

UNIVERSITY OF CALGARY

The Pathway to Clean Energy: A Review of the Implementation of British Columbia Climate
Change Policy and Strategies for Indigenous Communities

by

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Abstract

Climate change policies and strategies that frames the British Columbia (BC) approach to transitioning to a more sustainable future have been widely adopted in the Province of BC since the passing of the Clean Energy Act (CEA). This includes the CleanBC plan that aims to provide a pathway in achieving climate targets, including assisting Indigenous communities in the transition. This research study looks at the Indigenous components of the BC provincial policy and strategies resulting from the CEA. The first part of the project includes a BC policy and strategies literature review to gain an in-depth understanding of existing research and reports. The second and third parts include a data analysis that resulted from a survey completed with Indigenous participants to gather feedback on the CEA and Indigenous targeted initiatives. Based on results gathered, recommendations are multi-layered and encompass further collaboration in policy development, consultation, and improvement in intergovernmental relations.

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Table of Contents

Approval Page.....	i
Abstract.....	ii
Acknowledgments	iii
Table of Contents	iv
List of Figures	vi
List of Abbreviations.....	vii
Chapter 1: Introduction	1
1.1. Research Problem	3
1.2. Research Objectives.....	5
1.3. Sustainability Components	6
Chapter 2: Methodology	7
Chapter 3: Literature Review	11
3.1 Preamble.....	11
3.2 Indigenous People and Clean Energy	12
3.3 Barriers to Implementing Clean Energy Technologies	13
3.4 Traditional Knowledge and Clean Energy	14
3.5 Consultation in Energy Projects with Indigenous Communities.....	14
3.6 Clean Energy Policy Research.....	18
3.7 Indigenous Components of BC Climate Change Policies and Strategies	20

3.8 Indigenous Clean Energy Outlook	34
3.9 United Nations Declaration on the Rights of Indigenous Peoples and CleanBC	36
Chapter 4: Survey Results from Indigenous Communities.....	39
Chapter 5: Recommendations and Conclusion	46
5.1 Recommendations	46
5.2 Conclusion	49
5.3 Limitations and Future Research.....	51
References	53

List of Figures

Figure 1: Map of BC First Nations	1
Figure 2: Outline of research project methodologies	7
Figure 3: Illustration of BC Clean Energy Act Climate Change Programs	21
Figure 4: Outlook of CleanBC climate goals	26
Figure 5: Outline of Remote Community Energy Strategy Programs	28
Figure 6: Approximate location of survey participants	39
Figure 7: Survey question results on perspectives on BC’s climate change policy	40
Figure 8: Survey results on clean energy preferences	43

List of Abbreviations

FNCEBF – First Nations Clean Energy Business Fund

MIRR – Ministry of Indigenous Relations and Reconciliation

CEA – Clean Energy Act

NRT – New Relationship Trust

TK – Traditional knowledge

RERC – Renewable Energy for Remote Communities Program

CEL – Community Energy Leadership Program

RCES – Remote Communities Energy Strategy

FBC – Fraser Basin Council

BCICEI – BC Indigenous Clean Energy Initiative

FNEEBPP – First Nations Energy Efficiency Building Policy Program

WFN – Westbank First Nation

UNDRIP – United Nations Declaration on the Rights of Indigenous Peoples

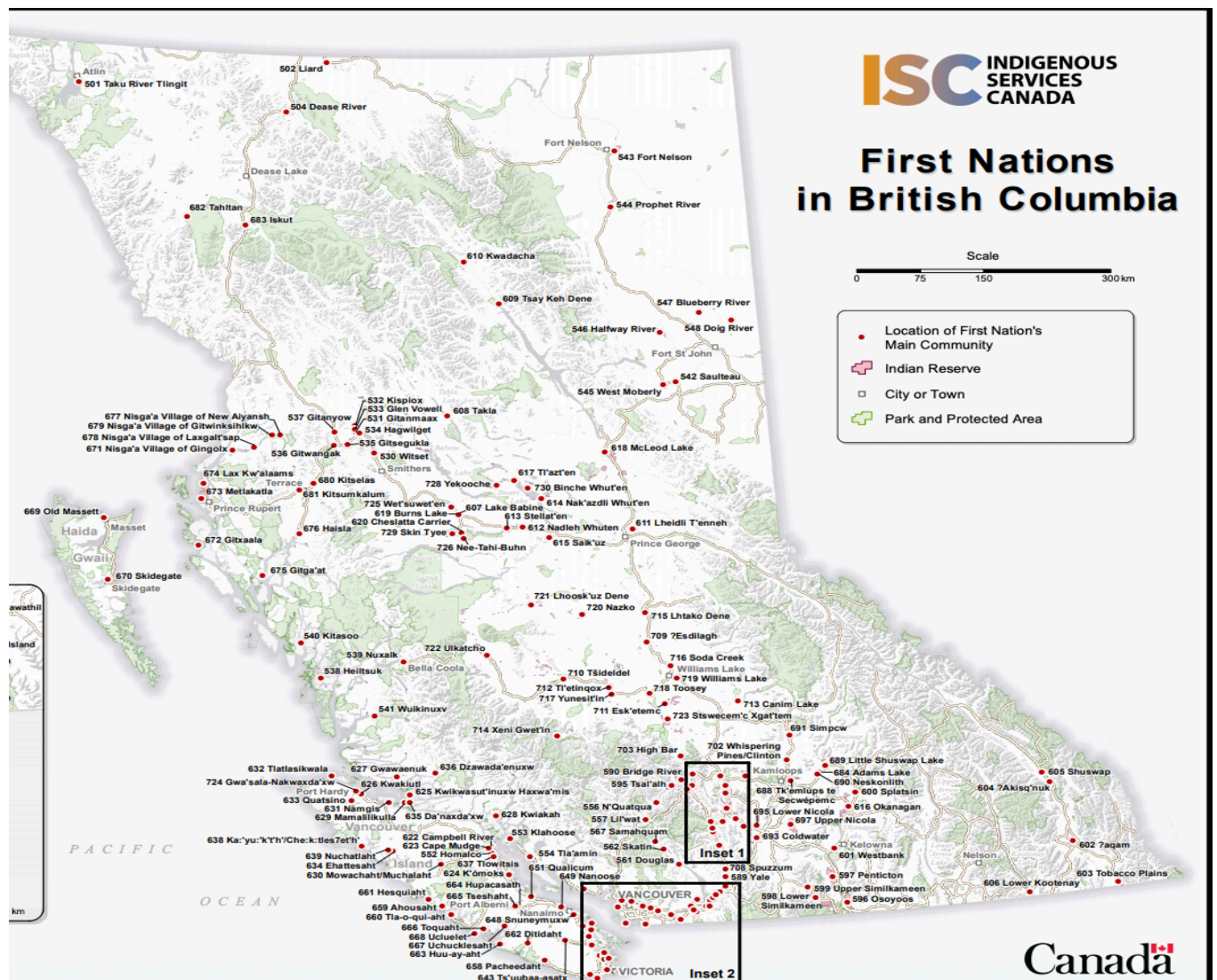
CBA – Canadian Bar Association

ICE – Indigenous Clean Energy Network

Chapter 1: Introduction

British Columbia (BC) is home to the second largest Indigenous population in Canada with about 200,000 Indigenous people and 203 First Nation's (Welcome BC, 2020; BC Assembly of First Nations [BCAFN], 2020) (Figure 1). Due to the diversity amongst each community and regions within province wide, each community's needs are different, particularly when it comes to clean energy economic development and opportunities.

Figure 1: Map of BC First Nations



(Indigenous Services Canada, 2019)

Clean and renewable energy has increasingly grown in the last 20+ years in BC. Hydro capacity is one source of power that has grown significantly. As of 2019, 95% of BC electricity is generated from renewables, equating to 16,000 MW and 90% total installed capacity (Canada Energy Regulator, 2019). However, when it comes to daily energy consumption, such as industry operations, three quarters of those energy needs continue to come from fossil fuels. In order to meet CleanBC aggressive goals of greenhouse gas (GHG) reduction targets over the next 30 years, more renewable energy, electrification upgrades, and reduction of waste are some of the biggest goals to be achieved. Encompassed within that is helping remote and Indigenous communities to adapt to the impacts of climate change, including reducing dependence of fossil fuels to cleaner energy and upgrading outdated infrastructure through various CleanBC funding programs.

1.1. Research Problem

Over the past decade, BC has ramped up climate change planning and action strategies to create newer and cleaner opportunities for residents while reducing harmful emissions and protecting the environment amidst growing impacts of climate change, such as the BC Indigenous Clean Energy Initiative. Although there is more awareness around sustainability and an increase of funding commitments in recent years by the Province of BC, implementation of clean energy projects in Indigenous communities may face more difficulties when pursuing opportunities. Issues and barriers may include socio-economic challenges, bureaucratic challenges, funding restrictions, and lack of capital. Both provincial and federal governments are continuously trying to reduce the gaps through different strategies. For example, the First Nations Clean Energy Business Fund (FNCEBF) was created under the CEA with the purpose of “promoting increased Indigenous community participation in the clean energy sector within their asserted traditional territories and treaty areas” (Province of BC, 2020, para. 1). Since its introduction, the program has provided capacity funding, equity funding, and set-up revenue sharing agreements with Indigenous communities. However, there continues to be a small percentage that have implemented clean energy technologies on their traditional territories. With BC in the midst of working towards achieving its climate change initiatives, the importance of working with Indigenous peoples towards reconciliation is highlighted numerous times in CleanBC reports. There are higher expectations moving forward as Bill 41 – Declaration on the Rights of Indigenous Peoples Act, was passed in November 2019 in BC unanimously. BC is the first province in Canada to adopt the United Nations Declaration on the Right of Indigenous Peoples (UNDRIP). This sets out a mandate to align provincial laws with those outlined in the Declaration. This legislation holds the provincial government to a higher level of accountability

and transparency moving forward as more collaboration and involvement in decision-making between Indigenous leadership and the Province is expected on matters that affect their territories and communities (Province of BC, 2020), including climate change planning and amendments. With the new legislation, it is important to identify gaps in current strategies and models to improve policies and funding for Indigenous communities that better reflect their needs and aligns with principles in UNDRIP. Participation and collaboration are also equally required from not only the province, but also from the federal government, stakeholders, and from a community level.

1.2. Research Objectives

This objective of this research project is to evaluate BC climate change policies in correlation with Indigenous needs pertaining to renewable and clean energy. The core objectives are:

1. To determine, at the Indigenous community level, an understanding of BC climate change policy, initiatives, and resources;
2. To gain perspectives from Indigenous [business] leaders on sustainability and clean energy;
3. To determine how Indigenous perspectives correlates to BC climate change policy;
4. To provide recommendations on methods to minimize barriers to clean energy in BC Indigenous communities; and,
5. To gain insight on existing Indigenous involvement in clean energy technologies in BC.

As the economic future of BC is changing daily due to unstable economic markets, this research will be important as it addresses issues that are vital for self-sufficiency and autonomy.

