted for the JRP to consider. It was not a rewarding, informative and positive experience to be asking the proponents expert questions.

Table 4-10 Level of Agreement for "Sufficient Information" Survey Statements

Survey Statement	Level of Agreement
The evidence submitted by intervenors was biased in favour of the intervenors' interests.	42%
At the end of the process, the JR Panel obtained all the information necessary to make an informed decision on the ENGP.	25%
The testimony of expert witnesses was adequately evaluated and tested during the JRP.	25%
The evidence was adequately evaluated and tested during the JRP.	20%

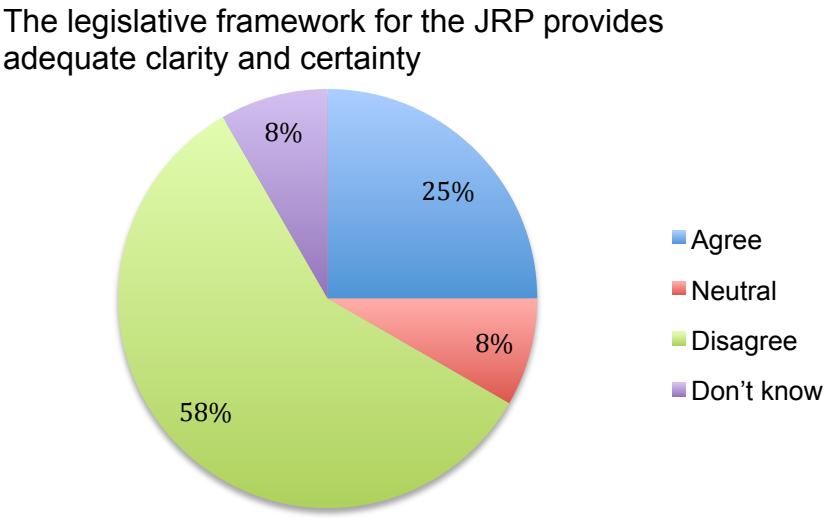
4.13. Strong Legislative Framework

In order to ensure participation and a meaningful review, the EA process should be structured in legislation that is clear, concise, unambiguous, and uses mandatory language. The legislation should have consistent content and be separate from other legal requirements (Joseph 2013, Gunton et al. 2004, Gibson 1993, Wood 2003, Gibson et al. 2005). In addition Joseph (2013) provides some good practices:

- all key elements of the process are established in law;
- legal text is clear, specific, unambiguous, consistent, and distinguishes the project review process from other legal requirements and processes;
- legal text uses mandatory language (e.g., "must" and "shall") and minimizes discretion. Flexibility is retained only where necessary to enable the process to be appropriately adapted to context; and
- the purpose of project review is written into law and is to inform decision-making and promote sustainability.

As shown in Figure 4-11, only one-quarter (25%) of respondents agreed that the legislative framework for the JRP provides adequate clarity and certainty.

Figure 4-11 Survey Respondents' Opinions of the Legislative Framework



4.14. Outcome of the Process

A good project evaluation process should achieve a number of outcomes including:

- serving the public interest;
- helping society move towards sustainability;
- integrating Aboriginal perspectives into decision-making;
- integrating public perspectives into decision-making;
- integrating the oil industry's perspectives into decision-making;
- improving relationships among stakeholders;
- reducing conflict;
- remaining cost-effective;
- addressing all significant policy issues;
- encouraging sound decision-making;
- addressing environmental concerns;
- addressing social concerns;
- addressing economic concerns; and

- improving participants' understanding of the project.

According to survey respondents, the JRP only achieved one of these outcomes: improving stakeholders understanding of the ENGP (with 72% agreement). Just over one-half (53%) of respondents indicated that the JRP changed their view of the ENGP with approximately two-thirds of respondents indicating their view became less favourable and 5% indicating their view became more favourable (Figure 4-14). Agreement for achieving other outcomes ranged from 6% (the outcome was cost-effective) to 44% (the process integrated the oil industry's perspectives into decision-making), with most outcomes achieving between 10% and 20% agreement as shown in Table 4-11.

Table 4-11 Level of Agreement with "Adequacy of the JRP" Survey Statements

Survey Statement	Level of Agreement
The JRP improved my understanding of the ENGP.	72%
The JRP adequately integrated the oil industry's perspective into decision-making.	45%
The JRP served the public interest.	28%
The JRP reduced conflict.	19%
The JRP adequately addressed economic development concerns.	17%
I am confident that if the ENGP is approved, the conditions attached to the approval will be fully implemented and strictly enforced by the federal government.	17%
The JRP adequately integrated Aboriginal perspectives into decision-making.	14%
The JRP improved relationships among stakeholders.	14%
The JRP encouraged sound decision-making.	14%
The JRP adequately addressed all of the significant policy issues associated with the ENGP	11%
The JRP adequately integrated public perspectives into decision-making.	11%
The JRP adequately addressed environmental concerns.	11%
The JRP adequately addressed social concerns.	11%
The JRP is designed to help society move towards sustainability.	8%
The JRP was cost effective.	6%

Overall, 27% of respondents rated the JRP as good or very good and only 16% would recommend that future pipeline projects be evaluated using a similar process to the ENGP JRP (Figure 4-15). Given the negative view of the process it is perhaps

somewhat surprising that over one-half (54%) of respondents agreed that they would participate in a similar review process, while only 14% said that they would not (Figure 4-16). This may reflect the view that it is important to participate in decision-making processes even if they are considered flawed.

When asked to speak to the strengths of the process, many participants suggested that it was inclusive and allowed public participation. In addition respondents felt positive about the following characteristics of the JRP:

- encouraged knowledge sharing and approached issues from a number of perspectives;
- open to public participation;
- brought forward contentious issues through the technical hearings;
- good communication;
- inclusive;
- easy to register and participate;
- created community solidarity across the Northwest;
- integrated community hearings;
- oral testimony (mostly by First Nations) was possible; and
- transcripts were available next day.

One participant who rated the JRP as “very poor” overall, said “it is much better having the process than the open door development approach that preceded the JRP.” Respondents said that the process’ weaknesses were that the review was too:

- costly;
- time consuming;
- biased;
- narrowly scoped;
- adversarial;
- intimidating; and
- complex.

