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Building a Community Engagement Framework for the Nuclear Energy Industry in Canada's North

—
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Master's thesis in Governance and Entrepreneurship in Northern and Indigenous Areas



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Abstract

This study explores engagement with Northern and Indigenous peoples and communities, using principles and practices that are currently being used within and outside of the nuclear energy sector. The project seeks to identify gaps in current nuclear energy engagement, explore the legal requirements for proponents, and provide recommendations for improved engagement with the Indigenous community in the nuclear energy sector.

Canada has committed to reducing its annual carbon emissions significantly by the year 2020. The framework to reduce emissions includes an energy strategy. One such solution to offset carbon emissions from energy sources is the increased use of nuclear energy. However, if increased use of nuclear energy is going to be a government priority, early public participation is essential. Public Participation processes needs to be meaningful and rooted in knowledge sharing and collaboration.

An informed and communicative process is accomplished through an early consultation process. To effect meaningful change, and adequately present the public with the proper tools to make informed decisions, the responsibility for this consultation process should fall within the mandate of the entire industry. The future of energy policy in Canada is currently unknown, with the potential to shift and change as technologies and new policies are created. Building a relationship based on trust, legitimacy and knowledge co-production will be in the long-term benefit of both the nuclear industry and the public.

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1 Introduction

This study explores engagement with Northern and Indigenous peoples and communities, using principles and practices that are currently being used within and outside of the nuclear energy sector. The project seeks to identify gaps in current nuclear energy engagement, explore the legal requirements for proponents, and provide recommendations for improved engagement with the Indigenous community in the nuclear energy sector.

Canada has committed to reducing its annual carbon emissions significantly by the year 2020. The framework to reduce emissions includes an energy strategy. One such solution to offset carbon emissions from energy sources is the increased use of nuclear energy. This increase in use could have a significant impact on reducing emissions from power production in general, and more specifically, in rural and remote areas of Canada, where many communities are still reliant on diesel. However, if increased use of nuclear energy is going to be a government priority, then a community engagement framework rooted in the principles of inclusive public participation will be necessary.

Increased education on nuclear energy will allow the public to make informed and educated decisions on the future of energy in their communities. This education needs to be meaningful; it needs to be based on knowledge sharing, rather than a one-way knowledge transmission. An informed and communicative process is accomplished through an early consultation process. To effect meaningful change, and adequately present the public with the proper tools to make informed decisions, the responsibility for this consultation process should fall within the mandate of the entire industry.

The future of energy policy in Canada is currently unknown, with the potential to shift and change as technologies are shifting changing and new policies are created. Building a relationship based on trust, legitimacy and knowledge co-production will be in the long-term benefit of both the nuclear industry and the public.

To examine the consultation process for nuclear energy advancement in Canada, we must review the concepts of consultation, public participation, and early engagement as well as the current legal and regulatory framework under which consultation is carried out. The research for this paper built on information collected during a knowledge synthesis. A knowledge synthesis is a method used to summarize all attempts to summarize related studies. A knowledge synthesis seeks to identify gaps and inconsistencies in current research (Kastner et al., 2012).

The preparation of this report proceeded in this fashion. First, I conducted a comprehensive literature related to community and Indigenous consultation. The literature review examined literature relevant to Northern and Indigenous peoples on the topics of: current consultation law and regulations; the academic literature on public participation, consultation, engagement; current consultation practices; and risk perceptions of the nuclear industry. The sources were collected by completing a search of peer-reviewed academic journals in the areas of risk, public participation, consultation and engagement in general. A second search included the examination of material related to risk perceptions, specific to the nuclear industry, as well as public support for the nuclear energy. The publications were then coded using Nvivo qualitative analysis software in order to identify key themes. The coding followed a thematic analysis, examining patterns and emergent themes across the entire data set. The current academic canon on risk and consultation is substantial. For this reason, I focused on literature relevant to the nuclear industry in an attempt to concentrate on the specific patterns and themes that have emerged within this industry.

For Nuclear consultation I focused on the legal and consultation requirements specifically Duty to Consult Legislation and nuclear energy regulations. For the topic of public participation I reviewed the International Association of Public Participation and Ladder of Citizen Participation. Throughout this examination the themes that emerged included early, efficient and effective engagement, the impact of engagement, social capital and social trust, and the length and depth of Engagement. For the topic of risk I examined commonly identified risk associated with the nuclear energy industry, these themes that emerged included identified risk, the probability of an accident such as a meltdown, concerns around nuclear waste storage and the transportation of waste. Next I explored the topic of different types of risks these included voluntary, imposed, and perceived risk. I further explored the concept of perceived risk, the key themes that emerged included trust, knowledge sharing, the effect of gender, culture and community on risk perceptions, the concept of risk perceptions as an emotional response that can change and adapt over time. The other themes included informed decision making and the effects of increase subject matter knowledge, attitude, social influence and personal belief on decision making. And finally I looked at the effect of Media on risk perceptions, themes for media included media as knowledge translation, media as an information source, and selective exposure, perception and retention.

Chapter 2 explores the concept and theoretical evolution of public participation from the development of Arnstein's ladder explain this concept to the current public participation spectrum. Engagement is increasingly becoming a more active part of the conversation about resource development. This conversation extends across several sectors: academic, industry

and civic. Chapter 2 also explore the principles behind effective public participation, common methods, engagement design and barriers to the engagement process. The next section of the chapter 2 explores the relationship between public participation and consultation, as well as outline the current regulatory and legal requirements of the nuclear energy industry in Canada.

Chapter 3, introduces Canada's Pan-Canadian Framework on Clean Growth and Climate Change and the relevance of this framework on the nuclear energy industry in Canada's North.

Chapter 3 explores historic and current issues surrounding nuclear energy in Canada's North. The next section introduces the relationship of social license to operate with the public participation process. The discussion then moves towards the applicability of risk theory as applies to nuclear energy engagement by providing a brief background of risk theory as applied to perceptions of nuclear energy, the effects of media on risk perceptions, and the influence of trust in risk perceptions.

Chapter 4 proposes a comprehensive community engagement framework for the nuclear energy industry in Canada's North. This framework includes suggested guiding principles, regulatory and legal requirements, roles and responsibilities of those involved in the public participation process, methodology, and timeline. Chapter 4 concludes with a discussion on the importance of early engagement in the community engagement process.

Chapter 5 reviews the current situation in respect to the proposed framework. This chapter identifies limitations in current practice and the effect of these limitations on meeting the goals of the proposed engagement framework. This section also explores the importance of relationship building and the need for balance between the public participation process and community expectations.

In the conclusion, I provide recommendations for improvements of engagement practices in the nuclear energy sector. This chapter also identifies remaining gaps and potential areas for future engagement research.

2 Public Participation

Public participation is rooted in information sharing and social learning; it is an iterative and ongoing process that includes consultation and engagement (Hurlbert, 2014). For this paper, I will be using the term public participation to be inclusive of the entire process, both formal and informal, from early engagement to regulatory consultation and beyond. Successful public participation is defined as an iterative process based on early and long-term engagement (Hurlbert, 2014). “A more successful model occurs over the long term, utilizes an iterative process of engagement, and multiple framing of related energy issues (in addition to the development of nuclear energy)” (Hurlbert, 2014, p. 56). Hurlbert suggests that nuclear energy consultation and engagement cannot follow just one process as a successful method of public participation (Hurlbert, 2014).