Alongside, it will provide some insight on how BC's climate change policies can better implement UNDRIP and Indigenous perspectives moving forward. This data will benefit Indigenous communities, provide recommendations to the provincial government to better improve their policies to reflect the unique challenges of Indigenous communities, and lastly, provide insight and foundational knowledge to other jurisdictions and industry looking to collaborate with Indigenous communities on clean energy and sustainability projects.

1.3. Sustainability Components

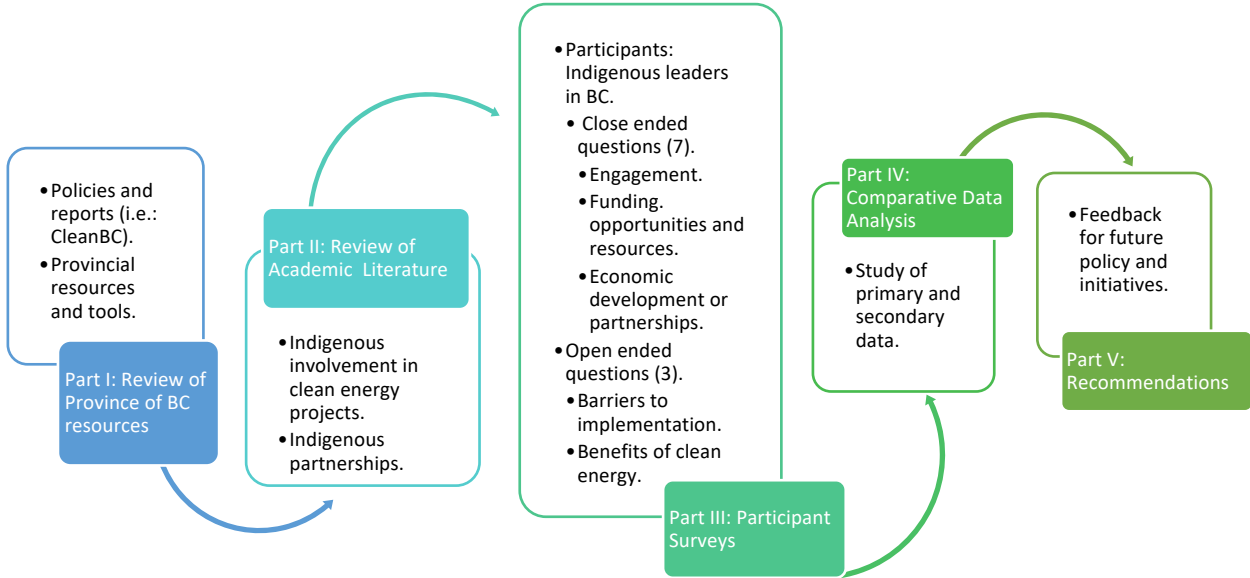
This research project contributes to sustainable energy development through environmental, social, and economic development components in the following ways:

- BC climate change policies and strategies are examined to determine its relevance to BC Indigenous communities. Historically, policies in BC (and nationally) have not always reflected or included Indigenous perspectives (CleanBC, 2019); thus, the impact of these policies and strategies, such as CleanBC, are explored.
- Impacts of climate change is a significant problem associated with Indigenous communities who are looking to clean energy technologies to minimize their environmental footprint and increase sustainability through community-owned energy solutions.
- It is important to understand the different layers of issues and challenges surrounding Indigenous communities to fully comprehend how legislation and initiatives impact their communities, and how it can be improved to better reflect their needs. Majority of communities are located remotely and continue to pay high costs for energy needs. Insights from Indigenous leaders are provided.
- Highlighting the considerations and importance of partnerships and consultation of projects. Several successful partnerships with BC Indigenous communities have resulted from clean energy projects.
- The impacts of resource projects for Indigenous communities can result in strong economic development benefits that contributes to self-autonomy and create further business opportunities.

Chapter 2: Methodology

A five-part approach was used for this research project, as shown in Figure 2 below.

Figure 2: Outline of research project methodologies



(Source: Author, 2020)

Part I: Review of Province of BC Resources

The first step in the research project is an in-depth review of BC’s provincial documentation to identify specific Indigenous components outlined in climate change strategies, including any engagement conducted. This data was gathered in order to understand; 1) what the Province of BC has done to address climate change for Indigenous communities, 2) what are the Province of BC’s plans are to help minimize impacts for Indigenous communities, and 3) current concerns and challenges for Indigenous communities in implementing clean energy technologies. Majority of literature was gathered from the Province of BC website. Other sources were gathered from organizations administering funding programs and the Government of Canada.

Part II: Review of Academic Literature

In order to gain a better understanding of previous work done on this topic, a literature review was compiled based on academic articles. Non-academic sources, such as reports, were also used in conjunction with academic work to provide context where appropriate. Although there are limited academic articles relating to this topic directly, there are literature resources that touch on the topic of climate change impacts on Indigenous communities. These sources provide knowledge concerning the gaps that need to be filled pertaining to the adoption of climate change and implementation of clean energy and provided a foundational framework for understanding the issues and current events surrounding this topic.

The literature sources used for were focused on Indigenous partnerships, climate change, and clean energy in Indigenous communities. Alongside, environmental justice and socio-economic challenges and barriers are also framed to provide broad context into the different layers of Indigenous partnerships across Canada, including geographical differences. It is important to acknowledge that there are some limitations as this literature review is not inclusive of available published research in the field. Sources over ten years old were not included in the search. The search terms used included: Indigenous, First Nations, partnerships, clean energy, climate change, sustainability, and renewable energy. Initial searches showed limited academic articles on Indigenous components in BC climate change policies and strategies; however, several articles outlining clean energy projects successfully implemented by Indigenous communities were obtained. There were also a number of supporting articles from websites, news sources, and different climate change or environmental organizations that touch on this topic. This indicates that the topic is new and therefore, academic research is limited.

Part III: Indigenous Community Participant Surveys

Information gathered from the literature review and the Province of BC's resources helped frame ten questions for a survey targeted for Indigenous leaders in BC. All but three questions were closed ended, and participants were given the option to provide comments throughout the survey process. This allowed for transparency and gave participants the opportunity to be involved in the research project as much as possible. A total of 14 surveys were sent and 10 were completed. Survey questions were divided into two categories. Category 1 questions were based on BC climate change policy, engagement, and resources tools. Category 2 questions were based on personal experiences and each individual community comments regarding economic development, challenges, and perspectives on clean energy. Participants were located in different parts of BC, including Vancouver Island, Northern BC, Interior BC, and the Lower Mainland; thus, perspectives from around the province was gathered and served to be extremely helpful in formulating recommendations, an overview of current challenges, similarities, and differences between each region. Data obtained from surveys was anonymous to avoid biases. The main objective was to gain insight on how BC's climate change policies and strategies have impacted each community and to gain community-level perspectives on clean energy. Due to limitations, in-person and/or phone interviews were not completed.

Part IV: Comparative Analysis of Survey Data and BC Climate Change Policy and Strategies

Data collected from the survey was compared in correlation to the policy and academic literature reviews in Part II and III. The data will help determine what components correlate and differ.

Due to the small participant size, it is important to acknowledge that there may gaps in the sampling strategy and data analysis.

Part V: Recommendations.

This section will formulate the recommendations for improving BC climate change policies and strategies for BC Indigenous communities.

Chapter 3: Literature Review

3.1 Preamble

In order to address the gaps in BC's current climate change policies and strategies to create a more prosperous and effective pathway towards sustainability and clean energy, it is crucial to analyze policies to identify gaps and areas of improvement to provide recommendations for government and corporations, particularly if BC is aiming to reduce its heavy reliance on fossil fuels, especially within industrial operations. Clean energy initiatives have already unfolded in many Indigenous communities in BC; however, the number of communities that have implemented clean energy technologies continues to be relatively small. Many Indigenous communities face unique challenges, such as remote locations, therefore, a one size fits all approach does not work (CleanBC, 2018). As more Indigenous leaders are interested in shifting their communities to clean energy security, most look to both government and industry partnerships to leverage economic opportunities. To create a successful shift to climate mitigation, it is crucial to create new economic opportunities and improve on current ones to help communities adapt to the impacts of climate change, produce cleaner energy, and contribute to BC climate goals.

To better understand what scholarly work has been completed on this topic, an academic literature review is presented. The intent of this section is to provide insights into clean energy and renewable projects around Canada, commonalities, themes, and an overview of sustainability amongst Canadian Indigenous communities. The next section will constitute a broad review of BC climate change policy and strategies that directly involve and/or impact Indigenous communities. This includes the main funding programs and initiatives for Indigenous communities that evolved from the CEA. The literature review sections include a critique of

these components with reference to the academic sources and BC government reports as appropriate.

3.2 Indigenous People and Clean Energy

Energy independence is desired in many Indigenous communities, particularly those reliant on diesel-generated power. A transition to clean energy can not only reduce climate change impacts, but also reduce environmental and health impacts. To date, there are only a handful of academic articles that touch on clean energy and Indigenous communities. More literature is emerging in this field, particularly comparative case studies of clean energy projects in specific Indigenous communities (Krupa, Galbraith, and Burch, 2015) and reports by companies. As such, findings reveal that literature is typically focused on a specific topic in clean energy, which corresponds to the main theme of clean energy in Indigenous communities but does not take into account the differing climates and options across regions. Existing literature shows that most papers are in forestry and mining sectors, followed by a handful on clean energy and renewables. The large number of forestry and mining related articles may be linked to the preponderance of the two sectors in Canadian resource development for Indigenous economic development over the past 30 years (Bullock, Kirchhoff, and Mauro, 2018). Due to the immaturity of the clean energy market for Indigenous communities, the challenges and lengthy time for implementation, provides context as to the paucity of studies have been conducted on the topic. Given the strong demand and trend for more sustainable resource development, it can be expected more ventures will emerge and gain more momentum in this sector.

When it comes to BC climate change policies and strategies, no literature on how Indigenous communities have utilized programs and how they have been impacted by policy currently exists. This is unfortunate as a solid knowledge base on participation of Indigenous communities

in clean energy is important for future outlooks and knowledge sharing to provide insight into ongoing challenges, successes, and lessons learned.

3.3 Barriers to Implementing Clean Energy Technologies

Indigenous communities invest in clean energy for a variety of reasons that vary by region and community capacity. Although the benefits of clean energy have many short and long-term benefits for environmental, community, and social aspects, Zurba and Bullock (2020) outline a major gap on the impacts of implementing renewable projects and Indigenous communities' socio-economic well-being. Socio-economic issues are noted in all literature in one form or another. According to a study by the Advanced Energy Centre (2015), the top systemic barrier to implementing clean energy technology is funding structures, lack of understanding on alternatives, challenges due to remoteness, and a shortage of community engagement. For these reasons, clean energy projects in Indigenous communities often take longer to complete. In some cases, poor communication by stakeholders and/or community leaders can also delay or pause a project. As cited in Downing and Cuerrier (2011), socio-economic factors, such as food security, health, and a potential loss/decrease in TK and cultural systems due changing climates can directly affect Indigenous livelihoods. Although this article is specific to the Canadian Arctic region where conditions are more extreme compared to other parts of Canada, the same concerns may be applicable to other regions. Although the published literature on socio-economic issues speaks to challenges, the articles are not necessarily applicable in other provinces or territories. The present study fills this gap in literature by providing perspectives from BC Indigenous communities and insight on BC climate change strategies. This could influence industry and government to focus on adopting strategies supported by Indigenous communities.

