Name: Judith Sayers

Organization: BC First Nations Clean Energy Working Group

Date: October 11, 2017

Please see my comments entitled Presentation to BCUC on Site C below. Also attaching 2 reference documents, one based on survey on First Nations in clean energy and a Strategy, Opportunities and Barriers paper.

Presentation to BCUC Panel Regarding the Preliminary Report on Site C
By Kekinusuqs-Judith Sayers on Behalf of BC First Nations
Clean Energy Working Group
October 11, 2017-Victoria BC

Good Evening Panel Members:

My name is Kekinusuqs, Judith Sayers and I am here on behalf of the BC First Nations Clean Energy Working Group.

I acknowledge the unceded territory of the Songhees and Esquimalt First Nations.

The BC First Nations Clean Energy Working Group (BCFNCEWG) is an informal group of First Nations who are involved in the Clean Energy industry in BC that work together on common issues. The issue of Site C is one of those common issues.

The preliminary report at page 84 talks of natural capital (6.3.1.6) and the impacts of Site C has on the natural capital in the Peace Valley and associated ecosystem services which sustains the health and wellbeing of local communities, contributes to the cultural and traditional ways of First Nations and are worth hundreds of millions of dollars annually in non-market values.

I am going to speak to the region of the province of BC and the impacts that Site C has on the economic well being of First Nations and the natural capital across this province. I will also address viable alternatives to Site C and take into consideration the loss of economic benefits for First Nation by not being able to develop clean energy.

First Nations in British Columbia have been active participants in the renewable energy sector since the early 2000's. Very little research has been conducted to assess the scope and implications of First Nations involvement. The BC First Nations Clean Energy Working Group (FNCEWG), in partnership with researchers at the School of Environmental Studies at the University of Victoria, and Clean Energy BC undertook a province-wide survey to find out what First Nation involvement is. (Survey mentioned on page 100 of preliminary report)

Responses were collected between October 2016 and February 2017. In total, 102 First Nations and 3 First Nations Tribal Councils completed the survey from out of the 203 First Nations in the province (52%) that contact was initiated.

This is NOT a complete picture of all the First Nations in the province as there are First Nations who are involved in the industry who did not complete the survey. For a survey, this is a useful result and is a good sample size to answer some of the questions needing to be answered and gives a clear picture of how First Nations are involved in clean energy.

47% of the 105 First Nations surveyed are involved in the clean energy industry in some way from ownership to receiving royalties or have an Impact Benefit Agreement (IBA).

98% or 103 First Nations of those surveyed are involved or interested in being involved in the clean energy industry in BC. This is a very high percentage of First Nations who find the industry valuable enough to participate or want to participate in some way in the industry. First Nations have been telling the BC government how important the clean energy industry is to them and now have the facts to back that up. (30 First Nations have 78 projects that are operational. 65 of these projects are grid connected. 16 non-grid connected. These 78 operational projects are different types of clean energy-61% run of river, 17% Solar PW, 10% Geothermal, 9% Wind and 2% Thermal

- **First Nations existing projects have a total capacity of 1,836 MW or 40% of Independent power producers contributions to the grid**. IPP's provide 14% of BC Hydro's energy supply or 4567 MW.

- **32 First Nations have projects in Development** (meaning beyond pre-feasibility or preplanning) **15 are currently under construction** and represent all sources (12 Solar PV projects, 12 Small Hydro projects, 8 biomass projects, 8 Wind projects, 4 Large Hydro projects, 2 Solar Thermal projects,1 geothermal project and 1 micro hydro project

- **Respondents to the survey identified 249 projects that are under consideration. This includes projects that are in pre-feasibility stage and those that are stalled for a myriad of reasons.** This number alone shows the demand for opportunities to sell power to the grid by First Nations and the lost opportunity to develop clean energy projects. (The 249 projects were across the spectrum of Solar PV (64), small Hydro (56), geothermal (33), wind (29), Biomass (19) Micro Hydro (19), large hydro (14), Solar Thermal (13), Ocean (2).)

Even with the lack of opportunity First Nations have to sell the power to BC

Hydro, First Nations are still pursuing projects with the hopes of possibly selling power to BC Hydro or making their communities grid independent to ensure they are using energy that is clean, or getting off of diesel.

- **61% of respondents said the biggest barrier to creating clean energy was No opportunity to sell power to BC Hydro grid because of Site C**

This is very frustrating for First Nations who have taken years and a considerable amount of time to get a project ready for application and consideration by BC Hydro and now being told there is no opportunity because they missed the deadlines in the Standing Offer Program.

The BC Government was very aware of how much interest there is by First Nations governments and still made the decision to proceed with Site C knowing they would be stopping development of projects that sold electricity to the grid and great economic development opportunities for First Nations. The BC government encouraged development of clean/renewable power through the Clean Energy Act and the BC First Nations Clean Energy Business fund.

First Nations have invested approximately $35.5 Million in operating projects.

(17 projects have spent under $100,000, 7 projects have spent under $250,000, 16 projects have spent under $1,000,000, 16 spent over $1,000,000=Total approximate investment $35,450,000[1])

First Nations have invested $3,880,000 in clean energy projects that cannot proceed because there is no opportunity to develop projects (61% or 38 respondents have spent under $10,000**,** 13% or 8 respondents spent under $50,000**,** 10% or 6 respondents spent under $100,000**,** 7% or 4 respondents spent under $250,000**,** 10% or 6 respondents spent over $250,000**=**Minimum of $3,8800,000 invested without a project to sell power to the grid.)

Whether a First Nation has spent $10,000 or $250,000, it is a significant amount to invest for most First Nations who are dependent on government funding. It we use the base number times the number of First Nations, First Nations have expended approximately $3, 880,000[2] in projects that likely won't be build

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[1] 17X100,000+7X$250,000+ 16X$1,000,000 + 16X$1,000,000 = $35,450,000

[2] 38 X 10,000 + 50,000 X 8 + 6X$100,000 + 4 X 250,000 + 6 X 250,000 = $3, 880,000. This is only a rough average as actual numbers were not requested but gives you a good idea as what First Nations have already spent on looking into projects in BC a.

because of lack of opportunity. According to the survey, only 14 First Nations received grants to help with these costs. First Nations cannot afford to lose money on a project that cannot go ahead because of change in procurement programs at BC Hydro. It is likely the BC government did not do a risk assessment of the investment by First Nations in BC in clean energy and what would be lost to them if Site C was built and there was no opportunity to sell clean energy to the grid.

An approximate investment of $3.3 billion is being lost in the province because First Nations can't build clean energy projects. This number could be at least doubled if all First Nations had participated in the survey. That is almost the cost of Site C that taxpayers would not have to bear.

When asked in the survey how much more it would cost to build the projects the First Nations would like to build if there was opportunity the following answers were given: 60% or 31 First Nations said it would be less than $25 million, 12% or 6 First Nations said it would be under $50 million, 6% or 3 First Nations said it would be under $75 million, 8% or 4 First Nations said it would under $250 million, 15% or 8 First Nations said it would be greater than $250 million.

Creating jobs in First Nations communities is an important part of why First Nations get involved in economic development. Whether it is one job or more, it is an important job in a First Nation community that reduces unemployment. Using the lowest and number of job times the amount of First Nations means the range of jobs created is 96-212 during construction and operations. Imagine if the 249 projects went ahead and what that would mean for more jobs. Compare this with the mere 25 permanent jobs Site C will have. (During Construction: 10 projects had 1-5 jobs, 1 projects had 5-10 jobs, 3 projects had 11-19 jobs, 21 projects had more than 20 jobs. During Operations: 25 projects had 1-5 jobs created, 3 projects had 6-10 jobs created, 3 projects had 11-19 jobs created , 1 project had over 20 job**s**

Site C is the main reason that First Nations will not be able to develop clean energy for economic development purposes. The demand for power does not require clean energy at this time as Site C will produce more power than is needed in the province.

The sheer number of projects First Nations are involved in is very large and tells its

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It is probably an under stated number but gives an idea of money expended by BC First Nations

own story. 78 operating projects, 49 First Nations involved in developing projects and an additional 249 projects that First Nations want to build also confirms the need to find ways for government to continue the development and expansion of this sector for First Nations. The projects that First Nations want to build have a value of approximately $3.4 billion for 105 First Nations in this province.

These 105 First Nations have already invested $35,450,000 in their operating projects and almost $4 million of their own money has been expended on projects that have been stopped for many reasons including the lack of opportunity.

The magnitude of this information for First Nations shows the real need to create the desired and needed opportunities to sell power to the BC Grid and improve the economy of the First Nations communities.

The preliminary reports says *…'the ecosystem benefits of natural capital in the Peace Valley and surrounding region are extremely valuable in monetary terms, and in some cases are truly priceless'…*

The clean energy industry to First Nations is truly priceless and its loss to the First Nations must be considered in the overall cost of Site C. The benefits to First Nations are many and varied and many benefits cannot be monetized such as community pride. (Benefits include equity, increased equity over time, training and employment, royalties, jobs, scholarships, clean power for the community, environmental monitoring, and IBA's-ie. 28 operational projects participated in equity, 19 participants will have their equity increased over time, 39 operational projects had training and employment, 42 operational projects had royalties, 3 respondents preferred not to say what benefits they receive and others had scholarships, power for the community, reducing operating costs for power and fishing monitoring and 45 operational projects have IBA's)

It also shows that First Nations are ready, willing and able to provide clean energy as an alternative to Site C that can be done incrementally when power is needed, at their own cost, and provides regional benefits all over the province. (refer to section 6.3.1.2. where issues regarding 100% debt financing are laid out.)

Another cost not taken into consideration is that BC will be behind in technologies in relation to clean energy. If there is no market for producing clean energy, developers will not be trying out new technologies here and BC will be left behind on progress and not using the natural capital all over BC.

Survey Report:

First Nations and Renewable Energy Development in British Columbia

April 2017

prepared for
B.C. First Nations Clean Energy Working Group

prepared by
Dana Cook, MA Candidate,
Eryn Fitzgerald, MA Candidate,
Dr. Judith Sayers, Adjunct Professor, and
Dr. Karena Shaw, Associate Professor and Director,
School of Environmental Studies,
University of Victoria

Contact

Dr. Karena Shaw
School of Environmental Studies
University of Victoria
PO Box 1700 STN CNC
Victoria B.C. V8W 2Y2

e-mail: shawk@uvic.ca
phone: 250 472 5070

Citation

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Acknowledgements

This survey was primarily conducted at the University of Victoria, on the territory of the W̱SÁNEĆ (Saanich), Lkwungen (Songhees), Wyomilth (Esquimalt) peoples of the Coast Salish Nation. Support for the survey was provided by Clean Energy BC and Indigenous and Northern Affairs Canada (INAC). The authors would like to express their gratitude to all of those who took time to complete the survey, to Annita McPhee for her essential contributions to data collection, and to Mike deWit for his editorial and formatting assistance.

Executive Summary

Although First Nations in British Columbia are active participants in the renewable energy sector, very little research has been conducted to assess the scope and implications of their involvement. Seeking to address this knowledge gap, the B.C. First Nations Clean Energy Working Group (FNCEWG) partnered with researchers at the University of Victoria's School of Environmental Studies to conduct a province-wide survey. Support for the survey was provided by Clean Energy BC and Indigenous and Northern Affairs Canada (INAC).

The research team attempted to contact 203 First Nations across the province from October 2016 to February 2017. In total, we received responses from 102 First Nations[1] and three Tribal Councils. The survey results presented in this report thus indicate the minimum level of First Nations' involvement in the renewable industry in B.C. at the beginning of 2017.

How are First Nations currently involved in renewable energy development?

- First Nations are substantially involved in the renewable energy sector, with 49 respondents indicating that they have operational projects or projects under development in all but one development region of the province.
- Thirty respondents indicated having 78 operational projects, with a total generating capacity of 1,836 MW. Run-of-river hydro made up 61% of these projects.
- Thirty-two respondents indicated 48 projects in planning or construction. Run-of-river hydro made up 36% of projects, solar (PV) made up 25% and geothermal and biomass made up 17% each.
- Of operational projects, 42 were selling power back to the grid through BC Hydro's Call for Power program. These projects make up the vast majority (96%) of the generating capacity of operational projects.

How would First Nations like to be involved in renewable energy development?

- First Nations are eager for more involvement. The survey results indicate 98% of respondents are already involved or wish to be involved in the sector.
- Seventy-seven respondents reported having nearly 250 projects under consideration. These include a greater variety of renewable energy technologies than existing projects: 36% run-of-river hydro, 26% solar (PV), 13% biomass, and 12% wind.
- Respondents with no prior involvement in the industry have 61% of projects under consideration.

1. We use the term First Nations throughout the report to refer to First Nation bands as specified by the Indian Act.

What barriers are First Nations experiencing in relation to renewable energy development?

- The majority (75%) of survey respondents indicated that they have projects in mind that they have not yet pursued or been able to pursue.
- Three primary barriers to entry and expansion were identified: lack of opportunity provided by BC Hydro programs (43 respondents), financing (41), and community readiness (40).

What are the potential impacts of a decelerated renewable energy industry?

- First Nations are not only benefitting economically from renewable energy development, but in myriad other ways including increased self-sufficiency, community capacity, and pride.
- If barriers are not addressed, there is a risk of losing momentum and potential for expanding First Nations' involvement in the industry, and its attendant benefits.

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1. Introduction

Although First Nations in British Columbia are active participants in the renewable energy sector, very little research has been conducted to assess the scope and implications of their involvement. Seeking to address this knowledge gap, the B.C. First Nations Clean Energy Working Group (FNCEWG) partnered with researchers at the University of Victoria's School of Environmental Studies to conduct a province-wide survey. Support for the survey was provided by Clean Energy BC and Indigenous and Northern Affairs Canada (INAC).

The survey asked respondents whether they were involved or interested in being involved in the industry, whether they had projects in operation or development, and whether they wished to be further involved. It also asked respondents to identify barriers to involvement and capacity building activities to date.