Figure 4-12 Overall Perspective of the ENGP JRP

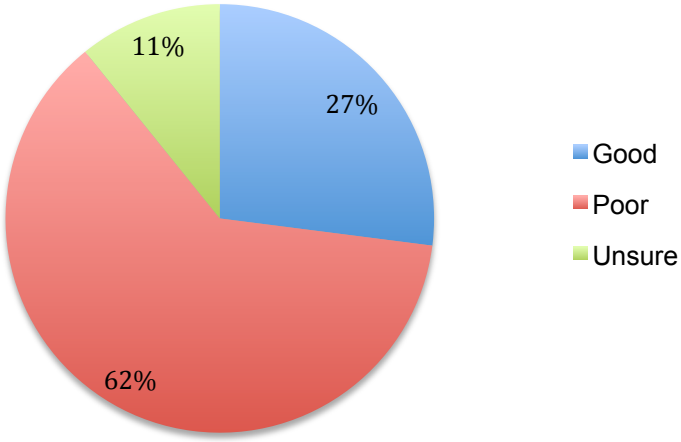


Figure 4-13 Effect the JRP had on Respondents' Perspective on the ENGP

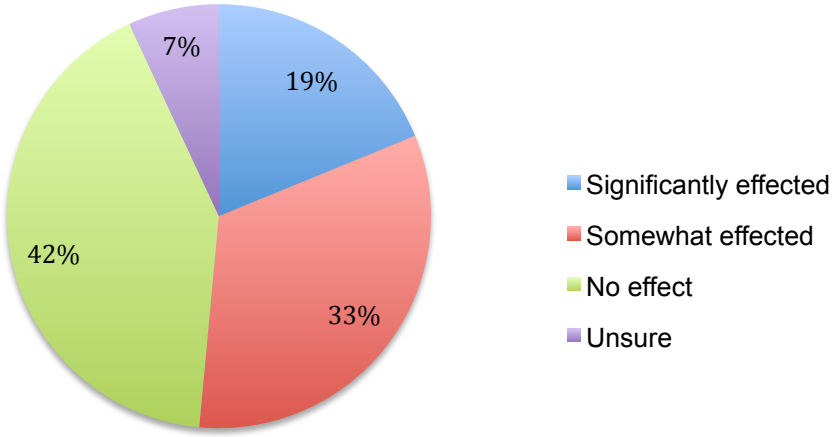


Figure 4-14 Effect the JRP had on Respondents' Opinion of the ENGP

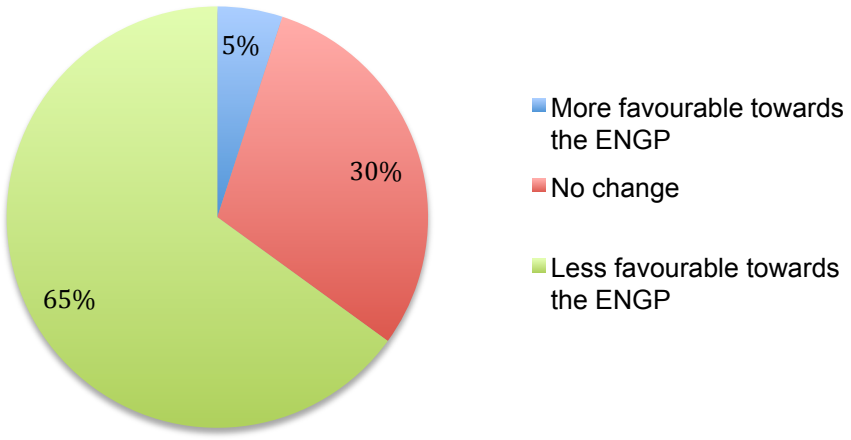


Figure 4-15 Respondents' Opinion that Future EAs be Modelled after the JRP

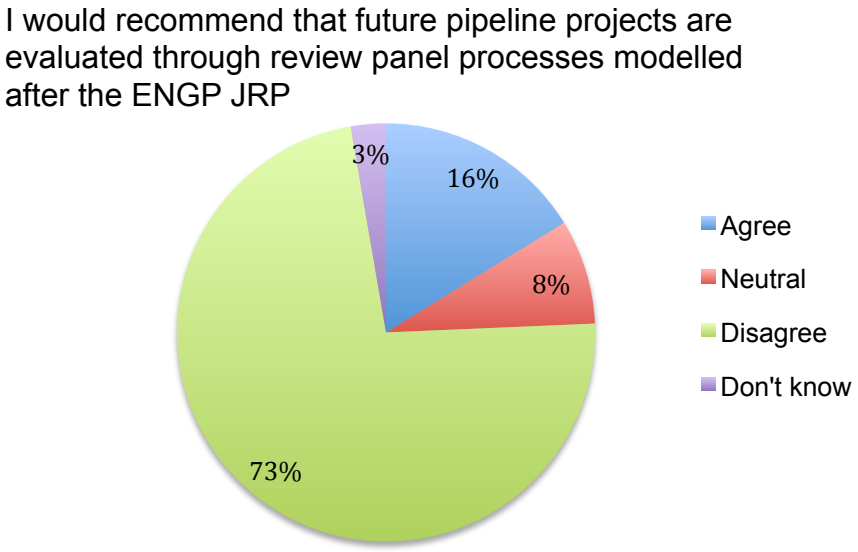
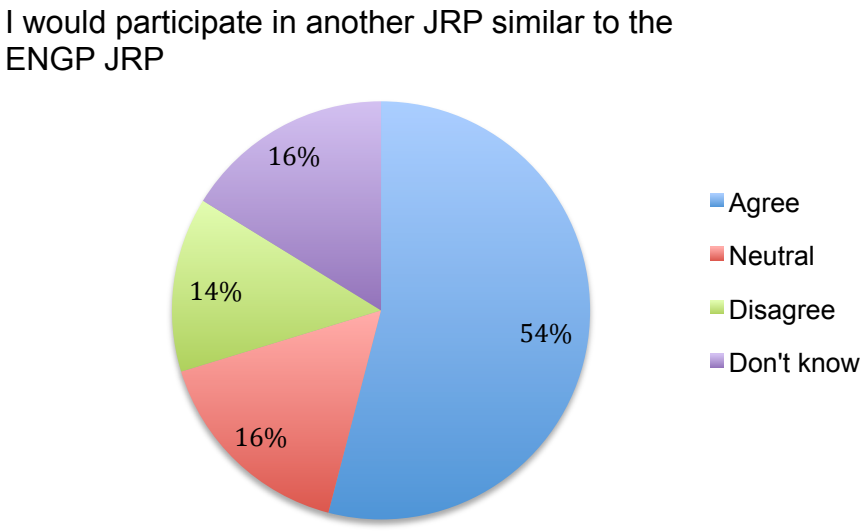
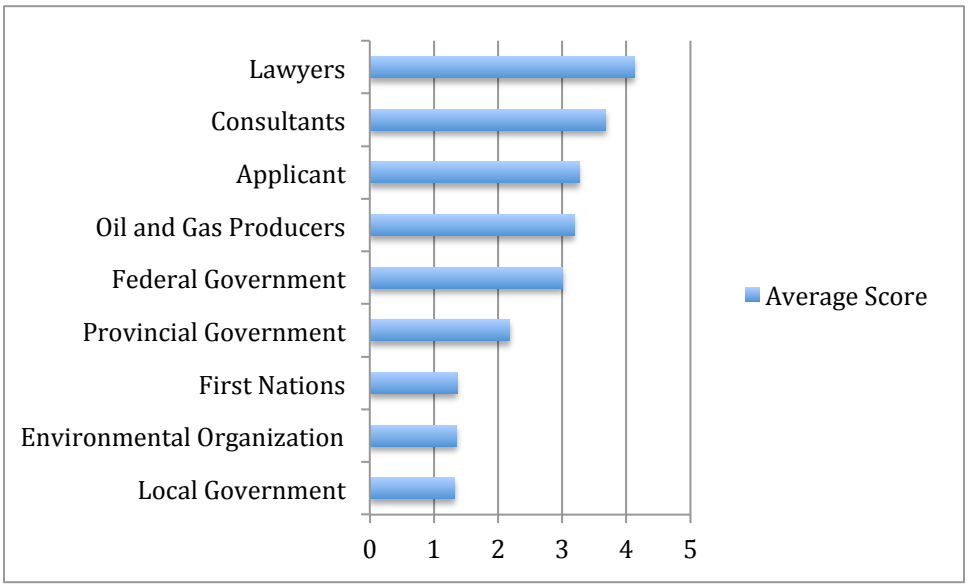


Figure 4-16 Respondent's Level of Interest in Participating in another JRP



Another way to evaluate the process is by asking respondents who, if anyone, benefitted from it. Respondents thought lawyers benefitted the most, followed by the federal government, Enbridge, the oil and gas sector, and consultants. Figure 4-17 displays the survey respondents' opinion of who benefitted from the JRP. Respondents felt that environmental organizations, First Nations and local governments benefited the least from the process.

Figure 4-17 Survey Respondents' Opinion of Level of Benefit Participants Received through the JRP Rated on One to Five Scale[1]



4.15. Improving the Process

The closed-ended and open-ended questions in the survey asked respondents to comment on how the JRP for pipeline projects could be improved. Table 4-12 lists the possible reforms and the level of agreement respondents indicated for each suggestion. There was very strong support (over 60% agreement) and less than 10% disagreement for most of the reform options except for restricting the number of participants (14% agreement), imposing time limits on the process (21% agreement), and having separate as opposed to joint review processes (45-58% agreement and 28-33% disagreement). Three-quarters of respondents (75%) felt that intervenors should receive more resources to participate in the process. Survey respondents largely (72%) felt that the government should prepare more detailed technical guidelines on methodologies that should be used to assess the project's economic, social and environmental impacts and risks. Eighty percent (80%) of respondents want the NEB to be required to consider comments from

[1] A score of one indicates that the respondent felt that the group did not benefit at all, whereas a score of five means the group had a large perceived benefit. The average scores listed are the average score given to each group.

any interested party and 69% of respondents felt that review panels for major energy projects should be made jointly by the federal government and impacted provincial governments instead of just by the federal government. Almost half of the respondents (44%) felt that the EA process under the *CEAA 2012* and the *NEB Act* should be conducted as two separate review processes under separate review panels instead of one combined hearing process. Slightly more than half (58%) of respondents felt that EA processes of the federal government and impacted provinces should be conducted as two separate processes instead of being combined into a single hearing process.