3.4 Traditional Knowledge and Clean Energy

The connection of between TK and Western science is noteworthy because it brings together socio-economic components, economic security, and adoption of climate change implementation strategies. For example, questions on the feasibility of electric vehicles and availability of charging stations is a major concern due to long travel distances. This is also a concern when it comes to hunting and trapping practices (CleanBC, 2019). The utilization of both knowledge systems in land and environmental management for current and future generations is transferrable to clean energy and sustainability. TK-Western science interaction and implementation into policy and practices is becoming more prominent, especially in environmental activities, and is recognized as an important practice in CleanBC. In terms of the relation of clean energy and Indigenous communities' traditional lands, opportunities that are concurrent with an Indigenous community's needs, resources and values is important in clean energy transitions, as mentioned in T'Sou-ke's motivation to transition to cleaner alternatives (Krupa et al., 2015, as cited in Denis and Parker 2009, p. 2089). In Ozog's (2008) study, T'Sou-ke Nation stresses the importance of overcoming current energy challenges, but also integrating clean energy technology with the community's culture, values, and traditions. This shows that a management model that is sustainable and environmentally friendly, and also incorporates TK, is a form of self-determination and empowerment as it allows for integration Indigenous governance models instead of being completely bound by traditional top-down institutional systems (Krupa et al., 2015).

3.5 Consultation in Energy Projects with Indigenous Communities

In the early stages of a project proposal, the importance of consultation and engagement is recognized and continues to grow for governments and proponents. Much of the literature on

consultation emphasizes the importance of meaningful consultation, which also translates to clean energy projects. Stefanelli et al.'s (2015) research emphasizes the need for engagement in the early stages of renewable energy projects to maximize outcomes. Proactive consultation is at the foundation of this research project as it supports the significance of mitigating climate change impacts in Indigenous communities through clean energy solutions, but also provides context on the variation of motivations for clean energy investment, including strong partnerships.

Furthermore, data from this study demonstrate why communities invest in clean energy which include, self-determination, secure energy for future generations, conservation, and economic prosperity. Additionally, there is a consensus that more research is needed to build momentum and offer more in-depth insights regarding the complexities for clean energy within Indigenous communities.

Bullock and Zurba (2018) and Bullock, Zurba, Parkins, and Skudra's (2020) research on bioenergy development and Indigenous partnerships supports a participatory natural resource management model, predominantly in forestry. This study is helpful in framing energy partnerships and provides context to issues related to implementation of clean energy projects. For example, it is noted that there is growing demand for bioenergy, and Indigenous communities are interested in it, but policies may not necessarily align or reflect Indigenous communities differing capacities, rights, and perspectives (Bullock et al., 2020), which may be a barrier. The misalignment of bioenergy policies continues to pose issues that can cause pitfalls – something that future research can build on. As mentioned by Bullock et al., 2020 (as cited in MacArthur and Matthewman, 2018, p. 2), energy development requires addressing the disparity of control and benefits between stakeholders and Indigenous communities. Historically, there have been cases of inadequate or lack of engagement that resulted in failed partnerships,

environmental contamination and in some cases litigation. The trauma from the impacts are intergenerational as it can affect Indigenous people's way of life, well-being, and resources. Reversal of past mistakes and relationships is ongoing between some corporations and Indigenous communities, but it often takes longer to repair these relationships versus doing early engagement in the planning stage.

When it comes to Indigenous communities' relations with government bodies, a higher level of collaboration and participation has been observed over time. Management of collaboration continues to evolve, despite asymmetries in decision making. While co-management and mutual benefit agreements of clean energy projects is valuable for Indigenous communities, multi-level processes within government practices has been shown to be disadvantageous for Indigenous communities. For example, electricity is governed through a Crown corporation in BC, which can result in implications in collaboration and miscommunication due to navigating through multi-level institutions (Krupa et al., 2015). As hydro prices continue to go up, some Indigenous peoples have voiced concerns over affordability, despite ongoing pressure about implementing electricity upgrades, especially because funding does not always fully cover upgrades (CleanBC, 2019). Historically, top-down colonial governing practices have severely affected Indigenous communities' livelihoods. Despite new frameworks to reconcile disparities between Indigenous communities and governments, eliminating the inequities is not always effective and, in some cases, reproduces the inequalities that were meant to be reversed (Nadasdy, 2003; Coulthard 2007, as cited in Krupa, 2015, p. 85).

Although Bullock's work contributes to the field of advancing Indigenous economic partnerships and has some overlap with this project in terms of Indigenous and stakeholder relations and intersections of social-economic issues, it only encompasses bioenergy technology. Since

bioenergy is not an option for every Indigenous community, other clean energy options are excluded from the study, which is a gap my project fulfills through a broad clean energy lens. Results in the methodology reveals that not all participants expressed interest in bioenergy due to barriers, such as geographical location (i.e.: not enough trees) or lack of capacity (Bullock et al., 2020). By looking into clean energy technologies as a whole, including bioenergy, my research will provide additional perspectives from Indigenous leaders from both a governance and economic development lens, similar to Bullock et al's (2020) approach.

Lowan-Trudeau (2017) also highlights the importance of education of renewable energy, alongside skills and employment training for capacity development to advance the success of communities' projects, including maintenance and installation. Such is the case for T̓silhqot'in Nation and T'Sou-ke First Nation in BC, wherein training and education of solar technology was provided to community members, which will allow further education of other community members and future generations. Despite the successes, there can and often are many challenges that requires more attention in order to address problems and increase more activity in the clean energy sector. Problems big enough may result in incompleteness, additional costs, and often prolong project lifecycles. For T̓silhqot'in Nation, they faced numerous problems with their solar over the five years prior to the full operation of their solar farm with training, financing, authorization, and weather (T̓silhqot'in Nation, 2019; Dyok, 2020). As awareness of climate change and clean energy increase, it is anticipated that the growth of projects will follow suit worldwide (Lowan-Trudeau, 2017).

Overall, most literature has a strong emphasis on inclusivity on energy projects, which will help shape and compliment my project. Despite limited published literature, Lowan-Trudeau (2017) suggests there is fast growth of renewable initiatives by many Indigenous communities in

Canada. Similar to their findings, results show there is an uptick of interest in clean energy implementation and growing opportunities in BC amidst the trend of more sustainable resource development projects. Lowan-Trudeau (2017) notes that BC has comparably more clean energy project developments versus other provinces, partly due to the province's clean energy funding for Indigenous communities. This does not take into account other reasons why BC Indigenous communities have more clean energy projects, such as geographical location and access to diverse natural resources. Nevertheless, it is fundamental to reinforce the importance of early consultation and strong communication from stakeholders on proposed projects to reduce problems. Questions around dynamics of revenue sharing and ownerships and how it compares to other resource development is raised by several studies cited in Lowan-Trudeau (2017), but also the benefits of participating in partnerships with corporations. This is a topic that requires further research for analysis and development in coming years as more Indigenous communities are looking at more sustainably viable opportunities. As each Indigenous community is different, gathering insight into more perspectives will be an advantage in minimizing the barriers to clean energy implementation.

3.6 Clean Energy Policy Research

While no existing literature investigates BC climate change policies in-depth, Bullock-Litic and Chalifour's (2012) paper on the BC carbon tax policy correlates with my study in some ways. Although my project does consider the BC carbon tax, it is worth noting because it has policy, environment, and sustainability components that relate to climate change. From a socio-economic perspective, the authors article on the unique challenges faced by Indigenous communities is comparable to my study findings. It is considered in their evaluation of the carbon tax and rebates provided to citizens of BC – similar to my methodology. Because many

Indigenous communities generally have higher living costs due to remoteness, lack of accessibility, and lower income, Bubna-Litic and Chalifour (2012) argue that these factors impacting disadvantaged Indigenous communities should be taken into consideration for the carbon tax policy and program. For example, some may not earn enough income to file a tax return, which would result in no tax rebate resulting from the carbon tax. This correlates with CleanBC feedback in which Indigenous participants questioned how their community fit into some programs. As outlined a recent report stemming from CleanBC engagement sessions with Indigenous communities titled ‘What We Heard’, many participants in the report indicated the programs did not reflect the realities of Indigenous communities. As a result, communities are forced to try to fit into already established regulations and processes (CleanBC, 2019).