Public participation in nuclear energy consultation is a process that needs to employ numerous methods, be adaptable and able to change from group to group. Successful public participation requires trust from the public, meaningful involvement and decision-making resulting in decreased conflict and successful conflict resolution. Trust increases the earlier that the public is involved in the process (Hurlbert, 2014) and trust is an integral part of risk assessments. Webler and Tuler (2002) propose that public participation has two levels: sustained deliberation and power sharing. Hurlbert (2014) suggests that the success of public participation processes can be evaluated using two different criteria. The first is acceptance criteria, this refers to the level of potential public acceptance; and the second is democratic criteria, which refers to the objectivity of the method of participation. Within these criteria, various characteristics that would influence the success of the participation process can be identified. These characteristics include “representativeness, independence of participants, early involvement, influence on final policy, transparency of process to the public, process criteria, resource accessibility, structured decision making, and cost effectiveness” (Hurlbert, 2014, p. 60). These characteristics involve an engaged, early and long-term public participation process, which cannot simply be accomplished through the standard consultation process alone.

For a participatory process to be authentic, it must be based on fair process. Webler and Tuler (2002) outline four components that engagement participants must do to ensure a fair process. This process includes attending, making statements, participating in the discussion, and participating in the decision making. Competence is also a requirement in the participatory

process. Competency refers to ensure access to information and implementing the best tools and tactics for knowledge collection (Webler & Tuler, 2002). Public participation allows for a two-way communication of diverse groups. This process of communication encourages shared knowledge production and a shared understanding of the issues. The more authentic the public participation process, the more transparent the decision-making process is, therefore creating transparency and increases trust and confidence.

Understanding public participation theoretically contributes to the understanding of the processes allowing for better alignment between context and technique (Webler & Tuler, 2002). Theoretical developments over the last 15 years have contributed to the increased understanding of the public participation approaches (Webler & Tuler, 2002). The theory outlines numerous benefits of the public participation process. Individual benefits include the inform stage, that increase knowledge, participation and fosters trust (Nabatchi & Amsler, 2014). Collectively, the benefits of public participation include capacity building, fostering a better understanding of social issues, increased social capital, leadership development and problem-solving (Nabatchi & Amsler, 2014). Institutionally, benefits of public participation includes improvements to policymaking, public justification, policy consensus, easier implementation, and effective public action (Nabatchi & Amsler, 2014).

The field of public participation is heavy in experiential knowledge, at times, this has brought about criticism; however, Innes and Booher (2004) argue that the large percent of case studies in their field are not the issue. The issue lies in the quality and depth of the present case studies. They argue many of the case studies lack consistency need for future theoretical developments in the public participation field (Innes & Booher, 2004). Future theoretical advance in the field will need to be based heavily on qualitative methods to not only produce concepts but also in the validation of the hypotheses (Webler & Tuler, 2002).

This conceptualization of a public participation model began with Arnstein's (1969) Ladder of Citizen Participation. This ladder begins with the category of contrived participation, which includes manipulation and therapy as steps. The second category is the degree of token power sharing, which includes informing, consultation and placation. The third category is the degree of public power sharing, which includes partnership, delegated power and public control (Arnstein, 1969). Arnstein's ladder noted both the limitations and difficulties of defining the public participation process in the 1970's (Nabatchi & Amsler, 2014). This

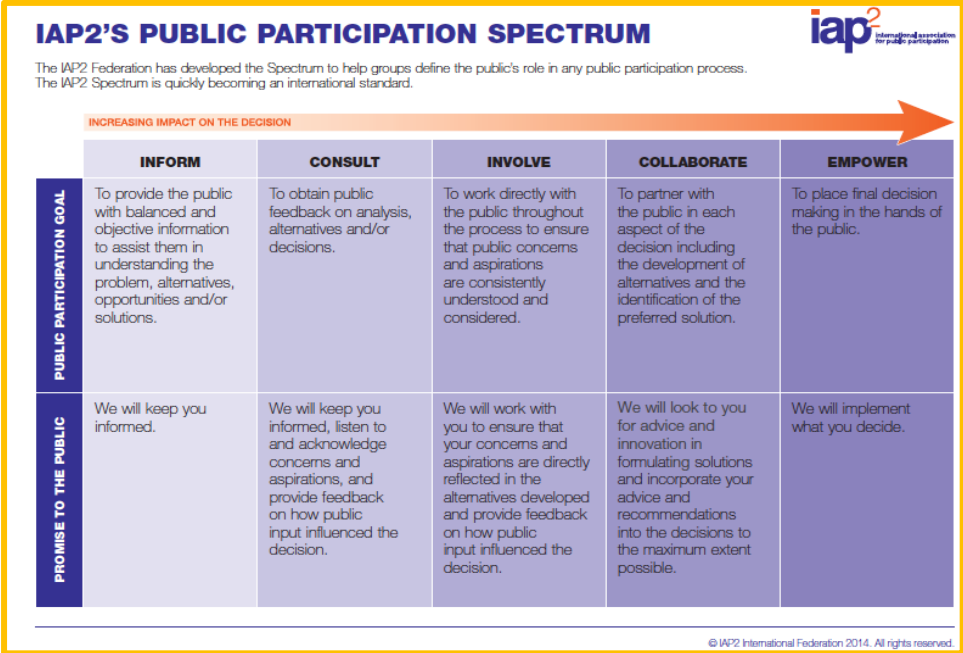
ladder became the inspiration for the International Association of Public Participation's Public Participation spectrum (Aitken et al., 2016; Figure 1).

Over time the model for public participation has evolved. The late 1970's brought an era of experts and "hard" data. The trend moved from decision making based on public judgment and opinion, and moved to decision making based on this analysis of this data (Nabatchi & Amsler, 2014; Yankelovich, 1991). This led to a weakening of the direct participation systems that were building in the 1960's and early 1970's (Nabatchi & Amsler, 2014). The reliance on hard data remained the predominantly determine factor in decision making until the 1990's when this began to shift. Conventional participation structures showed a lack of public participation, reliability on experts began to decrease while at the same time citizens began to put more and more pressure on the government systems, at times crippling the policymaking process (Nabatchi & Amsler, 2014). At this time, public officials perceived this resistance to be selfish and short sighted. This was often referred to as NIMBY or Not in My Back Yard and has is often used to discredit the concerns (Esaiasson, 2014; Nabatchi & Amsler, 2014; Petrova, 2016; van der Horst, 2007).

In the early 2000's there was a shift in language from 'public participation' to 'community engagement' (Ross, Baldwin, & Carter, 2016). Although this language does not seem to have impacted the actual definition of public participation. The International Association of Public Participation (IAP2; <http://iap2.org>), an international leader in public participation, continues to use the terms 'public participation' and 'community engagement' interchangeably. Ross (2016) notes that when distinctions are made between, community engagement and public participation; public participation is often more specific, whereas community engagement tends more general and longer term. The IAP2 has been integral in the categorization of the literature on public participation. The IAP2 designed a spectrum of public participation (Figure 1– IAP2's Public Participation Spectrum) "to help groups define the public's role in any public engagement process (International Association for Public Participation, 2014). In IAP2's introduction of this spectrum they refer to both public participation and public engagement.

The IAP2's Public Participation Spectrum (Figure 1) includes five categories of public participation process: informing, consulting, involving, collaborating and empowering the public. Each of these categories has clear objectives and are linked to increasing participatory

forms and public commitment. This spectrum is the international standard for public participation (International Association for Public Participation, 2014).



Source: International Association for Public Participation. (2014). IAP2 's Public Participation Spectrum. Reproduced with permission.

Figure 1– IAP2's Public Participation Spectrum

The IAP2 has also developed a set of core values for public participation. These values are widely and internationally accepted as the basis for 'good engagement.' The core values help make decisions that reflect the public interest. IAP2's core values have been implemented in many local, municipal, national, international and industrial engagement frameworks across the world (International Association for Public Participation, 2014). The values are based on the belief that people who are affected by a decision should be involved in the decision-making process and that their contribution to this process will influence the final decision. Authentic engagement empowers the public to make informed decisions on the topics that affect them (Aitken et al., 2016; International Association for Public Participation, 2014). Authentic and meaningful engagement needs to follow a process of information, consultation, and empowerment (Aitken et al., 2016). Over time various principles and practices have been developed to guide authentic engagement.