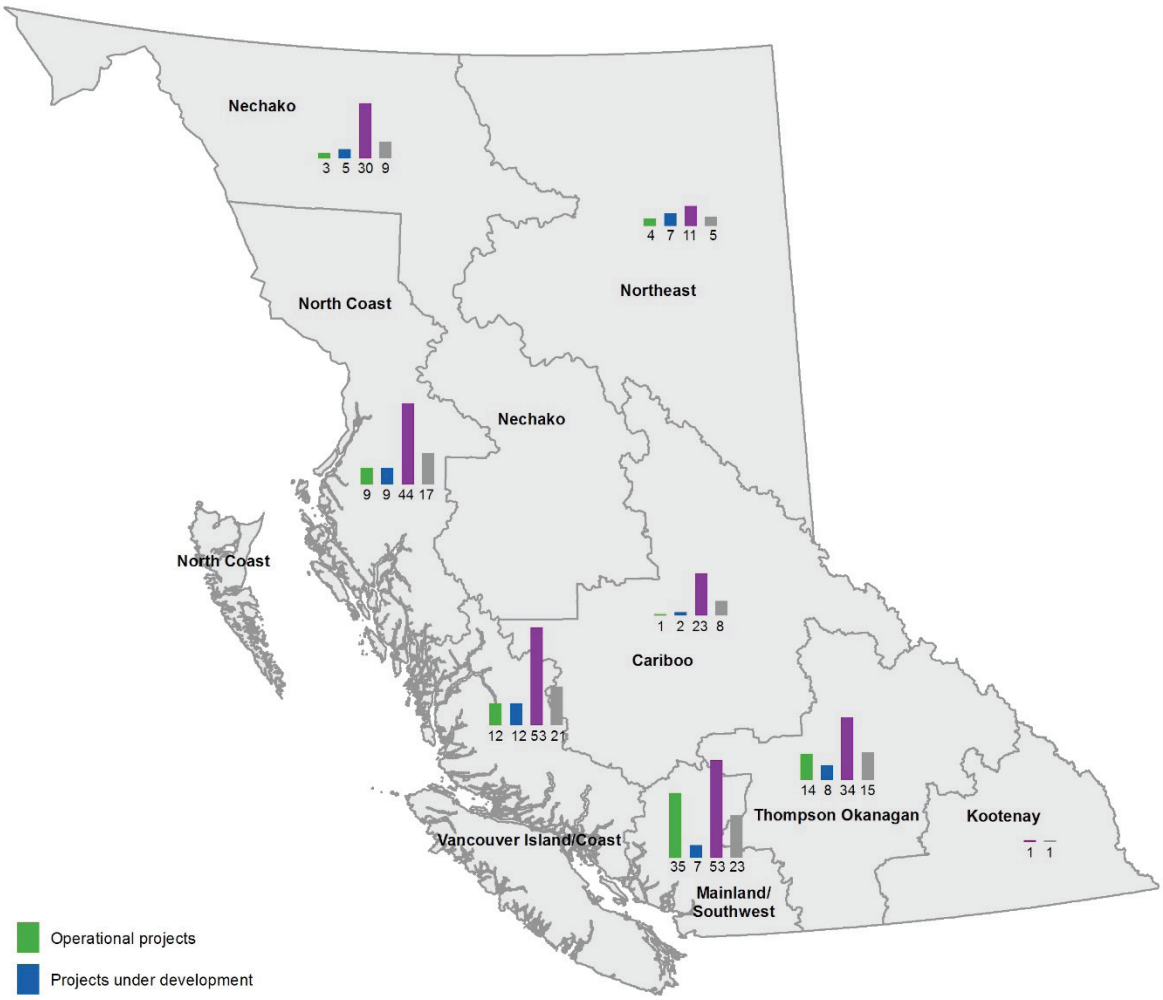
The research team attempted to contact 203 First Nations across the province from October 2016 to February 2017. In total, we received responses from 102 First Nations and three Tribal Councils. The survey results presented in this report thus indicate the minimum level of First Nations' involvement in the renewable industry in B.C. at the beginning of 2017 but do not provide an exhaustive overview. There are First Nations who are involved in the industry who did not complete the survey.

Our findings suggest that there is widespread involvement and interest in renewable energy developments among First Nations in B.C. (figure 1.1). Out of survey respondents, 79% were connected to the provincial energy grid, with the balance being off-grid. The results demonstrate a wide variety of projects, differing in size, technology, and application. Grid-connected communities are eager to develop renewable energy projects to sell power to BC Hydro. These activities and ambitions range from small projects producing less than 100 kW of electricity to large projects generating over 15 MW. Ownership and involvement also vary considerably depending on whether First Nations are the project proponents or joining projects proposed by others.

Despite this multifaceted involvement and interest, 68% of respondents indicated they are experiencing substantial barriers to entry and expansion in renewable energy development. The three most common barriers included lack of opportunity in BC Hydro programs, financing, and community readiness. These barriers are surmountable through the introduction and implementation of appropriate policies and support.

This report proceeds in three sections: in the next section we describe the survey methods and limitations, we follow this with key findings, and conclude with a discussion of wider implications.

Figure 1.1: Involvement by Development Region



2. Survey Methods

The research team invited 203 First Nations and several Tribal Councils to participate in an online survey requiring approximately 15-20 minutes. We recruited respondents in person, by email, phone, and Facebook, as well as through listservs. We sent formal invitations to First Nation Chiefs in October and called band offices to follow-up. We also made presentations at two different conferences: "Generate" hosted by Clean Energy BC in November and "Links to Learning" hosted by INAC in December. For data collection, we used an online tool, FluidSurveys. The survey was divided into four sections: 1 – Operational Projects, 2 – Projects in Development, 3 – Projects under Consideration, and 4 – Capacity Building. In the majority of cases, respondents filled out the survey independently using the link provided by email. In some cases, we conducted the survey with respondents in person and over the phone. The majority of respondents were employees or elected officials, with each First Nation deciding on the most appropriate representative to complete survey. We then reviewed each survey response for completion and consistency and frequently contacted respondents to clarify details of their involvement. In total we received responses from 102 First Nations and three Tribal Councils.

2.1 Survey Limitations

Although the response rate for the survey was over 50%, the research team is aware of many other First Nations with renewable energy experience who did not complete the survey. Therefore, it is possible that this survey understates the full scope, scale and implications of First Nations' involvement in the sector and that some of the activities, goals, and challenges associated with renewable energy projects may not have been captured.

3. Findings

This section provides an overview of the key survey findings, organized by the four primary questions:

- How are First Nations involved in renewable energy development?
- How would First Nations like to be involved in renewable energy development?
- What barriers are First Nations experiencing in relation to renewable energy development?
- What are the potential impacts of a decelerated renewable energy industry?

3.1 How are First Nations currently involved in the renewable energy industry?

Overall, 47% of respondents who completed the survey currently participate in the renewable energy industry in some way. Respondents indicated that impact benefit agreements (IBAs) were signed for 45 projects in operation. The IBAs commonly included provisions regarding royalties, training and/or employment, and equity. In 19 of these projects, the amount of equity will increase over time.

3.1.1 Operational Projects

Of the 105 respondents, 30 indicated that they have at least one project in operation. We calculated 78 renewable energy projects in total, harnessing energy from several sources. The majority of existing projects are run-of-river hydroelectric (hydro), with solar photovoltaic (PV), geothermal, wind, and solar thermal making up the remainder (figure 3.1).

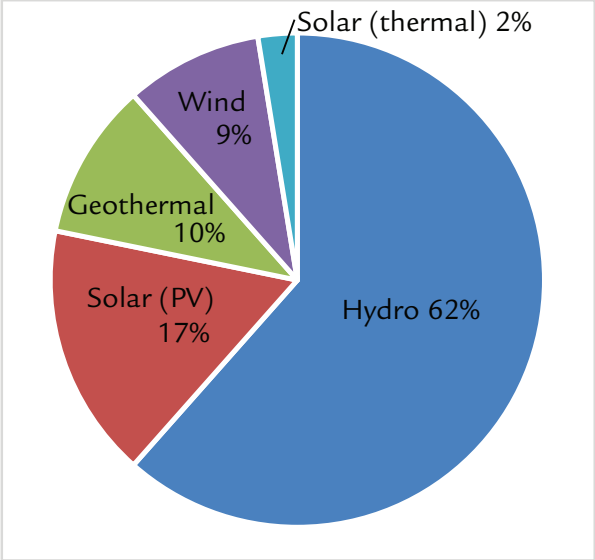


figure 3.1: Technology of Operational Projects by percentage

The total capacity of operational projects listed by respondents is 1,836 MW, which suggests that First Nations are involved in a notable amount of renewable power generation in the province. Among operational projects, we found a wide range of project sizes but large projects (above 15 MW) account for approximately 40% of operational projects (32 projects). The capacities of operational projects are displayed in figure 3.2.

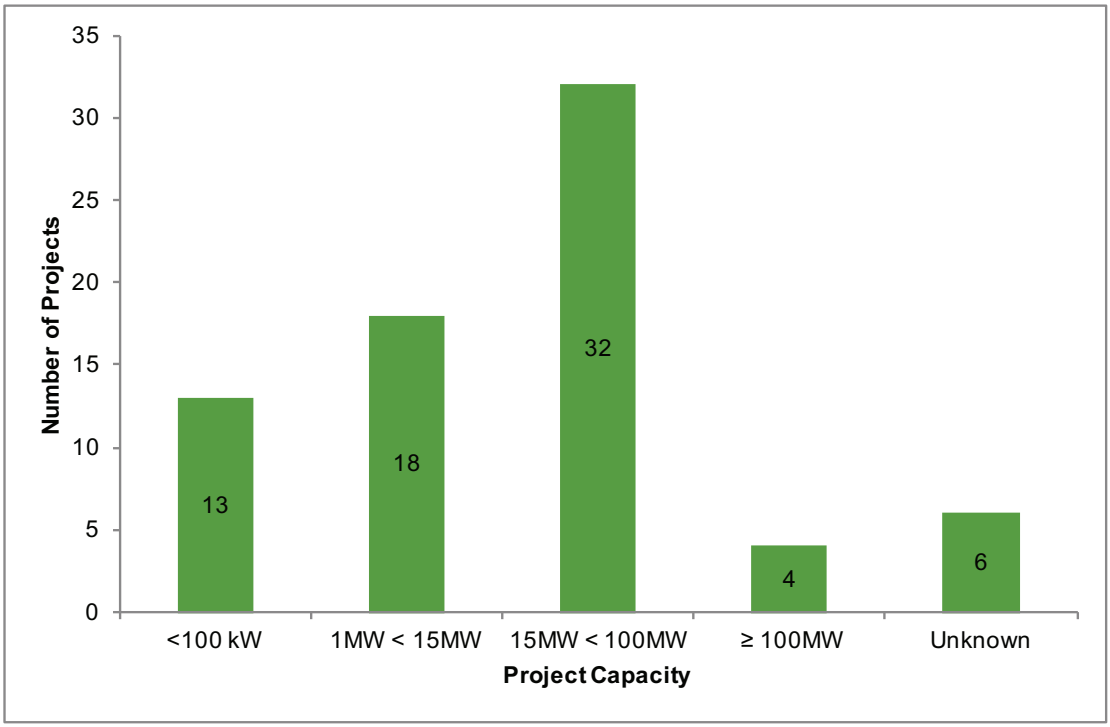


figure 3.2: Capacity of Operational Projects

Of the operational projects reported in the survey, at least 50 are connected to the North American electricity grid. For grid-connected communities, the opportunity to sell power to BC Hydro is key to the commercial viability of a project. BC Hydro has four main distributed generation programs in which First Nations may participate as energy project proponents: 1 – periodic tender calls for power, 2 – the standing offer program, 3 – the micro-standing offer program, and 4 – the net metering program. First, BC Hydro can issue a Call for Power in which they seek proposals from private power producers to meet a certain acquisition target. The last Call for Power was in 2008 and no new Calls for Power are expected. Second, BC Hydro has a Standing Offer Program (SOP) that accepts submissions for small renewable energy projects (over 100kW and up to and including 15 MW). By contrast, the micro standing offer program deliberately targets community groups and First Nations and only accepts project proposals above 100kW and up to and including 1MW. Lastly, the net metering program is designed to purchase energy from BC Hydro's residential and commercial customers with small renewable energy units (under 100kW) in excess of what they use themselves. Aside from these four programs, First Nations have also been able to secure electricity purchase agreements (EPAs) from BC Hydro through bilateral agreements with the provincial government, but these are not well documented. See figure 3.3 for a comparison of operational projects by program.

Of BC Hydro's distributed generation programs, Calls for Power have historically generated the most opportunity for First Nations who wish to participate in the renewable energy sector. The operational projects that were developed under a Call for Power produce 1,756 MW, or 96% of the power currently produced by survey respondents.

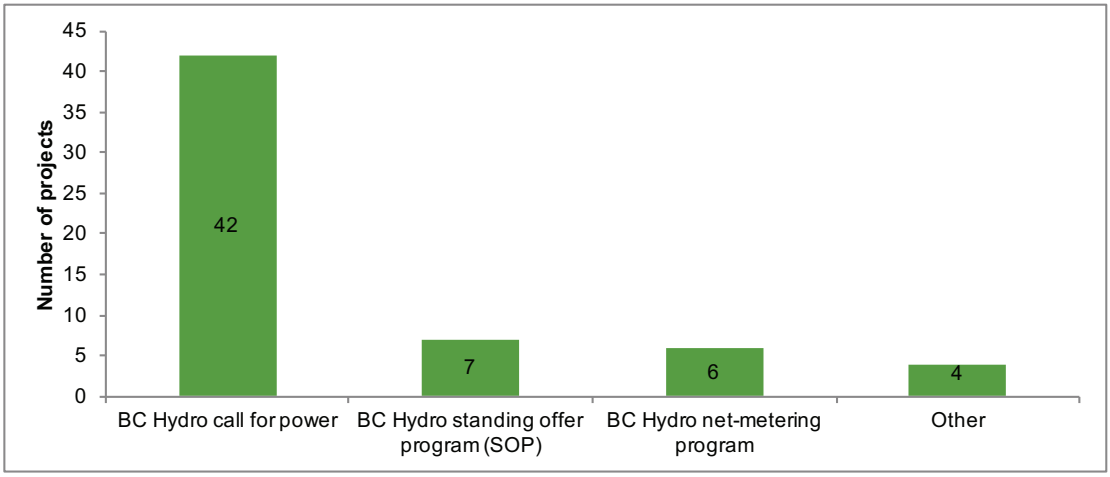


figure 3.3: Operational Projects by BC Hydro Program

First Nations have made substantial financial investments in renewable energy projects. There was a wide range of investment in operational projects, ranging from respondents investing under $100,000 on 17 projects, to greater than $1 million on 16 projects (figure 3.4).