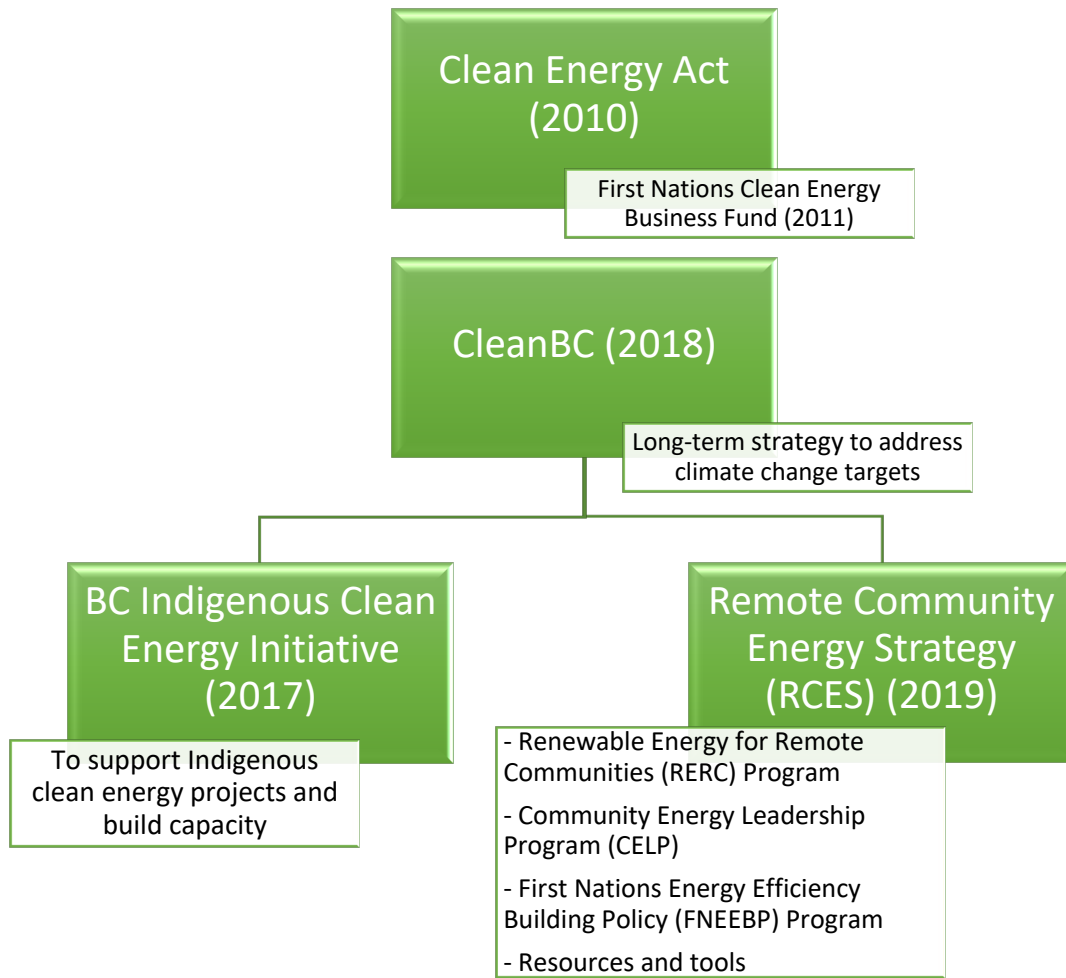
The drawbacks of this article are that few in-depth solutions are provided, despite suggestions that climate change mitigation initiatives should be accessible to everyone and be more flexible (Bubna-Litic and Chalifour, 2012). The few solutions presented are very generalized and do not address resolutions to minimize challenges. For example, they state that incentives for housing could be a solution, but do not elaborate more on specific incentives and how it can benefit people or what a program may look like. Therefore, enhancing this research to include suggestions on how government can help minimize challenges. Furthermore, because the article is fairly dated (eight years old), there have been changes in the provincial government, and as a result, some changes have been made to carbon tax programs and policy since then; hence, updated research and analyzes is needed to determine its effectiveness currently and if there have been any improvements. In general, the methodologies for this study revolved around ‘fairness’, which is referred to as “incorporating both substantive and procedural justice” (Bubna-Litic and Chalifour, 2012, p. 138). This approach, stemming from a human rights lens, is focused on how

the policies benefit different groups and society as a whole. Because fairness is differently amongst every individual and discipline, some biases may have skewed the data analysis.

3.7 Indigenous Components of BC Climate Change Policies and Strategies

In remote communities across BC and Canada, diesel is the main source of energy generation – many of which are Indigenous communities. In BC, it is estimated that over 20 First Nations continue to rely on diesel as their main power source (National Observer, 2020). Because of the high cost and environmental footprint of fossil fuel systems, many public and private organizations have been trying to identify ways to implement cleaner energy technologies (Advanced Energy Centre, 2015). In BC, the provincial government has stated they are committed to taking action on climate change through the reduction of GHG emissions and creating new opportunities that around improving infrastructure, cleaner transportation and industry, reducing waste, and boost skills training in the sustainability field. Contrary to this, remote Indigenous communities continue to feel the burden of being diesel-dependant, and finding solutions is not always easy. The two major climate change initiatives that speak to renewables and clean energy with large Indigenous components are the First Nations Clean Energy Business Fund (FNCEBF) and the CleanBC strategy (Figure 3).

Figure 3: Illustration of BC Clean Energy Act Climate Change Programs



(Source: Author, 2020)

3.7.1. First Nations Clean Energy Business Fund (FNCEBF)

The FNCEBF was established in 2011 as part of the CEA legislation. Administered by the Ministry of Indigenous Relations and Reconciliation (MIRR), the purpose of this funding is to encourage and include more Indigenous participation in the clean energy sector on their traditional and treaty lands (Government of BC, n.d.). This includes building capacity and development through funding of feasibility studies, engaging proponents, grants, and assistance for implementing projects (CEA, 2010; MIRR, 2015). Almost three quarters of BC First Nations

have successfully received funding since its implementation. In the last fiscal year (2018-2019), 14 projects in solar, community energy planning, feasibility studies, and hydropower were funded. Amounts of funding ranged from \$15,000 to \$500,000.

The main focus of these projects is aimed at reducing communities' reliance on diesel-generated power through new technologies and educating community members about the economic value of clean energy opportunities for prosperity (Government of BC, 2019). Based on the funded project list (2011 to 2017), majority of funded projects fell under capacity funding, which includes community energy plans and feasibility studies (Government of BC, 2017).

The second stream of the FNCEBF is revenue/equity funding, which is intended to provide equity contributions to financially viable clean energy projects with an Energy Purchase Agreement with BC Hydro funding up to \$500,000 may be awarded (MIRR, 2016). Revenue sharing agreements may also be signed based on provincial resource rents (land and water rentals) after 2010. If a project overlaps on one or more First Nations' territories, discussions of potential revenue sharing agreement is initiated. Projects of this magnitude generally require other sources of funding and/or revenue, such as financial loans.

Since the launch of FNCEBF, over \$11.2M has been awarded to over 110 First Nations for capacity and equity projects. According to the FNCEBCF regulation under the CEA, the initial balance of the fund was \$5M (CEA, 2010), but has steadily increased over the years. In fiscal year 2019 to 2020, the approximate budget was \$7.74M, but there is no data on actual amounts or projects yet due to an extended application intake deadline of early 2021. The budget increase has allowed more projects to be funded and can be seen as a step in the right direction for BC's climate targets. This could also influence more communities to start the process of developing projects within their territories by engaging potential partners.

Despite the extra funding, guidelines for applicants remains unchanged since 2015. In reflecting on the funded projects list (up to 2017), only a small amount of Indigenous communities received equity funding for projects in the past few years, which includes investments in renewable resource(s) and remote community electrification. According to the guidelines, the applicant must show evidence of sufficient resources (i.e.: capital) and experience to bring the project to life (MIRR, 2015), which may pose challenges for some Indigenous communities. For example, if they are new to clean energy, it is unclear if the province will provide extra assistance to applicants who are interested in applying, but unsure where to start. Secondly, applicants require a considerable amount of capital to fully develop and implement projects for equity funding, which may be in the form of federal government funding, financial institution assistance, own-sourced revenue, and other funds. For some Indigenous communities who may not have enough band revenue for big projects and/or lesser capacity, it may prolong or discourage project development. Some may pursue industry partnerships to alleviate the financial commitment, but this may also pose challenges and can be timely, especially for large scale projects.

Indigenous communities experience more limitations to accessing affordable capital in comparison to non-Indigenous institutions. According to Canada's Public Policy Forum (2016) report on improving access to capital for First Nations, the underlying issues that restrict access to financial capital includes socio-economic pathologies, governance challenges, and institutional barriers and biases (p. 6). In 'What We Heard', start-up capital was also voiced as a barrier faced by Indigenous communities as renewable projects often require more funds and the options may be limited depending on geography and magnitude of a project (CleanBC, 2019).

Participants also added that if a project was completed, operations and maintenance costs may be expensive and some do not have the capacity to upkeep equipment, which may result in higher than anticipated repair costs in the end. For example, depending on where equipment is produced and sold, repair and maintenance can be extremely expensive if a part is only sold by a foreign supplier or manufacturer. A subsidy program for clean energy maintenance would be helpful in alleviating some of the costs for any ongoing repairs. This could also be tied into refundable or forgivable loans depending on the success of a project, which was suggested as an alternative to grants by some Indigenous participants during the engagement sessions (CleanBC, 2019).

Of the 110+ First Nations who have received FNCEBCF funding since 2011, less than a quarter have received equity funding to move projects past the initial capacity development phase (MIRR, n.d.). Although there may be other reasons that delay or restrict communities from implementing clean energy projects, data reviewed from both policy and an academic lens shows that time and time again access to capital, bureaucracy, and socio-economic factors play a role in any project development because majority of funding models are similar across federal and provincial bodies, and do not necessarily fit Indigenous communities' needs nor provide flexibility. There are some limitations with this analysis because some projects may not be reflected in provincial data, particularly if a community accessed equity funding elsewhere or if the project was funded after 2017. The province has stated it is committed to being transparent with Indigenous communities, but an accountability report has yet to be seen for funded FNCEBCF projects from 2017 onwards.

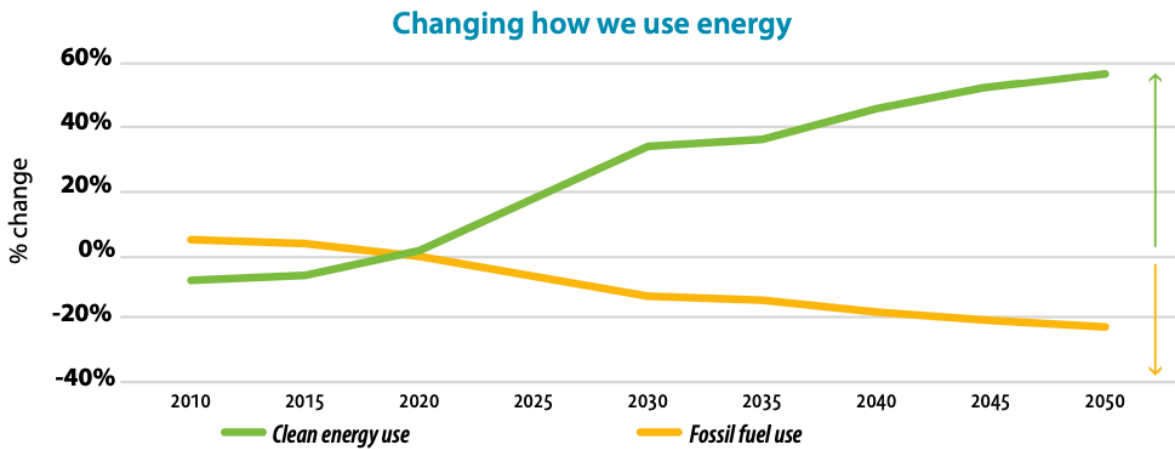
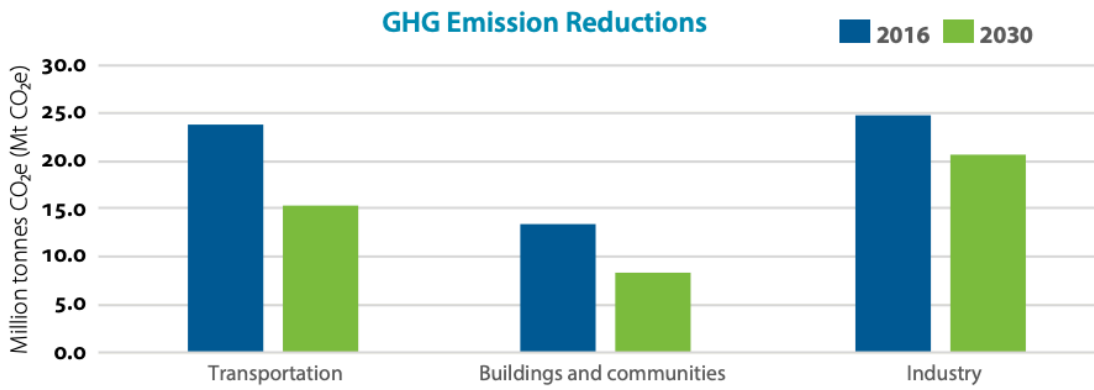
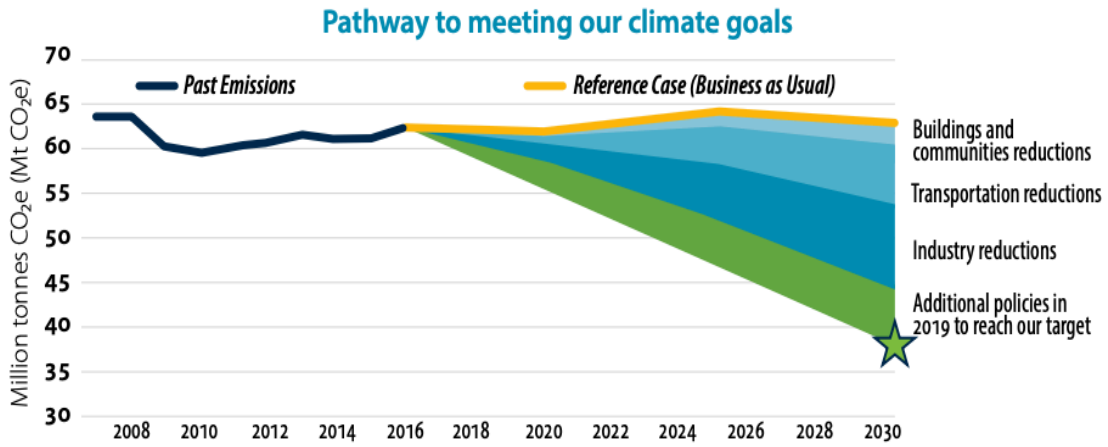
In contrast, there are numerous Indigenous communities who have successfully built strong governance systems, overcome challenges, and created profitable clean energy businesses in BC. For example, \$150,000 was awarded to Westbank First Nation (WFN) for the installation of