In any public participation process, the largest hurdle to cross is differencing expectations from participants and organizers. These expectations include expectations of process design, decision-making power, analysis and evaluation (Shiple & Utz, 2012). Decision-making is rarely linear but rather iterative. Therefore, decision making processes require an iterative

and adaptive process. This process needs to consider both internal and external factors that may impact the decision or the decision-making process (Nabatchi & Amsler, 2014).

The design of an engagement plan should include numerous iterative and often repetitive processes. The first process includes the assurance that the development of an engagement design is appropriate for the context and purpose. It needs to clearly articulate why a public participation process is necessary and outline the desired outcomes attempting to achieve (Bryson, Quick, Slotterback, & Crosby, 2012). Outcomes may include exploration, conflict resolution, decision making or collaborative action (Nabatchi & Amsler, 2014). The purpose and design should be revisited and redesigned often throughout the process (Bryson et al., 2012).

The next process refers to the method of participation. Participation methods may include in-person, remote or online. The method needs to also consider the intended participants and ensure that the method does not limit access to the engagement activity (Nabatchi & Amsler, 2014; Webler & Tuler, 2002). For example, if the intended participants are from an area with limited internet connectivity an online survey would not be the appropriate method for engagement as this would limit that participant's ability to participate in the engagement. Participants are central to the public participation process, ensure accurate quantity is important but also ensuring that the participants are the correct ones to address a given topic (Nabatchi & Amsler, 2014). This emphasizes the importance of stakeholder analysis to ensure that the design includes the appropriate groups for the appropriate phases of the process (Bryson et al., 2012).

Participant recruitment must also be considered in the design process. Voluntary self-selection, random selection, targeted, and incentive-based recruitment can be used individually or in combination with each other (Nabatchi & Amsler, 2014). Each strategy has potential benefits and deficits. For example, self-selection is often the least intensive recruitment process, but often suffers from participation bias and may not be demographically representative. Random selection or targeted recruitment would limit this participation bias, but require much more resources to carry out. Incentive-based participation is often used to remove common barriers to participation, such as providing transportation to low-income individuals (Nabatchi & Amsler, 2014).

The engagement design also needs to include specifics to provide adequate access to the information for the participants (Bryson et al., 2012; Nabatchi & Amsler, 2014; Webler & Tuler, 2002). These specific need to be detailed enough to encourage informed decision making and presented in a way that technical expertise is not required. Work with the stakeholders to establish the legitimacy of the process. Participants should have a hand in designing the process (Bryson et al., 2012). They should contribute the strategy and organization of the discussions that happen during the public engagement process (Nabatchi & Amsler, 2014).

Public engagement processes can include one-way, two-way, and deliberative communication modes. A well-developed communication strategy will include the use of technologies to support the engagement objectives. Like the design as a whole, the communication strategy also needs to be adaptive and iterative to make use of information, communication, and other technologies to support the objectives (Bryson et al., 2012). The communication strategy should include structural characteristics that promote interactions and seek to manage power dynamics by providing opportunities for meaningful participation and engagement in the decision-making process (Bryson et al., 2012; Webler & Tuler, 2002).

It is important that the design of an engagement plan ensures the public participation process has adequate resources to meet the objectives outlined in the design. Ensure that the main leadership roles (i.e., championing, sponsoring, facilitating) of the process are adequately resourced (Bryson et al., 2012). A successful design will also ensure appropriate structure to guide operational decision making. This structure needs to have clearly defined roles and responsibilities identifying the overall work to be done and defined the power of each party to influence the process and outcomes. A good structure would also take into consideration a mediation process that encourages problem-solving (Berkes, 2009; Bryson et al., 2012; Webler & Tuler, 2002).

Analysis and evaluation are closely associated with the theoretical literature on public participation (Webler & Tuler, 2002). An engagement design must have well-developed evaluation measures and evaluation process (Bryson et al., 2012). Moro (2005) sets the criteria (Table 1 – Criteria for good public participation.) of which to measure good public participation. This criterion states that good participation must add value, empower publics, improve social trust and social capital, and must have sufficient public involvement. Trust and social capital are key components of successful public participation. Trust is a determinate of

success, which assists in the networking and relationship building. Social capital is integral in cooperation and collaboration. Public participation is not just about producing a consensus, but rather building social capital while engaging the public and ensuring that policy development and decision making is informed (Berkes, 2009; Cuff, 2007; Putnam, 1995).

According to Moro (2005), a good participation process must include:

Table 1 – Criteria for good public participation.

VALUE ADDED	
EFFECTIVENESS	Better achievement of the goals and objectives.
EFFICIENCY	Efficiencies that save time, money, social tensions, and so on.
IMPACT	Wider, deeper and more permanent effects on target situations and subjects.
PERTINENCE	Greater relevance to the issues dealt with by the policy.
EMPOWER	
PROBLEM SOLVING	The value people get from being empowered to solve the issues they face.
AWARENESS	Increased awareness by involving public in decision making.
SOCIAL TRUST & SOCIAL CAPITAL	
TRUST	Future assumptions based on the actions of others.
CAPITAL	The strength of the norms and social networks that influence society.
PUBLIC INVOLVEMENT	
QUANTITY	Relative to the situation.
FREQUENCY	The frequency and intensity of public involvement vary person to person.
FORMS AND TOOLS	The forms and tools used in public involvement cross a large spectrum, some more likely to garner public involvement.
Interpreted from: Moro, G. (2005). Citizens' Evaluation of Public Participation. <i>Evaluating Public Participation in Policy Making</i> , 128. Http://Doi.Org/10.1787/9789264008960-En	

The design of an engagement plan should be structured in a way to encourage an adaptive and iterative process. Throughout the multiple processes, the designer must consistently design, align, redesign and realign participation goals, purposes, approaches, commitments, technologies, and resources (Bryson et al., 2012).

The consultation literature has identified common barriers to engagement. These barriers must be considered during the development of any engagement plan. A comprehensive engagement process needs to identify barriers to engagement and include strategies for reaching the addressing these barriers.

The first barrier identified is time. Participation in engagement activities requires a time commitment of the participants. This commitment can produce undue hardship on participants whom already feel taxed balancing day to day commitments and the addition of engagement activities may not seem feasible (Diduck & Sinclair, 2002).

The second barrier is consultation fatigue. Consultation fatigue is the result of “extensive, on-going consultation activities [that] may result in participant burnout and informed cynicism, and thus negatively impacting public participation” (Land-Murphy, 2009, p. 51). When a group or individual participant begins to feel fatigue from the engagement process, the engagement itself becomes less effective (Diduck & Sinclair, 2002; Land-Murphy, 2009; Shipley & Utz, 2012).

The third barrier noted is the lack of resources, both technical and financial. Often, individuals and communities lack the resources required to appropriately challenge decisions (Diduck & Sinclair, 2002). Access to the appropriate technical expertise needed to challenge usually requires fiscal resources. This is in addition to the potential financial hardship participation in engagement activities could impose. Such costs could include, time off work to participate in activities, childcare costs related to participation in activities, in some cases travel costs associated with transportation to the activity venue.

The fourth barrier identified is the inaccessibility to information. Often times information is either hard to find, not sufficient enough and/or highly technical (Diduck & Sinclair, 2002). At times, there is also the lack of access to unbiased information, often information is presented in a summary form that stresses reduced, low or no impacts (Diduck & Sinclair, 2002). This type of information production does not empower individuals in making informed decisions.