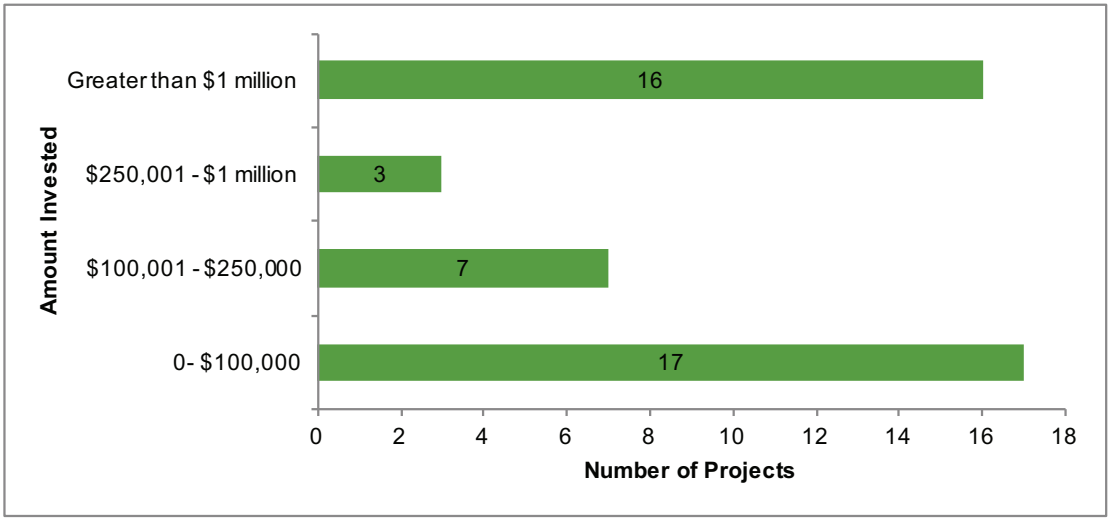


figure 3.4: Investment in Operational Projects

3.1.2 Projects in Development

In addition to operational projects, many First Nations are involved in developing new renewable energy projects. The development phase includes both planning and construction. A total of 32 respondents indicated that they are cur-

rently participating in the planning or building of 48 projects. These projects are well beyond the feasibility stage, with 15 projects already under construction. For some First Nations, this represents their first foray into the sector, while for others, this is the sixth or seventh project on their territory.

The reported projects under development include a range of technologies, as shown in figure 3.5. Compared to the energy sources of operational projects, these findings suggest that First Nations are interested in a greater diversity of renewable energy technologies than previously. For instance, the percentage of hydro projects in development is considerably smaller (35%) than operational hydro projects (61%). Additionally, the mix of technologies now includes biomass (17%) whereas no biomass projects were reported as being in operation.

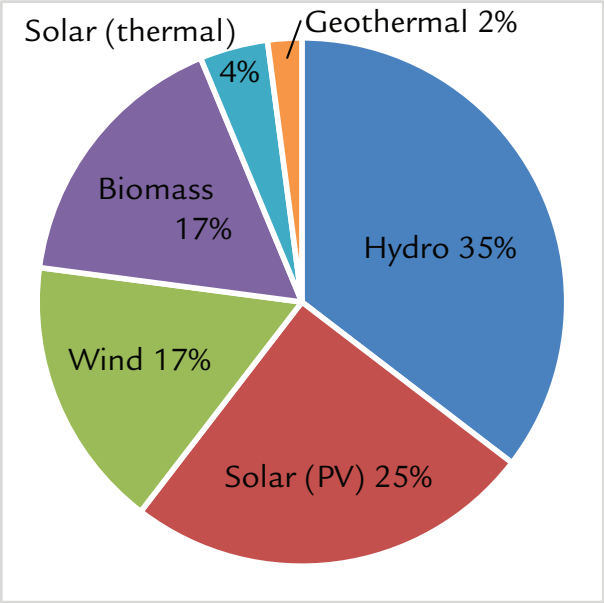


figure 3.5: Technology of Projects in Development by percentage

3.2 How would First Nations like to be involved in the industry?

The survey results indicate a strong interest in the renewable energy industry on the part of First Nations, with 98% of respondents indicating existing involvement or a desire to be involved.

Collectively, 77 respondents reported having nearly 250 projects under consideration. These include projects in the pre-planning phase, without the requisite permits and financing, as well as more developed projects that have been stalled. The survey identified various reasons for project delays (see section 3.5). Importantly, the majority (61%) of undeveloped or stalled projects are being considered by First Nations without prior experience in the renewable energy sector. This finding suggests the potential to significantly expand the number of

First Nations who are benefitting from involvement in renewable energy development (figure 3.6).

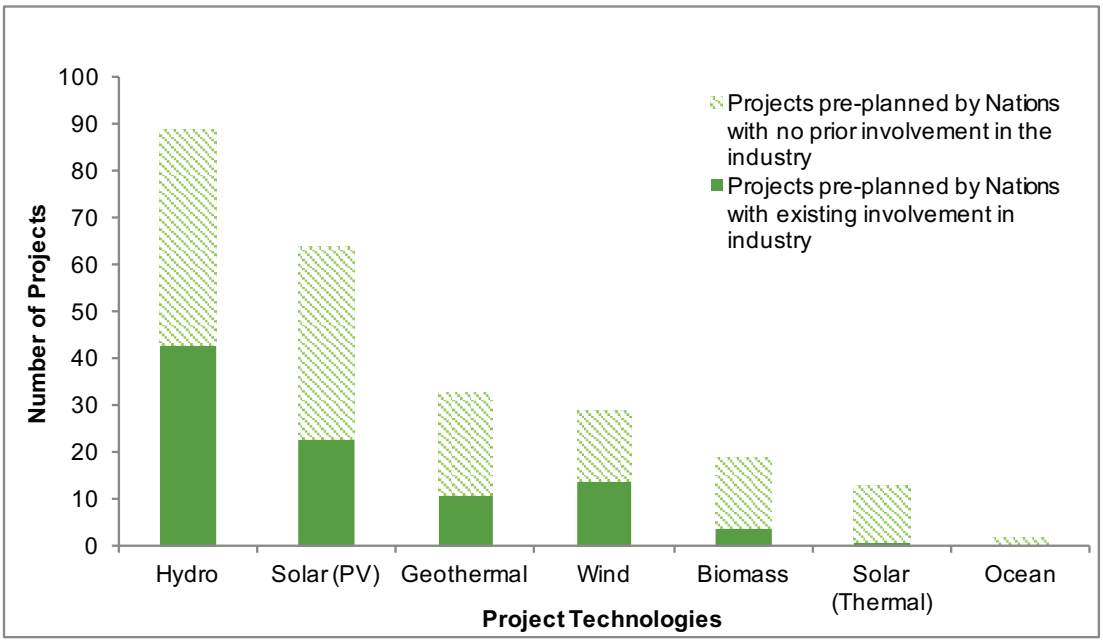


figure 3.6: Projects in Pre-Planning

Much like projects in development, the projects under consideration include a greater variety of renewable energy technologies than existing projects (figure 3.7).

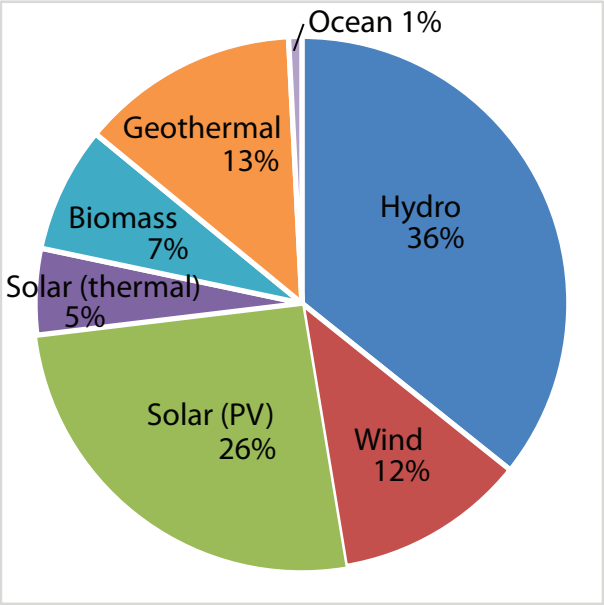


figure 3.7: Technology of Projects in Pre-Planning

Along with the large number of projects under consideration, the high response rate to this question indicates that there is an appetite among respondents for greater involvement in the industry. If offered the potential to sell the power from these projects to the grid, 96% of those who responded to this question said they would. Facilitating opportunities for new and experienced First Nation power producers to sell power to the grid is an essential part of supporting their renewable energy ambitions.

3.3 How have technology choices changed over time?

As mentioned, the survey results indicate shifts in favoured renewable energy technologies among First Nations. In particular, the responses reveal an increase in the percentage of solar PV, solar thermal, biomass and micro-hydro projects under development compared to operational projects (figure 3.8). These increases may be partly due to the growing affordability of certain technologies (especially solar PV), as well as their greater flexibility in terms of location (they are less site constrained than hydro, wind or geothermal). Conversely, the survey results reveal a decline in large hydro from operational projects to projects in development or pre-planning (from 36% to 6%, respectively), which may reflect both financial and siting limitations.

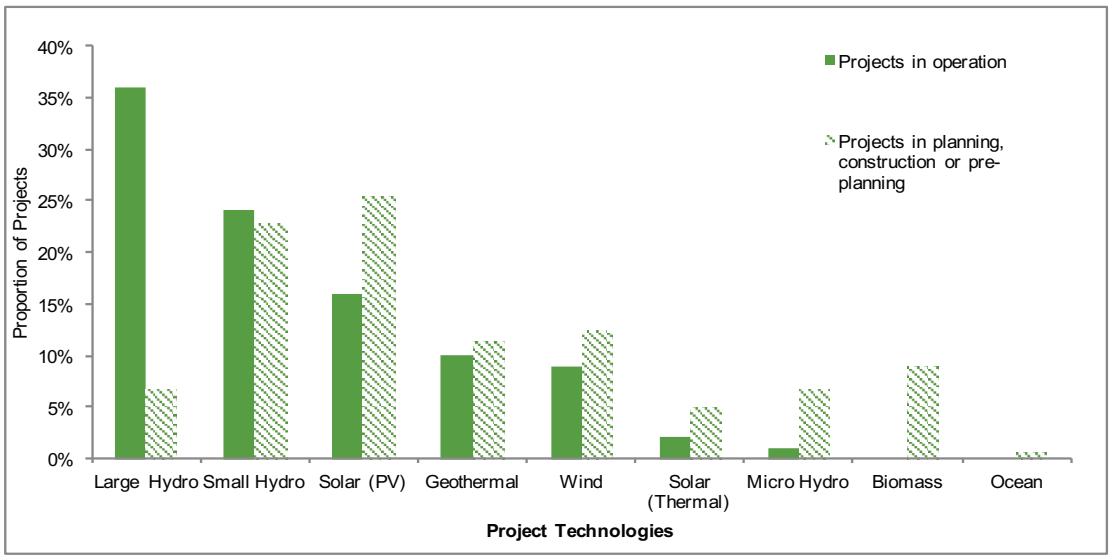


figure 3.8: Comparing Renewable Energy Technologies between Operational Projects and those at Earlier Stages of Development

3.4 How have benefits changed over time?

Survey results revealed that operational projects are delivering benefits to communities in terms of resource royalties, training and employment, and equity involvement. The survey found a slight shift in anticipated benefits for projects under development, however, with a heavier emphasis on training and employment and equity rather than royalties (figure 3.9). This shift could be a function of the technology shift identified in the previous section, with communities anticipating smaller-scale projects with deeper community involvement. However, because these are anticipated benefits, the differences could also reflect the immaturity of the projects under consideration.

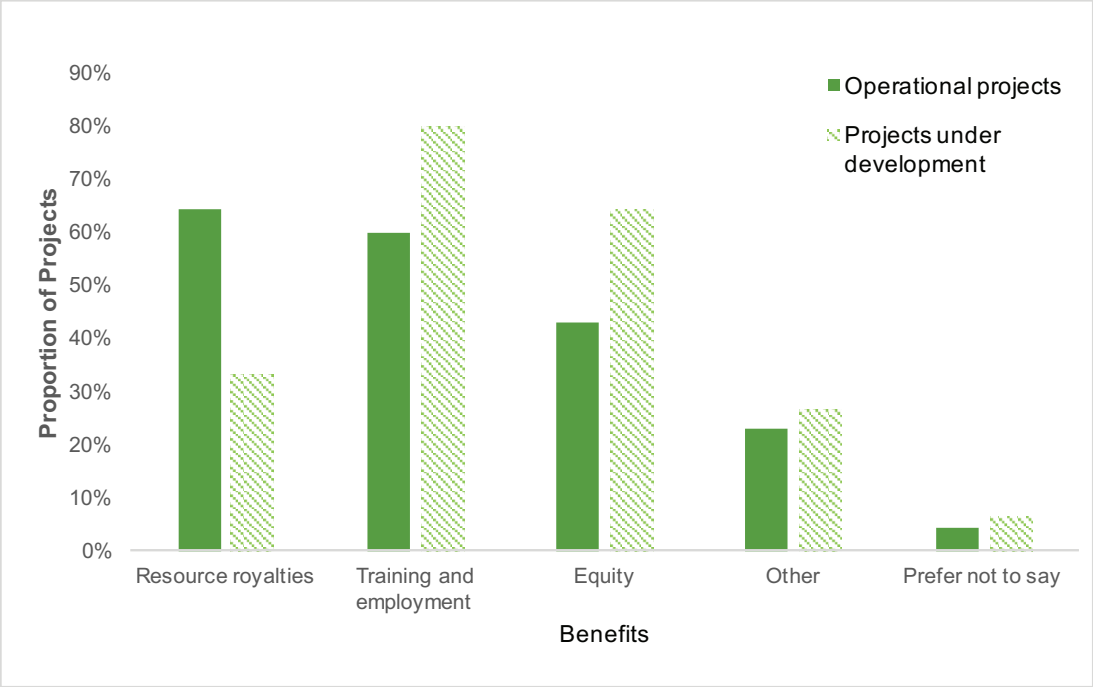


figure 3.9: Benefits of Operational Projects vs. Projects in Development

3.5 What barriers are First Nations experiencing in relation to renewable energy developments?

The majority (75%) of survey respondents indicated that they have projects in mind that they have not yet pursued or been able to pursue. They identified three primary barriers to developing projects: lack of opportunity provided by BC Hydro's programs (61%), lack of community readiness (59%), and difficulty securing financing. The financial barriers were expressed as difficulty with soft costs (57%), difficulty with equity (47%), and difficulty with long term financing (44%). Other frequently mentioned barriers included: inability to secure a suitable partner (27%), environmental concerns (20%), and difficulty securing permits (17%). See figure 3.10 for a comparison of barriers. Respondents were also given the opportunity to identify other barriers and one of the most commonly raised issues was the difficulty of connecting to the grid.