solar panels at their school in 2018, alongside ISC Innovation Funding; however, almost \$1.5M of WFN's own source revenue was still required to make the expansion and renovation possible (WFN, 2018; MIRR, 2018). This is expected to offset utility costs by \$12,000 annually (MIRR, 2018). This innovative pilot project was supported by community members and is the start of more renewable projects for the band (Kelowna Capital News, 2019). Fortunately, WFN already had the infrastructure and resources for the project investment, resulting in a fairly quick completion for the project versus other projects that often take several more years to complete.

3.7.2. CleanBC

In late 2018, the New Democrats (NDP) government officially launched the CleanBC strategy. This long-term plan is just one step in BC's attempt to fight climate change with \$902M invested until 2022 (Pembina Institute, 2019; CleanBC, 2019). CleanBC aims to create a more sustainable future for all British Columbians through the use of more clean and renewable energy. The main objective of this blueprint is to provide action plans to reduce GHG emissions by shifting from fossil fuels to greener solutions in the workplace and within households. The hope is that this will improve quality of life for BC residents, create economic opportunities and growth (i.e.: employment), and expand local businesses to global markets. The main areas of focus are transportation, buildings and infrastructure, waste reduction, emission reductions in industry, and assist remote and Indigenous communities' through new resources (CleanBC, 2018). The legislated GHG emission target is a reduction of 25.4 Mt (40%) based on a 2007 baseline (Figure 4), with plans to implement more reductions over coming years in an attempt to exceed current climate targets. Progress will be measured through annual accountability reports released by the province (CleanBC, 2018).

Figure 4: Outlook of CleanBC climate goals



(CleanBC, 2018, p. 10)

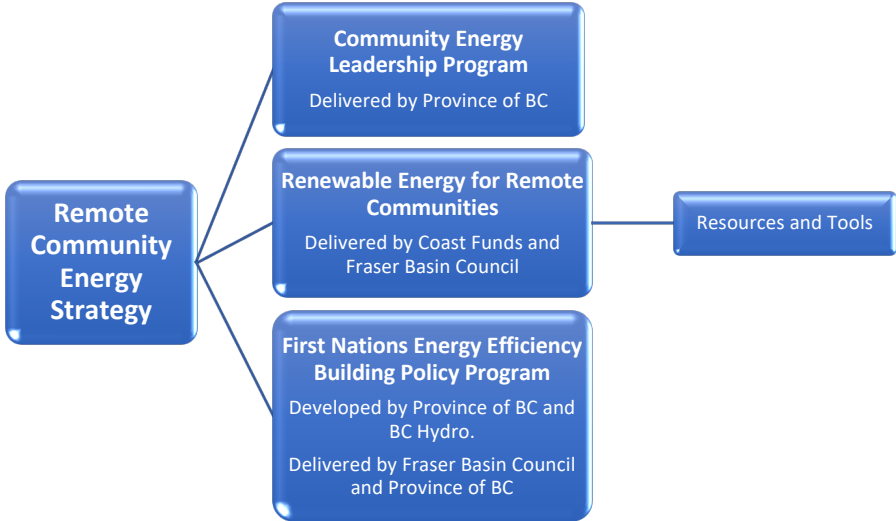
To achieve these targets, the province intends to get ongoing feedback from the public on current and future initiatives to strengthen existing and new relationships with businesses, other government bodies, utilities, Indigenous communities, non-profit organization, and education institutes (CleanBC, 2018). In regard to Indigenous communities, the CleanBC plan (2018) states, “together, in collaboration with Indigenous peoples, we will work to build more resilient communities, where everyone benefits from a cleaner future” (p. 6). Although it is unclear how much of the budget is allocated for Indigenous related initiatives, helping build Indigenous communities’ capacity and resiliency through full partnerships is mentioned numerous times. This means inclusion of Indigenous peoples in all aspects of the key action goals, including developing a mutually beneficial approach through engagement, clean energy opportunities, acknowledgement of traditional knowledge (TK), and assisting Indigenous communities shift to green alternatives. For example, one of the main goals, under ‘Support for Communities’ is to help reduce reliance on diesel through upgrading existing infrastructure, assist in transitioning to biofuels, and educate communities about the economic value of clean energy opportunities for prosperity (CleanBC, 2018; Government of BC, 2019).

3.7.3. CleanBC’s Remote Community Energy Strategy (RCES)

Specific initiatives pertaining to support for remote and Indigenous communities falls under the multi-stakeholder program Remote Community Energy Strategy (RCES), which was launched in 2019 under CleanBC. The objective of RCES is reducing diesel consumption in generating electricity in remote communities by 80% and \$16.5M of funding investments (Government of BC, n.d.). Alongside several community tools and resources, there are three main programs under RCES that serve to compliment other initiatives, including the Community Energy Leadership (CEL) Program, Renewable Energy for Remote Communities (RERC) Program, and

the First Nations Energy Efficiency Building Policy (FNEEBP) Program (Figure 5). All programs have objectives that align with CleanBC’s plan as a whole, including a strong focus on the increasing energy efficiency through the promotion of partnerships and economic development to advance clean energy. Funding may cover construction and labour, engineering, associated equipment and material, training costs, and technology procurement (Government of BC, n.d.). Programs are delivered by the province, Coast Funds, Fraser Basin Council (FBC), and there appears to be some involvement with BC Hydro.

Figure 5: Outline of Remote Community Energy Strategy Programs



(Source: Author, 2020)

The biggest program under RCES is RERC. Although the province has committed \$16.5M to the program over the next three years (2020 to 2023), it is unclear if a certain amount will be allocated for Indigenous communities solely. According to Coast Funds, they are responsible for administering \$7.9M in new investments in 2020. The benefit in having Coast Funds deliver funds is that the company was created to support First Nations in developing and achieving their economic development goals that includes sustainability, natural resources, and conservation

initiatives in the Great Bear Rainforest and Haida Gwaii (Coast Funds, 2020). This puts them in a good position to work with all 11 coastal communities to develop strong business plans and maximize funds. Because of the organization's geographical focus, communities within the region will be able to get one-on-one support versus navigating through the different layers of government. Originally, Coastal First Nations expressed a strong desire for the company to deliver the program due to their unique mandate and positioning (Coast Funds, 2020). This is also a strong sign that the province is open to working with stakeholders to improve current funding methods, and if successful, it could open the doors for more partnerships. Communities who are dependent on diesel generated energy were invited to submit advanced proposals during the initial intake with assistance from Coast Funds – a strong indicator of the province's commitment to help Indigenous communities' transition away from diesel. To date, the Kitasoo (Xai'xais) First Nation and Dzawada'enuxw First Nation has been awarded a combined \$25M+ for two major hydroelectric projects that will bring more efficient energy systems and energy sovereignty to both communities (Coast Funds, 2020). As more funding is allocated and more projects are implemented in coming years, future research is needed to track progress and its alignment with CleanBC's goals on reducing emissions from diesel electricity generation by 80% by 2030 (FBC, 2019).

The Fraser Basin Council is the other organization responsible for administering funds for the remaining 32 eligible First Nations and local governments (i.e.: regional districts). FBC will also be helping applicants with proposals in the early stages to maximize the chances of getting projects approved. To determine how successful both partnerships are with the province, it will be crucial to continue monitoring announcements, accountability reports, and assessments in coming years from everyone. Although there has been a large commitment in funding for RCES

in 2019, it is unclear if funding will be matched in following years. The information provided on the provincial website is not updated regularly enough to reflect the most up to date information or any updates about either partner organizations; thus, a clear flow of information is needed for transparency purposes.

In regard to the Community Energy Leadership Program and First Nations Energy Efficiency Building Policy Program, it is unclear if either program will have further intakes. The CELP has stated there are no further plans for intakes after the 2019 to 2020 fiscal year (Government of BC, n.d.). Of the three of four rounds of funding intakes, about 10 communities have been successful to date in the highly competitive and lengthy funding process (Government of BC, n.d.). Similarly, the FNEEBPP was a pilot project that has not seen much movement since 2016. Indigenous communities are now directed to the First Nations Home EnergySave Program, which is run by FBC and has a similar objective of improving efficiency in homes (FBC, n.d.). Discontinuation of programs like the FNEEBPP and CELP would further limit resources for Indigenous communities as it financially aided upfront capital costs for clean energy systems. This may subsequently increase competitiveness of other programs (Government of BC, 2019). This does not dismiss CleanBC's progressive outlook of climate change targets in the next three years. BC goals for reduction of diesel-generated energy for Indigenous communities are very ambitious; though, achieving these goals will require collaboration from all levels of government and industry (Pembina Institute, 2019). The long-term strategies and commitment appear to be strong and headed in the right direction to building new and better relationships with Indigenous communities. By partnering with external agencies to deliver funding, this can eliminate some tensions that Indigenous communities may have working with the government and allow for more directed support that can advance projects faster. The hope is that they will also be able to

direct and inform Indigenous communities to other resources in the RCES, such as the FNEEBPP, to further community-led and owned sustainability initiatives and trigger additional economic opportunities.