In addition, 64% of respondents felt that review bodies should complete an integrated evaluation of all alternative transportation projects for shipping oil instead of evaluating each project separately. Three-quarters (75%) of respondents felt that the approval of First Nations governments should be required before projects are built. Most respondents (74%) felt that the Canadian government should require the applicant to complete an extensive public consultation process in accordance with detailed public consultation guidelines prior to submitting an application.

As shown in Table 4-12, 83% of respondents were opposed to restricting the number of intervenors in the hearings to only those deemed by the NEB to be directly affected by the project and/or have relevant expertise. Most survey respondents (83%) felt that Enbridge should accept full liability for any damages caused by the project, and document their ability to pay for any damages as a condition for approval. In addition, 83% of respondents felt that applicants should have a comprehensive compensation plan approved by a review panel that specifies which types of damages would be eligible for compensation, which parties would be compensated, and how damage costs would be determined, as a condition of project approval. Together this indicates that the survey respondents want proponents to take clear responsibility for spills or other damages and that this responsibility should be documented prior to any damages occurring.

As indicated in the closed-ended questions, intervenors were concerned about the panel's background, bias and First Nation rights. When asked for suggestions for improvements, the three most common responses were requiring affected First Nations and communities' approval on projects; panel members should be from a variety of

backgrounds (geographically and professionally) and represent a number of different interests; and there should be financial support for intervenors when needed. The next most common response was to restrict government from changing legislation affecting project review until the project has been approved.

Respondents were also given a number of suggestions for reforming EA methods. One suggestion was to have the government prepare more detailed technical guidelines on methodologies for assessing the project's economic, social and environmental impacts and risks, (72% agreement). Three-quarters (75%) of respondents agreed that a cost-benefit analysis should be required for all major project reviews and (83%) of respondents felt that government review agencies should hire independent scientists to conduct the impact assessment analysis rather than using experts that are employed by, or hired by the project applicant, with the costs financed by a levy applied to the applicant. Many survey respondents (61%) also felt that applicants should be required to engage in consensus-based negotiations with stakeholders and attempt to reach stakeholder agreement on major project issues prior to submitting an application (if agreement is not reached despite the applicant's best efforts the project could still be submitted for review).

Table 4-12 Level of Agreement with "Methods to Improve the JRP" Survey Statements

Survey Statement	Level of Agreement	Level of Disagreement
Require the applicant to have a comprehensive compensation plan approved by the review panel that specifies what types of damages would be eligible for compensation, what parties would be compensated, and how damage costs would be determined as a condition of project approval	83%	8%
As a condition for project approval require the applicant to accept full liability for any damages caused by the project and document ability to pay for any damages	83%	7%
Have government review agencies hire independent scientists to conduct the impact assessment analysis rather than using experts that are employed by, or hired by the project applicant. (The costs of the independent analysis would be financed by a levy applied to the applicant)	83%	7%
Require the NEB to consider comments from any interested party	80%	7%

Survey Statement	Level of Agreement	Level of Disagreement
Require the approval of impacted First Nations government before projects can be built	75%	11%
Provide more resources for intervenors to participate in the process	75%	8%
Include a requirement for comprehensive benefit cost studies for all major project reviews	75%	6%
Require the applicant to complete an extensive public consultation process in accordance with detailed public consultation guidelines prior to submitting an application	74%	14%
Have government prepare more detailed technical guidelines on methodologies that should be used to assess the project's economic, social, and environmental impacts and risks.	72%	11%
The appointment of a review panel for major energy projects should be made jointly by the federal government, and impacted provincial governments instead of just by the federal government	69%	8%
Complete an integrated evaluation of all alternative transportation projects for shipping oil instead of evaluating each project separately	64%	11%
Require the applicant to engage in consensus-based negotiations with stakeholders and attempt to reach stakeholder agreement on major project issues prior to submitting an application (if agreement is not reached despite the best efforts of the applicant the project could still be submitted for review)	61%	22%
The environmental assessment process of the federal government and impacted provinces should be conducted as two separate processes instead of being combined into a single hearing process	58%	28%
The environmental assessment process under the Canadian Environmental Assessment Act and the pipeline approval process under the National Energy Board Act should be conducted as two separate review processes under separate review panels instead of being combined into one hearing process	44%	33%
Impose legislated time limits specifying the maximum time for project review.	25%	61%
Restrict the number of intervenors in the hearings to only those deemed by the NEB to be directly affected by the project and/or have relevant expertise	14%	83%

Table 4-13 displays the support for the JRP as a factor of the respondents' support for the ENGP. All of the respondents who supported the ENGP felt that the

process was good, while only 10% of respondents who opposed the ENGP felt the process was good.

Table 4-13 Cross Table of Respondent Preferences for the ENGP and the JRP

	Process = Good	Process = Unsure	Process = Poor
Support ENGP	11%	0%	0%
Neither Support nor Oppose ENGP	6%	0%	3%
Oppose ENGP	11%	8%	61%

4.16. Conclusion

Survey respondents were selected from the list of cross-examining intervenors in the JRP. The survey asked respondents questions based on good practices for joint reviews and found that survey respondents largely did not feel that the JRP was a success. The lack of support for the process is further illustrated by the large number of legal challenges and statements of discontent after the process was completed.

In September 2014 the Federal Court of Appeal announced that they will hear the Gitxaala First Nation and Haida First Nation's appeal of the GOC's approval of the ENGP. The First Nations claim that Canada did not adequately consult and accommodate Gitxaala. In addition, five other groups requested appeals during the 15-day deadline set by the federal government. These groups include BC Nature, EcoJustice, Kitasoo-Xaixais and Heiltsuk First Nations and Gitga'at First Nations. In addition to court appeals, Kitimat residents started a plebiscite about whether the pipeline should or should not be approved. The city rejected the pipeline with 58% of the votes. Although the review process has ended, construction has not begun and in the face of court appeals and pubic opposition to the ENGP, it is uncertain when it will begin. On a more positive note, there was widespread support among respondents for how the process could be improved.

Chapter 5.

5.1. Key Lessons

This project's objective was to evaluate the environmental assessment process using a case study of the JRP for the ENGP. In order to complete this objective, I first reviewed the Enbridge Northern Gateway application. Next, I examined the existing project approval framework in Canada for pipeline projects such as the ENGP and I reviewed the structure of the JRP for the ENGP. I assessed this process against good practices using a survey of intervenors who cross-examined during the hearings.

Overall, the study results indicate that the JRP for the ENGP was deeply flawed. The majority of respondents (73%) said that they would not recommend that future pipeline projects be evaluated through a review panel process modelled after the ENGP JRP. Only 27% of respondents rated the process as good or very good overall and 62% rated the process as poor or very poor. However, one positive result was that more than half (54%) of the respondents said that they would participate in a similar review process in the future.

The results of this study must be viewed in light of this research's limitations First, the study surveyed only a subset of JRP participants and comprised of intervenors who engaged in cross-examination and the response rate was 42%. Second, 81% of the survey respondents were opposed to the ENGP. This may have impacted their perception of the process even though surveys were completed prior to the ENGP decision. It is possible that opponents of the ENGP would have been highly critical of any review process associated with the application on the grounds that they were opposed to the application. Nonetheless, it is important, regardless of stakeholders' views, to have a process for evaluating projects that all stakeholders have confidence in. The strong support for most of the suggested reforms indicates that there is widespread

agreement on how to improve the process. Given the number of pipeline proposals requiring review, and the widespread agreement on how to improve the process, it is important that consideration be given to reforming the process to mitigate perceived deficiencies identified in this evaluation of the ENGP review process.