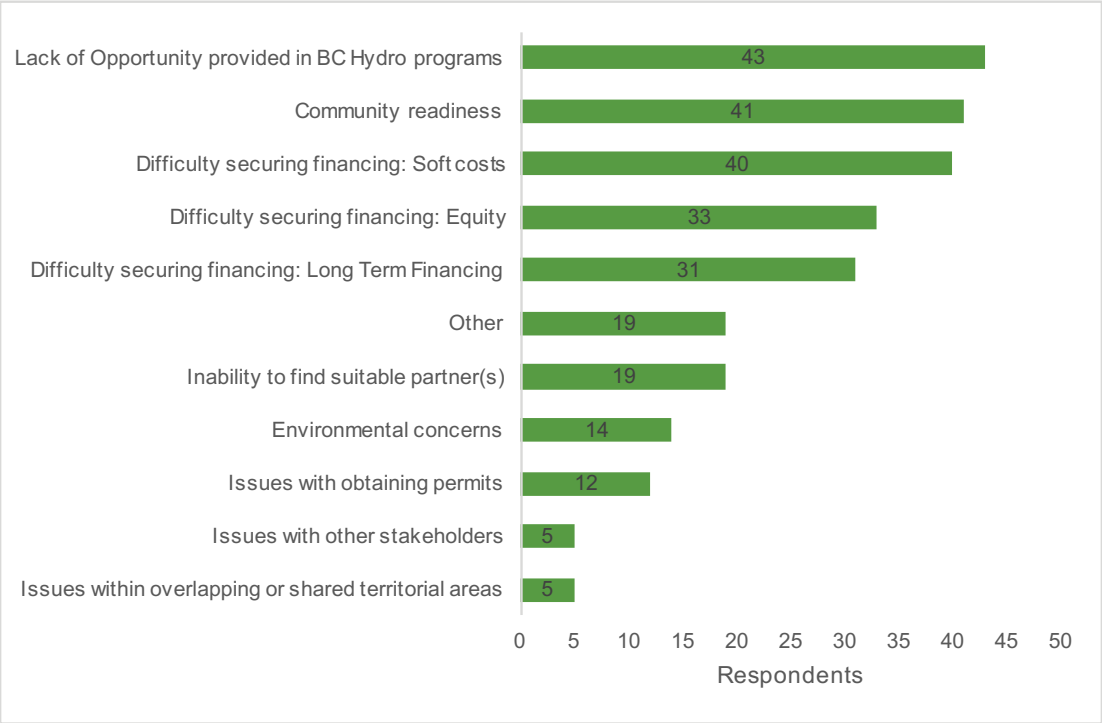


figure 3.10: Barriers to Involvement

With regards to the lack of opportunity in BC Hydro programs, many respondents elaborated in their comments about the difficulty of securing electricity purchase agreements (EPAs) for renewable energy projects. Even small energy projects often require EPAs from BC Hydro to be viable but respondents indicated that there are fewer and fewer ways to obtain them.

The second most commonly cited barrier was community readiness, which was interpreted differently by different respondents. For First Nations who have not yet participated in the industry, knowing where to start and what capacity a community needs was identified as a barrier. Addressing this would require education for community members and employees in renewable energy options and development process. For communities who have already pursued renewable energy projects, community readiness also meant the community's response to a particular project, or that they had not yet consulted the community about a project.

Lastly, respondents indicated several issues in relation to financing renewable energy projects. The majority of respondents (57%) indicated a struggle to fund pre-planning activities. Pre-planning involves investigating the applicable environmental, technical, commercial and permitting aspects of project development. Although there are a few programs available to address this need, survey responses indicated that some First Nations have difficulty accessing limited funding sources and struggle with heavy reporting requirements.

Obtaining long term financing is also a challenge, with 44% of respondents identifying this as a barrier. Long term financing is easier with an EPA from BC Hydro, a guaranteed source of revenue, and a good financial track record. One of the biggest hurdles in obtaining long term financing is experience. If the community has not built a project before, they need to show they have a partner or experienced advisors.

Similarly, 47% of survey respondents listed obtaining equity as a financial barrier to renewable energy developments. There are a few First Nations funds or capital corporations that support equity financing, but these are limited. Industry partnerships have been instrumental to many First Nations who are looking for assistance with equity.

3.6 What are the potential impacts of a decelerated renewable energy industry?

First Nations have been investing in pre-planning, planning, and capacity building activities for renewable energy development within their communities. The survey found a range of financial investment on the part of First Nations with projects in the pre-planning and planning stages (figure 3.11). The majority of respondents (38) declared investments under $10,000 but a handful of respondents (6) reported spending over $250,000. These significant financial investments will likely be lost if the projects do not move ahead.

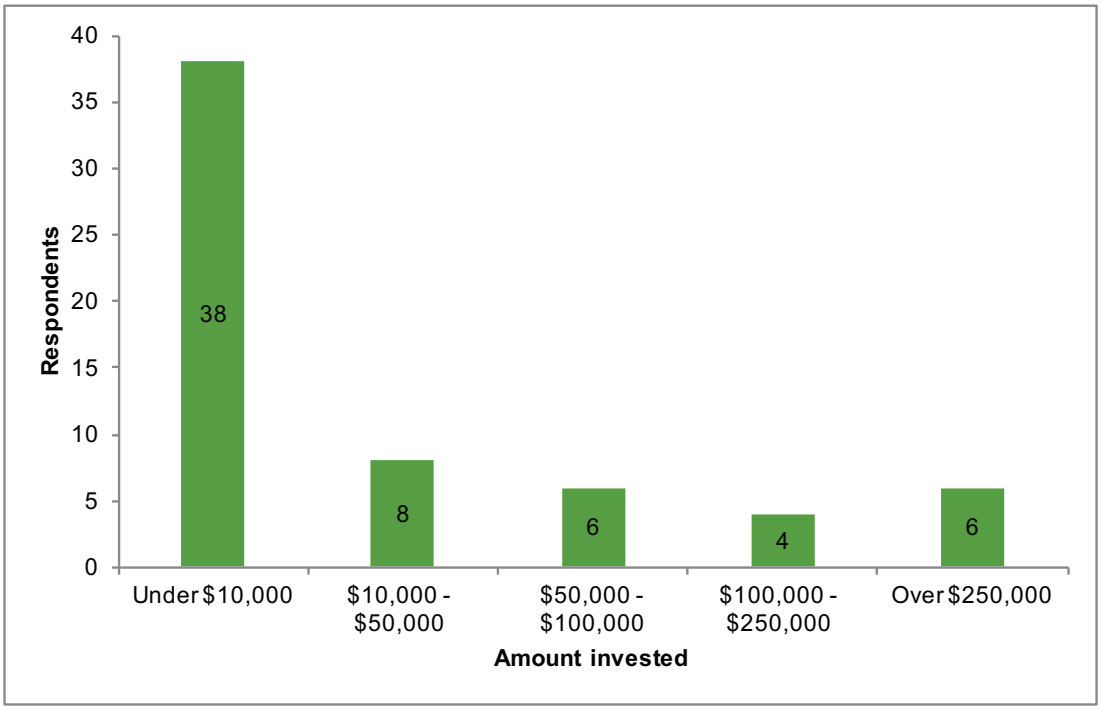


figure 3.11: Financial Investments in Projects in Pre-Planning

Just under half of respondents (47%) indicated that they have been actively building capacity among their members to strengthen participation in the renewable energy industry. Capacity building activities have primarily focused on educating community members about renewable energy, training Chief and Council, and training members in construction. See figure 3.12 for more detail. Capacity building often requires a great deal of time, effort and coordination given the diversity of tasks associated with renewable energy developments. Some activities may prompt the development of transferable of skills and generally contribute to the community's well-being but others are specific to the sector.

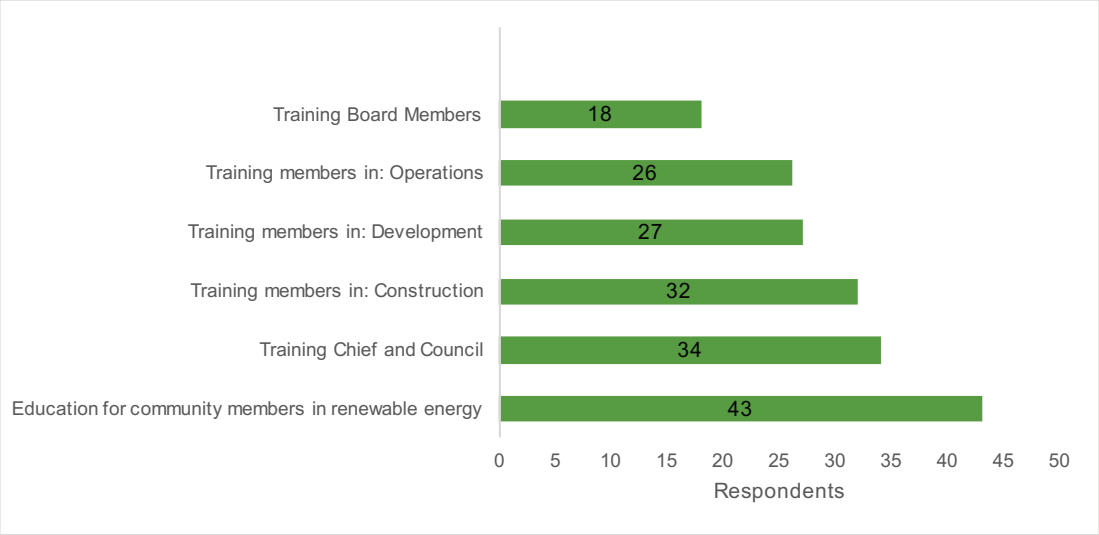


figure 3.12: Capacity Building Activities

When asked how much more it would cost to build the projects they had envisioned, the majority of respondents (31) indicated that it would be under $25 million but a few respondents (8) predicted that it would be greater than $250 million (figure 3.13). These are preliminary calculations mostly based on pre-planning efforts and likely underestimate the amount required to operationalize projects. Even as estimates, these figures represent significant potential contributions to regional economies.

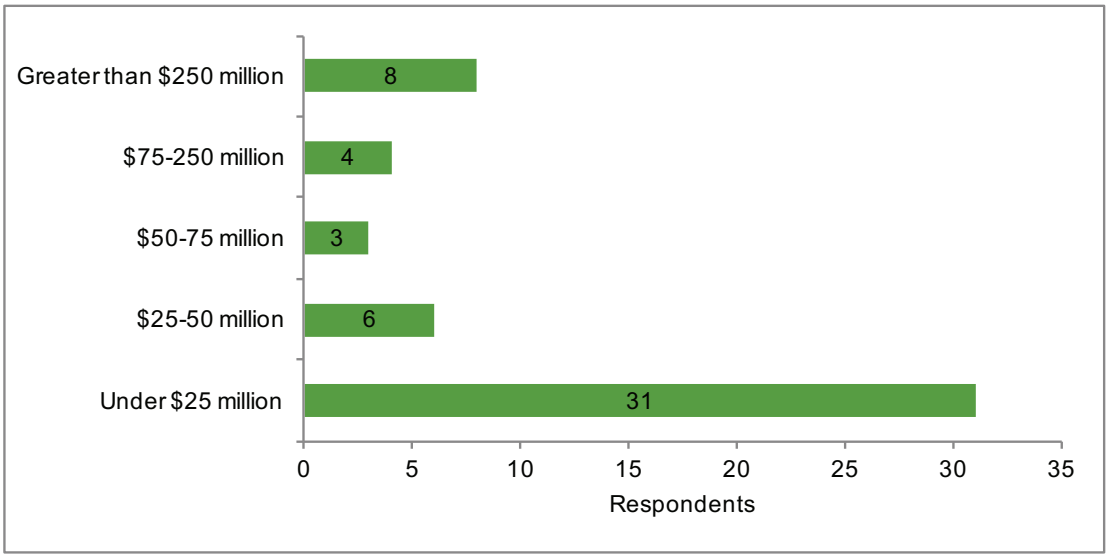


figure 3.13: Predicted Financial Investment Required

3.7 How can capacity-building support First Nations' involvement in renewable energy development?

The survey found that 88% of respondents are eager to develop more capacity in the renewable energy sector. From most to least interest, respondents indicated a desire to focus on the following capacity building activities: planning projects, operations, community energy planning, project management, and board training for members. Taking into account the above mentioned finding that community readiness is a barrier to participation in the industry for almost 60% of respondents, it is important to prioritize capacity building in the ways outlined by respondents if First Nations are to realize their ambitions in the sector.

4. Discussion

The survey results demonstrate that First Nations in B.C. are participating in renewable energy developments in substantial and diverse ways and are eager to expand their involvement. The vast majority of respondents (98%) are involved or interested in being involved in the industry, with nearly 50 respondents reporting new or existing projects on their territory. Projects vary considerably in size, technology, and application. Some projects are intended to provide electricity to community buildings while others are meant to generate revenue through power sales.

First Nations experience myriad benefits from these projects, with many respondents declaring renewable energy development as an economic venture that is consistent with their values and priorities. For some, commercial scale projects have the potential to provide much needed revenue and jobs within communities with minimal environmental impacts. For others, project benefits include energy self-sufficiency and reducing their diesel or BC Hydro expenditures.

4.1 Barriers to Participation

Despite growing momentum and interest within the industry, the survey identified three main barriers to entry and expansion within the industry. The barriers indicated include 1 – lack of opportunity provided by BC Hydro programs, 2 – financing, and 3 – community readiness.

The identification of a lack of opportunity points to a significant decline in BC Hydro's interest in facilitating independent power production. The largest program through which BC Hydro acquires electricity are Calls for Power, which can lead to signing EPAs for projects producing over 15 MW. There has not been a Call for Power since 2008, and there are none scheduled for the next 20 years. Likewise, the Standing Offer Program has filled up all opportunity until 2019, with the government creating a waiting list pending any program availability past 2019. This decline in BC Hydro's interest is due to the provincial government's decision to build Site C, a 1100MW dam in the Northeast of the province, which it is anticipated will more than meet demand for power in the province. Unfortunately, this leaves many First Nations unable to advance projects that sell power to the grid, which is what makes many projects commercially viable. Without this possibility, their potential benefits are lost. Respondents spoke of projects that are "...still viable and feasible and desirable. We want them to proceed [as] we've invested a lot of time and energy in advancing our needs, what we need is BC Hydro to free up the opportunity."

Respondents also identified transmission line accessibility and capacity as a barrier to their projects. One respondent commented, "In [our] case the relationship with BC Hydro is key to viability. If they are unwilling to negotiate access, then no project will succeed no matter how desirable or feasible."

In addition to the lack of opportunity within BC Hydro programs, survey respondents identified financing as a barrier to involvement in the industry, with one respondent emphasizing that financing involved a: "...huge learning curve. Funding initiatives are not easy to access, and take time to receive responses; [this] creates timeline challenges for planning." Finance challenges extended across the lifespan of projects, from soft costs for pre-planning to obtaining equity.

