



# Support for Conservation & Energy Management in Indigenous Communities

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## List of Acronyms

CE.....	Clean Energy
CEA....	Community Energy Association
CEM.....	Community Energy Manager
CEEI....	Community Energy and Emissions Inventory
CEEP....	Community Energy and Emissions Plan/ Planning
CEP.....	Community Energy Plan/ Planning
CCP....	Comprehensive Community Plan
CMHC....	Canada Mortgage and Housing Corporation
DSM....	Demand Side Management
GWH....	Gigawatt Hours
EE....	Energy efficient/ efficiency
FN....	First Nation
FNCEBF.....	First Nations Clean Energy Business Fund
GHG....	Greenhouse Gas
IESO....	Independent Electricity System Operator
ISC.....	Indigenous Services Canada
INAC.....	Indigenous and Northern Affairs Canada
kWh.....	Kilowatt Hours
gWh....	Gigawatt Hours
LED....	Light Emitting Diode
MIRR....	Ministry of Indigenous Relations and Reconciliation
PAYS.....	Pay As You Save
PCP....	Partners for Climate Protection
SCEEP....	Strategic Community Energy and Emissions Plan/ Planning
ToC....	Table of Contents
ToR....	Terms of Reference

# Executive Summary

## Introduction & Background

Despite recent progress made toward greater self-sufficiency, healthy community design, and economic development, Indigenous communities in Canada experience ongoing challenges including high energy costs and inadequate housing. Like other utility companies and organizations, BC Hydro has joined emerging efforts to increase collaboration with Indigenous and remote communities through pilot initiatives consisting of funding for energy management positions, curriculum and training opportunities in energy management, and expanded incentive and rebate programs for upgrades to buildings, and energy conservation policies for on-reserve buildings. BC Hydro identified the need for research on the state of and current practice around Indigenous community energy planning in B.C. and programs and approaches being taken by other North American utilities to support Indigenous customers with conservation and energy management. This research is intended to 1) identify current practices in Indigenous community energy planning and implementation and determine where additional support for such efforts is needed, and 2) provide recommendations on how BC Hydro can assist Indigenous communities in advancing conservation and energy management.

## Methodology

To achieve this, the research was conducted in two parts: (1) an Indigenous Community Energy Plan (CEP) Scan and Review, and; (2) a DSM Program Scan. A review of documents, consisting of guidelines and recommendations by various agencies and utilities for structuring community energy planning, informed the plan evaluation. To supplement the desktop review of plans, interviews with CEP consultants, funders, and long-term staff provided additional insights about the barriers and opportunities faced in community energy planning. Overall, 67 Indigenous local governments were identified as having community energy plans. 12 plans were selected for in-depth review from which successes and weaknesses of the various planning documents and processes could be identified.

## Results from CEP Evaluation and DSM Program Scan

The first research question was geared toward better understanding the status quo of community energy planning in B.C. through the strengths and weaknesses of a small sample of plans and highlight improvement potentials. The desktop review of selected plans and semi-structured interviews with consultants, long-term staff, and funders produced some significant findings. Most importantly, no standard approach exists among the Indigenous CEPs observed, despite guiding frameworks that are used to help communities structure their plans. The in-depth review produced mixed results with regards to whether the plan's content satisfied guiding frameworks for community energy planning (e.g., recommended inventory reporting methods, inclusion of targets using baseline and forecast, inclusion of a detailed engagement section). One major finding is that current frameworks used to evaluate Indigenous CEPs may need to better accommodate the unique conditions of many Indigenous communities, including small population sizes, distinct governance arrangements, staff capacity, as well as the geography, history and socio-economic features that define some of these communities. Among the interview findings, client capacity arose as a significant issue communities face in their CEP process that hinders implementation. As a second significant finding, interview respondents valued knowledge transfer (via job training, education) in the CEP process highly and this is something funders recommended communities and consultants continue to focus on if not already. CEPs, like Comprehensive Community Plans and economic development plans, have the ability to be a highly referenced document with various applications for a community. The DSM Program Scan revealed around 22 programs across North America, about half of which were focused on Indigenous communities. 17 out of 22 of the programs utilized energy conservation measures (e.g., free giveaways, direct installations, rebates) and 13 out of 22 of the

programs applied capacity building measures (e.g., grants and funding, technical support, how-to advice). This scan helped answer the second research question, providing a snapshot of current programs and practices that exist to support Indigenous customers in North America and identifying gaps that BC Hydro could fill in to better assist them in matters of conservation and energy management. Example programs from this scan highlight wise practices for working with Indigenous communities on building upgrades and energy efficiency program, highlighting innovative funding mechanisms, opportunities for capacity building through training, and approaches for mutual learning and partnership. The appendix of the report includes relevant case studies from Indigenous customer-focused programs run by Manitoba Hydro and Aki Energy, IESO and Western Diversification.