3.7.4. CleanBC's BC Indigenous Clean Energy Initiative (BCICEI)

Preceding the release of the CleanBC plan was the BCICEI in 2017, which was formed through the Government of Canada's Strategic Partnerships Initiative. Similar to the RCES, this program is delivered by the New Relationship Trust (NRT), an independent non-profit organization that aims to strengthen BC First Nations through capacity building (NRT, 2020), in partnership with Western Economic Diversification Canada. The purpose of the BCICEI is to support and advance Indigenous communities' and build capacity through funding of clean energy projects (NRT, 2019; Government of Canada, 2019), which is similar to the FNCEBF. In 2019, the Province of BC joined BCICEI under the CleanBC plan, which boosted the original \$4.2M funding amount to \$9.5M (Yellowhead Institute, 2019). BCICEI is overseen by an advisory council made up of representatives from both levels of government, the private sector, and Indigenous leaders.

Since the program launch, NRT has helped administer funding to 31 Indigenous communities or organizations (Government of Canada, 2019). From 2019 to 2020 alone, 13 Indigenous communities are receiving funding totaling just over \$2.5M. Projects range from solar photovoltaic installations to wind generation projects (Government of Canada, 2019). Aside from this, there is not enough information available about prior funding cycles or status of previous projects to compare the BCICEI program as a whole. Based on information available, it appears the program is similarly in high demand, a sign that Indigenous communities are harnessing clean energy opportunities and have been able to utilize funds for both feasibility

studies and installation of technologies. This unique tripartite partnership consists of individuals from all levels of government and Indigenous leaders familiar with clean energy and economic development, which is highly beneficial when reviewing applications. Moving forward, it will be important for the province to continue strengthening partnerships with stakeholders, such as the federal government, to get more committed maintain funding and with Indigenous communities/leaders to collectively grow this initiative and climate change goals in general, including reconciliation goals. In recent years, there has been growing tensions over several major resource projects in BC that has strained relationships between the province and some Indigenous communities on issues relating to environmental impacts and Aboriginal rights and title (Pembina Institute, 2019).

3.7.5. Future of CleanBC

The CleanBC plan is very ambitious and aims to promote more sustainable development for industry, residents, and Indigenous communities. For Indigenous communities, majority of resources fall into the building infrastructure category. Although the plan was released almost two years ago, most participants from the engagement sessions were unaware of CleanBC in general but were supportive of the plan. This suggests the plan was not created in collaboration with Indigenous peoples. Moving forward, many participants provided input on how the government can incorporate feedback into CleanBC and work collaboratively with Indigenous communities to implement Indigenous knowledge and practices into climate change initiatives, particularly preparedness measures. As affirmed by participants, due to the diversity within each region of BC, not all programs are fitting for certain locations (CleanBC, 2019). This is another reason why programs should be more flexibility in their guidelines and requirements. For example, in northern BC where there is more extreme colder weather, there tends to be more

GHG emissions due to additional energy used for industry operations, bigger vehicles, and longer driving distances. Due to the high costs of transitioning to cleaner alternatives, implementing clean energy technologies may not be as progressive for some Indigenous communities (CleanBC, 2019).

Socio-economic issues, including poverty and food security, was an ongoing concern stated in ‘What We Heard’ that coincides with challenges restricting implementing of clean energy options in other parts of Canada (CleanBC, 2019). This problem stems from a long history of colonial systems and structures, which is also presented as a theme in academic literature on Indigenous involvement in clean energy (Lowan-Trudeau, 2017). When considering the reality of daily socio-economic problems in Indigenous communities, climate change and transitioning to cleaner alternatives may not a high priority, if at all (CleanBC, 2019). Several parts of ‘What We Heard’ also mentioned that hydro costs are continuously going up, which only increases the growing food security problem. For Indigenous communities to transition to clean energy and contribute to the CleanBC targets, socio-economic barriers also need to be addressed. Creating opportunities that allow Indigenous communities to be directly involved in the planning and execution of CleanBC would allow for more engagement and the implementation of TK into land management and environmental initiatives. Indigenous peoples have a wealth of knowledge and leadership in many environment aspects due to familiarity with the land that would be highly beneficial for addressing climate change. The importance of balancing TK with Western science was also identified by participants (CleanBC, 2019).

In addition, results show that there is continues to be a disconnect and mistrust towards government bodies and a strong need for more information sharing between Indigenous communities and government bodies to minimize the gap in CleanBC and maximize solutions to

climate change (CleanBC, 2019), but data shows that the province is open to feedback. The hope is that the feedback will be reflected in CleanBC initiatives moving forward to avoid repetitive discussions at engagement sessions. Resolving these problems will take time and require more commitments from both levels of government, but the theme of stakeholder and Indigenous relations is becoming more prominent now as there has been an increase in industry partnerships with Indigenous communities, especially in renewables and clean energy projects.

Generally speaking, results show a positive shift to a more sustainable future. Literature such as Stefanelli et al.'s (2018) study also shows that renewable energy is a promising pathway moving forward for most Indigenous communities. In forthcoming years, holding the province accountable to their CleanBC targets and commitments will be crucial to measure where BC stands in terms of reaching climate change targets and a breakdown of the progress made with Indigenous communities, particularly on engagement and funding models under each program. Under CleanBC, the province committed to releasing annual accountability reports, which will provide transparency to the general public. Thus far, only the 2019 accountability report is accessible.

3.8 Indigenous Clean Energy Outlook

As climate change policies continue to evolve and change, further research is required to explore how the provincial government may change and adapt new practices and amendments for the current BC climate change strategies, particularly changes to clean energy funding for Indigenous communities and other resources. As more corporations seek partnerships with Indigenous communities in accordance with provincial, federal, and company specific Indigenous consultation guidelines in energy development, Indigenous capacity development is also expected to increase. The topic and trends of Indigenous involvement in development

projects in clean energy and renewables is a growing field that is linked to an increase in economic development for Indigenous communities. Since 2017, Indigenous renewable energy projects on a medium-to-large scale have increased by almost 30% in Canada, with many more projects in development currently (Indigenous Clean Energy [ICE], 2020).

Patterns of an increase in business ventures with Indigenous has also been evident in the past 20 years, particularly in resource development projects, alongside the emergence of more entrepreneurial projects from Indigenous-owned businesses. For example, the Tahltan Nation purchased 5% of the Northwest BC Hydro Electric Facilities from Axium and Manulife in July 2019 – making it the largest clean energy investment in BC history. This is another step forward for the nation in their goal towards economic and energy independence. The partnership is expected to provide vast benefits for generations to come (Tahltan Central Government, 2019).

An overlap of mutually shared goals between stakeholders and Indigenous communities is highlighted as a strong benefit for partnerships but incorporating Indigenous values and knowledge into impact benefit agreements can hold complexities as well. Balancing community needs, energy needs, long and short-term benefits, and traditional and cultural values with contending interests can be difficult, but if done in a meaningful and balanced way, it can result in successful projects and opportunities for long-term (Lowan-Trudeau, 2017, as cited in Jaffar, 2015, p. 609). This illustrates a need for further attention on Indigenous related clean energy projects to ensure proper consultation is taken by both the Crown and industry to avoid past mistakes (Lowan-Trudeau, 2017). Given the growing interest in clean energy, further research may also offer valuable insight into community level methods of reducing the barriers to implementation and the multitude of clean energy options for remote communities. At the same time, there has been an emergence of organizations in the clean energy sector, such as the

Indigenous Clean Energy Network, whose purpose is to help advance and promote Indigenous communities' participation in energy projects and collectively create new opportunities (ICE, n.d.).

Existing literature is complimentary to my project and provides crucial examples and analyzes of the dimensional layers of clean energy within Indigenous communities, alongside the current gaps that still need to be addressed from a policy and socio-economic lens. Given that current BC climate change policies and programs like CleanBC are fairly new, there is no academic research on this topic to date. To successfully meet BC climate change goals and work towards additional participatory partnerships with Indigenous communities, support and collaboration from both government and stakeholders is needed to successfully shift away from fossil fuels. Alongside current literature, ongoing research as a whole will supplement and provide insight into motivations of implementation of sustainable alternatives for Indigenous communities and perspectives into reducing the impacts of climate change from an Indigenous lens. This would take into consideration any recent changes in policy and new clean energy projects amongst Indigenous communities, alongside perspectives of experiences. When it comes to research of this nature, it is important to acknowledge that not all work is reflected in this study as there is a lot of on the groundwork that may not be illustrated in academia (Sayers, 2019).

3.9 United Nations Declaration on the Rights of Indigenous Peoples and CleanBC

Since the roll out of the CleanBC plan, it is evident the provincial government is committed to strengthening its relationship and reconciliation with Indigenous communities through the launch of several programs under the plan within the past two years, including RCES and its recent commitment to the BCICEI. They have acknowledged that 'efficient programs' for clean energy have not always been available for Indigenous communities, but is adamant things will be

different with CleanBC, particularly inclusion of Indigenous TK and values in future strategies and planning (CleanBC, 2018). The most notable and an important step in the CleanBC plan was the unanimous passing of the Declaration on the Rights of Indigenous Peoples Act in BC (Bill 41) in late 2019. In the CleanBC plan, it states “initiatives must reflect government’s commitment and obligation to support the implementation of the United Nations Declaration on the Rights of Indigenous Peoples and the Calls to Action of the Truth and Reconciliation Commission" (CleanBC, 2018, p. 13). This framework was developed by the BC government and First Nations Leadership Council with the purpose of advancing reconciliation and further supporting economic development opportunities while respecting Indigenous rights. This bill requires the province to take all necessary processes to ensure provincial laws align with UNDRIP. When applied to CleanBC, this means the province should fulfill consultation duties where necessary and include Indigenous peoples in decisions on matters that impact their communities. For example, this would include the development of a climate change adaptation strategy, which is scheduled to be developed in 2020 (CleanBC, 2019), but the status and progress of this is unclear.

As outlined in Bill 41, the purposes of the act are as follows:

- (a) to affirm the application of the Declaration to the laws of British Columbia;
 - (b) to contribute to the implementation of the Declaration;
 - (c) to support the affirmation of, and develop relationships with, Indigenous governing bodies.
- (Legislative Assembly of BC, 2019, para. 2).