Community readiness was identified as a third barrier to renewable energy development. One respondent commented, "We don't know how to proceed – what skills and capacity do we need? How do we get them?" with another commenting, "Everyone from leadership to individuals are interested, [we] simply don't know how to start. The band is interested in the different forms for economic development standpoints and from a stewardship standpoint."

Respondents indicated key ways they would like support overcoming capacity barriers to renewable energy development. These included education for community members about renewable energy, training Chief and Council and board members, and training First Nations members in construction, development and operations. One respondent commented: "The type of capacity that we're adding at this point is in planning and community engagement and the community engagement portion is not insignificant. It's not just about organizing a meeting – it's a big project for the community. Where I would like to see more capacity is the technical and construction side...It's a great opportunity for our members to get experience in this area."

4.2 Beyond Economic Development

Commentary from survey respondents clearly suggests that many First Nations view renewable energy projects as a means to achieve multiple social, political and environmental objectives, beyond economic development. Survey respondents expressed the desire to use such projects to become energy self-sufficient, minimize environmental impact, decrease electricity expenditures, and foster pride in their communities. Responses also indicate that several First Nations view renewable energy as much more than industrial development. For example, one respondent noted, "We need to think holistically about energy from an Indigenous perspective. In local languages, the equivalent term for energy has a much deeper meaning and context than simply power production."

Given the diversity of potential benefits, the renewable energy sector offers a unique opportunity, and one that merits the attention and support of policymakers. The survey was not able to assess the full value (in economic terms or otherwise) of benefits of renewable energy development to communities, but this is an important question for future investigation, with the following comment at its core:

"Our first project is a model of environmental, financial, and community benefit. The social side has been fantastic because it has engendered pride in people who were challenged to be proud given the history of [First Nation] relations with the general population and media in Canada and the ongoing effects of residential school. This refound pride allows for foundational skill development

in those that so dearly need to be lifted, with support and with their own energy, out from the pit in which they exist. The idea that we are working on another larger project that will generate revenues for generations to come is also rippling through our community. Success will engender success."

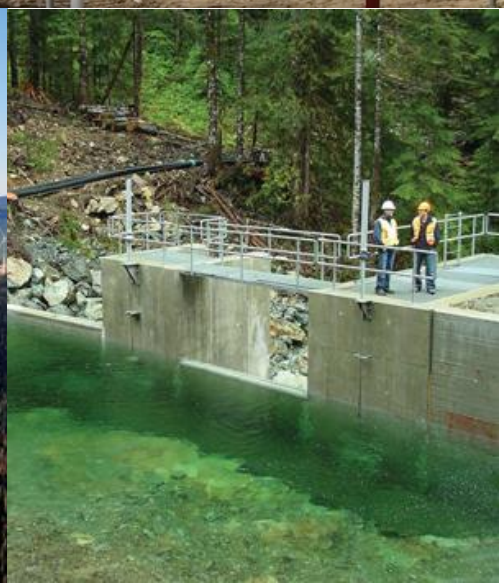
5. Conclusion

Renewable energy development offers an important opportunity for First Nations, one with the potential to provide myriad economic, social, political, and environmental benefits. Several respondents emphasized that it offers a unique opportunity: "This is the only sector that offers any hope of current and future economic opportunities." Others emphasized the way it complements their values and goals: "We want to see our community empowered and equipped to generate our own energy and to gain the maximum benefit from development in [our] local area."

Without the appropriate policy and support, however, opportunities will be lost. One respondent commented that the "Clean Energy business is dying right now. Opportunities aren't there like they once were," highlighting the need for support to facilitate success in the industry. What this support should look like is not straightforward: one of the key findings from the survey is that First Nations are involved, and want to be involved, in renewable energy development in a variety of ways. Some seek to develop large-scale projects that will deliver substantial revenue benefits; others are primarily focused on self-sufficiency and or energy independence, and are open to smaller-scale technologies that offer maximum community control and benefit. Some Nations have extensive experience in the industry, while others are not sure how to get started. There is no "one size fits all" policy option to support First Nations' involvement in renewable energy generation.

This challenge, however, has a silver lining: there are many opportunities for policy approaches that will facilitate First Nations' ambitions. The key barriers of a lack of opportunities, financing and community readiness can be tackled at a variety of scales, and as the technologies mature, options for community involvement should also increase. The benefits of commercial scale projects, however, cannot be understated. They provide a sustainable source of revenue to communities where economic opportunities that do not deplete resources and damage the environment are limited. There is strong momentum from First Nations to build on this potential, and clear benefits both to their communities and beyond if this momentum can be met with an effective and supportive policy framework.

BC First Nations and Clean Energy Sector: Opportunities and Challenges



Prepared by Kekinusuqs, Judith Sayers Final April 21, 2017 for the BC First Nations Clean Energy Working Group

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BC First Nations and Clean Energy Sector: Opportunities and Challenges

1. Introduction: *Background for First Nations in Clean Energy Industry*

The BC First Nations Clean Energy Working Group (BCFNCEWG) is an informal group of First Nations who are involved in the Clean Energy industry in BC that work together on common issues. The group in the past has worked with BC Hydro on various policy issues and obtained funding from BC and BC Hydro to develop a clean energy toolkit.

Clean Energy BC has entered into an MOU with First Nations and the First Nations Energy and Mining Council to work together and help achieve First Nations objectives and opportunities in the clean energy sector.

Many First Nations in the province have embraced the clean energy industry because it represents a viable industry that is within the values of the First Nations. It also brings many benefits to the communities that are shared by all members.

BCFNCEWG has engaged in research that will help document First Nations involvement in Clean Energy in the Province and the results will be part of this paper. Governments need to understand how important this industry is and has been to First Nations and make greater efforts to facilitate greater opportunities.

The *BC Clean Energy Act* sets out that the Government of BC is 'to foster the development of First Nation communities through the use and development of clean and renewable resources.' The Act also establishes the Clean Energy Business Fund that provides money for development of projects and shares revenue from projects. Such a fund encourages the development of clean energy in First Nations communities. The BC Government has distributed $8.2 million to 110 First Nations up to January 6, 2017 for various aspects of clean energy development that encourages development of clean energy. Their restricting of opportunities to create clean energy that will be expanded upon in the next section, runs contrary to the purposes of this fund.

Additionally BC First Nations and organizations have been involved in capacity building in the Clean Energy Industry. They have built clean energy projects, been engaged in project development, trained powerhouse operators, developed a toolkit, built key partnerships and several financial funds were established specifically for providing equity for projects. Understanding what capacities still need to be developed and accomplished will also help guide the efforts and direction of First Nations.

The Federal Government has been supportive in helping First Nations develop clean Energy. Recently a clean energy initiative fund was established that is being

administered by the New Relationship Trust that will help First Nations develop projects, build capacity and address Demand Side Management (DSM).

2. Current Situation For Developing Clean Energy in BC.

Currently, the opportunity to create Clean Energy in the province is very limited. BC and BC Hydro decided in 2014 to develop Site C, a 1100MW mega dam in North Eastern BC scheduled to have its power on the grid by 2024. Unless there in an increase in the need for power in the province, BC Hydro does not see a need for Independent Power Producers (IPP's) to produce more electricity as there will be too much energy available with Site C in 2024.

When the decision to go ahead with Site C was made, BC Hydro modified the Integrated Resource plan (IRP) that sets out where power will come from in the next 20 years. A Draft IRP was circulated that did not give any opportunity to Independent Power Producers for the next 20 years. First Nations and Clean Energy BC undertook a lobby with government to add in an opportunity for clean energy. This lobby was a success and the government added in Chapter 8 that allowed for producing 150GWh/45 MW of energy per year under the Standing Offer Program (SOP).

This year, as BC Hydro is undergoing a Rates Review Application to the BC Utilities Corporation (BCUC), they have to make cuts from their budget. They determined that they would cut $65 million from the Standing Offer Program from 2020-2024. What this boils down to is that for those 5 years, they may be cutting the opportunity to IPP's by two thirds. We know there will be cuts to the volume and price of energy and/or both but this is uncertain at this time. There is no indication from BC Hydro on what will happen after 2024 with the SOP. This creates great uncertainty to First Nations wanting to pursue clean energy projects. It should also be noted that BC and BC Hydro did not consult with First Nations on this cut to the SOP.

The Standing Offer Program has encouraged the development of clean energy throughout BC and represents a significant investment by First Nations into the BC Economy. It provides valuable income and jobs in First Nations communities plus many other benefits. The limitation of this program has serious economic impacts on First Nations.

3. What is the extent of involvement of First Nations in the Clean Energy Industry in BC?

i) BC First Nations Clean Energy Survey:

In order to strategize for First Nations in BC in the clean energy sector, it is good to

have a good understanding of the extent of the involvement of First Nations in the industry itself. First Nations in British Columbia have been active participants in the renewable energy sector since the early 2000's. Very little research has been conducted to assess the scope and implications of First Nations involvement. The BC First Nations Clean Energy Working Group (FNCEWG), in partnership with researchers at the School of Environmental Studies at the University of Victoria, and Clean Energy BC undertook a province-wide survey to find out what First Nation involvement is. The survey asked First Nations if they were involved in the industry and if so, how. First Nations were asked how they wished to be involved, what barriers and opportunities they had encountered, and how their capacity was affecting and being affected by involvement in the industry.

Responses were collected between October 2016 and February 2017. In total, **102 First Nations and 3 First Nations Tribal Councils** completed the survey from out of the 203 First Nations in the province (52%) that contact was initiated.

The survey results identify the information gathered from these 105 First Nations. This is not a complete picture of all the First Nations in the province as there are First Nations who are involved in the industry who did not complete the survey. For a survey, this is a useful result and is a good sample size to answer some of the questions needing to be answered and gives a clear picture of how First Nations are involved in clean energy.

ii) According to the Survey: How involved are First Nations in BC in the Clean Energy Sector?

47% of the 105 First Nations surveyed are involved in the clean energy industry in some way from ownership to receiving royalties or have an Impact Benefit Agreement (IBA).

98% or 103 First Nations of those surveyed are involved or interested in being involved in the clean energy industry in BC. This is a very high percentage of First Nations who find the industry valuable enough to participate or want to participate in some way in the industry. First Nations have been telling the BC government how important the clean energy industry is to them and now have the facts to back that up.

- 30 First Nations have 78 projects that are operational. 65 of these projects

are grid connected. 16 non-grid connected.

- These 78 operational projects are different types of clean energy as follows:

  61% run of river
  17% Solar PW
  10% Geothermal
  9% Wind
  2% Thermal

First Nations are interested in many types of clean energy depending on the resources in their territories. The largest type of clean energy is run of the river projects reflecting the abundance of waterways in First Nations territories. The survey noted that First Nations developed these projects 100% in their territories.

- Existing projects have a total capacity of 1,836 MW ranging from large hydro to micro Hydro under 100 kW.

Independent Power Producers provide 14% of BC Hydro's energy supply or 4567 MW. First Nations are involved in almost half of that supply (40%). This is a significant part of the independent power producers in BC. It also illustrates how many First Nations have partnerships with First Nations. The survey had 48 First Nation identify partnerships in their projects.

- The 65 projects that are connected to the provincial energy grid have been selling power to BC Hydro under different programs:

  42 projects under BC Hydro Call for Power
  7 projects under Standing Offer Program (under 15MW)
  4 projects under Net Metering Program

The last power call was in 2008 so many of the projects were accepted either before 2008 or in the 2008 call. Since 2008, BC Hydro has only been accepting power under the Standing Offer (under 15 MW) or the Net Metering Program and opportunities to sell power to BC Hydro have been reduced significantly since that time.

- 32 First Nations with projects in Development (meaning beyond pre-

feasibility or preplanning) 15 are currently under construction and represent all sources

12 Solar PV projects
12 Small Hydro projects
8 biomass projects
8 Wind projects
4 Large Hydro projects
2 Solar Thermal projects
1 geothermal project
1 micro hydro project

- Respondents to the survey identified 249 projects that are under consideration. This includes projects that are in pre-feasibility stage and those that are stalled for a myriad of reasons. This number alone shows the demand for opportunities to sell power to the grid by First Nations and the lost opportunity to develop clean energy projects.

- The 249 projects were across the spectrum of Solar PV (64), small Hydro (56), geothermal (33), wind (29), Biomass (19) Micro Hydro (19), large hydro (14), Solar Thermal (13), Ocean (2).

With 32 First Nations actively developing projects with 15 of those in construction, 78 projects in operation and 249 projects that First Nations have under consideration, no one can doubt that clean energy is a significant industry to First Nations in BC. These numbers show the level of interest and commitment of First Nations to being a part of the clean energy sector. Even with the lack of opportunity First Nations have to sell the power to BC Hydro, First Nations are still pursuing projects with the hopes of possibly selling power to BC Hydro or making their communities grid independent to ensure they are using energy that is clean, or getting off of diesel. The interest is high and many First Nations are looking for alternatives to create energy themselves.

The BC Government was very aware of how much interest there is by First Nations governments and still made the decision to proceed with Site C knowing they would be stopping development of projects that sold electricity to the grid and great economic development opportunities for First Nations. The BC government as is noted later were the ones to encourage development of clean/renewable power

through the Clean Energy Act and the BC First Nations Clean Energy Business fund.

iii) How much money have First Nations invested in their Operating Projects?

- 17 projects have spent under $100,000
- 7 projects have spent under $250,000
- 16 projects have spent under $1,000,000
- 16 spent over $1,000,000
- Total approximate investment $35,450,000[1]

iv) How Many Jobs have been created?

During Construction:

- 10 projects had 1-5 jobs
- 1 projects had 5-10 jobs
- 3 projects had 11-19 jobs
- 21 projects had more than 20 jobs

During Operations

- 25 projects had 1-5 jobs created
- 3 projects had 6-10 jobs created
- 3 projects had 11-19 jobs created
- 1 project had over 20 jobs created

Creating jobs in First Nations communities is an important part of why First Nations get involved in economic development. Whether it is one job or more, it is an important job in a First Nation community that reduces unemployment. Using the lowest and number of job times the amount of First Nations means the range of jobs created is 96-212.

v) What kinds of benefits have First Nations enjoyed from projects?

The question was asked what benefits did the First Nations receive from projects

[1] 17X100,000+7X$250,000+ 16X$1,000,000 + 16X$1,000,000 = $35,450,000

whether it was their own project or in partnership. First Nations were specifically asked about equity, training and employment and royalties and were encouraged to add others that were not listed.