### Summary

These learnings could guide program managers from utilities, government and non-governmental agencies in the future development of energy-related programs to Indigenous communities. In addition, results may be useful to inspire the design and development of BC Hydro's conservation and energy management program offers for Indigenous customers. The following recommendations were made from both the community energy plan and DSM program evaluations.

### Recommendations from Community Energy Plan Evaluation

- Consider that community energy planning can come in different forms and that communities may tailor frameworks for structuring CEP content to their unique needs and goals;
- Allow for flexibility in CEP frameworks to be more tailored for small-sized communities and remote communities (i.e., shorter timelines, alternative inventory approaches), as these comprised the majority of communities observed;
- Provide additional guidelines for how external consultants should engage in the community energy planning process to support capacity-building;
- Emphasize the importance of having dedicated staff as the CEP champions within the community who can carry the plan toward implementation;
- Alternatively, provide additional funding and flexibility in CEP funding structure to allow communities to hire staff to oversee CEP development and implementation;
- Explore flexible funding timelines that extend over more than just one fiscal year to allow communities to optimize the community energy planning process and do proper engagement;
- Document everything in the CEP - some CEPs did not state the same detailed information that was found when conducting interviews - since a CEP is a living and highly referenced document, documentation is important;
- Explore opportunities for providing support for Indigenous communities pursuing community energy planning that involve knowledge sharing, peer networking, and benchmarking.

### Recommendations from DSM Program Scan

- Enhance utility program structures to focus more on capacity building in addition to energy saving measures;
- Follow the examples of innovative utility programs like IESO's Aboriginal Community Energy Plan Program and Manitoba Hydro's Community Geothermal Program (see Case Studies) that prioritize relationship-building, flexible financing, and social learning;
- Explore the possibility of streamlining funding for renovations and energy efficiency upgrades to ease the burden on applicants, perhaps via an add-on approach;
- Maintain a flexible approach when working with Indigenous communities (e.g., covering costs partially or fully, using face-to-face interaction, extending funding timelines, etc.).

# I. Introduction

Most North American energy utility companies offer demand-side management (DSM) programs to support customers in saving energy and money, including, in some jurisdictions, programs targeting Indigenous communities. As will be explained further in this report, many Indigenous communities face ongoing challenges regarding inadequate housing quality and supply and high household energy costs. This matter should warrant the attention of professionals engaged in conservation and energy management programs. BC Hydro is currently exploring approaches to strengthen and improve support for Indigenous Communities (First Nations) to pursue initiatives that reduce energy consumption and greenhouse gas emissions and strengthen energy management practices at the community scale. To date this pilot initiative has supported a range of activities, some of which include: providing salary support to Band Councils/Nations to hire staff to champion energy management in the community; developing curriculum and offering education and skills training on energy management; exploring incentives and rebate models to support residential and commercial building energy upgrades; supporting the development and implementation of energy efficient buildings policy on reserve. In addition to these activities, BC Hydro is working in partnership with the Ministry of Indigenous Relations and Reconciliation (MIRR), BC Hydro, FortisBC, and Community Energy Association (CEA) to explore how to strengthen support for Indigenous community energy planning and implementation in B.C.

To support these pilot activities, BC Hydro identified the need for research on the state of and current practice around Indigenous community energy planning in BC and programs and approaches being taken by other North American energy utilities to support Indigenous customers with conservation and energy management. This research is intended to 1) highlight learnings, good practices and areas for improvement in Indigenous community energy planning and implementation, and 2) provide recommendations on how BC Hydro can support Indigenous communities in advancing conservation and energy management. To achieve this, the research was conducted in two parts: (1) an Indigenous Community Energy Plan Scan and Review, and; (2) a Demand-Side Management (DSM) Program Scan. The findings will be of interest to program managers from utilities, government and non-governmental agencies offering energy-related programs to Indigenous communities. This research will inform the design and development of BC Hydro's conservation and energy management program offers for Indigenous customers.