The final barrier identified is lack of true decision making power. Engagement must include clear decision points. Regardless of the engagement activities, if the final decision has already been made this will weaken the overall process causing engagement to be inauthentic. Participants must feel their input will have an impact on the final decision (Diduck & Sinclair, 2002). Not having clear input will have a negative impact not only on participant’s engagement experience but also the overall participation level.

The next layer in this equation is determining how the term consultation fits in to the public participation process. The term ‘consultation’ can carry different meanings, connotations, and

liabilities. The term consultation is often used synonymously with engagement; however, it appears that, within the regulatory framework, these are two very different terms. As discussed, engagement suggests an ongoing and active relationship whereas 'consultation' is often seen as more specific and often intermittent process that is often formal as the result of, or to fulfil a regulatory requirement (Head, 2007). For nuclear energy projects, the level of this consultation required is determined by the Canadian Nuclear Safety Commission (CNSC) during the licensing process (CNSC, n.d.-a). Public participation is a process that may encompass both consultation and engagement, but its function should be less normative.

In Canada, the term 'consultation' often implies a legal duty to consult. The 'duty to consult' is a Crown responsibility, and a legal process. However, is there a responsibility to the public for consultation before this formal process? For the purpose of this paper, consultation prior to, or outside of this legal process is referred to as early consultation or early engagement (Expert Panel on the Modernization of the National Energy Board, 2017). For this paper, and in an attempt to differentiate between the legal responsibilities of the Crown to consult, I will be using the term 'early engagement' to describe the engagement process that takes place prior to the formally triggered consultation process.

The duty to consult and accommodate (DTCA) refers to the legal requirements of government to consult with Indigenous communities on decisions that may affect their Aboriginal rights, real or constructive (Newman, 2014). DTCA stems from two well-known supreme court decisions, *Haida* (*Haida Nation v. British Columbia*, 2004) and *Taku* (*Taku River Tlingit First Nation v. British Columbia*, 2004). These decisions provided a court definition of DTCA.

The *Haida* case involved the harvesting of timber by Weyerhaeuser Company Ltd. in an area of Queen Charlotte Island where the Haida had asserted Aboriginal rights and title. The court found that the province had a duty to engage in meaningful consultation with the Haida, and that they did not fulfil this duty. This case questioned where the proponent, in this case, Weyerhaeuser also had a duty, the court found that this duty lies with the crown, and cannot be delegated to third parties (*Haida Nation v. British Columbia*, 2004).

The Taku River case decision was released at the same time as *Haida*. This case reviewed if the Crown had a duty to consult prior to approving the re-opening of a mine and construction of an access road over an area where the Taku River Tlingit had asserted Aboriginal rights

and title. Since the province was aware of this assertion, they had a duty to consult (*Taku River Tlingit First Nation v. British Columbia*, 2004).

These decisions lay out a process whereby the government is required to consult with Indigenous communities and produce appropriate accommodations where required. The nuclear industry in Canada is regulated federally; therefore the DTCA is an obligation of the federal government. As stated in *Haida*, the duty cannot be delegated to a third party. This is not to say that proponents do not serve a role in the DTCA process. *Haida* noted that although the duty lies with the Crown, proponents can be delegated the responsibility for procedural aspects of consultation (Coates, 2016; *Haida Nation v. British Columbia*, 2004; Newman, 2014).

There are various misunderstandings associated with the interpretation of DTCA. The first misunderstanding is that DTCA provides Indigenous groups with a veto power. However, the courts have stated that this is not the case. The purpose of DTCA is to assess the level of impact the proposal would have on the right or title in order to better be able to mitigate these impacts (Newman, 2014).

Another misunderstanding involves a general cynicism surrounding the effectiveness of the DTCA process. The view is that despite issues and impacts being identified during the consultation process, the government can ultimately choose to proceed with the project. However, the government is required to act in 'good faith'. As Newman (2014) notes that if the government does not act in good faith they could be liable. He further notes, that there have in fact been instances where the DTCA process has influenced major project changes and even project abandonment (Newman, 2014).

The laws and regulations that define the CNSC, and the regulatory framework under which it operates, includes *The Nuclear Safety and Control Act* (NSCA); *The Directive to Canadian Nuclear Safety Commission Regarding the Health of Canadians in Nuclear Liability Act*; and the *Canadian Environmental Assessment Act* (CEAA) (CNSC, n.d.-a). In a May 2013 report, the CNSC set out to include an earlier opportunity for Aboriginal and public involvement in the licensing process. "Early engagement by the applicant is an important part of good governance, sound policy development, and decision-making. The applicant, therefore, should demonstrate that engagement with the appropriate parties has been integrated into project planning. Early engagement by applicants helps to ensure that relevant issues are identified

and addressed as soon as possible"(CNSC, n.d.-b). This quote demonstrates how the regulator (CNSC) places the onus on the applicant for early engagement.

On May 15, 2017 the Report of the Expert Panel (the Panel) on the modernization of the National Energy Board was released. The Panel was asked to focus on numerous issues, one specifically was consultation. The Panel report outlined a vision for the future that included a “system wherein the regulator, with project proponents, delivers higher quality early engagement in the conceptual design phase of a proposed project”(Expert Panel on the Modernization of the National Energy Board, 2017, p. 20). They envisioned the regulator playing a much stronger role in the process than it currently does today. The Panel was clear that it’s vision for engagement was about enabling collaborative decision-making process (Expert Panel on the Modernization of the National Energy Board, 2017).

The Panel addressed engagement specific to Indigenous peoples, envisioning a process in which the energy regulator fully recognizes the nation to nation relationships with Indigenous people (Expert Panel on the Modernization of the National Energy Board, 2017). The Panel recommended the equal inclusion traditional knowledge in hearings and the acknowledgment of Indigenous worldviews in decision-making (Expert Panel on the Modernization of the National Energy Board, 2017).

Comments from participants were also collected and summarized in the Panels’ report. This summary indicated that Canadians expect their energy regulator to be transparent and open and independent while delivering safety, security and environmental protection (Expert Panel on the Modernization of the National Energy Board, 2017). These visions, recommendations and comments give us a sense of current expectations and future aspirations regarding energy regulations in Canada.

3 Nuclear Energy Engagement in Canada's North- Current Issues

Canada is a signatory to the Paris Agreement, which commits to reducing carbon emissions. Canada's goal is to reduce annual carbon emissions by approximately 291 million tonnes CO₂ equivalent by 2030 (Government of Canada, 2016). The Pan-Canadian Framework on Clean Growth and Climate Change outlines Canada's approach to CO₂ reduction. In respect to energy, the framework outlines a process that includes four main pillars. The first pillar seeks to increase energy generation from low emitting energy sources; the second pillar seeks to increase connectivity to clean power with places where this is absent; the third pillar, seeks to modernize electricity production systems; and the fourth pillar seeks to reduce reliance on diesel, specifically by working with Indigenous Peoples and northern and remote communities (Government of Canada, 2016). Nuclear energy is a potential solution to assist in this goal, potentially with the advent of Small Modular Reactors (SMRs). The definition of SMR's in Canada is a broad term that can include anything from 3-300 MWe. These are not the typical large reactors we are used to seeing. The typically SMR's are only a few metres wide. The Canadian Nuclear Safety Commission (CNSC) classifies SMR's in three categories. The first category is the 100-300 MWe, large conventional grid SMR (integrated light water design); the second category is the 3-~40 MWe, micro-grid, transportable core SMR (liquid, metal, gas, molten, salt); and the final category covers the new research, reactors with unknown coolant type (CNSC, n.d.-a). These low-generating, low-emitting reactors are one possible solution that addresses each of the four pillars identified. To move forward in expanding the role of nuclear energy, an open and informed consultation process will be essential.