- 28 operational projects participated in equity
- 19 First Nations will have their equity increased over time.
- 39 operational projects had training and employment
- 42 operational projects had royalties
- 3 respondents preferred not to say what benefits they receive
- Other had scholarships, power for the community, reducing operating costs for power and fishing monitoring
- 45 operational projects have IBA's

vi) Barriers to First Nations being involved in Clean Energy.

68% of First Nation respondents indicated they are experiencing substantial barriers to entry and expansion in renewable energy development. The barriers to First Nation not developing projects are as follows

- No opportunity to sell power to BC Hydro grid (61% of responses)
- Lack of community readiness (59% of responses)
- Difficulty securing soft costs (57% of responses)
- Difficulty securing equity (47% of responses)
- Difficulty securing long term financing (44% of responses)
- Inability to secure a suitable partner (27% of responses)
- Environmental concerns (20% of responses)
- Difficulty securing permits (17% of responses)

The biggest barrier identified by First Nations is the lack of opportunity to sell power to BC Hydro to place on the grid. This is very frustrating for First Nations how have taken years or considerable amount of time to get a project ready for application and consideration by BC Hydro and now being told there is no opportunity.

From the list of barriers it is clear that Capacity Building is still needed in some First Nations Communities. First Nations have been working on capacity building over the years in order for them to more full participate in the development of clean energy projects and 88% or 92 First Nations respondent in the survey want to build

more capacity. This provides information as to what sorts of training and capacity building needs to be the focus in the near future. The areas identified for more capacity building include:

- 79% Planning projects
- 79% Operations
- 76% Community Energy Planning. 25 First Nations have done their CEP or 24%
- 63% Project Management including permitting
- 53% Board member training

Also work needs to be done on finding more sources for funding for soft costs, equity and capital for First Nations projects. There was efforts made for instance in equity funds. The New Relationship Trust, ANTCO and the Nuu-chah-nulth Economic Development Corporation put together an equity fund and due to lack of applications discontinued the fund. This was not because of lack of First Nation interest, but is a reflection on the lack of opportunity to secure long term electricity purchase agreements with BC Hydro.

vii) What have First Nations invested in clean energy projects that cannot proceed because there is no opportunity to develop projects?

- 61% or 38 respondents have spent under $10,000
- 13% or 8 respondents spent under $50,000
- 10% or 6 respondents spent under $100,000
- 7% or 4 respondents spent under $250,000
- 10% or 6 respondents spent over $250,000

Whether a First Nation has spent $10,000 or $250,000, it is a significant amount to invest for most First Nations who are dependent on government funding. It we use the base number times the number of First Nations, First Nations have expended approximately $3, 880,000[2] in projects that likely won't be build because of lack of opportunity. According to the survey, only 14 First Nations received grants to help

[2] 38 X 10,000 + 50,000 X 8 + 6X$100,000 + 4 X 250,000 + 6 X 250,000 = $3, 880,000. This is only a rough average as actual numbers were not requested but gives you a good idea as what First Nations have already spent on looking into projects in BC a. It is probably an under stated number but gives an idea of money expended by BC First Nations

with these costs. First Nations cannot afford to lose money on a project that cannot go ahead because of change in procurement programs at BC Hydro. It is likely the BC government did not do a risk assessment of the investment by First Nations in BC in clean energy and what would be lost to them if Site C was built and there was no opportunity to sell clean energy to the grid.

viii) What kind of investment is being lost in the province because First Nations can't build projects?

When asked in the survey how much more it would cost to build the projects the First Nations would like to build if there was opportunity the following answers were given:

60% or 31 First Nations said it would be less than $25 million
12% or 6 First Nations said it would be under $50 million
6% or 3 First Nations said it would be under $75 million
8% or 4 First Nations said it would under $250 million
15% or 8 First Nations said it would be greater than $250 million.

Not having specific numbers, but using averages, the lost opportunity to BC and First Nations is roughly $3.275 billion.[3] This would be an incredible investment by First Nations and a large boost into the BC economy to the various regions of BC. Remember as well that this represents information from half the First Nations in BC and this would be a greater number. The investment of money is only one part of the loss as there are also other benefits lost including jobs.

ix) Conclusions as to the state of the Clean Energy Industry for First Nations in BC

The survey that 105 First Nations participated in strongly indicated that the clean energy industry is a very important to them. 98% said they were or wanted to be involved in the industry. You cannot get a clearer indication of interest.

The sheer number of projects First Nations are involved in is very large and tells its own story. 78 operating projects, 49 First Nations involved in developing projects and an additional 249 projects that First Nations want to build also confirms the

[3] 31 X 25m + 6 X 50m + 3 X $75 + 4X $250m + 8 X $250,000 = $3,275,000,000

need to find ways for government to continue the development and expansion of this sector for First Nations. The projects that First Nations want to build have a value of approximately $3.4 billion for 105 First Nations in this province.

These 105 First Nations have invested $35,450,000 in their operating projects and almost $4 million of their own money projects that have been stopped for many reasons including the lack of opportunity.

Capacity building is an ongoing concern and efforts must be made to continue to build capacity in all areas of development

The magnitude of this information for First Nations shows the real need to implement the strategies in this paper in order to create the desired and needed opportunities to sell power to the BC Grid and improve the economy of the First Nations communities.

4. Opportunities, Barriers and Strategies for First Nations in the Clean Energy Industry.

4(A) Standing Offer Program (SOP)

Currently, the SOP allows for the development of projects from 100kW to 15 MW for a total of 45 MW per year or 150 GWh per year.

BC Hydro advises "*We are making some changes to our Standing Offer program to ensure the price we pay for electricity reflects the current cost of new clean technologies, which has declined in recent years. All available annual volume for 2019 has been assigned, and the price and volume beyond 2019 are currently under review. We will not assign any additional volume for 2020 and beyond until we determine the future price and annual volume.*

As we establish the new program price and volume, we will continue to receive and review applications. Once applications meet all the key requirements of the Program, applicants will be notified by BC Hydro and their applications will be placed in a priority queue. We will process applications in the order of the queue once the price and annual volume have been set.

Please note, as of the date of this notice, we are processing eight applications for queue positions.

Micro-Standing Offer program projects will continue to be accepted."

Challenges

As a First Nation in BC, if you don't have an approved application in with BC Hydro, there is no opportunity under the Standing Offer Program until after 2019. Even then, BC Hydro is putting people in a queue and if they open up the program again, all volume may already be taken by the queue. So First Nations need to get their applications in so they can be in the queue in case any opportunities open up.

Any proposed projects beyond 2019 are uncertain until BC Hydro determines what volume and price will be available from 2020 and beyond. The uncertainty lies in whether BC Hydro will cut the price or volume or both. There are no known opportunities beyond 2024 as that is when Site C power will become available and there has been no direction set from BC Hydro. BC Hydro has undertaken a study to try and determine what price and volume could be beyond 2020.

The other challenge is the messaging that BC Hydro and the BC Government communicate to the public. Their messaging consists of the following: BC doesn't need any more power, Site C is the cheaper option and independent power producers drive up the price of power. IPP's have been trying to counter these messages with little success despite their prices being comparable.

BC Hydro has also underestimated the cost of developing Site C and runs a huge debt in a special account so the real cost of power is not known to the public.

Options/Strategies

i) First Nations should undertake an intense lobby with the BC Government and BC Hydro to prevent cuts to the SOP so that the program continues as it is now. Also there should be a push to stop the decrease the price as this would make many projects not financially viable.

ii) First Nations continue to lobby for First Nations opportunities to produce clean energy either under bilateral/accommodation/reconciliation agreements that could fall outside the SOP or energy calls.

iii) First Nations can lobby the federal government to provide $65 million to BC Hydro so that the SOP program can continue with a condition that First Nations have a meaningful equity position of every approved project.

4(B) Micro SOP

As part of the SOP program, BC Hydro has developed the Micro Standing Offer Program ("Micro-SOP") to enable small-scale clean energy projects **over 100 kW up to and including 1 MW** (1,000 kW), particularly those developed by First Nations and communities. BC Hydro has tried to streamline the process for a micro SOP project and has simplified the EPA.

Micro SOP is intended for First Nations and communities. First Nations must own a beneficial share of the project and must actively participate in the development, construction, or operation of the Project in a meaningful way. BC Hydro will not consider royalties and other financial benefits a First Nation(s) may expect to receive from a developer as involvement in the project.

Challenges

The challenges for micro SOP is the same as SOP, there is only so 45MW of power per year for both SOP and micro SOP and that allocation has been spoken for until 2019 while the opportunity after 2019 won't be known for some time.

Opportunities

A 1MW project is an affordable size that can be self-financed by many First Nations. (for example a 1 MW solar farm costs between $2M and $3M). Therefore a 1 MW project is large enough to be cost effective, while small enough to be self-financed and owned by the community. Additionally, interconnection under the micro-SOP is much simpler. Certain technologies like solar are not that complex and it can be easily implemented by First Nations. This is a program designed with First Nations in mind and it is important one to keep regardless of the allocation for the SOP. The output of micro SOP is too small to affect BC Hydro system or cost. BC Hydro is still accepting micro SOP applications so a project could proceed in this category.

Once you have done these smaller projects, you have a proven track record of producing renewable power and when the opportunity arises to create more power you can create larger solar, wind, or geothermal power with the confidence needed by investors. You also know the capacity needed for these projects and can continue to build capacity with members.

First Nations such as T'souke, Kanaka Bar, and Lower Nicola have all put in solar panels as rooftop panels on their buildings or as stand-alone. Tsilhqot'in is building a 1 MW solar farm.

Along with putting solar in place, T'souke has trained their members to install solar panels and have gone out into other communities to install solar panels and have made a business of installation.

Options/Strategies

i) Lobby provincial government for a separate, small allocation every year for micro SOP, possibly 10 MW. This allows for opportunities for First Nations.

ii) Lobby that Micro SOP continues regardless of the fate of SOP.

iii) Work with First Nations who have done similar projects and utilize their expertise.

4(C) Net Metering

First Nation's Electrical independence through solar and small wind/Run of River /Geothermal/biomass and the use of net metering

While opportunities to be producing power for the grid have been greatly reduced, First Nations could look to creating clean power for their own community homes, businesses and facilities that makes them independent from the grid.

If the First Nation is on the grid they can make money from the net metering program. The power that is produced by the First Nation up to 100 Kw can be sold to BC Hydro in excess of what is used by the First Nation. Clean Energy for the First Nations itself would include putting in place solar panels, single wind turbines, geothermal or other types of renewable energy.

The cost of solar panels have come down 25% over the past five years and have become more affordable to put in place.

More communities could install solar panels. There are many other unique solar projects across Canada such as Lubicon Lake and Montana First Nations in Alberta.

A few First Nations have put in small geothermal projects such as Skeetchsn, Lil'wat and Squamish to power some of their community buildings. Kitselas and Okanagan Indian band are also working on geothermal in their communities.

Biomass is being installed by Old Masset Village Council, Kwadacha, Lake Babine and Saulteau to name a few.

Lower Nicola Indian Band also installed a single wind turbine to help provide power to their community.

Opportunities:

The BC Hydro net metering program allows for creating electricity of up to 100kW in capacity. As a net metering customer with a smart meter, when you generate more electricity than you use up to the 100kW, you receive a credit to your account

that is applied against your future electricity use. At your anniversary date, if you have an excess generation credit remaining on your account, BC Hydro will pay you at the published rate which currently is 9.99 cents per kWh.

Of course if you are off grid, you don't have to worry about how much renewable energy you create, you can create as much as your community needs.

The costs of purchasing solar panels and wind turbines have come down considerably over the years. For a more remote community, the cost of shipping adds to that cost making the return on investment a bit longer. Installing micro-grids to supply power to the community homes and buildings is also an additional cost.

For some communities, they want to create power for a revenue stream. These smaller projects that provide power to community homes, businesses and facilities may create a small revenue stream on the net metering program if you are on the grid.

The biggest financial advantage to installing renewables specifically for the community is that once the initial investment has been paid off, money that used to pay for diesel or electrical bills can now be used for other more important purposes in the First Nation. It also reduces greenhouse gas emissions if you are replacing power from a non-renewable source. Furthermore, it also makes the First Nation independent from the grid, so if the power goes out, you can still power your home and businesses. The experience you gain in creating smaller clean energy under the net metering program, provides you the opportunity to learn how to build clean energy projects which can be used for larger projects when that opportunity arises.

Options/Strategies

i) Find partners that can help build infrastructure in community if First Nation cannot finance these projects themselves.
ii) Find philanthropic organizations or people who would contribute to installing renewable power especially when it replaces Greenhouse gas emitting generators. People and organizations that are pro climate change and supporting renewable power can be found and pursued for funding.
iii) Access government/organization funding to put in renewable infrastructure in the community, especially in remote communities.
iv) Work with First Nations that have put renewable projects in their communities to seek their advice and direction.

4(D) Feasibility studies for building a transmission line-business.

BC Hydro is capital limited as they are building Site C and expanding some current dams. While existing transmission lines may be in need of replacement, BC Hydro may not have it within their financial priorities to replace or expand their existing transmission lines. Also, there are areas in BC where BC Hydro has no intention at this time to build transmission lines at this time. Most likely these are areas where your First Nation needs to get power to. You could build a business case to build your own transmission lines. Additionally, some First Nations are subject to very unreliable power into their communities and cannot engage in economic development based on intermittent power. They need upgrades to existing transmission lines to ensure reliable power.

In 2012 the Conference Board of Canada estimated that C$35.8 billion will be invested in transmission in Canada by 2030.

Challenges

Transmission lines are not especially profitable and are capital intensive in their upkeep through storms and other natural events. You would need to conduct a thorough feasibility study done on the transmission lines merits and viability. When upgrading lines into communities, First Nations would have to work closely with BC Hydro and the Federal government to get the financial means to do so.

The challenges for transmission renewal and expansion of the Transmission grid are (i) Fragmented Planning Processes (ii) Regulatory and Permitting Hurdles (iii) The Need for Public Permission (iv) Who Pays? These are national issues that First Nations need to find where they can play a part. International and interprovincial connections are an important part of this.

Opportunities

Finding partners that can help build infrastructure. There could be other potential partners to build a transmission line for other developments. In Ontario a collective of 16 First Nations got together and formed a company to build transmission lines into their communities. Wataynikaneyap Power Ltd. is a 100 percent First Nations owned and operated company, with revenue from the transmission line going back to the communities that are part owners of the company.

The Federal Government is putting a lot of money into infrastructure and may be a potential source of funding. First Nations need to lobby for funds to do upgrades to transmission lines in their communities for reliable power.