# II. Background

## 2a. Challenges faced by B.C. Indigenous communities related to housing and energy

Indigenous communities have experienced turbulent physical, social and economic change since colonization. According to Fraser Basin Council (n.d.), First Nation communities in B.C. face high household energy costs and these energy costs sometimes double that paid by other households in Canada. Although the conclusion that First Nation households face higher energy burdens still remains anecdotal in the absence of more quantitative research, one study has shown that the likelihood that households might face 'energy poverty' increases in rural communities (Rezaei 2017). Furthermore, Indigenous communities have been left out of analyses of energy poverty, which currently rely on expenditure-based measures (Rezaei 2017, p 56). According to Rezaei (2017), these measures do not reflect the households who intentionally try to curb their energy consumptions (e.g., underheating) to reduce household energy costs. Another factor for why remote Indigenous communities may *feel* the effects of energy burdens is due to their reliance on diesel electricity generators (UBC Sauder S3i). In addition, inability to access credit and no grid connection limits their ability to find affordable energy alternatives (UBC Sauder S3i).

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Inadequate housing presents additional challenges for various Indigenous communities, particularly those in rural and remote settings. According to the Statistics Canada's 2016 census, around ¼ of First Nations and 11% of Métis live in homes in need of major repairs while this is the case for only 6% of the non-Aboriginal population (IESO 2018b, p 6). In addition, more than 40% of on-reserve residents lived in homes needing major repairs, whereas this was the case for 14% of off-reserve First Nations people. (IESO 2018b, p 6). Palmer & Associates Inc. (2007) found that various coordination, jurisdictional, financial and capacity barriers stand in the way of addressing housing pressures in Indigenous communities. In the past, the Canadian government funded reserve housing construction and designed homes in a way to support individual nuclear families, despite Indigenous families having a more complex family structure, with larger family sizes and communal living arrangements (Hanson 2009). Lastly, large household sizes increase occupancy of homes, driving up energy consumption and household energy bills. In addition, homes outside BC's Lower Mainland were found to have low compliance rates with B.C. Building Code (Tiedemann & Sulyma 2016). This holds implications for energy consumption and GHG emissions, as single-family homes often face more insulation challenges due to easier exposure to the elements and fewer shared walls (Condon 2010; Ewing and Rong 2008). Indigenous Reserves tend to be located in more rural and remote areas of BC with harsher climates, which in turn, increases heating and cooling demand and the need for fuel from sources like propane, oil, diesel and wood. In addition, diesel power can triple in cost for remote communities (Fraser Basin Council n.d.). As a result, homes on reserve can be significant contributors to energy consumption, GHG emissions and energy costs for the community. The federal government through Indigenous Services Canada (formerly, Indigenous and Northern Affairs Canada) and through the Canada Mortgage and Housing Corporation (CMHC) provides funding to support home renovations, especially for communities with inadequate housing; however, these programs do not necessarily place emphasis on the energy performance of the home. BC Hydro's residential energy conservation programs, including the Home Renovation Rebate program and the Energy Conservation Assistance Program, were designed to help residential customers improve their home energy performance and reduce household electricity bills. However, these programs do not target Indigenous communities. In the absence of targeted programs and resources for Indigenous communities - to improve energy performance in the building stock on reserve and build energy literacy and local capacity around energy management - energy costs may continue to burden Indigenous households.





## 2b. Community energy planning as a lever for economic development and community resilience

Community energy planning and implementation has provided some opportunities to communities seeking greater self-sufficiency, energy independence, resource conservation, cultural preservation, healthy community design, job creation, training and education, economic development, and more. By helping meet some of the aforementioned goals, community energy planning could help communities become more in charge of their own energy solutions for the future, but also deal with pressing issues like energy affordability and inadequate housing. In an effort to advance the economic development of B.C.'s Indigenous communities, the provincial government has set aside funding for community energy planning as a way to promote energy conservation, but also propel local economic development. For example, the provincial First Nations Clean Energy Business Fund has allocated approximately \$50,000 in capacity building funds and \$500,000 in equity funds so that Indigenous communities can conduct clean energy feasibility projects. More than a hundred Indigenous communities have received such funding since 2011 (Media Relations, MIRR 2015).