Not only is this new law a crucial step in the provincial government’s mandate, but a part of the movement towards building better and stronger opportunities and healthier communities for Indigenous peoples. However, there have been questions raised about how UNDRIP will be

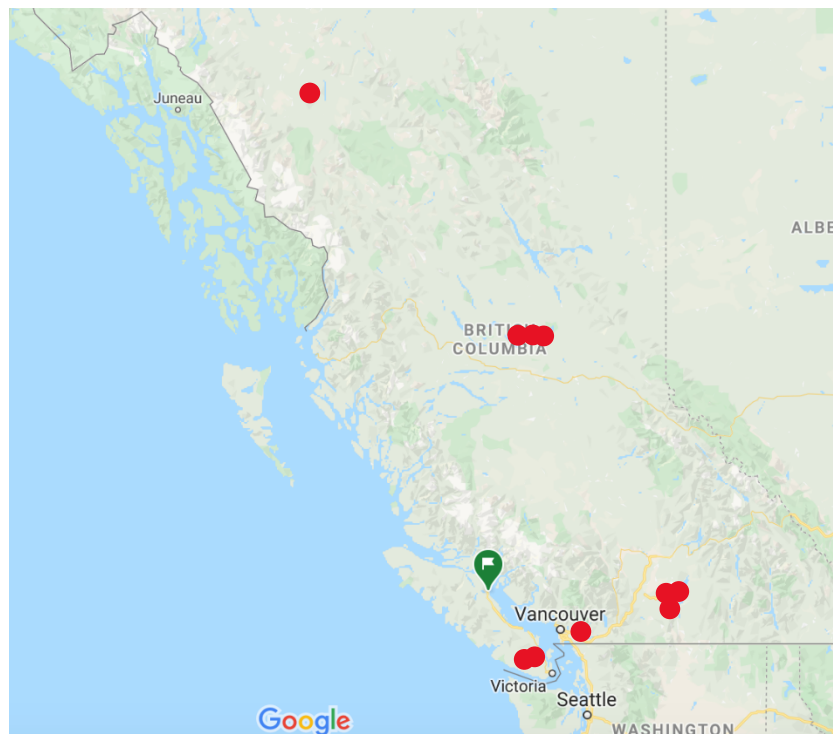
applied to ‘free, prior and informed consent’ for project development, which will likely impact clean energy projects. Article 26 states that Indigenous peoples have the right to their traditional territories and control of resources they possess (Legislative Assembly of BC, 2019). The Canadian Bar Association (CBA) states that the consultation piece could have profound implications for investors of projects in BC that are on Indigenous lands. It is clear that it will take some time for Bill 41 to be reflected and fully understood in particular areas like environment and climate change acts (CBA, 2019). Committing sufficient resources to development, particularly sustainability, will be vital if the province wants to achieve its climate targets. The implementation of UNDRIP and correlation to clean energy for Indigenous communities has not been investigated yet, which will be reflected through my analysis of the survey results. In years forthcoming, annual accountability reports must be developed in consultation and collaboratively with Indigenous peoples and be released on or before June 30 of each year (Legislative Assembly of BC, 2019, para. 5). The accountability requirement is a positive move to hold the province responsible in its mandate, but also provide transparency with Indigenous communities and the general public.

Chapter 4: Survey Results from Indigenous Communities

The research survey was designed for Indigenous community leaders, including former elected leaders and Indigenous professionals involved in their community. The map shown in Figure 6 provides the approximate location of the participants' community. Data gathered from the survey participants is presented in the following sub-sections in common themes including:

- Perspectives on how BC climate change policy reflects Indigenous community needs (section 4.1);
- Utilization of programs/funding (section 4.2);
- Interest in clean energy (section 4.3); and,
- Barriers and challenges to implementation of clean energy (section 4.4).

Figure 6: Approximate location of survey participants

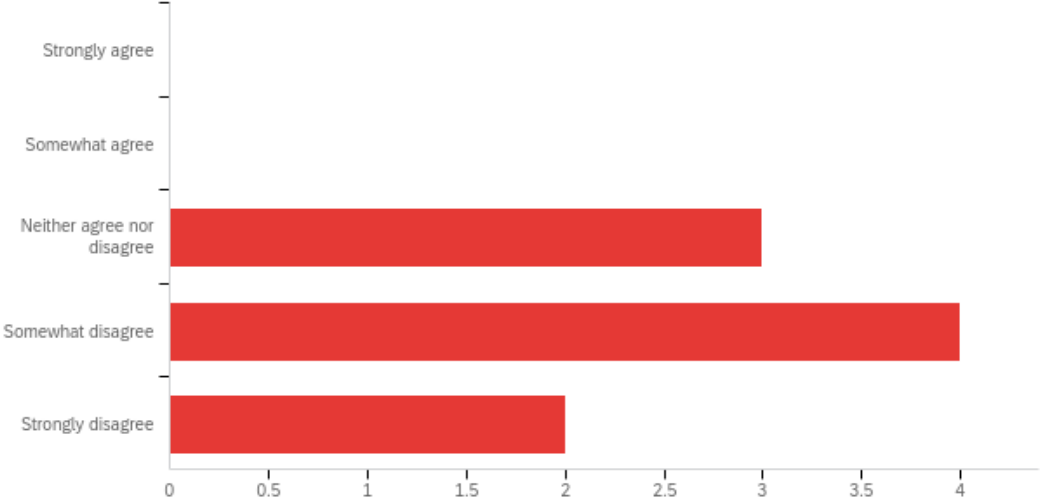


(Google Maps, 2020)

4.1 Perspectives on how BC climate change policy reflects Indigenous community needs

Of the ten respondents who completed the survey, majority of respondents selected ‘somewhat disagree’, followed by ‘neither agree nor disagree’. Two respondents selected ‘strongly disagree’ when asked “how strongly do you feel that BC’s current climate change policies are reflective of Indigenous communities’ needs?” (Figure 7).

Figure 7: Survey question results on perspectives on BC’s climate change policy



The data show that there may be a disconnect with government policies and those Indigenous communities in the survey. As mentioned previously in both the academic and policy reviews in this report, communication challenges and lack of transparency continues to be problematic when it comes to government and Indigenous relations regarding climate change policy. This can lead to programs not being utilized to its full capacity due to lack of knowledge about available resources and tools. In regard to engagement, the province has been more participatory in recent years through engagement sessions in an attempt to address challenges and close the gap. Participants were asked how the province can better support Indigenous communities in the face of climate change impacts. ‘Active involvement and engagement of communities’ and ‘more funding/grant opportunities’ was ranked the highest. ‘Other’ was also provided as an option; however, no one elaborated. This speaks to the need for more inclusivity of Indigenous peoples

in processes that affect their communities. It is also important to acknowledge that implementation of changes into policy and programs will take time due to bureaucratic realities. Unfortunately, none of the survey participants have been involved in the development of climate change initiatives with the province, despite involvement in clean energy by some participants.

4.2 Utilization of Programs/Funding

To gain a better understanding of which participants were familiar with clean energy resources outlined above in the policy review, participants were asked if their community had applied to any programs and if funding was beneficial, such as the First Nations Clean Energy Business Fund (FNCEBF). It was encouraging to see that FNCEBF has been utilized by 50% of participants, especially in that the program has only been in existence since 2011. In terms of benefits, a single participant answered this question, which may suggest that some participants have not utilized funding past stream one, the feasibility stage.

It is worth noting that one respondent did not find the Renewable Energy for Remote Communities Program beneficial, which is partially delivered by Coast Funds and FBC. Further understanding into this would be beneficial for program improvements.

Despite the few numbers who have applied for funding, about 60% have utilized online tools and resources, including fact sheets from the Province of BC website, disaster resilience planning, and the Indigenous Climate Change toolkit. 40% were unaware of available resources and tools. This speaks to the significance of education and awareness about clean energy opportunities and services available for Indigenous communities. Improvement in this field is vital for a successful shift to cleaner alternatives, CleanBC's targets, and improve government-Indigenous relations. One respondent emphasized the importance of awareness amongst different regions/areas. As mentioned by Lowan-Trudeau (2017), there is a large number of pedagogical opportunities that

require further research, particularly with respect to social and environmental justice.

Exploration of more options that reflects today's increasing demand for more renewable energy that harnesses Indigenous values, TK, and UNDRIP can allow for Indigenous communities to be further involved in projects, co-management, and increase sovereignty. One limitation of this data is that some participants may be unaware of funding the band has applied for, resulting in skewed data results.

4.2.1. UNDRIP and the Clean Energy Act

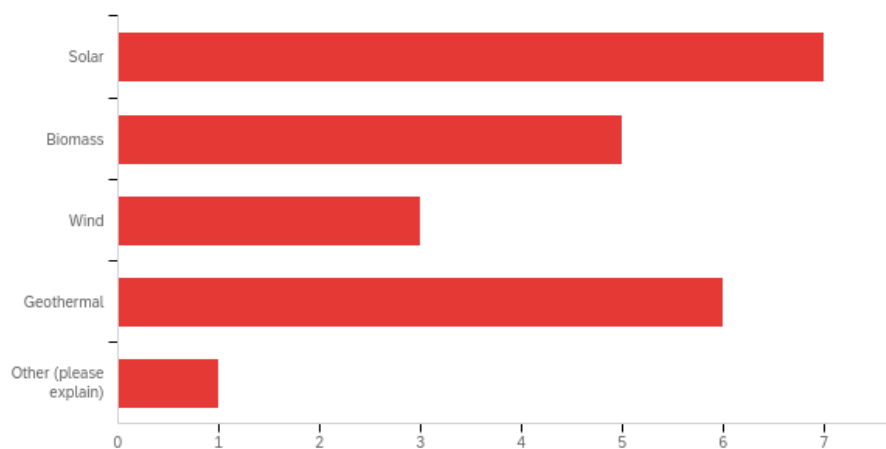
While the provincial government has been highly praised for the passing of the Declaration on the Rights of Indigenous Peoples Act in BC, fulfilling those promises has not always been reflected in actions. In late July 2020, the province released Bill 17, the Clean Energy Amendment Act. As cited in the bill, Section 1(1) states the definition of “electricity self-sufficiency” will be repealed and more general definitions will be added (Legislative Assembly of BC, 2020). The act essentially eliminates energy self-sufficiency in the CEA mandate, which would allow BC Hydro to easily buy power from the United States instead of the current requirement of buying from BC independent power producers – of which, 80 are fully or partially owned by Indigenous communities. This amendment is detrimental to Indigenous communities' economic development, particularly those who have invested their time and resources into successful clean energy projects (BCAFN, 2020; City News, 2020). An interesting finding in this survey was that majority of participants believe the passing of UNDRIP in BC will help improve BC's climate change policies, whereas people who attended CleanBC engagement sessions believe reconciliation is an overused term that is not always reflected in actions and should be separate from climate change management (CleanBC, 2019). Contrary actions by the province, such as the CEA Amendment, point to a failure of upholding UNDRIP.

Notably, the Community Emergency Preparedness Fund, though not technically part of CleanBC, is mentioned in several documents. This was presented as an option in the survey due to the overlap of emergency preparedness and climate change. All but one participant has applied for this funding and 75% said it was beneficial. The ties to the trend of adopting to climate change in several ways, including planning for and mitigating impacts of potential environmental impacts to the land, which includes wildfires, flooding, and environmental incidents. In comparison to implementation of clean energy, managing emergency preparedness may rank higher for most Indigenous communities.