Options/Strategies

i) Interested First Nation undertake feasibility studies on transmission lines

ii) Work with other interested First Nations in the region.
iii) Map out strategy on putting together the business-economic/political case for development-from larger grids to micro grids

4(E) Bilateral agreements with the Province

The IRP says that 'working with the B.C. Government, BC Hydro will enter into cost-effective bilateral procurements, benchmarked to competitive processes, where those procurements further the *Clean Energy Act (CEA)* British Columbia energy objectives. The IRP cites the example of its agreement with AltaGas to provide $180 million to the Northwest Transmission Line (NTL) for its EPAs for Forrest Kerr, McLymont and Volcano power projects. As part of accommodation agreements, the Province has entered into bilateral agreement with Upper Nicola and the Okanagan First Nations for 15 MW wind and solar. There are other bilateral agreement that are being negotiated as well.

Currently the BC Government is entering into one off agreements to some First Nations to build clean energy projects. These project fall outside any of BC Hydro existing programs. While the Ministers of Energy and MARR and the CEO of BC Hydro don't engage in conversations about these bilateral agreements, they do exist and are being negotiated with various First Nations. Your First Nation could pursue a bilateral agreement with the BC government in the form of a Reconciliation Agreement/Act, an accommodation agreement or a community and economic development agreement.

Challenges

There are no existing policies or guidelines on how to get a bilateral agreement with the province of BC. It is also unknown as to how the province chooses to enter into an agreement with a First Nation. Are they wanting development in certain areas and are giving these agreement in exchange? Is it to get a treaty or other agreement with the First Nation? No one really knows how you can get such an agreement to achieve that political willingness to offer you one so you have to use your own strategies with the province to get one.

Opportunities

If your First Nation can lobby/negotiate/pressure the BC Government for a bilateral agreement to develop clean energy in our territory without going through the Standing Offer Program or a power call, you have a very good opportunity to create clean power and should take full advantage of such an opportunity as not every First Nation in the province has such an advantage.

Options/Strategies

1. Lobby/negotiate/pressure the BC Government for a bilateral agreement through accommodation, reconciliation or other agreements to create an opportunity to generate power outside existing BC Hydro agreements.

2. First Nations work with BC Government to determine what the guidelines are for bilateral agreements.

4(F) BC Hydro Power Call

When the Integrated Resource Plan (IRP) was made available in November 2013 it did not have any planned Calls for Power from the Independent Power Producer sector. The next IRP will be in 2018 and will define whether there will be any Power Calls for 2018-2038. There are no planned calls for power in the foreseeable future unless there is a large increase in demand for power.

BC Hydro has been talking about a clean capacity call in the near future. Clean capacity has had many definitions attributed to it including it needing to be firm power that doesn't depend on the spring freshet. There has been no timeline established for when such a call could occur.

Challenges:

When First Nations are planning clean energy projects that are over 15 MW, they have no certainty as to when there may an opportunity to sell the power to the grid. This makes it difficult to determine when the First Nation should expend money and effort in doing the preliminary work/studies/feasibility for a possible project.

The challenge with the clean capacity call is having First Nations involved in helping to define what clean capacity is and the role of First Nations in the call. Possibly negotiating preferential treatment for a First Nations project with a First Nation prices.

Opportunities

Within the BC Hydro IRP there are no opportunities for a Power Call for larger projects for the next 20 years unless there is an increase in the demand for power in BC. Uncertainty around if and when this will happen makes this a very improbable opportunity. The only possible opportunity may be that clean capacity call.

Working with BC Hydro to define a clean capacity call would ensure First Nation input into such a call.

Options/Strategies

1. Work with BC Hydro to develop clean capacity call
2. Continue to work with BC Hydro in IRP's and creating opportunities to create clean energy.

4(G) Buy a project or Provide services to an Existing project

Buy an existing projects within the territory/Electricity Purchase Agreement (EPA) Renewals or provide services that will include the operations of an existing facility.

First Nations may have opportunity to buy an existing project within their territory. They could approach existing developers to find out if they are interested in selling to them. Some developers are trying to sell their projects because of what BC Hydro is offering on the rate on renewals has little or no profit.

For First Nations who have renewals of their EPA's coming up in the next few years, it would be important to keep yourselves informed on what is happening.

The IRP said that BC Hydro has assumed that about 50 per cent of the bioenergy EPAs will be renewed; about 75 per cent of the run-of-river EPAs that are up for renewal in the next five years will be renewed; and that all other EPAs will be renewed. Informally, the BC Government has stated that they would like to see all EPAs renewed. With that said, there are some projects that might not get a renewal on their EPA and it would be important to ensure any projects being bought or coming up for renewal would be renewed.

First Nations need to lobby the provincial government/BC Hydro to ensure there rates offered in a renewal provide an adequate profit margin.

Many clean energy projects are remote and companies may not want to move an employee to the remote area. A First Nation could train their members to be operators or a plant and provide that service for them. Saulteau First Nation provides such services to a couple of wind farms in their territory.

Challenges

If a project is coming up for renewal in the next few years First Nations must be very cautious about what BC Hydro will offer to purchase power on the renewal. Discussions/negotiations will have to take place with BC Hydro to get a firm price before purchasing the project. Current negotiations for EPA renewable have not been favourable. While the negotiations are under non-disclosure agreements, the information available is that it is a very, very limited offer.

In the IRP BC Hydro "plans to renew expiring EPAs at cost-effective prices for clean or renewable IPP projects currently in operation and with contracts set to expire in coming years. As described in section 4.2.5.1, in its EPA renewal negotiations, BC

Hydro will consider the seller's opportunity cost, the electricity spot market, the cost of service for the seller's plant, and other factors such as the attributes of the energy produced and other non-energy benefits."

Finding training for members to operate plants may be a challenge for members who don't want to leave their communities for training. Working with Colleges in the territory may be an option to increase this capacity.

Options/Strategies

i) Speak with each of the companies in the territory that have a clean energy project to determine if they would like to sell.
ii) Purchase a project that has a lot of years left on EPA or work with BC Hydro to procure a good price for power in a renewal of an EPA. BC Hydro may be more favourable in a good rate for an EPA renewal for a First Nation but there is no guarantee of that.
iii) Negotiate with companies in First Nation territory for an operations contract

4(H) Upgrades to existing BC Hydro facilities

BC Hydro is upgrading a few of their existing facilities. Some of these upgrades include increasing the capacity of the project. For example, Mica, Revelstoke and John Hart Dams have all undergone upgrades in the past two years.

While this should open up an opportunity to First Nations to become involved in an existing BC Hydro facility within their territories, existing BC Policies do not allow for partnerships with BC Hydro.

BC Hydro has only entered into compensation agreements for existing facilities for Tsay Keh Dene, Kwadacha, St'at'imc. There are many dams that First Nations would like to enter into compensation agreements before any upgrades are done.

Challenges

BC Hydro does not have a mandate from BC Government to partner with anyone. Therefore when they do expansions or upgrades of existing facilities like John Hart of Mica or build new facilities like Site C, they cannot partner with First Nations whose territories are impacted by such facilities. There is also no mandate to revenue share on heritage assets or new ones.

BC Hydro and the BC Government are not motivated into entering into negotiations with First Nations for compensation for damages done to their rights and territories from existing facilities.

Options/Strategies

i) BC First Nations must lobby the provincial government to change their mandate and allow BC Hydro to develop projects jointly with First Nation. As an example, Manitoba Hydro is building two large dams with First Nations.

ii) BC First Nations must lobby BC government to enter into negotiations for historic grievances related to existing BC Hydro facilities.

iii) First Nations must also lobby to allow for revenue sharing from existing and new facilities. The Clean Energy Act does not allow for revenue sharing from Heritage Assets or from Site C. First Nations may get some revenue sharing from the Clean Energy Fund for new independent power projects.

4(I) Climate Change Plan

On October 31, 2015, The BC Climate Leadership Team released its 32 Recommendations to the BC Government. It took the BC government until August 16, 2016 to respond to this and did not adopt all of their recommendations but they did address 21 of them in some form.

Had the BC government adopted all the recommendations, they would have increased electrification within BC and would not have found it necessary to limit Independent Power Producers as they are doing now.

Challenges

BC Government has put in place its Climate Plan. It has ground itself into its positions that they won't increase the carbon tax until other provinces catch up to it ignoring the recommendations that BC increase the tax and continue to be a world leader on this front. They have made this position clear to the Federal Government a well. Changing the Climate plan will not be easy.

Opportunities

BC First Nations must get organized and lobby the provincial government to change its Climate Leadership Plan dated August 2016. As First Nations are on the forefront of climate change and are feeling its impacts now, action must be taken immediately. Pushing more electrification for the province using renewables is an essential part of that and decreasing green house gas emissions. There are many cities, environmental groups and concerned citizens that are very concerned about the lack of progress in the BC Climate Leadership Plan and First Nations would find many allies in moving such an agenda forward. First Nations need to strategize on what they would want in the Climate Leadership Plan inclusive of a role in

developing clean energy.

One way to increase electrification would be to increase electric cars which would require the support of strategic investment in electric vehicle (EV) infrastructure. It would also be necessary to work with federal government to support activity at the subnational level to electrify. As well as support federal government to enter into a North American Electric Auto Pact that would support infrastructure throughout North America for transportation corridors. First Nations would need to work with each other to ensure the infrastructure of sustain electric cars was installed along the routes as well. A current example of this is T'souke who has a solar charging station for EV's but more are needed to help electrify cars.

Options/Strategies

1. First Nations must lobby the BC Government to implement all recommendations of the Climate Leadership and work on greater electrification in the province.
2. First Nations must also lobby their own initiatives to help with climate change.
3. First Nations help promote use of electrical cars. This can be done with a lobby both provincially and federally. Getting Canada to enter into the North American Electric Auto Pact to increase infrastructure of electric cars.
4. First Nations will install charging stations for EV's in their reserves and work on a corridor to the main cities.

4(J) Spin off business for shut down/clean up of existing facilities.

As some independent power projects are shutting down and some facilities are requiring clean up, First Nations could form businesses that could specialize in the proper processes of shutting down and cleaning up in facilities.

Challenges

There aren't many projects that are shutting down, but could be done in conjunction with other environmental restoration and rehabilitation projects or clean up companies. Travel to some of these locations may be a distance from the First Nation community and some opportunities to do so may not be economically feasible.

Opportunities

First Nations can take advantage of facilities that shut down in their territories or that need clean ups of any kind be it environmental or other. Getting organized and training people to do clean ups of all kinds is a way of managing the territory and maintaining the stewardship on the land.

Options/Strategies

i) Train members to do environmental clean ups and create a niche market for these kinds of opportunities**.**
ii) Market your business so that companies will come to you to do this kind of work**.**

5. Remote Communities

There are 25 First Nations that are remote/off-grid communities in BC. Remote and off grid communities have the greatest opportunity to create clean energy in order to get off diesel. The greatest problem with using diesel to create energy is the green house gases that it creates. Other problems are the high cost of diesel, the cost of transporting the diesel to the remote community and the risk associated with spilling diesel either in transport or at the location.

Micro-grids are in place to deliver diesel-generated energy to homes and businesses in the community. The problem for some communities is that they have reached their load restriction and cannot add any more generation for new homes and businesses. Energy storage is also necessary to look at and develop.

Some First Nations communities have been able to take advantage of diesel generator efficiency programs, use of modular diesel generator units and battery storage which has helped to an extent but the overall issue off getting totally off diesel totally is still very important.

Challenges:

Some First Nations communities would like to produce power to the grid to create revenues for their communities. Government programs do not allow for an economic component to providing power to First Nations communities and discourage First Nations from creating clean energy beyond their needs.

There has been a lack of government programs in assisting off grid communities. For example, BC Hydro no longer has a remote community program though they do continue to work with off grid First Nations.

Renewable energy projects like solar and wind have a large initial output of finances at the installation but the payback over years is substantial in terms of money and reducing greenhouse gases. However, transporting infrastructure for clean energy to remote communities adds a large cost onto developing various projects.

Options/Strategies

i) Do feasibility studies for extension of transmission lines from BC Hydro grid to community.
ii) Use feasibility study to determine if there is a business opportunity for the First Nation or a collection of First Nations as they are doing in Northern Ontario.
iii) Do feasibility studies for extension of micro-grid in the community to take on the extra load.
iv) Determine ways to decrease use of electricity through Demand Side Management.
v) Do feasibility studies on the use of clean energy and determine if the deployment costs have gone down enough to make it economically feasible.
vi) Find partners that would be willing to work with the First Nations to put in place renewable energy in their communities. The opportunity to create clean energy for remote communities has increased as other opportunities in the province have decreased.
vii) Work with First Nations who have expertise in the various areas such as solar, run of the river, wind, geothermal and biomass.
viii) Work with Federal and provincial governments on renewal and expanding transmission line on regulatory improvements, financing, and better community relations.
ix) Lobby governments to change their funding for remote communities to include an economic component where feasible.

6. Further Capacity Building

First Nations have been working on their own capacity building in clean energy over the past 16 plus years. First Nations have become their own developers of projects or have a major role in projects with their partners. Capacity varies from First Nations who have not built a project but want to, to First Nations who have built several projects. First Nations can also make use of the BC First Nations Clean Energy Toolkit to help them develop projects. Funding soft costs, equity and long term financing continue to be a challenge as the demand on existing program is very competitive.

Challenges

As the opportunity to create clean energy is greatly reduced in the province, less money is available to do the required capacity building. For remote communities, finding the political will to help build capacity within the community does not exist or is very limited.

Options/Strategies

i) Work with various funding agencies to ensure there is money to do Community Energy Plans (CEP) for those communities that have not done one.
ii) Work with training agencies, colleges, etc to do energy related training programs for communities and community related training for energy developers
iii) Develop or implement common monitoring platform for implemented energy projects and track savings.
iv) Increase resources for Band Technical Service offices to serve as knowledge/implementation hubs for energy related projects, reducing project deployment costs.
v) Make use of First Nations Clean Energy Toolkit. Possibly hold regional sessions to take First Nations through the toolkit so they know helpful it can be. Also, update toolkit periodically.
vi) Develop curriculum/presentations for member's education on clean energy types, impacts, and profitability.
vii) Training on grant writing and working with agencies that give out money to streamline application process and accounting.
viii) Find ways within communities to work on the Demand Side management to reduce use of power.
ix) Continue to work with Financial Institutions

7. First Nations Need for Organization

7(A) First Nations Organized Political Lobby and Office

As Governments are always changing policies and laws that impact directly on First Nations, First Nations need to do an organized lobby. Oftentimes, a few First Nations will go and lobby the provincial or Federal governments to change a policy or law or to implement a new policy or law. It would be so much more effective if all the First Nations in the province could coordinate their efforts, or have one coordinating person who could set up meetings with appropriate government Ministers, Deputy Ministers, Assistant Deputy Ministers and other officials. As the Federal Government has been helpful in renewable energy, further lobbies to have them work with the province and put in place other funding opportunities would also be key areas to focus on.