Image Source: Janice Keyes, 2018

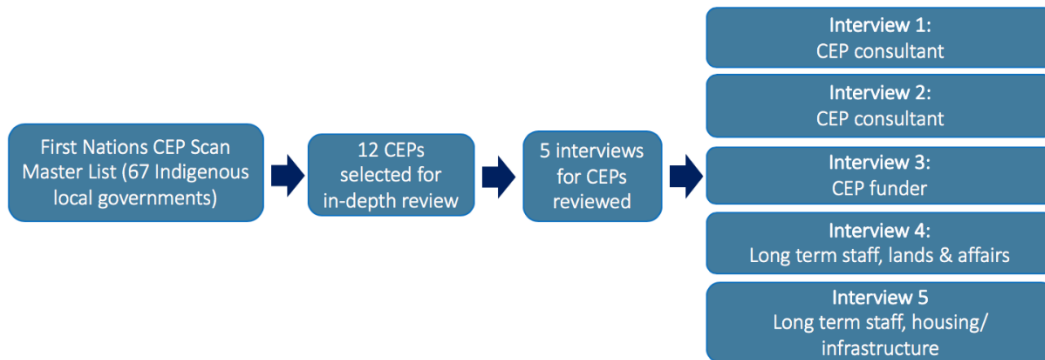
### III. Methodology

As seen in Table 1 below, research began with a document review of guiding frameworks that detailed CEP content and process. The outcomes of the document review informed a community energy plan review framework upon which to evaluate the Indigenous CEPs to glean whether CEPs incorporated key elements as recommended by existing frameworks (see Appendix A) Interviews were used to supplement the desktop review of plans by building a better understanding of community’s respective planning process and outcomes. This step could also introduce different perspectives on challenges in community energy planning and ways to overcome them.

**Table 1.** Overview of CEP templates assessed for Document Review

Document Title	Document URL
BC Hydro’s CEEP Quickstart Process	<a href="https://www.bchydro.com/content/dam/hydro/medialib/internet/documents/power_smart/sustainable_communities/ceep_quickstart_brochure_081612.pdf">https://www.bchydro.com/content/dam/hydro/medialib/internet/documents/power_smart/sustainable_communities/ceep_quickstart_brochure_081612.pdf</a>
BC Hydro’s CEEP Program Offer Terms of Reference	<a href="https://www.bchydro.com/content/dam/hydro/medialib/internet/documents/power_smart/sustainable_communities/A12_249_CEEP_Offer.pdf">https://www.bchydro.com/content/dam/hydro/medialib/internet/documents/power_smart/sustainable_communities/A12_249_CEEP_Offer.pdf</a>
Fortis BC’s SCEEP Process	No shareable link
BC Hydro’s CEEP Resource Guide- Sample Table of Contents	<a href="https://www.bchydro.com/content/dam/hydro/medialib/internet/documents/power_smart/sustainable_communities/A12_277_CEEP_Guide_TableofContents.pdf">https://www.bchydro.com/content/dam/hydro/medialib/internet/documents/power_smart/sustainable_communities/A12_277_CEEP_Guide_TableofContents.pdf</a>
MIRR’s FNCEBF Template	<a href="https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/consulting-with-first-nations/first-nations-clean-energy-business-fund">https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/consulting-with-first-nations/first-nations-clean-energy-business-fund</a>
CEA’s CEEP: A Guide for B.C. Local Governments	<a href="http://www.toolkit.bc.ca/sites/default/files/CEA_PlanningGuide_LR_v3.pdf">http://www.toolkit.bc.ca/sites/default/files/CEA_PlanningGuide_LR_v3.pdf</a>
CEP Getting to Implementation in Canada	<a href="http://framework.gettingtoimplementation.ca">http://framework.gettingtoimplementation.ca</a>