The history of the North and the industry has been largely focused in the entry point of uranium mining. Port Radium, located north of Yellowknife, NWT, was Canada's first large-scale uranium mine. The history of Port Radium is shrouded in controversy. Although the mine closed in 1990, the nearby Dene communities feel that they are still being impacted by the negative effects of the mines operations. In addition to the negative impacts on their environment, their social structures, the community also asserted that the high rates of Cancer in the community could be linked to the mine (Coates & Landrie-Parker, 2016; World Nuclear Association, 2017).

Developing a public participation process requires an understanding of the historic evolution of uranium production, using northern Saskatchewan as the primary example. Northern Saskatchewan is currently the only location in Canada producing Uranium, and up until 2009

Canada was the world's largest uranium producer (World Nuclear Association, 2017). This production comes mainly from the McArthur River and Cigar Lake mines in northern Saskatchewan, producing some of the highest-grade uranium in the world (World Nuclear Association, 2017). Both mines are operated by Cameco, one of the largest uranium producers. Cameco works with the neighbouring communities, which are predominantly Indigenous through their corporate social responsibility sector. The Canadian Council for Aboriginal Business has awarded the company with gold level achievement hallmark from the Progressive Aboriginal Relations program three times. This award recognizes the company's efforts and commitment to recruit, retain and advance Indigenous employment (Canadian Council for Aboriginal Business, n.d.).

Cameco's community engagement process is based on the inclusion and engagement of the near-by communities, going as far as entering into formal agreements with the three of the communities (Cameco Corporation, n.d.; "Collaboration Agreement between the Northern Village of Pinehouse and Kineepik Metis Local Inc. and Cameco Corporation and Areva Resources Canada Inc.," 2012). These agreements offer employment and business development, specific engagement programs, community investments and environmental stewardship (Coates & Landrie-Parker, 2016). Despite Cameco reporting high levels of Indigenous and Northern public support, uranium mining in Northern Saskatchewan is not endorsed unanimously. Over the years there have been numerous blockades and demonstrations organized by project opponents to protest the uranium industry in Saskatchewan (Coates & Landrie-Parker, 2016). This group, which includes Northern and Indigenous Peoples and southern supporters, remains an organized and prominent voice in Northern Saskatchewan when it comes to resource development in general and specifically towards the nuclear industry.

A study conducted in Canada's North asked participants¹ about community support for nuclear energy (Coates & Landrie-Parker, 2016). The most common response was that participants did not have enough information to make an informed decision about their energy future. Respondents that did have an extensive knowledge of nuclear energy noted that the

¹ Participants included community members, government officials, and nongovernmental organizations and utilities. The geographic scope included Northern Saskatchewan, Northwest Territories, Nunavut and the Yukon.

general public should have access to education on the subject to make an educated and informed decisions on the future of energy systems in their community. Many participants also noted that this consultation, as they referred to it, needs to start now as energy policies and long-term energy plans are being developed, revised and implemented now. If nuclear energy is going to be an option for these northern communities than it needs to be included in these energy policies and plans (Coates & Landrie-Parker, 2016). The early and often inclusion of the communities in the design and implementation of a community engagement framework will increase the legitimacy of the community engagement process.

The energy markets in Northern and remote Indigenous communities are extremely different from the rest of Canada. Geographically, this area is area is isolated and remote. The regional climate is that of arctic and subarctic climate, with long, cold and windy winters. There is low population spread over an extremely large area. Climate, geography, and population all contribute to the energy situation Canada's North currently faces. It is not connected to a national grid, the per capita energy use is twice that of the national average, and the occurrence of black and brownouts are all too frequent. Northern communities, a number of which are not connected to the provincial electricity grid, rely heavily on diesel generators, although some more populous centre supplement with liquid natural gas or hydroelectricity (Coates & Landrie-Parker, 2016). The cost of energy fluctuates depending on location, in some areas it is also highly subsidized. Across the board, energy costs were higher than the 2015 national average of 12.3 ¢ per kWh. In some locations, the cost of energy was exponentially higher than the rest of the nation. The highest being 114.16 ¢ per kWh in Kugaaruk during the winter months (Coates & Landrie-Parker, 2016). The current energy systems of Canada's north are less than ideal, if there are cleaner, more efficient, more reliable and more cost-effective options available, or potentially available in the case of SMR's, the public should have access to the information so that they can make clear and informed decisions about the future of energy in their regions.

It is clear there needs to be new options to address the energy issues of the North. The high cost of energy has a negative impact on both the individual and economic opportunities. There is growing desire to find more clean, green and feasible solutions. The study in Canada's North found that most people had some knowledge of uranium mining, coming primarily from public fora and open discussions (Coates & Landrie-Parker, 2016). Comments from across the North indicated that people believed that their level of knowledge was not substantial. Northerners are looking for solutions, and actively exploring alternative energy

options, which might include SMR's. As currently constituted and operationalized, nuclear industry consultation answers many questions about the technology, but these are not necessarily the questions people want to know. Industry often misses the collaborative piece and add on opportunities for questions to formal hearing processes. At that time, they ask "What do you want to know about the technology, safety, process? Etc." That is too late and builds suspicion within the communities. The only way to have conversations that are truly driven by, and in full collaboration with, the community, is by building both the questions and the conversations around the interests and needs of both the communities (giving them precedence) and the nuclear energy industry. Responding to questions is a great deal removed from formulating the questions together. This openness to learn, discuss, ask questions, and ultimately engage, provides an important opportunity for the nuclear industry (as a whole) to begin a collaborative conversation about the future of Energy in the North. Ultimately the decision about this future lies with the community.

Engagement rarely begins early enough. There remains a discrepancy over who is responsible for early engagement. The CNSC in an effort to remain an unbiased regulator avoids public participation until a formal consultation process is triggered. The reactor vendors are often the first source of technical education for communities. This education, although early, is usually motivated by the hopes of obtaining a social license, with the ultimate goal to sell a product. Vendors feel the responsibility of engagement falls on the utilities or operators. The issue is that this is late consultation, not early engagement. If nuclear energy is a government priority, then early public participation is key to public acceptance. Instead of embracing the benefits of early engagement, the industry partners (vendors, utilities, regulators, and operators) often feel this responsibility lies with the other partners, leaving the industry unaware of whom is responsible for this process, when in fact each player should assume some role in every stage of this public participation process.²

Often when discussing the relationship industry partners and stakeholders the term social license (or social license to operate, SLO) will present itself. SLO refers to an ongoing acceptance or approval from stakeholders. SLO is based on the idea of legitimacy and trust,

² This statement is based on personal observations from conferences, discussions tables, and vendor presentations including: Micro Reactors in the Arctic, hosted by Lead-Cold, November 29-30 2016; 4th International Technical Meeting on Small Reactors, November 2-3 2016. Ottawa, Ontario, Canada; and the 37th Annual Canadian Nuclear Society Conference, June 4-7 2017, Niagara Falls, Canada.

which, as demonstrated earlier, can be obtained through ongoing and long-term engagement (Parsons, Lacey, & Moffat, 2014). Not only does a proponent require government approval through permitting but also community or stakeholder acceptance through SLO. SLO is often linked to profitability, hence why it is usually linked to industry or proponents. However, profitability can be more than just financial profit, for the regulator the benefit comes from being able to adequately provide unbiased, high standard, technical expertise and education on nuclear technology. Therefore, it could be argued that it is in the best interest of the regulator to obtain SLO. An added benefit obtaining SLO includes the potential for social learning that occurs during the ongoing, long-term engagement process. An engagement process that is focused on long term relationship building and is open to learning from these stakeholders will allow the regulator to tailor the content of engagement activities to meet the unique needs of the stakeholders, while empowering them in the process, building trust and creating legitimacy.