Challenges:

Currently, First Nations in the province do not have a formal structure to work together. Information is sent out to a list that has been compiled of interested First Nations and conference calls organized when necessary. First Nations in the

province do not have the financial capacity to establish an office to carry out the necessary work. There is no funding available to put a formal structure in place.

Opportunities

First Nations could seek funding from governments or other private sources to establish an office where a coordinator could be hired that would set up meetings for lobbying, ensure there are enough First Nations available for meeting, and acquire a mandate of a position from all First Nations in clean energy. The office would coordinate the efforts of First Nations and start with implementing this strategy. The office could be a repository for information on what First Nations are involved in clean energy and any information on studies, etc., that First Nations are willing to share. Also setting up communications with all First Nations on issues that affect them or funding opportunities on clean energy.

Or one First Nation could offer up a staff person who can do the work outlined above.

Or continue in the informal way that is being done now. This is ad hoc at best and at times there can be no response from many First Nations. This ad hoc method has not been very effective but could continue until a formal organization can be formed.

Options/Strategies

i) Find ways to set up a central office to coordinate efforts of First Nations in province or continue in the ad hoc way things have been working.
ii) Mandate office and have Terms of Reference for working together.

7B) Strategies for First Nations in BC

First Nations need to set out strategies on how to create more opportunities in clean energy, how to work together, how to build capacity, how to find more funding opportunities and how to respond to political issues that arise. This paper can be the beginning of those strategies and built upon as conditions change. First Nations also need to have a social media strategy where key messages are sent out to increase awareness of clean energy, and the need to increase the opportunity for First Nations in Clean Energy as well as other important messages.

Challenges

One challenge would be the logistics faced in organizing First Nations to come together to work on this. One option involves setting up a central office with regular meetings of First Nations (minimum one per year) to establish strategies for issues

facing them that will include capacity building, increasing funding opportunities, and creating more opportunities to develop clean energy projects in their territories. First Nations would need to secure funding to bring First Nations together to have meetings or organize them in conjunction with other meetings. The CEBC Generate conferences can be used for one meeting annually including the First Nations One Day Course but more meetings are needed.

Another challenge would be how to organize First Nations to come up with key messages on a regular basis. This could be done at regular meetings if they are happening, or have one person take the lead to create key messages and circulate to First Nations on the email list and have them add input. Then this would require organizing how those key messages will be circulated on social media, through letters to governments and at meetings.

The biggest challenge is to determine how to structure working together, how it would work, how it would be funded, and if not funded, how tasks/strategies can be assigned to First Nations with date specific completion times. This would be especially important if there is no central office set up.

Options/Strategies

i) Hold an organizing meeting to bring First Nations across the province involved in clean energy to determine how First Nations can work together, if there will be a formal or informal structure and how strategies can be created, implemented and carried out.
ii) Hold an annual meeting to set up strategies on increasing the opportunity to create clean energy and look at ways to remove barriers.
iii) First Nations collectively put together key messages that can be sent out. Then each of the First Nations use their twitter, Facebook and Linked in pages to send out these messages. When an issue is important, an increased number of key messages would be sent out regarding that particular issue.
iv) If a coordinating office is set up, a communication strategy would be put together with key messages. The office would ensure that key messages are sent out regularly and increased when needed. Coordinating office would work with First Nations to help send out the key messages.
v) Ensure that any strategy, office, or task is supported and carried out.

8. Get Involved in Technological developments for Clean Energy including research and testing.

Innovation is important in any industry. Finding new ways to create clean/renewable energy is critical for the industry and there have been many

technological advances in clean energy and the cost of wind turbines and solar panels have come down due to these developments. First Nations could be on the leading edge of new technology by involving themselves in research. Or First Nations could find reputable technology companies to partner with where members could help create, test and launch new innovations.

Challenges

Currently, policies in BC for testing out new technology requires that a new technology be used for 3 years in one jurisdiction before it can be used in BC to sell power to the grid. You could do testing of the technology in BC without connecting to the grid.

The lack of procurement for more power in BC is a huge disincentive to creating new innovations in clean energy.

Options/Strategies

i) Research innovations in clean energy
ii) Research companies that are testing out new innovation in clean energy and look for partnerships
iii) Develop a research company or partner with one.
iv) Find ways to test out new innovations in clean energy.
v) Work on Developing the Electric Vehicle (EV's) industry

9. Relationship Building

First Nations must continue to build relationships with the BC Government, BC Hydro, the Federal Government, Clean Energy BC and other relevant organizations.

Regular meetings that will look at opportunities, challenges and barriers and how that can changed will be part of those meetings. With Clean Energy BC it will be how they can work more effectively with one another.

Challenges

The BC Government and BC Hydro have already made decisions without consulting First Nations that have decreased the opportunity to create more clean energy. These decisions were made that were contrary to the Clean Energy Act and promises to First Nations in the New Relationship and other guidance documents.

Options/Strategies

i) BC Government: Set up regular dialogue sessions with MEM to discuss

greater opportunities for First Nations in renewable energy and other relevant Issues.

ii) **BC Hydro:** Re-establish working sessions on important issues

iii) **Federal Government:** Set up regular dialogue sessions with First Nations and Canadian government departments to work on opportunities in clean energy, financing, training and capacity building opportunities.

iv) **Clean Energy BC:** Regular meeting of the working group to implement the MOU between Clean Energy Be, BC First Nation and the BC First Nations Energy and Mining Council.

10. CONCLUSIONS

There are many challenges facing First Nation within the Clean Energy Industry in British Columbia. Many of those challenges involve the BC Government and BC Hydro priorities and mandates, and the lack of opportunities to create clean energy and how current unfavourable situations can become more favourable to First Nations.

Uncertainty of the demand for power in BC, the impact of Site C power coming on line in 2024, the continued electrification of the province, the technology and innovations and how they can be utilized are all factors that play a role in the future of First Nations developing clean energy project.

What is very clear is that First Nations need to get organized and work together either formally or informally to help address barriers and challenges. Lobbying the federal and provincial governments to bring about positive changes to help create opportunities for development in planned and proposed projects is key and requires a conjunct effort.

First Nations working together may include developing a provincial First Nations energy utility that includes developing power and their own grid. At the very least First Nations need to insist that any development in their territories have a certain percentage of clean energy use as part of their consultation and accommodation. The percentage would be negotiated through the consultations.

It is very clear that First Nations want to be part of the clean energy industry. It is an industry that reflects the values of First Nations and provides many positive benefits.

Federal, provincial and local governments must work with First Nations in BC to make more opportunities available through financial and other means

APPENDIX A
PROPOSED STRATEGIES/OPTIONS

CATEGORY	OPTION/STRATEGY	WHO?	DATE TO BE DONE
Creating More Opportunity in Clean Energy	1. Lobby government/BC Hydro not to make cuts to SOP and leave as is including keeping the price	All First Nations	
	2. Lobby federal government to provide BC Hydro with $65 for the SOP program-targeted for First Nations.		
	3. Lobby for First Nations opportunities to create clean energy either under bilateral agreements or treaty that would be outside the SOP or energy calls with priority to FN's.	Individual FN	
	4. Work with BC Hydro to develop clean capacity call	Individual FN	
	5. Continue to work with BC Hydro in IRP's and creating opportunities to create clean energy.	Individual FN	
	6. Determine ways to decrease use of electricity through Demand Side Management.		
	7. Do feasibility studies on the use of clean energy and determine if the deployment costs have gone done enough to make it economically feasible for grid and off grid communities	Individual FN	
	8. Find partners that would be		

	willing to work with First Nations to put in place renewable energy in their communities. The opportunity to create clean energy for remote communities has increased as other opportunities in the province have decreased. 9. Work with First Nations who have expertise in the various areas such as solar, run of the river, wind, geothermal and biomass 10. Lobby/pressure/work with Province to offer a bilateral agreement that you can produce power without being under a BC Hydro program. 11. Work with federal and provincial governments to get First Nations off diesel generation or offset diesel generation 12. Help promote and institute electric vehicles, (EV)'s, and installing their necessary infrastructure in transportation corridors First Nations use 13. Provide viable options to switch from one kind of energy source or use to another that decreases GHG in BC. (Objective in Clean Energy Act) 14. Determine feasibility of a provincial BC First Nations Utility Company	Individual FN	

	15. First Nations insist during consultation and accommodation that any developers in their territory have to use a % of clean energy- % to be negotiated.		
Grid Independence through creating clean energy for community and Net Metering	i) First Nations act on their own to get off the grid and become independent by clean energy sources ii) Find partners that can help build clean energy in community iii) Find philanthropic organizations or people who would contribute to installing renewable power especially when it replaces Greenhouse gas emitting generators. People and organizations that are pro climate change and supporting renewable power can be found and pursued for funding. iii) Access government/organization funding to put in renewable infrastructure in the community, especially in remote communities. iv) Work with First Nations that have put renewable projects in their communities to seek their advice and direction.	Individual FN	
Creating more Opportunity in Transmission Lines In Remote Communities	1. Do feasibility studies for expansion of transmission lines from BC Hydro grid to community. 2. Use feasibility study to determine if there is a business opportunity for the First Nation or a collection of First Nations. 3. Do feasibility studies for		

	extension of micro-grid in the community to take on the extra load. 4. Work with BC Hydro to get more reliable power in communities by Transmission Line Upgrades. 5. Energy storage is necessary to look at and develop. 6. Work with Federal and provincial governments on renewal and expanding transmission line on regulatory improvements, financing, and better community relations.		
Purchase existing Facilities with willing Seller. Ensure Renewal of EPAs provide adequate Price	1. Talk with companies who have projects in your territory and offer to buy. 2. Find out when EPA ends-If EPA ends soon talk to BC Hydro about price for power under renewal before purchase.		
Create Spin Off Businesses that can clean up on shut down of facilities or during operations	1. There may be opportunities to clean up a site after a project has been decommission. 2. There may be opportunities to clean up while project is running-could expand environmental clean up services to doing this.		

CATEGORY	OPTION/STRATEGY	WHO?	DATE TO BE DONE
Organization of First Nations-Setting up an	i) Set up a central Office to coordinate BC First Nations efforts in Clean Energy		

Office	ii) Look for funding from governments or other private sources to establish an office iii) Hire a coordinator to run office that would a) set up meetings for lobbying b) ensure there are enough First Nations available for meeting c)acquire a mandate from all First Nations in clean energy d)coordinate efforts of First Nations e) be a repository for information on what First Nations are involved in clean energy and any information on studies, etc. f) Establish communications with all First Nations involved in clean energy on issues that affect them or funding opportunities on clean energy. OR iv) Or One First Nation offers up a staff person who can do the work outlined above. OR v) Continue in the informal way that is being done now with one First Nation calling meetings when required.		
MEETINGS AND MANDATES	i) Hold an organizing meeting to bring First Nations across the province involved in clean energy to determine how First Nations can work	**All First Nations**	

	together, if there will be a formal or informal structure and how strategies can be created, implemented and carried out. Establish mandates for various teams/committees. ***Note: could use Generate 2016 All Day First Nations Course as the organizing meeting* ii) Hold annual meetings to set up strategies on increasing the opportunity to create clean energy and find ways to remove barriers. iii) Ensure that any strategy or task is supported and carried out.		
COMMUNICATIONS AND KEY MESSAGES	iv) Establish a Communications strategy for working with First Nations and external groups to help promote issues v) Collectively establish key messages that can be sent out by main office and First Nations vi) First Nations use their twitter, Facebook and Linked in pages to send out these messages. vii) If a coordinating office is put together, the communication strategy would be implemented. key messages are sent out regularly and increased when needed.		

CATEGORY	OPTION/STRATEGY	WHO?	DATE TO

			BE DONE
Establish Organized Political Lobby On Specific Issues	1. Lobby with the BC Government and BC Hydro to have them not make cuts to the SOP and that the program continues as it is now. There should be a push to not decrease the price as it would make many projects not financially viable 2. Lobby for micro SOP program continues on its own outside SOP program with a certain target of up to 10 MW. 3. Lobby BC Government to changes it's BC Climate Leadership Plan to embrace all 32 Recommendations of the Leadership team and ensure there is increased electrification throughout the province. 4. Lobby governments to change policy that BC Hydro can partner with First Nations in building facilities in their territories. 5. Lobby government to change revenue sharing from Heritage Assets. 6. Lobby Government/BC Hydro to ensure that renewal rates give an adequate profit margin. 16. Lobby federal and provincial governments to come up with programs and money to assist First Nations get off diesel generation or offset diesel generation		

	7. Lobby for loan guarantee program like Ontario and other innovative programs 8. Have a priority in any power call, SOP to projects with First Nations majority ownership 9. Lobby for a First Nations price for projects with a majority or greater of ownership. 10. Lobby to have BC and BC Hydro to negotiate compensation agreements of existing dams so this is not a barrier to moving ahead on other projects.		

CATEGORY	OPTION/STRATEGY	WHO?	DATE TO BE DONE
Capacity Building	I) Work with various funding agencies to ensure there is money to do Community Energy Plans (CEP) for those communities that have not done one. II) Work with training agencies, colleges, etc. to do energy related training programs for communities and community related training for energy developers III) Develop or implement common monitoring platform for implemented energy projects and track savings. IV) Increase resources for Band Technical Service offices to serve as knowledge/implementation hubs for energy related projects, reducing project		

	deployment costs. V) Make use of First Nations Clean Energy Toolkit. Possibly hold regional sessions to take First Nations through the toolkit so they know how to use. VI) Find $ to update toolkit periodically as needed VII) Develop curriculum/presentations for member's education on clean energy types, impacts, and profitability. VIII) Training on grant writing and working with agencies that give out money to streamline application process and accounting. IX) Find ways within communities to work on the Demand Side management to reduce use of power.		

CATEGORY	OPTIONS/STRATEGY	WHO?	DATE TO BE DONE
Building Relationships	**BC Government:** Set up regular dialogue sessions with MEM to discuss greater opportunities for First Nations in renewable energy and other relevant Issues. **BC Hydro:** Re-establish working sessions on important issues **Federal Government:** Set up regular dialogue sessions with First Nations and Canadian government departments to work on opportunities in clean energy, financing, training and capacity building opportunities.		

	Clean Energy BC: Have regular meetings of the working group to implement the MOU between Clean Energy		

CATEGORY	OPTIONS/STRATEGY	WHO?	DATE TO BE DONE
TECHNOLOGY Development	i) Research innovations in clean energy ii) Research companies that are testing out new innovation in clean energy. iii) Develop a research company or partner with one. iv) Test out new innovations in clean energy. v) Work on energy storage vi) Work on new technologies for EV's.	**First Nations**	