5.2. Recommendations

Although it is challenging to develop a review process that will work well every time given differing contexts and differing project components, responses from the survey suggest that the review process could be significantly improved.

Recommendation 1: *Project proponents should be required to have a comprehensive compensation plan approved by the review panel that specifies which types of damages would be eligible for compensation, which parties would be compensated, and specifically requires the applicant to accept full liability for any damages and documents their ability to pay for these damages.*

Survey respondents felt that the legislative framework for the joint EA review needs improvement. Very few respondents indicated that they felt confident that the ENGP's conditions would be fully implemented and strictly enforced by the federal government. By legally requiring an applicant to have a comprehensive compensation plan, the public would have more faith in the legislative framework and the public would have more confidence that the proponent will prevent damages and be held accountable if an accident did occur.

A concern that was frequently brought up was distrust in NG, their experts and their evidence. The JR Panel requires NG to insure $950 million to cover potential costs of a spill. Although this is an improvement over not having any insurance, the Exxon Valdez spill in 1989 cost more than $2.5 billion in clean-up costs alone (Alaska Resources Library and Information Services 2014).

Recommendation 2: *Establish EA decision criteria that are specific enough to achieve consistent outcomes by limiting unwarranted discretion while remaining flexible enough to accommodate each application's unique circumstances.*

Only one-quarter (25%) of survey respondents were confident that the JR Panel had all of the necessary information at the end of the process to make an informed decision on the ENGP. In addition, just over half of the respondents felt that the evaluation criteria did not provide clear guidance on whether to approve the pipeline, and which conditions to apply if the pipeline was approved. By implementing specific decision-making criteria, the decision-makers would use less discretion and they would have greater democratic accountability because they would be required to follow the guidelines established by elected officials.

Recommendation 3: *Require the NEB to consider comments from any interested party.*

Eighty percent (80%) of respondents felt that the NEB should consider comments from any interested party. Bill C-38 changed the *NEB Act* in 2012 so that only those members of the public who are directly affected by a project or who have particular expertise relevant to the project can participate as an intervenor. However, any member of the public may write a letter of comment.

Recommendation 4: *Require the approval of impacted First Nations governments before projects can be built.*

Most respondents (75%) felt that First Nations governments' approval should be required for projects impacting First Nations. The current approval process under the *CEAA 2012* and the *NEB Act* require First Nations consultation only. However, the Tsilhqut'in decision is changing the legal framework towards requiring First Nations approval where Aboriginal title is involved. The Tsilhqut'in people brought their claim to the Supreme Court of Canada to seek recognition of Aboriginal title to two tracts of land in the Tsilhqut'in traditional territory. The Supreme Court of Canada made their decision

in the Tsilhqot'in Nation v. British Columbia, 2014 SCC44 on June 26, 2014. Chief Justice Beverley McLachlin included the following in the written decision:

> (80) Where Aboriginal title is unproven, the Crown owes a procedural duty imposed by the honour of the Crown to consult and, if appropriate, accommodate the unproven Aboriginal interest. By contrast, where title has been established, the Crown must not only comply with its procedural duties, but must also ensure that the proposed government action is substantively consistent with the requirements of s.35 of the *Constitution Act, 1982*. This requires both a compelling and substantial governmental objective and that government action is consistent with the fiduciary duty owed by the Crown to the Aboriginal group.
>
> (86) First, the Crown's fiduciary duty means that the government must act in a way that respects the fact that Aboriginal title is a group interest that inheres in present and future generations. The beneficial interest in the land held by the Aboriginal group vests communally in the title-holding group. This means that incursions on Aboriginal title cannot be justified if they would substantially deprive future generations of the benefit of the land.
>
> (87) Second, the Crown's fiduciary duty infuses an obligation of proportionality in the justification process. Implicit in the Crown's fiduciary duty to the Aboriginal group is the requirement that the incursion is necessary to achieve the government's goal (rational connection) that the government go no further than necessary to achieve it (minimal impairment): and that the benefits that may be expected to flow from that goal are not outweighed by adverse effects on the Aboriginal interest (proportionality of impact).
>
> Paragraph 80, 86 and 87 of SCC decision in Tsilhqot'in

This recent Supreme Court Tsilhqot'in decision indicates that approval may be required for incursions on First Nation's title except in circumstances where there is a compelling and substantial government objective that justifies overriding First Nations rights and title. Therefore the recommendation for First Nations approval is generally consistent with current legal requirements.

Recommendation 5: *Provide more resources for intervenors to participate in the process.*

Most respondents (75%) also felt that intervenors need more resources to participate in the process than the government provided during the ENGP review. As shown in Chapter 4, most respondents felt that their intervenor group did not have enough resources to participate effectively. In addition, respondents felt that the nature of the process was too cumbersome for lay people. In a judicial-type setting, lawyers work most effectively, but lay people cannot necessarily afford to hire lawyers to represent their interests. In addition, the proponent gains financially from a project and therefore may be able to afford to conduct a large number of studies. Any intervenor hoping to replicate the studies for accuracy or to get a different opinion may not have the resources available to conduct appropriate studies.

Recommendation 6: *Government agencies should hire independent scientists financed by a levy attached to the application to conduct impact assessment analysis.*

Most respondents (84%) felt that government review agencies should hire independent experts for the impact assessment instead of relying on experts hired by the proponent. The cost of the independent analysis could be financed by a levy applied to the applicant. This would reduce costs to participants, because participants would not need to duplicate results as there would be more trust in the results of the studies and the researchers would not exhibit bias to the proponent or opponents.

Recommendation 7: *Require the applicant to complete an extensive public consultation process in accordance with detailed public consultation guidelines prior to submitting an application. Require the applicant to engage in consensus-based negotiations with stakeholders and attempt to reach stakeholder agreement on major project issues prior to submitting an application (if agreement is not reached despite the best efforts of the applicant the project could still be submitted for review).*

Although NG completed public consultation activities prior to submitting their application and continued to shape their application as a result of consultation, they have not started construction partly because local and Aboriginal people are opposed to the ENGP. In the future, proponents could conduct public consultation long before applying

for permits. Proponents could listen to the goals and needs of the public and shape their application to meet those needs and gain public approval, prior to the review process.

Consensus-based negotiation has been shown to effectively reduce conflict by using shared decision-making and interest-based negotiation (Gunton and Day 2003). This approach is very popular and has been used for the last twenty years in land and resource planning in BC (Gunton and Day 2003; Frame et al. 2004; Leach et al. 2002). Consensus-based negotiation encourages agreements where all parties are satisfied, and participants experience increased social and political capital, representation, and teamwork, and the negotiations produce innovative high quality solutions (Morton 2009).

Recommendation 8: *The appointment of a review panel for major energy projects should be made jointly by the federal government, impacted provincial governments, and impacted stakeholders instead of solely by the federal government.*

A number of respondents questioned the composition of the JR Panel and asked why BC was not represented. If the provincial and federal governments and stakeholders had chosen the JR Panel jointly, the panel may have better represented a variety of interests. Just over half (53%) of the respondents felt that the JR Panel for the ENGP exhibited bias towards NG. In addition only 22% of respondents felt that the JR Panel would make an unbiased recommendation on the ENGP. By changing the composition of the panel to represent a number of interests, the potential for bias among panel members would be reduced.

Recommendation 9: *Complete an integrated evaluation of all alternative transportation projects for shipping oil instead of evaluating each project separately.*

By completing an integrated evaluation, multiple project effects could be examined and needs for oil transportation could be met by identifying the most cost-effective projects, with the least adverse impacts.