CNSC, even as the regulator, should be required to obtain a SLO and to obtain this it is no longer enough to solely meet the regulatory requirements. It is no longer enough to provide information only on a project-specific basis. It is no longer enough to assume that claiming to be unbiased and arm's-length will grant legitimacy with the public. CNSC is an international leader nuclear safety standards; they should also be striving towards becoming a leader in engaged consultation practices. A collaborative engagement process is just one option of how this could be accomplished. The first step is ongoing relationship building, based on trust, legitimacy and knowledge co-production for the long-term benefit of both the public and the regulator.

Adoption of energy and environmental initiatives are rooted in the collective decision of the public. Nuclear energy is one of the more controversial energy initiatives. Positive public opinion on nuclear energy is slow to change. However, public support is negatively impacted quickly by dramatic events such as Fukushima Daiichi, Chernobyl, and Three Mile Island. This drop in support is often slow to recover (Kovacs, Eng, & Gordelier, 2010; Kwok, Yeung, & Xu, 2017; N. F. Pidgeon, Lorenzoni, & Poortinga, 2008; N. Pidgeon, Harthorn, & Satterfield, 2011). Public concern for nuclear energy focuses on potential catastrophic events disproportionately compared to other energy technologies (Kwok et al., 2017). The main concerns that influence public attitudes towards nuclear energy includes terrorism, waste storage and the misuse of nuclear materials (Kovacs et al., 2010). Public Support for nuclear energy is complex and also influenced by factors external to the nuclear sector such as the

increasing recognition that “sustainable economic development through science and technology is not without risks, and some of these risks are inherent in the potentialities of science and technology themselves” (O’Connor & Van den Hove, 2001, p. 84). As innovation increase, the understanding of the technology behind these innovations does not. Furthermore, there is a large proportion of the population that currently has not formed an opinion for or against nuclear energy. Understanding and addressing risk perceptions will be integral if governments wish to introduce nuclear energy (Kovacs et al., 2010).

Increased duration, collaboration and information of the engagement process would contribute positively to the public’s perception of risk of nuclear energy since perception of nuclear energy is directly correlated to the public perception of risk: the greater the subject knowledge the lower the perceived risks and the higher the perceived benefits (Choi, Kim, & Lee, 2000; Stoutenborough, Vedlitz, & Liu, 2015). The entire industry would benefit from a coordinated, long-term approach to public participation.

The public has a complex and widespread conception of risk that incorporates numerous qualitative variables into the risk equation (Slovic, 2001). These qualitative variables involve individual feelings, beliefs, attitudes, and judgments (Barnes, 2001). Technical experts, however, do not perceive the risk of these variables in the same way. Experts tend to view risk about mortality expressed quantitatively rather than in qualitative variables (Slovic, 2001). These difference in risk perceptions often produce conflicts between public and experts. This also demonstrates while the typical risk statistics provided to the public by experts often have very little impact on perceptions (Slovic, 2001). The gap between the public and the experts is a not entirely a knowledge gap, however, increased information would contribute to shrinking the gap that does exist (Kwok et al., 2017; Slovic, 2001) The qualitative variable the public uses to assess risk form the basis of current public opposition to hazardous energy technologies. Regulators often struggle to reconcile these perceived risks with technical reassurances of safety (Barnes, 2001).

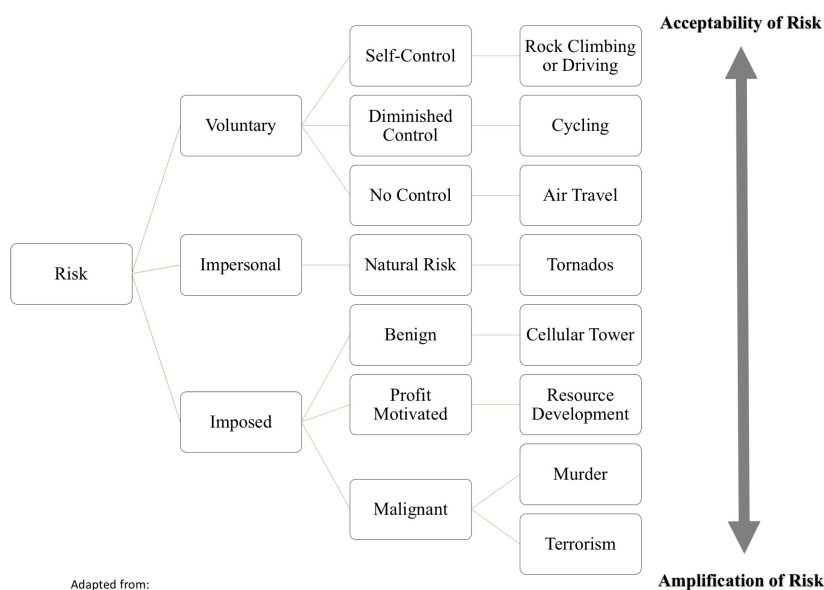
The amount of risk the public will tolerate largely depends on the type of risk involved. Accepted risks are perceived to have rewards that outweigh the costs. Risk can be classified into three areas; voluntary, impersonal and imposed. This classification structure is a spectrum, where the more voluntary the risk, the higher the acceptability. The more imposed the risk is, the more it is amplified (Adams, 2011; Roeser, Hillerbrand, Sandin, & Peterson,

2012). Figure 2 outlines these classifications with the spectrum of acceptability of risk to amplification of risk.

The first level of classification is voluntary. Voluntary risks can be self-controlled, such as rock climbing or driving; diminished control, such as cycling; and no control, such as flying. The more voluntary, familiar and controllable a process is, the more tolerant the public will be (Adams, 2011; Flynn & Bellaby, 2007; Figure 2).

The second classification of risk is an impersonal risk. The impersonal risk is a natural risk or in other words one imposed by nature, such as living in an earthquake zone or tornado alley. The public has a medium tolerance for natural risks (Adams, 2011; Roeser et al., 2012; Slovic, 1999; Figure 2). Reactions vary, however, for those living in such areas, whose tolerance for this risk is significantly higher than those located outside these areas (Adams, 2011).

The third example is imposed risk; these risks are much less tolerated. Imposed risks can include benign, profit motivated and malignant risks and can include examples of anything from natural resource development to theft and murder. The tolerance decreases dramatically if the imposers are perceived to be malignant in their intentions (Adams, 2011; Bell, 1984; Roeser et al., 2012; Figure 2). Overall, the more voluntary and controlled the risks are the more acceptable the individual is of the risk, the more imposed, and malignant the risk is the more it is amplified.



Adapted from:
Adams, J. (2011). Not 100% sure? The "public" understanding of risk. *New Scientist*, 90–100. Page 96.

Figure 2– Risk classification

Perceived risk is a factor in determining acceptance of nuclear energy (Choi et al., 2000; Kwok et al., 2017; N. F. Pidgeon et al., 2008; Stoutenborough et al., 2015; Vassie, Slovic, Fischhoff, & Lichtenstein, 2016). These perceptions are influenced greatly by trust (Flynn & Bellaby, 2007). Risk perceptions differ between gender, groups, cultures, emotional communities, neighbourhoods. These perceptions are often dependant on peoples intuitive and experiential thinking (Flynn & Bellaby, 2007).

Mass media plays an important role in the social construction of risk perceptions (Flynn & Bellaby, 2007; OECD-Nuclear Energy Agency, 2002; Olmsted, 1985; Yeo et al., 2014). The Nuclear Energy Agency found that mass media is the main source of information for the public (Kovacs et al., 2010; Yeo et al., 2014). However, they also found that most did not feel that the media provided enough information to make informed decisions on nuclear issues. The public trusts governments even less than the media. The public places the majority of its trust in Scientists, environmental protection and consumer organizations (Kovacs et al., 2010).