4.3 Clean Energy Technology

In order to gain a general understanding of clean energy preferences in Indigenous communities, four options were listed in the question, including solar, biomass, wind, and geothermal. Participants were able to select more than one choice if desired (Figure 8). From highest to lowest ranked, solar received the most counts, followed by geothermal, biomass, and wind energy.

Figure 8: Survey results on clean energy preferences



Complimentary to the strong interest of clean energy, 50% of participants said their community has partnered with industry on a sustainably project in some capacity. The motivation for

implementation of clean energy technologies is widespread, ranging from conservation of the environment and land to being energy independent. Several participants emphasized the importance of educating community members on sustainability, reducing footprint sizes, and improve access to traditional foods and medicines. From an economic development lens, the theme of capacity building, such as partnerships with multiple Indigenous communities, was mentioned in several responses. When it comes to energy independence, one participant provided insight into the benefits of diversifying options as it could reduce harmful environmental impacts to land and water resources, but also potentially offset costs of other community business ventures that require large amounts of energy, including infrastructure and industry-related operations.

4.4 Barriers to Implementation of Clean Energy

In terms of challenges to implementing clean energy in Indigenous communities, navigating through government bureaucracy was noted as a prominent barrier. When a community pursues a clean energy project, there is often a lot of back and forth with utility providers regarding connectivity to the grid and potential power-sharing revenue agreements. As some of the province's CleanBC programs are run in partnership with BC Hydro, some communities face bureaucratic challenges, like miscommunication and delays, throughout the lifecycle of the project. This is not uncommon when working with several institutions and power structures when trying to progress projects forward. Despite strong interest in clean energy by communities, lack of funding opportunities was cited as a pitfall that can result in potential deterrence from clean energy development altogether. Closely tied to that is access to capital, which was also cited numerous times in the previous chapter as one of the main issues preventing investment into clean energy. Not every Indigenous community has the funds to

implement systems, even if it is subsidized by government. Clean energy technology is often more costly in comparison to traditional fossil fueled systems and requires full commitment for several years by leadership. As lack of capacity and socio-economic issues is unfortunately a common problem amongst Indigenous communities, this may also impeded implementation of clean energy, especially if there is weak support or lack of education about a project. This may also tie into traumatic past experiences of bad partnerships with government and institutions, which has resulted in broken trust with some companies. Though much of the CleanBC programs look enticing for the general population, many communities from ‘What We Heard’ echoed that some programs do not fit with Indigenous communities’ realities, such as increasing hydro costs that are already high in remote areas (CleanBC, 2019).

Chapter 5: Recommendations and Conclusion

5.1 Recommendations

The findings presented in this research project provide a context into the potential issues selected Indigenous communities have faced when considering investing into clean energy projects. From a clean energy perspective, the growing demand for more sustainable solutions has triggered an increase in project development in Indigenous communities. Despite the interest in implementing clean energy, there are layers of challenges encountered by Indigenous communities. Based on the literature reviews and survey results, the following recommendations are provided to improve CleanBC climate change policies and strategies.

- Increase transparency and engagement from the Province of BC with Indigenous communities for all clean energy legislation amendments;
- Ongoing CleanBC engagement sessions with Indigenous communities;
- Increase BC intergovernmental relations, including other Crown corporations such as BC Hydro, and BC Utilities Commission; and,
- Increase collaboration with external stakeholders for the delivery of funding programs, including Indigenous-owned businesses.

5.1.1. Transparency and Engagement

Although the CEA has made amendments since legislation and released several initiatives aimed at reducing climate change impacts over the years, there continues to be challenges with the multitude of institutions Indigenous communities work with when it comes energy development, such as traditional bureaucratic structures. Despite the efforts to have more Indigenous participation in decision-making on policy making and more efforts to fulfill consultation, there

are still inconsistencies and misperceptions that can negatively affect economic development and traditional lands of Indigenous communities, such as the recent CEA Amendment.

The following recommendations may assist BC government in these transparency concerns:

- The need for collaborative policy development is not new to the clean energy sector. Closely tied to this is the call for continuous acknowledge of rights and titles of Indigenous peoples and opportunities to exercise environmental governance (Zurba and Bullock, 2018). This is an example of lack of sufficient consultation and acknowledgement of the direct impacts for Indigenous communities from clean energy policies and strategies.
- In order to progressively move forward in alignment with the UNDRIP, the province should evaluate how it handles amendments to the CEA and if they are committed to living up to UNDRIP principles.
- In order for CleanBC to build capacity for Indigenous remote communities, fulfilling UNDRIP obligations to include Indigenous leaders at the decision-making table and continuing to invest in clean energy opportunities is required to reduce diesel reliance, lessen climate change impacts, and creating stronger government-Indigenous relations.

5.1.2. CleanBC: Policy Improvement and Increased Engagement

- In regard to policy reform, more funding opportunities from CleanBC that better reflects Indigenous communities' needs is strongly recommended in order to increase resource utilization by more communities.
- As presented in several existing literature, many Indigenous communities were concerned community members would be disqualified for some programs aimed at improving infrastructure and transportation electrification, such as rebates, despite the need for more

efficient homes and fewer GHG emissions. Current feedback and input from Indigenous participants in CleanBC's engagement sessions were insightful for evaluating the CleanBC funding programs, resources, and tools. The hope is that amendments reflecting the recommendations are fulfilled, which would align with the session's overall purpose.

- Continuation of these engagement sessions is strongly recommended in different regions/areas in BC to give more Indigenous communities the opportunity to voice their concerns on an important topic. This could result in amendments to climate change strategies and policy.

5.1.3. Improvement of Intergovernmental Relations

Navigating through several institutions when trying to implement a clean energy project for Indigenous communities is exhausting and time consuming. Negotiations between all parties involved can drastically and quickly affect how a project is executed. Often there is miscommunication or a disconnect between intergovernmental bodies, Crown corporations, and Indigenous communities.

To improve communication and increase project development, the following recommendation may advance intergovernmental relations:

- To maximize success of a project and improve project development for Indigenous communities, strong collaboration, a clear line of communication, and guidance needs to come from institutions to support communities through the lifecycle of a project. Equally, strong leadership needs to come from communities as well. This analysis has revealed that motivations for clean energy are varied, which may be dependent on capacity. As presented in several reports and literature, building mutually beneficial relationships is once again stressed as essential for projects, especially energy development.

5.1.4. Increase collaboration with external stakeholders

To reduce complications working with several bureaucracies, pursuing more partnerships with external organizations, such as Coast Funds and FBC, can be highly beneficial for both Indigenous communities and the province because more support could be provided for programs, building of stronger relationships between organizations and communities, and allow for more knowledge sharing opportunities. It would be helpful to have communities suggest which organizations would be best suited for certain programs, which may increase the number of successful applications for clean energy funding and improve project timelines.

5.2 Conclusion

Climate change shifts have already unfolded in BC and globally, especially in Indigenous communities. An increasing number of Indigenous communities are now looking to clean and renewable energy to increase efficiency, achieve energy independence, reduce GHG emissions, and advance economic opportunities. Climate change strategies and resources have been introduced since the passing of the CEA by the Province of BC, including numerous funding programs and tools for Indigenous and remote communities. Approaches such as the CleanBC plan propose to encourage industry and residents to transition to more sustainable practices that strengthens the economy and to achieve BC's climate change goals by 2030 and onwards. The purpose of this research study was to research and analyze Indigenous components of climate change policies and strategies stemming from the CEA and current government, including program funding, reports, and progress to date. A policy review combined with a literature review was completed to analyze the impacts, benefits, and gaps of these strategies and to gain an understanding of current research on climate change policies and involvement of Indigenous communities in the clean energy field.

The participant surveys, which was sent anonymously to a small group of Indigenous leaders and professionals around BC, had the objective to gain feedback and insights from a community level. Questions asked revolved around policy, governance, and involvement in clean energy.

The survey also allowed participants to provide information about their thoughts on BC's climate change policy and strategies.

Based on data collected from the survey in combination with both policy and literature reviews, the analysis points to a strong support for clean energy; however, there are still challenges when it comes to project development. Issues around access to capital was mentioned several times in the reviews and survey as an ongoing barrier that may prevent implementation of clean energy. Indigenous communities often face more challenges compared to other public institutions, such as navigating through different institutional hoops and systemic obstacles to gain access to capital (Canada's Public Policy Forum, 2016). Alongside, improving funding was mentioned as a reoccurring recommendation due to bureaucratic systems and models that do not always align with the unique needs of Indigenous communities. This was similarly found in academic articles and policy reports. From a policy lens, further consultation and transparency with Indigenous communities was equally important to participants. Not only does this include government, but also utilities corporations. Similarly, inclusion of Indigenous knowledge and perspectives is strongly recommended for climate change management.

Nonetheless, there is growing momentum and motivations for Indigenous involvement in clean energy amidst growing demands for more sustainable energy options locally and globally.

Several Indigenous communities in BC and other provinces have capitalised on clean energy already. The pathway to clean energy among BC Indigenous communities has a positive outlook

and will be beneficial long-term in creating economic and energy independence, alongside job creation and contributing to reducing BC's environmental footprint.

5.3 Limitations and Future Research

Due to the short timeframe of this project, several challenges emerged.

- Originally, phone/in-person interviews were to be completed a few of the survey participants, but due to unforeseen events, this was not possible. As a result, this study solely relied on data from the anonymous surveys with individuals that were selected by choice.
- The survey data had some limitations due to sample size. Results received were helpful in my project in reaffirming other parts of the report; however, having more participants would have offered more perspectives into BC climate change policy and Indigenous-targeted initiatives.
- The survey options provided to participants were gathered from the Province of BC's website; however, a limitation in one question is that the BC Indigenous Clean Energy Initiative was not given as a selection choice. Due to the lack of full responses on specific programs and the small participant size, a concrete outlook on which programs have been most beneficial is not conclusive.
- Since the CleanBC plan was only released in 2018, several Indigenous-targeted programs and resources are new and have only gone through one or two funding intakes. As a result, accountability reports and current information on funded projects is not readily available. Available content was helpful in framing my project as a whole and allowed for an investigation into the major Indigenous components of CleanBC, but further research is required to analyze progress.

- Future academic research has several areas and gaps to address. There is limited research on Indigenous involvement and clean energy; although, there is some literature on socio-economic components in resource development that overlaps with clean energy. As this is a new field that has gained immense attention in the past decade, studies have grown, but more research is needed to reduce gaps, address challenges, and share knowledge of other projects completed by Indigenous communities around BC and Canada. More research is specifically needed for industry and Indigenous partnerships in clean energy to provide insight into the different complex layers of clean energy partnerships and how it is similar and different from traditional resource development projects.
- Further studies on co-management of clean energy systems may be helpful for other Indigenous communities looking to invest. Previously mentioned was the importance of education and awareness of clean energy technologies as projects will be maintained and operated by community members. Passing knowledge onto future generations will help pave a clear pathway for clean energy and sustainability for future generations.

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