A large number of respondents commented that cumulative effects were missing from the list of issues and the scope of the Project. In addition, for local communities and First Nations located in regions where several projects are proposed (such as Kitimat), it

can be cumbersome to participate in several separate reviews. Instead, proponents could submit project applications and compete to gain the support of First Nations and communities and receive approval. This would also allow reviewers to examine cumulative effects of multiple projects and determine whether such effects are justifiable.

Recommendation 10: *The CEA Agency and the NEB should identify reference class forecasting and cost-benefit analysis (including multiple account cost-benefit analysis) as recommended EA methods and the agencies should provide comprehensive guidelines for applying the methods*.

As mentioned earlier, there was agreement among most survey respondents that the JR Panel did not have all of the information necessary to make an informed decision. Almost three-quarters (73%) of respondents felt that the government should prepare more detailed technical guidelines on methodologies for assessing the project's economic, social and environmental impacts and risks. Additionally, three-quarters (75%) agreed that a cost-benefit analysis should be required for all major project reviews.

The methods should be (1) suited to the review context, (2) flexible and adaptable, (3) scientifically robust, (4) minimally reliant upon subjective inputs, (5) easy to understand, evaluate and put to use, (6) capable of producing useful outputs, (7) highly accepted by users and stakeholders, (8) cost-effective, and (9) participative.

5.3. Future Research

A number of issues remain unresolved and could be examined through future research. Respondents varied in who they thought should make final project decisions. Future research should ask participants involved with other unique EAs to indicate who they feel should make the final decision. Research could also extend to other regions or areas, whose EA systems differ from Canada's EAs. Participants with experience using other forms of EA, where decision-making authority rests with the review body, or with local governments, could provide insights into how successful these other types of processes can be.

In addition, a majority of respondents did not like legislated time limits. Of those who did like legislated time limits, there was disagreement as to whether the time limits were too long or too short. Future research might compare participant satisfaction with particular EAs and their outcomes and the long-term project sustainability across project reviews, which varied in duration.

The survey responses also did not provide clear direction on having separate as opposed to joint review processes. Future research may direct these questions to a new group of intervenors whose experiences with the joint review process may differ from this survey's respondent group.

5.4. Conclusion

The ENGP review emerged as the embodiment of environmental controversy during the last five years. Fuelling this controversy are perceptions of bias and an overly complex review process with a judicial design that leaves many Aboriginal groups and members of the public feeling unrepresented. The survey results suggest that there are a number of reforms that could improve the process if implemented. With further research, and a few changes to the current process, EAs could evolve to better meet the needs of everyone involved in, or affected by, project proposals.

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Appendix A.

Survey Responses

Survey results - Sept 10

Informed Consent

Response	Count	
Agree and begin survey	43 *100.0%*	
	Total: 43	

1. Please tell us with which of the following groups you are associated.

Response	Count	
Local government	5 *12.5%*	
Oil and gas industry	2 *5.0%*	
Other industry	1 *2.5%*	
Consultant	6 *15.0%*	
Aboriginal group	10 *25.0%*	
Environment organization	9 *22.5%*	
Academia	1 *2.5%*	
Legal Counsel	3 *7.5%*	
Other, please specify...	11 *27.5%*	
	Total: 40	

2. How many years experience do you have with the Canadian pipeline review process? (Not just the Northern Gateway application)

Response	Count
	39 responses

If applicable, could you briefly describe your past role in the pipeline review process?

Response	Count

Response	Count
	29 responses

3. In which province/state do you currently reside?

Response	Count	
a) Alberta	8 *20.0%*	
b) British Columbia	31 *77.5%*	
c) Other, please specify...	1 *2.5%*	
	Total: 40	

4. Approximately how long have you been involved with the Enbridge Northern Gateway Project (ENGP) review?

Response	Count	
a) <1 year	1 *2.5%*	
b) 1-3 years	18 *45.0%*	
c) >3 years	21 *52.5%*	
	Total: 40	

5. Did the intervenor group you were involved with submit written evidence to the ENGP Joint Review Panel (JRP)?

Response	Count	
Yes	29 *76.3%*	
No	9 *23.7%*	
	Total: 38	

6. Did the intervenor group that you were involved with engage in cross examination of any witnesses during the review process?

Response	Count

Response	Count	
Yes	24 *60.0%*	
No	16 *40.0%*	
	Total: 40	

7. Which of the following represents your view?

Response	Count	
a) Consolidating the NEB, CEAA, and BC and Alberta provincial review processes processes under a single review panel is a good idea.	9 *22.5%*	
b) Consolidating the NEB, CEAA, and BC and Alberta review processes under a single review panel is a good idea in principle but it did not work well for the ENGP review.	6 *15.0%*	
c) Consolidating the NEB, CEAA, and BC and Alberta review proceses processes under a single review panel is not a good idea.	18 *45.0%*	
d) Unsure	7 *17.5%*	
	Total: 40	

Optional space to explain your answer to question 7.

Response	Count
	25 responses

8. Which of the following statements matches your opinion?

Response	Count
Response	Count
a) The JRP did not exhibit any bias for or against Northern Gateway and the intervenors during the hearing process	10 *25.0%*
c) The JRP exhibited bias against intervenors opposed to Northern Gateway during the hearing process	21 *52.5%*
d) Not sure	9 *22.5%*
	Total: 40

If you answered b or c to question 8 can you provide examples of of JRP bias? If not skip to question 9.

Response	Count
	21 responses

9. Which of the following statements matches your opinion?

Response	Count
a) Federal government agencies participating in the JRP hearing exhibited bias in favour of Northern Gateway	15 *37.5%*
c) Some federal government agencies exhibited bias in favour of Northern Gateway while others exhibited bias against Northern Gateway in the JRP hearing	6 *15.0%*
d) Federal government agencies participating in the JRP hearing did not exhibit bias	4 *10.0%*

Response	Count	
e) Not sure	15 *37.5%*	
	Total: 40	

10. Please indicate your agreement with:

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
I. I am satisfied with the process that the JRP used to determine the list of issues to be considered in the ENGP hearing	1 *2.6%*	13 *33.3%*	7 *17.9%*	7 *17.9%*	10 *25.6%*	1 *2.6%*	*Total:* 39
III. I am satisfied with the list of issues determined by the JRP for the ENGP hearing	0 *0.0%*	9 *23.1%*	8 *20.5%*	8 *20.5%*	14 *35.9%*	0 *0.0%*	*Total:* 39
III. I am satisfied with the scope of the project as defined by the JRP for the hearing (ie the components of the ENGP that were included in the assessment)	0 *0.0%*	12 *30.8%*	4 *10.3%*	8 *20.5%*	14 *35.9%*	1 *2.6%*	*Total:* 39

11. The process for determining the list of issues could have been improved by:

Response	Count
	21 responses

12. Please identify any important issues that were omitted from the JRP's list of issues.

Response	Count
	24 responses

13. Please identify any issues on the JRP's list of issues that should have been omitted from the hearing.

Response	Count
Response	Count
	10 responses

14. Please identify any components and/or activities that should have been added to the JRP's definition of the ENGP's scope used in the hearings.

Response	Count
	17 responses

15. Please rate your familiarity with the National Energy Board's (NEB) Filing Manual for Pipeline approval applications.

Response	Count	
a) Very familiar	3 *8.3%*	
b) Somewhat familiar	18 *50.0%*	
c) Not familiar	15 *41.7%*	
	Total: 36	

16. The methods that should have been used to assess the impact of the ENGP were clearly identified by the NEB and Canadian Environmental Assessment Agency (CEA Agency).