The main issue with mass media being the main source of information is that media is often focused on ‘bad news’ (Choi et al., 2000; Kwok et al., 2017; Olmsted, 1985). Information on the success of nuclear energy does not satisfy the ‘bad news’ criteria and is therefore not readily available (Olmsted, 1985). It is argued that the public that receives information through media channels to be worse off than those who have had no information at all (Choi et al., 2000; Slovic, 2000, 2001).

Media as an information source can be problematic. Users are often subject to selective exposure (they view what they want), selective perception (they hear what they want), and selective retention (they remember what they want), and mostly these ‘wants’ are information that reinforces their own beliefs or already defined social constructs (Olmsted, 1985). Media should not be the only source of information. It is important to provide various modes of information exchange to ensure that there are enough options to provide the relevant information to ensure the integrity of the decision-making process (Kwok et al., 2017).

Trust is a fundamental variable influencing perception and a central theme in the literature (Flynn & Bellaby, 2007; N. F. Pidgeon et al., 2008; Roeser et al., 2012; Shin & Choi, 2014; Vassie et al., 2016). Although acceptance of nuclear energy is directly determined by perceived risks and benefits, it is indirectly determined by trust (Flynn & Bellaby, 2007).

Trust in a public participation process is most effectively built by empowering the public in the planning and pre-planning processes, by creating a perceived fairness (Aitken et al., 2016).

Public participation often focuses on how to use these processes to overcome or avoid public opposition. This often results in a process that devalues the participants, and the values and experiences that they can bring to the public participation process, and the insight they have in the rationales for local opposition (Aitken et al., 2016). Attempting to understand the opposition as a way to avoid or overtake it, does not create trust nor empower the public in the process and often negatively impacts relationships furthering opposition (Aitken et al., 2016).

Risk of nuclear energy is concentrated around three areas that all involve the risk of releasing nuclear material into the environment: 1) the probability of an accident such as a meltdown, 2) nuclear waste storage and 3) the transportation of waste (Stoutenborough et al., 2015; Vassie et al., 2016; Yeo et al., 2014). Any information, consultation, engagement or otherwise, needs to address these issues, not simply the benefits of nuclear energy. Furthermore, the issues need to be addressed within the social and cultural milieu they are presented, rather than the purely scientific assessment that usually takes precedent during consultation and engagement activities. Studies have shown the benefits of increased education to improve the risk perception of nuclear energy (Choi et al., 2000). These reports looked directly at education through regular schooling as being the most effective, but also included site visits. This practice should be fully integrated into an informed consultation and engagement plan (Choi et al., 2000).

Disastrous events are often more memorable than successful operations, and they carry a significant impact on risk perceptions, albeit further perpetuated by media coverage (Yeo et al., 2014). For example, public support for nuclear energy that is relatively unchanged will take a dramatic decrease following catastrophic events such as the Chernobyl event of the Fukushima Daiichi event (Choi et al., 2000). The communication of public radiation risk following a nuclear accident further perpetuates the perception of nuclear being a major public health issue (Yeo et al., 2014). A study of support for nuclear energy in the United States noted that following the Fukushima Daiichi event there was an overall decline in support for nuclear energy, however, many were still in favour of nuclear energy in the United States, with just under a quarter of Americans attributing this support to the

assumptions that nuclear power plants in the United States are safer than those in Japan (Yeo et al., 2014).

4 Community Engagement Framework for the Nuclear Energy Industry in Canada's North

The proposed community engagement framework, although developed with the nuclear energy industry in mind, can be applied to other industries as well the same strategy other industries employ. Any successful nuclear energy engagement framework in Canada will need to acknowledge and incorporate some minimum elements. These elements are presented in **Error! Reference source not found.**

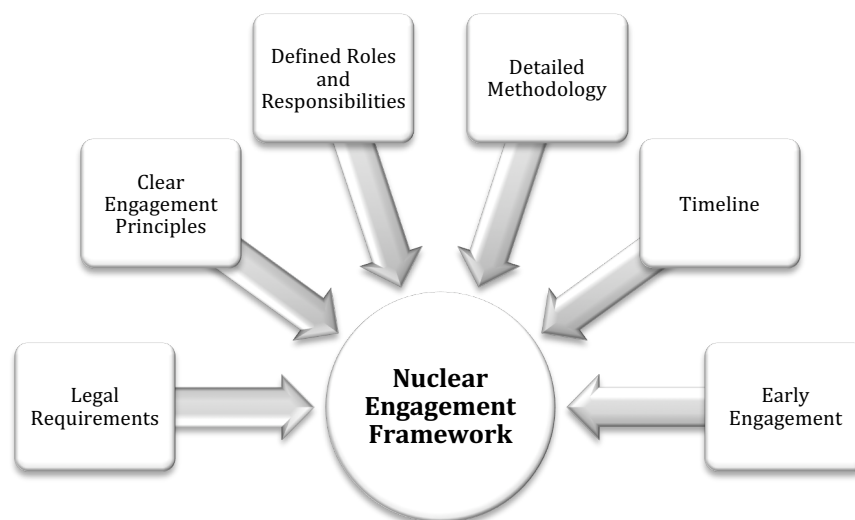


Figure 3 - Criteria for a comprehensive community engagement framework

These elements must be considered during framework development and included in the final community engagement Framework. The following paragraphs discuss each element and how to include these sections in the framework development is presented in the following paragraphs.

The first section to include in an comprehensive community engagement framework is legal requirements. The legal requirements section will need to define the legal obligations set out in Canadian law and Canadian regulations. It will also need to outline how the community engagement process will lead to fulfilling these requirements and obligations. The legal framework for consultation is minimum requirements for consultation. A comprehensive engagement framework includes responsibilities outside of legal framework for consultation.

The second section will need to clearly define the engagement principles. These principles will lay the foundation for the framework and be used to guide the engagement process. During the planning and development phase the engagement team will need to work closely with all parties to develop guiding principles for the framework. These principles need to be developed through consultation with the community. Principles should align with the core values of the IAP2. Many examples of guiding principles share similar components that fully aligns with the core values of the IAP2 (Australian Government, 2018; Chuong, Walton, Marini, & Maksimowski, 2015; City of Edmonton, n.d.; Province of British Columbia, 2013). These components are outlined in Table 2 - Sample guiding principles.

Table 2 - Sample guiding principles

Principle	Description
Inclusivity	This principle ensures engagement processes are designed in a way that promote and allow for adequate community contributions while building relationships with a diverse group of stakeholders.
Early Involvement	This principle stresses stakeholder involvement as early as possible to allow for and encourage active participation
Decision Making	This principle stresses that the engagement process must include an authentic opportunity to influence the decision.
Transparency and Accountability	This principles ensures the engagement process is well defined in terms of stakeholder input level of engagement and outcomes.
Open and Timely Communication	This principle highlighted importance of objective, timely and accurate information sharing.
Relationship Building	This principle stresses the importance on relationship building rooted in mutual trust and respect.
Evaluation	This principle ensures continuous improvement of the engagement process.
<small>Table adapted from the guiding principle documents of the City of Guelph, The City of Edmonton, the Province of British Columbia and the Australian Government (Australian Government, 2018; Chuong et al., 2015; City of Edmonton, n.d.; Province of British Columbia, 2013).</small>	

The third section is clearly defined roles and responsibilities. A comprehensive framework will have a detailed description of relevant roles and responsibilities. This will include high level roles of the proponent, utility, community and regulator and also detailed roles and expectations in respect to the operational side of the framework. Generally, the role of the community leaders is to work with the community to identify priorities; the regulator is to provide technical support and expertise in the planning, implementation and reporting of these priority areas. The operational roles should be developed in response to engagement priorities and defined within the framework. The community’s role is to actively participate in the community engagement process.