Funding programs were scanned to surface existing Indigenous CEPs in B.C. to determine how many and which communities have CEPs. For the purposes of this report, CEPs could refer to community energy plans, community energy & emissions plans, climate action plans, community energy management plans, and in some cases, energy baseline reports. This definition does not include clean energy feasibility studies or strategies focused solely on clean energy project development. This information is presented in the form of a master list extracted from BC Hydro, FNCEBF, and FortisBC spreadsheets of Indigenous communities pursuing CEPs. From these lists, only the Indigenous communities that had CEPs that BC Hydro could gain access to were selected for a more in-depth review. As part of a desktop review, spreadsheet analysis helped highlight trends and present key findings in graphical/visual form. Furthermore, five semi-structured interviews were conducted with relevant community members, consultants, and funders to understand the strengths and weaknesses in Indigenous CEP planning processes and outcomes, and the funding programs supporting these. The Community Energy Planning Getting to Implementation framework served as the basis for the interview guide (see Appendix A). This open-source framework serves to guide communities to move their community energy planning vision to implementation and includes ten strategies. Interview questions (see Appendix B for interview guide) provided insights into individual communities’ motivations for undertaking a CEP, strengths and weaknesses of the planning process, and remaining challenges for CEP implementation.



**Figure 1. CEP Scan & Review Process**

The other major component of this project, the Demand-Side Management (DSM) Program Scan, involved conducting a jurisdictional scan of how utilities, government agencies and non-profit organizations are supporting DSM in Indigenous communities. This step involved identification of existing program supporting Indigenous communities with a focus on utility programs, desktop review of select program targeting Indigenous customers, and informal interviews with select program managers (see Appendix C for the list of programs and review framework). Programs were reviewed based on the following: program structure, program participation, capacity building measures, energy savings, incentive programs, and lessons learned. This step is intended to unearth current DSM program trends, highlight lessons learned and positive examples, and identify program opportunities for BC Hydro to consider.



**Figure 2. DSM Program Scan Process**

The body of the report is divided into two parts: 1) findings and analysis for the CEP Review and 2) findings and analysis for the DSM Program Scan. The research questions will be answered in these respective sections. An overall discussion will take place linking the significance of both of these pieces with the Indigenous Reconciliation movement in the U.S. and Canada. Conclusions and recommendations will:

- Highlight how Indigenous community energy planning processes could be better structured and supported to improve outcomes for Indigenous communities, and;
- Provide considerations for utilities (and other funders) looking to strengthen and improve DSM programs and support for Indigenous communities.

## IV. Analysis & Findings

### 4a. CEP Scan & Review

To assist communities with community energy planning and implementation, utilities, governments and non-governmental agencies have developed frameworks to serve as guidance on the planning process and the structure and content of CEPs. These frameworks tend to agree on the general structure and content of the plan, although the order and naming of sections and their content may differ slightly. The document analysis suggest that community energy plans should include the following content:

#### COMMUNITY ENERGY PLANNING FRAMEWORK

**Background:** this section should describe the overall rationale of the CEP, including the purpose, objectives and scope of the CEP

**Methodology:** this section should describe the process of engagement, defining who was involved and what their responsibilities were as well as how the data was collected. It could also include key steps and milestones for the CEP process

**Vision, goals and targets:** this section should highlight the goals and targets, ideally both short and long-term (i.e., 10 and 25 year time horizon)

**Community and energy or emissions profile (baseline inventory and forecast):** this section should indicate expected community growth and an community energy consumption and emissions profile, include baseline and forecast data, total energy consumption and emissions, and a breakdown of emissions and energy consumption by fuel type and by sector (buildings, transport and waste)

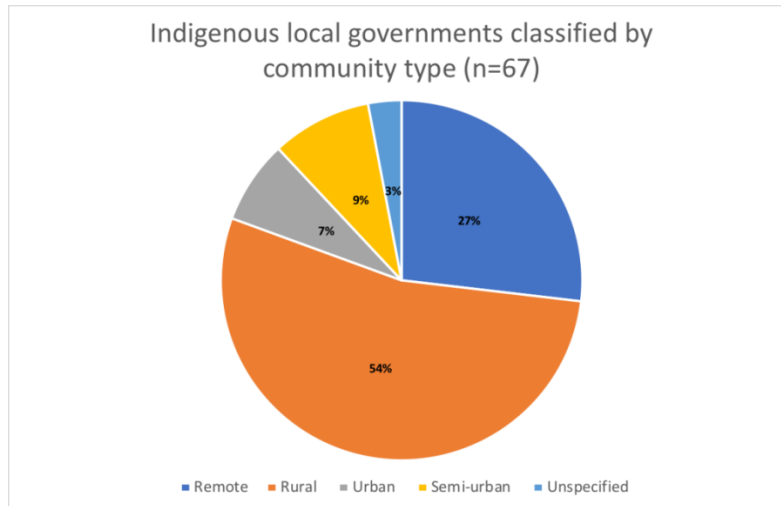
**Action plan:** this section should ideally highlight both demand-side management and clean energy opportunities and follow the 4 R's framework (see Figure X), where reductions in energy demand are prioritized. It should also include short and long-term actions, funding, and mention to community engagement, jobs and education opportunities