Response	Count	
a) Strongly Agree	1 *2.6%*	
b) Agree	7 *18.4%*	
c) Neutral	10 *26.3%*	
d) Disagree	8 *21.1%*	
e) Strongly Disagree	7 *18.4%*	
f) Don't know	5 *13.2%*	
	Total: 38	

17. The methods that Northern Gateway (the proponent) used to assess the impact of the ENGP were:

Response	Count	
a) Excellent, no problems	2 *5.3%*	
b) Adequate but could benefit from a few improvements	4 *10.5%*	
c) Poor/Inadequate	26 *68.4%*	
d) Don't know	6 *15.8%*	
	Total: 38	

18. Do you have any suggestions for how Northern Gateway (the proponent) could have improved their assessment methods?

Response	Count
	27 responses

19. All parties potentially affected by the ENGP were given adequate opportunity to participate in the review process.

Response	Count	
a) Strongly Agree	4 *10.5%*	
b) Agree	10 *26.3%*	
c) Neutral	5 *13.2%*	
d) Disagree	9 *23.7%*	
e) Strongly Disagree	10 *26.3%*	
	Total: 38	

20. Stakeholders were given sufficient opportunities to learn and become informed of the issues raised by Northern Gateway's application.

Response	Count	
a) Strongly Agree	4 *10.5%*	

Response	Count	
b) Agree	11 *28.9%*	
c) Neutral	5 *13.2%*	
d) Disagree	11 *28.9%*	
e) Strongly Disagree	7 *18.4%*	
	Total: 38	

21. Do you have any suggestions on how the JRP process could have improved stakeholder involvement?

Response	Count
	25 responses

22. Please indicate your agreement with:

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
I. The scope of the NEB and CEAA evaluation criteria for project evaluation are appropriate (ie the criteria include all relevant considerations that should be taken into account)	2 *5.4%*	8 *21.6%*	6 *16.2%*	9 *24.3%*	10 *27.0%*	2 *5.4%*	*Total:* 37
II. The evaluation criteria provide clear guidance to decision-makers for their deliberations on whether to approve pipeline applications or not and what conditions to apply if they do approve the pipeline	2 *5.4%*	5 *13.5%*	9 *24.3%*	11 *29.7%*	8 *21.6%*	2 *5.4%*	*Total:* 37
III. The evaluation criteria are too vague.	5 *13.5%*	12 *32.4%*	9 *24.3%*	7 *18.9%*	2 *5.4%*	2 *5.4%*	*Total:* 37

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
IV. The evaluation criteria are deficient and need to be revisesd.	8 *22.2%*	11 *30.6%*	7 *19.4%*	5 *13.9%*	2 *5.6%*	3 *8.3%*	*Total:* 36

23. Please indicate your agreement with:

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
I. The JRP will fully consider all the evidence and make an unbiased recommendation on the ENGP	4 *10.8%*	4 *10.8%*	6 *16.2%*	8 *21.6%*	11 *29.7%*	4 *10.8%*	*Total:* 37
II.The JRP had already made up its mind on the ENGP before the review process commenced	7 *18.9%*	6 *16.2%*	9 *24.3%*	6 *16.2%*	2 *5.4%*	7 *18.9%*	*Total:* 37
III. The federal government will fully consider all the evidence and make an unbiased decision on the ENGP	1 *2.7%*	1 *2.7%*	4 *10.8%*	5 *13.5%*	25 *67.6%*	1 *2.7%*	*Total:* 37
IV. The federal government had already made up its mind on the ENGP before the review process commenced	20 *54.1%*	6 *16.2%*	3 *8.1%*	3 *8.1%*	4 *10.8%*	1 *2.7%*	*Total:* 37

24. The JRP process for the ENGP review:

Response	Count	
a) Proceeds too rapidly	10	*27.0%*

Response	Count	
b) Takes too much time	5 *13.5%*	
c) Takes an appropriate amount of time	16 *43.2%*	
d) Not sure	6 *16.2%*	
	Total: 37	

25. Final decisions on pipeline applications like Northern Gateway's application should be made by:

Response	Count	
a) Governor in Council (elected politicians in the federal government cabinet) based on recommendations from the NEB/CEAA JRPs (current process)	5 *13.5%*	
b) By the JRP unless the decision is to approve in which which case the JRP's decision needs to be ratified by the Governor in Council (federal government cabinet)	6 *16.2%*	
c) The NEB/CEAA JRP	1 *2.7%*	
d) Elected politicians in the federal and affected provincial governments based on recommendations from the NEB/CEAA JRPs	1 *2.7%*	
e) Elected politicians in the federal, affected provincial governments, and First Nations governments based on recommendations from the NEB/CEAA JRPs	7 *18.9%*	

Response	Count	
f) Consensus agreement among all key stakeholders impacted by the pipeline	12 *32.4%*	
g) Other, please specify	5 *13.5%*	
	Total: 37	

Optional space to explain your answers to Questions 22-25

Response	Count
	18 responses

26. Please indicate your agreement with:

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
I. Government bodies and staff involved in the JRP process had adequate resources to participate effectively	3 *8.3%*	16 *44.4%*	0 *0.0%*	7 *19.4%*	5 *13.9%*	5 *13.9%*	*Total:* 36
II. The proponent had adequate resources to participate effectively in the JRP process	18 *50.0%*	11 *30.6%*	1 *2.8%*	1 *2.8%*	1 *2.8%*	4 *11.1%*	*Total:* 36
III. Non-industry stakeholders such as First Nations, environmental, and community groups had adequate resources to participate effectively in the JRP process	0 *0.0%*	3 *8.3%*	2 *5.6%*	7 *19.4%*	22 *61.1%*	2 *5.6%*	*Total:* 36

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
IV. The stakeholder group that I was involved with had adequate resources to participate effectively in the JRP process	2 *5.6%*	3 *8.3%*	2 *5.6%*	6 *16.7%*	21 *58.3%*	2 *5.6%*	*Total:* 36
V. Publicly available documentation on the JRP process provided all parties with a clear description of the process and clear instructions on how to participate	4 *11.1%*	15 *41.7%*	4 *11.1%*	5 *13.9%*	6 *16.7%*	2 *5.6%*	*Total:* 36

27. Please indicate your agreement with:

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
I. The evidence submitted by Northern Gateway was biased to exaggerate the benefits and understate the risks of the ENGP	23 *63.9%*	7 *19.4%*	2 *5.6%*	1 *2.8%*	2 *5.6%*	1 *2.8%*	*Total:* 36
II. The evidence submitted by Northern Gateway provides all the necessary information to make a decision on the ENGP	3 *8.3%*	4 *11.1%*	3 *8.3%*	9 *25.0%*	16 *44.4%*	1 *2.8%*	*Total:* 36
III. The evidence submitted by intervenors was biased in favour of the intervenors' interests	2 *5.6%*	13 *36.1%*	7 *19.4%*	6 *16.7%*	5 *13.9%*	3 *8.3%*	*Total:* 36

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
IV. At the end of the process, the JRP obtained all the information necessary to make an informed decision on the ENGP	2 *5.6%*	7 *19.4%*	6 *16.7%*	8 *22.2%*	11 *30.6%*	2 *5.6%*	*Total:* 36
V. Northern Gateway's expert witnesses showed bias in favour of Northern Gateway	22 *61.1%*	8 *22.2%*	3 *8.3%*	2 *5.6%*	0 *0.0%*	1 *2.8%*	*Total:* 36
VI. Intervenors' expert witnesses showed bias in favour of their clients	4 *11.4%*	9 *25.7%*	11 *31.4%*	6 *17.1%*	3 *8.6%*	2 *5.7%*	*Total:* 35
VII. The evidence submitted by Northern Gateway was based on good science	2 *5.6%*	2 *5.6%*	6 *16.7%*	9 *25.0%*	15 *41.7%*	2 *5.6%*	*Total:* 36
VIII. The evidence submitted by intervenors was based on good science	7 *19.4%*	11 *30.6%*	14 *38.9%*	1 *2.8%*	0 *0.0%*	3 *8.3%*	*Total:* 36
IX. The evidence was adequately evaluated and tested during the JRP hearing.	0 *0.0%*	7 *20.0%*	4 *11.4%*	9 *25.7%*	11 *31.4%*	4 *11.4%*	*Total:* 35
X. The testimony of expert witnesses was adequately evaluated and tested during the JRP hearing	1 *2.8%*	8 *22.2%*	6 *16.7%*	7 *19.4%*	10 *27.8%*	4 *11.1%*	*Total:* 36

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
XI. The evidence submitted by Northern Gateway provided an accurate assessment of the costs and benefits of the ENGP	1 *2.9%*	2 *5.9%*	3 *8.8%*	8 *23.5%*	18 *52.9%*	2 *5.9%*	*Total:* 34
XII. The evidence submitted by intervenors provided an accurate assessment of the costs and benefits of the ENGP.	1 *2.9%*	6 *17.1%*	14 *40.0%*	6 *17.1%*	4 *11.4%*	4 *11.4%*	*Total:* 35

Optional space to explain your answer to question 27.