The next section needs to include a detailed methodology. The methodology needs to ensure an effective and appropriate approach to the engagement process. The methodology should ensure alignment between objectives, principles and process of engagement while provided a detailed description of these processes and the evaluation criteria. Other considerations for methodology can include community driven or community led methods and the incorporation of Traditional Ecological Knowledge (TEK) in the methodology.

The next section of a comprehensive community engagement framework will define the timeline of the engagement process. The timeline should clearly articulate the engagement process and how it aligns with the proposed or potential project timeline, the regulatory process and plans for long term involvement and ongoing relationship building.

The final section is early engagement. As a representative of Indigenous organizations³ and an academic researcher⁴, I have attended numerous conferences and post professional training specific to Indigenous consultation and Duty to Consult and Accommodate⁵ and community consultations⁶. It is through these experiences that I have come to understand the importance of early engagement. Although the concept of early engagement is often included in the core principles, this concept should be a fundamental part of a comprehensive framework for community engagement. As noted earlier, there appears to be some discrepancy over who is responsible for early engagement concerning energy projects: vendor, regulator, utility, operator, or government. Further to this early engagement allows for clear understanding of consultation and engagement expectations. Over the years, I have seen this misunderstanding

³ Specifically in my role as Director Intergovernmental Relations and Director of Operations for the Métis Nation-Saskatchewan and as a consultant for numerous Indigenous governments across Northern Saskatchewan.

⁴ Specifically referring to my time as a Social and Economic Scientist with an international environmental consulting firm; my position as a Aboriginal Community Engagement Coordinator with the Centre for the Study of Cooperatives and Research Associate with the International Centre for Northern Governance and Development both at the University for Saskatchewan.

⁵ Including: Crown and Aboriginal Duties: Beyond Consultation; Aboriginal Rights and Title in Canada; Consultation & Accommodation: Annual Updates; all through the Pacific Business and Law Institute, Vancouver, British Columbia 2009-2016; World Indigenous Business Forum 2016, Honolulu, Hawaii and 2017, Saskatoon, Saskatchewan; and numerous conference presentations on Indigenous Engagement including the Association of Cooperative Educators Annual Conference. University of Massachusetts. July 12-15, 2016. Amherst, Massachusetts and the Métis Nation Legislative Assembly. June 2010. Saskatoon, Saskatchewan.

⁶ This was both in my capacity as an Indigenous representative and as a consultant for an industry proponent.

of expectations breakdown the engagement process. Without the time to build meaningful relationships to be able to foster collaborative conversations, it will be quite difficult to fully articulate expectations for consultation and engagement—for all parties.

What constitutes early engagement, or more so when does the public participation process start? The answer to this question depends on the role played in the public participation process. Vendors of nuclear energy systems often become involved in public participation very early in a project concept as a way to engage and inform the public of their projects, obtain public support and ultimately sell a product. A utility may get involved before a proposed project to gauge the potential for public acceptance of nuclear energy projects or as a way to develop a long-term energy plan. Government leaders may also be involved in the public participation prior to proposed projects to assist them with long-term planning. The regulator becomes involved in the public participation process once a project has been proposed and has is begun the licensing process (CNSC, n.d.-b).

5 Discussion

The role of the regulator is to remain unbiased and offer sound technical expertise on nuclear technology. Early regulator involvement is closely tied to public perception of the regulator. For example, if the regulator becomes involved in the public participation of a project prior to the licensing or pre-licensing phase it can be perceived as being biased or in favour of the project prior to the environmental or technical assessment. In the past, the CNSC has been criticized for being too close to government and industry, hindering its ability to remain independent (Gloria Galloway, 2016a, 2016b; Uechi, 2011). However, as a regulator that is accountable to the public and responsible for education and information they have a responsibility to be involved in a public participation process to educate and inform the public when new technologies and innovations emerge. Innes and Booher (2004) argue that the most basic goals of participation are rarely met through the regulatory process. While not meeting the basic goals regulatory participation is also viewed as counterproductive to the participation process often causing the trust to decline (Innes & Booher, 2004).

The question remains that if SMR's are a potentially viable solution to the energy issues in Canada's north, and the regulator is aware through the pre-licensing process that SMR vendors are targeting these communities, does the regulator have a responsibility to begin the public participation process even before the formal process is triggered. They do not have a legal obligation to engage at this stage. However, these areas are currently exploring potential future energy options, and although the future of SMRs in Canada is unknown, these communities should be informed early and often of the potential new energy option when considering future energy developments in their communities.

One of the major benefits to the CNSC being proactively involved in the education of nuclear technology, rather than strictly consultation related to project licensing, is an increase in their legitimacy by operating outside of industry and government agenda. This increased legitimacy will allow for a more open and transparent, long-term public participation process that ideally would allow for regulated consultation if a project should arise. Following an open and transparent public participation process does not mean that early engagement is directly tied to project buy-in. Simply being part of "an inclusionary collaborative process does not necessarily guarantee the justice of either process or material outcomes" (Healey, 2003, p. 115). However, it does contribute to the increase in trust and social capital.

Participation that is a collaborative and iterative process is more likely to be authentic and ultimately successful (Ross et al., 2016). Community engagement as an ongoing and adaptive process will maintain positive relationships while promoting social learning with the specific communities (Ross et al., 2016). Engagement is more than simply participation. It needs to be inclusive and address the needs of the community as these needs arise. It is conceivable that a person(s) may have actually been consulted but does not feel engaged, this is the example of an under-developed engagement framework. Engagement suggests a commitment to a process and requires a focus on the participant (Ross et al., 2016).

This process should be an adaptive, inclusive, and multi-dimensional model that encourages forward thinking and knowledge co-production (Innes & Booher, 2004). Collaborative participation addresses many of the challenges between current participation theory and practice, such as the division between collective and individual interests (Innes & Booher, 2004). Collaborative participation emphasizes the knowledge sharing process that combines the strengths of those involved while mitigating the weaknesses. It is about sharing responsibilities, rights, and duties amongst the members. Collaborative participation emphasizes relationships and empowers people in the decision-making process.

6 Conclusion

All players in the nuclear industry have a responsibility to become more involved in the public participation process. An increased engagement process, one that begins long before any legal triggers, will help shift the public perception of, and strengthen the support for, nuclear energy. It is imperative that the CNSC increase their presence during the early engagement. Currently, the CNSC is under scrutiny for operating too close to industry. One solution to mitigate this would be for the CNSC, utilities, and Government to increase their involvement in the community as a way to help drive the engagement process through an adaptive and iterative process for relationship building and focused knowledge sharing around the nuclear industry. Despite the increased time, human and fiscal resources required, this relationship would be mutually beneficial to both the regulator, industry and the public. It is no longer enough to provide information only on a project-specific basis, a comprehensive engagement process requires more inclusive efforts in order to gain legitimacy and create meaningful relationships with the public.

Resource development in the north is a topic that often carries the baggage of past mistakes. This is amplified when the development involves the nuclear sector. The expectations for consultation in the north, nuclear or otherwise, are based in a desire for local control over the decision that affect them. There is a need to be engaged early and often. Successful engagement in the north needs to be rooted in collaboration, co-production of knowledge, relationship building and ultimately trust. Trust than can only be achieved by and early and informed process.

The CNSC is an international leader in nuclear safety standards; they should also be striving towards becoming a leader in engaged consultation practices. Increased community involvement is just one example of how this could be accomplished. This would be a meaningful step to ongoing engagement plans based on relationship building, trust, legitimacy, and knowledge of the long-term benefits for both the public and nuclear sector.

Overall, this analysis helps set the stage for the future project by providing the fundamental issues and gaps with current nuclear consultations and the effect this has on public perceptions of risk. This paper proposes a framework for a comprehensive Community engagement plan for the nuclear energy industry. It supplies a starting point for identifying a successful public participation model for future consultation and public participation in the nuclear industry in Canada.

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