**Implementation plan :** this section should provide detail on how the actions will be implemented, indicating the roles and responsibilities, resource requirements (staff and consultant resources, capital, operations and maintenance costs), potential funding sources, time frame for implementation, and a plan for monitoring and reporting

**Figure 3.** Recommended sections of a CEP to inform in-depth CEP review

A list of sixty-seven Indigenous governments with CEPs in B.C. was compiled with the assistance of funders that support this work. Plan funders included the B.C. First Nations Clean Energy Business Fund, Indigenous Services Canada, FortisBC, BC Hydro, and Fraser Basin Council. Within this Master List, some CEPs were published as early as

2003 and others as recently as 2018. Many plans were completed with the assistance of consultants. A majority of the Indigenous communities were classified as being either rural (54%) or remote (27%) and were geographically dispersed across B.C.



**Figure 4.** Pie chart classifying Indigenous communities by community type

From the master list, 12 completed CEPs were selected for in-depth review based on those that were complete (as opposed to draft) and those which could be accessed by BC Hydro. It should be qualified that two of the 12 plans do not entirely fit the description of the CEP as they were remote community electrification plans or energy baseline reports. The 12 plans came from the following Indigenous governments and organizations: Klemtu (Kitasoo), Coastal First Nations, Haida Nation, Ktunaxa, Kwadacha, Nuxalk, Wuikinuxv, Seabird Island, Skidegate, Snuneymuxw, and Tsay Keh Dene. Some Indigenous communities were included in more than one CEP. For example, the Skidegate Band Council, while it has its own baseline energy report, is also represented under the Haida Nation's CEP, as well as in the Coastal First Nations Clean Energy Action Plan. Similarly, Klemtu/Kitasoo, Nuxalk and Wuikinuxv have their own CEPs and are also part of Coastal First Nations Clean Energy Action Plan. It should be qualified early on that the complexities in Indigenous local government structures and resulting overlaps in community energy plans or similar plans have created limitations for accuracy in this report.

**Table 2.** Overview of communities chosen and their respective CEPs

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Indigenous Local Government Name	Plan Name	Plan Publication Year	Classification (remote, rural, semi-urban, urban)
Coastal First Nations	Clean Energy Action Plan for the Coastal First Nations	2011	remote
Haida Nation	Haida Gwaii Island Energy Plan	2012	remote
Kitasoo Nation (Community of Klemtu)	Community Electricity Plan for Community of Klemtu	2014	remote
Ktunaxa Nation	Ktunaxa Nation Community Energy and Emissions Plan	2010	rural
Kwadacha Nation	Kwadacha Nation Energy Management Plan	2018	remote
Nuxalk Nation*	Nuxalk Community Energy Plan	2017	remote
Oweekeno First Nation	Oweekeno First Nation Community Energy Plan	2010	remote
Seabird Island Indian Band	Seabird Island First Nation Community Energy & Emissions Plan (2009); Seabird Island First Nation Community Energy Plan (2014)	2009 and 2014	rural
Skidegate Band Council	Skidegate Band Council Energy Baseline Report	2011	remote
Snuneymuxw First Nation	Snuneymuxw FN Community Energy & Emissions Plan	2016	semi-urban
Tsay Keh Dene	Energy Management Plan for Tsay Keh Dene	2017	remote

According to the recommendations taken from the document review, community energy plans should include tactical short-term actions, but take a long-term view of up to 25 years. A majority of plans used a long-term time horizon; however, three plans used a short time span of under 10 years.