Response	Count
	15 responses

28. The application and evidence adequately assessed:

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
I) The need for the ENGP	3 *8.3%*	4 *11.1%*	1 *2.8%*	15 *41.7%*	11 *30.6%*	2 *5.6%*	*Total:* 36
II) Alternatives to the ENGP	0 *0.0%*	1 *2.8%*	6 *16.7%*	12 *33.3%*	15 *41.7%*	2 *5.6%*	*Total:* 36
III) Benefits of the ENGP	2 *5.9%*	4 *11.8%*	5 *14.7%*	17 *50.0%*	4 *11.8%*	2 *5.9%*	*Total:* 34
IV) Costs of the ENGP	0 *0.0%*	7 *19.4%*	2 *5.6%*	17 *47.2%*	8 *22.2%*	2 *5.6%*	*Total:* 36
V) Adverse environmental impacts of the ENGP	1 *2.9%*	4 *11.4%*	3 *8.6%*	9 *25.7%*	16 *45.7%*	2 *5.7%*	*Total:* 35

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
VI) Likelihood of significant adverse impacts of the ENGP	2 *5.6%*	4 *11.1%*	3 *8.3%*	10 *27.8%*	15 *41.7%*	2 *5.6%*	*Total:* 36
VII) Cumulative Impacts	1 *2.8%*	1 *2.8%*	2 *5.6%*	10 *27.8%*	18 *50.0%*	4 *11.1%*	*Total:* 36
VIII) Stakeholders negatively impacted by the ENGP	1 *2.8%*	5 *13.9%*	4 *11.1%*	8 *22.2%*	15 *41.7%*	3 *8.3%*	*Total:* 36
IX) Compensation and mitigation measures to address negative impacts of the ENGP	0 *0.0%*	1 *2.8%*	4 *11.1%*	9 *25.0%*	19 *52.8%*	3 *8.3%*	*Total:* 36
X) Economic feasibility	2 *5.6%*	3 *8.3%*	6 *16.7%*	10 *27.8%*	12 *33.3%*	3 *8.3%*	*Total:* 36
XI) Existence of markets	3 *8.3%*	3 *8.3%*	8 *22.2%*	11 *30.6%*	7 *19.4%*	4 *11.1%*	*Total:* 36
XII) Availability of oil and condensate to be shipped	4 *11.4%*	6 *17.1%*	12 *34.3%*	4 *11.4%*	4 *11.4%*	5 *14.3%*	*Total:* 35
XIII) The public interest	3 *8.3%*	2 *5.6%*	1 *2.8%*	12 *33.3%*	13 *36.1%*	5 *13.9%*	*Total:* 36
XIV) Alternative means of carrying out the ENGP	0 *0.0%*	4 *11.4%*	4 *11.4%*	9 *25.7%*	15 *42.9%*	3 *8.6%*	*Total:* 35

29. The JRP communicated well with proponents and stakeholders during the joint review process.

Response	Count	
a) Strongly Agree	9 *25.0%*	
b) Agree	15 *41.7%*	
c) Neutral	2 *5.6%*	
d) Disagree	6 *16.7%*	

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Response	Count	
e) Strongly Disagree	3 *8.3%*	
f) Don't know	1 *2.8%*	
	Total: 36	

30. The legislative framework for the joint review process provides adequate clarity and certainty.

Response	Count	
a) Strongly Agree	3 *8.3%*	
b) Agree	6 *16.7%*	
c) Neutral	3 *8.3%*	
d) Disagree	14 *38.9%*	
e) Strongly Disagree	7 *19.4%*	
f) Don't know	3 *8.3%*	
	Total: 36	

31. Please indicate your agreement with:

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
I. The JRP process served the public interest	2 *5.6%*	8 *22.2%*	5 *13.9%*	8 *22.2%*	12 *33.3%*	1 *2.8%*	*Total:* 36
II. The JRP process is designed to help society move towards sustainability	0 *0.0%*	3 *8.3%*	5 *13.9%*	10 *27.8%*	17 *47.2%*	1 *2.8%*	*Total:* 36
III. The JRP process adequately integrated Aboriginal perspectives into decision-making	0 *0.0%*	5 *13.9%*	4 *11.1%*	8 *22.2%*	16 *44.4%*	3 *8.3%*	*Total:* 36

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
IV. The JRP process adequately integrated public perspectives into decision-making	0 *0.0%*	4 *11.1%*	5 *13.9%*	11 *30.6%*	12 *33.3%*	4 *11.1%*	*Total:* 36
V. The JRP process improved relationships among stakeholders	0 *0.0%*	5 *13.9%*	5 *13.9%*	12 *33.3%*	11 *30.6%*	3 *8.3%*	*Total:* 36
VI. The JRP process reduced conflict	0 *0.0%*	7 *19.4%*	4 *11.1%*	9 *25.0%*	15 *41.7%*	1 *2.8%*	*Total:* 36
VII. The JRP process was cost-effective	0 *0.0%*	2 *5.7%*	7 *20.0%*	8 *22.9%*	12 *34.3%*	6 *17.1%*	*Total:* 35
VIII. The JRP process adequately addressed all of the signficant policy issues associated with the ENGP	0 *0.0%*	4 *11.1%*	3 *8.3%*	10 *27.8%*	18 *50.0%*	1 *2.8%*	*Total:* 36
IX. The JRP process encouraged sound decision-making	0 *0.0%*	5 *13.9%*	3 *8.3%*	9 *25.0%*	17 *47.2%*	2 *5.6%*	*Total:* 36
X. The JRP process adequately addressed environmental concerns	0 *0.0%*	4 *11.1%*	3 *8.3%*	8 *22.2%*	20 *55.6%*	1 *2.8%*	*Total:* 36
XI. The JRP process adequately addressed social concerns	0 *0.0%*	4 *11.1%*	5 *13.9%*	5 *13.9%*	21 *58.3%*	1 *2.8%*	*Total:* 36
XII. The JRP process adequately addressed economic development concerns	1 *2.9%*	5 *14.3%*	7 *20.0%*	4 *11.4%*	15 *42.9%*	3 *8.6%*	*Total:* 35

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
XIII. I am confident that if the ENGP is approved, the conditions attached to approval will be fully implemented and strictly enforced by the federal government	3 *8.6%*	3 *8.6%*	2 *5.7%*	3 *8.6%*	23 *65.7%*	1 *2.9%*	*Total:* 35
XIV. The JRP process improved my understanding of the ENGP	1 *2.9%*	24 *68.6%*	5 *14.3%*	3 *8.6%*	1 *2.9%*	1 *2.9%*	*Total:* 35
XV. The JRP process was too adverserial	4 *11.1%*	3 *8.3%*	12 *33.3%*	10 *27.8%*	6 *16.7%*	1 *2.8%*	*Total:* 36
XVI. The JRP process adequately integrated the oil industry's perspective into decision-making	6 *16.7%*	10 *27.8%*	7 *19.4%*	1 *2.8%*	7 *19.4%*	5 *13.9%*	*Total:* 36

32. Below is a list of possible reforms suggested by various stakeholders to improve the review process for major energy projects. Please indicate your views on the desirability of these reforms using the scale provided.