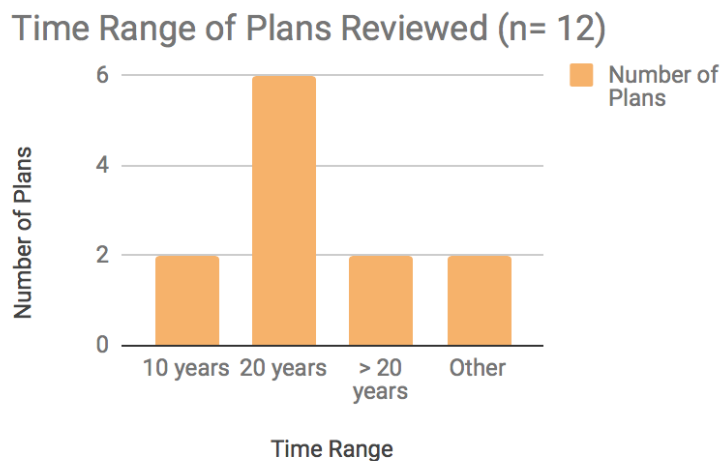


Figure 5. Time range of CEPs reviewed

### Background

This section should describe the overall rationale of the CEP, including the purpose, objectives and scope of the CEP. Eleven of twelve plans outlined the purpose, objectives and scope in their CEP document.

Among the CEPs reviewed, communities expressed a variety of motivations, such as the ones seen in the Figure 6 below. Many of these clustered around the themes of environmental protection, economic development, and social wellbeing, or the 3 E's of sustainable community development, economic efficiency, equity, and environment (American Library Association 2006). Five of twelve plans mentioned reducing energy costs as a prioritized benefit for undergoing a CEP process. Seven of twelve plans listed environmental protection (e.g., climate change, pollution mitigation) as a prioritized benefit. This finding is interesting given that in interviews and published materials that contributed to the DSM Program Scan, it seemed that high household energy costs more often motivate Indigenous communities to partake in community energy planning.



**Figure 6.** Motivations described for undergoing CEP process from CEP desktop review

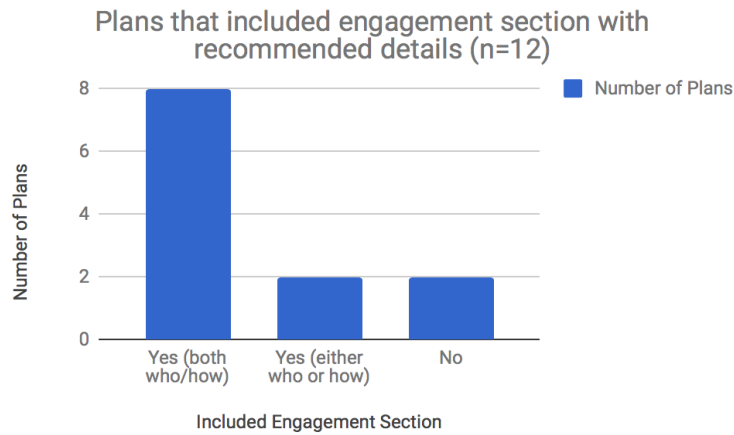
Upon reviewing plans in-depth and conducting interviews, additional and more specific motivations were highlighted. For example, one of the interviewees explained that, Tsay Keh Dene had experienced historical displacement due to BC Hydro's past energy projects and activities. Understandably, Indigenous communities who have historically been at the mercy of the Canadian government and service providers "don't feel like they are in charge of their own energy futures". In addition, although Tsay Keh Dene's plan was more of a short-term and iterative energy management plan than a long-range community energy plan, a housing shortage has driven this community's interest in energy planning endeavors. Planning for and implementing energy efficiency upgrades, fits in well with the community's new home construction and renovation activities. Through the community's development projects, members can see the impacts of energy efficiency upgrades in terms of reduced cost and improved comfort.

Snuneymuxw First Nation decided to begin the community energy planning process rather fortuitously. A consultant approached the community about doing a CEP at a time when a long-term staff member overseeing the Housing and Infrastructure departments was getting ready to embark on building a new school, considered a "significant project for the community" (CEP Interview 2). At the same time, this community faces a housing shortage, and community energy planning activities such as conducting home energy audits and installations was timely.