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
I. Provide more resources for intervenors to participate in the process	22 *61.1%*	5 *13.9%*	5 *13.9%*	3 *8.3%*	0 *0.0%*	1 *2.8%*	*Total:* 36

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
II. Have government prepare more detailed, technical guidelines on methodologies that should be used to assess the project's economic, social, and environmental impacts and risks	14 *38.9%*	12 *33.3%*	4 *11.1%*	3 *8.3%*	1 *2.8%*	2 *5.6%*	*Total:* 36
III. Include a requirement for comprehensive benefit-cost studies for all major project reviews	14 *38.9%*	13 *36.1%*	5 *13.9%*	0 *0.0%*	2 *5.6%*	2 *5.6%*	*Total:* 36
IV. Have government review agencies hire independent scientists to conduct the impact assessment analysis rather than using experts that are employed by, or hired by the project applicant. (The costs of the independent analysis would be financed by a levy applied to the applicant)	20 *55.6%*	10 *27.8%*	3 *8.3%*	2 *5.6%*	0 *0.0%*	1 *2.8%*	*Total:* 36
V. Require the applicant to complete an extensive public consultation process in accordance with detailed public consultation guidelines prior to submitting an application	16 *44.4%*	11 *30.6%*	1 *2.8%*	4 *11.1%*	1 *2.8%*	3 *8.3%*	*Total:* 36

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
VI. Require the applicant to engage in consensus-based negotiations with stakeholders and attempt to reach stakeholder agreement on major project issues prior to submitting an application (if agreement is not reached despite the best efforts of the applicant the project could still be submitted for review)	14 *38.9%*	8 *22.2%*	5 *13.9%*	6 *16.7%*	2 *5.6%*	1 *2.8%*	*Total:* 36
VII. Impose legislated limits specifying the maximum time for project review. If you disagree, please go to xi	5 *13.9%*	4 *11.1%*	3 *8.3%*	14 *38.9%*	8 *22.2%*	2 *5.6%*	*Total:* 36
VIII. Maintain the current legislated time limits for project review (15 months with a possible extension of 3 months)	3 *13.6%*	4 *18.2%*	3 *13.6%*	6 *27.3%*	5 *22.7%*	1 *4.5%*	*Total:* 22
IX. The current legislated time limits should be longer	7 *30.4%*	6 *26.1%*	4 *17.4%*	5 *21.7%*	0 *0.0%*	1 *4.3%*	*Total:* 23
X. The current legislated time limits should be shorter	1 *4.3%*	3 *13.0%*	5 *21.7%*	5 *21.7%*	8 *34.8%*	1 *4.3%*	*Total:* 23

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
XI. Restrict the number of intervenors in the hearings to only those deemed by the NEB to be directly affected by the project and/or have relevant expertise	3 *8.6%*	2 *5.7%*	0 *0.0%*	11 *31.4%*	18 *51.4%*	1 *2.9%*	*Total:* 35
XII. As a condition for project approval require the applicant to accept full liability for any damages caused by the project and document ability to pay for any damages	25 *69.4%*	5 *13.9%*	3 *8.3%*	2 *5.6%*	0 *0.0%*	1 *2.8%*	*Total:* 36
XIII. Require the applicant to have a comprehensive compensation plan approved by the review panel that specifies what types of damages would be eligible for compensation, what parties would be compensated, and how damage costs would be determined as a condition of project approval	24 *66.7%*	6 *16.7%*	2 *5.6%*	2 *5.6%*	1 *2.8%*	1 *2.8%*	*Total:* 36
XIV. Require the NEB to consider comments from any interested party	16 *45.7%*	12 *34.3%*	3 *8.6%*	2 *5.7%*	1 *2.9%*	1 *2.9%*	*Total:* 35

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
XV. The appointment of a review panel for major energy projects should be made jointly by the federal government and impacted provincial governments instead of just by the federal government	16 *44.4%*	9 *25.0%*	6 *16.7%*	3 *8.3%*	0 *0.0%*	2 *5.6%*	*Total:* 36
XVI. The environmental assessment process under the Canadian Environmental Assessment Act and the pipeline approval process under the National Energy Board Act should be conducted as two separate review processes under separate review panels instead of being combined into one hearing process	9 *25.0%*	7 *19.4%*	6 *16.7%*	8 *22.2%*	4 *11.1%*	2 *5.6%*	*Total:* 36
XVII. The environmental assessment process of the federal government and impacted provinces should be conducted as two separate processes instead of being combined into a single hearing process	13 *36.1%*	8 *22.2%*	3 *8.3%*	6 *16.7%*	4 *11.1%*	2 *5.6%*	*Total:* 36

Variable	a) Strongly Agree	b) Agree	c) Neutral	d) Disagree	e) Strongly Disagree	f) Don't know	
XVIII. The appointment of a review panel for major energy projects should be made jointly by the federal government, impacted provincial governments, and impacted stakeholders instead of just by the federal government	17 *47.2%*	10 *27.8%*	5 *13.9%*	1 *2.8%*	1 *2.8%*	2 *5.6%*	*Total:* 36
XIX. Complete an integrated evaluation of all alternative transportation projects for shipping oil instead of evaluating each project separately	16 *44.4%*	7 *19.4%*	6 *16.7%*	2 *5.6%*	2 *5.6%*	3 *8.3%*	*Total:* 36
XX. Require the approval of impacted First Nations government before projects can be built	18 *50.0%*	9 *25.0%*	3 *8.3%*	1 *2.8%*	3 *8.3%*	2 *5.6%*	*Total:* 36

33. Overall how would you rate the ENGP JRP process?

Response	Count	
a) Very good	3 *8.1%*	
b) Good	7 *18.9%*	
c) Poor	10 *27.0%*	
d) Very poor	13 *35.1%*	
e) Unsure	4 *10.8%*	
	Total: 37	

34. What are the main strengths of the ENGP JRP process?

Response	Count
Response	Count
	27 responses

35. What are the main weaknesses of the ENGP JRP process?

Response	Count
	30 responses

36. Do you have any other ideas on how the joint review process should be improved?

Response	Count
	18 responses

37. Which of the following statements describes your view with respect to the pace of oil sands development?

Response	Count	
a) The current rate of oil sands expansion is about right	2 *5.6%*	
b) Oil sands expansion is not fast enough	2 *5.6%*	
c) Oil sands expansion should be slowed down	14 *38.9%*	
d) There should be a moratorium on oil sands expansion	18 *50.0%*	
	Total: 36	

38. What is your position/perspective on the ENGP?

Response	Count	
a) Strongly support	2 *5.6%*	

Response	Count	
b) Support	2 *5.6%*	
c) Neither support or oppose	3 *8.3%*	
d) Oppose	7 *19.4%*	
e) Strongly Oppose	22 *61.1%*	
	Total: 36	

If you support or strongly support the ENGP can you summarize the reasons for your support?

Response	Count
	6 responses

If you oppose or strongly oppose the ENGP can you summarize the reasons for your opposition?

Response	Count
	24 responses

39. How much did the JRP process change your perspective on the ENGP?

Response	Count	
a) Significantly	7 *19.4%*	
b) Somewhat	12 *33.3%*	
c) Not at all	15 *41.7%*	
d) Unsure	2 *5.6%*	
	Total: 36	

40. How did the JRP process affect your opinion of the ENGP?

Response	Count	
a) more favourable towards the ENGP	2 *5.4%*	

Response	Count	
b) No change	11 *29.7%*	
c) less favourable towards the ENGP	24 *64.9%*	
	Total: 37	

41. I would recommend that future pipeline projects are evaluated through review panel processes modelled after the ENGP JRP.

Response	Count	
b) Agree	6 *16.2%*	
c) Neutral	3 *8.1%*	
d) Disagree	17 *45.9%*	
e) Strongly Disagree	10 *27.0%*	
f) Don't know	1 *2.7%*	
	Total: 37	

42. I would participate in another joint review process similar to the ENGP JRP process.

Response	Count	
a) Strongly Agree	6 *16.2%*	
b) Agree	14 *37.8%*	
c) Neutral	6 *16.2%*	
d) Disagree	3 *8.1%*	
e) Strongly Disagree	2 *5.4%*	
f) Don't know	6 *16.2%*	
	Total: 37	

43. On a scale from 1 to 5 with 1 being not at all and 5 being very much please rate how much you think each of the following groups benefited from the ENGP joint review panel hearing process.