**Methodology:**

Content of Engagement Section

Based on Figure 3, this section should describe the process of engagement, defining who was involved and what their responsibilities were as well as how the data was collected. It could also include key steps and milestones for the CEP process. The engagement process overall should include staff engagement, community and partner engagement, and support from elected officials (Community Energy Planning in Canada. (n.d.)). The document review results conveyed that well-structured CEPs should detail the engagement process by including an engagement section in the plan itself, prior to the inventory or community energy/emissions profile section. The engagement section should include the following recommended details: *who* was involved (people & their roles) and *how* the data was collected. *Who* could include staff members, Chief and Council, youth, elders, and other members of the community, community partners, and funding partners. Ideally, data collection would occur using community input like community surveys and audits on energy usage within the community to invite participation from community members, staff, and partners. Plans were reviewed on this basis and a majority of them (8/12) included an engagement section, satisfying both the *who* and *how* criteria.



**Figure 7.** CEPs that included engagement sections, with the recommended content [who (roles & responsibilities) and how (data collection methods)]

Most plans included some discussion on engagement, either as its own section within the methodology or in the implementation or action period section. Some plans, including the Community Electricity Plan for Community of Klemtu (Kitasoo Nation) did not discuss engagement at all and additional interviews might be required in future research to reveal the quality and extent of the engagement process. Skidegate Band Council’s Energy Baseline Report did not discuss staff engagement in its methodology, but it outlined potential partnerships in the actions and implementation section. Both of these plans display some of the content that a CEP would contain, including an inventory, action plan, implementation, and list of partners, but the lack of engagement is what sets them apart from being considered a bona fide community energy plan.

**Staff Engagement**

Among the plans that included an engagement section, a majority alluded to the importance of staff engagement. While Skidegate Band Council’s plan made no mention of staff engagement, the Haida Gwaii Island Energy Management Plan and Nuxalk Community Energy Plan had strong engagement sections, including this information in detail. The former plan outlined staff organizations, such as the Haida Gwaii Clean Energy Committee, who were



involved in the planning process and included a detailed job description for the Haida Gwaii Sustainability Manager role. Nuxalk Nation's plan also indicated that it would leverage staff and identified departments that could be responsible for particular actions in the plan. Defining roles and responsibilities often leads to accountability. Other plans, such as the Energy Management Plan for Tsay Keh Dene mentioned the importance of having champions but did not explicitly identify who those champions will be let alone describe any potential projects of funding partners. The Snuneymuxw Community Energy and Emissions Plan listed the names of community energy champions who were involved. An interviewee explained that two long-term staff who oversee the Housing and Infrastructure department have spearheaded the CEP initiative within this community, helping it move forward toward implementation by planning and carrying out action items like home energy assessments, acquiring funding, and getting buy-in from Council. The interviewee credits the success of the plan in the community to the dedication and competence of these long-term staff.

From CEP Interviews 1 and 2, it became clear that having energy champions working on a voluntary basis to carry a CEP through to implementation might not suffice. Instead, long term staff who are committed to the CEP's success take on the work as part of their regular duties and ensure the plan gets embedded within the large-scale infrastructure projects of the community, such as increasing the housing stock and building a new school. According to guiding frameworks, energy champions help carry a plan to implementation. However, energy champions can come in different forms and the different interviewees presented varying examples of this. One long-term staff member mentioned that mentorship opportunities and a 'clear champion guidance model' will ensure the success of her community's energy planning efforts (CEP Interview 4). On the other hand, a consultant observed that the one-off energy champion model has not been successful and described the role of an energy champion as a difficult one (CEP Interview 1). This consultant states: "If nothing is being delivered, the person feels like they're constantly harassing people, and so I've found that a lot of times, it's just hard to keep them motivated. A lot of people just drop out of that role" (CEP Interview 1). Overall, interview respondents expressed a deep need to support the 'energy champion' position, either through extending it to be a two- year contract to attract more qualified individuals to the position and allow work to get done or formalizing the position by providing specific training and peer networking opportunities.

"If nothing is being delivered the [energy champion] feels like they're constantly harassing people. It's just hard to keep them motivated"  
-CEP interview 1- consultant

It is important to recognize that having dedicated staff members does not always substitute for the inherent lack of capacity in small communities and a tight funding timeline for completing CEPs. When asked about lessons learned, the two long-term staff who were described as being extremely dedicated (CEP Interview 2), still wished they had done more meaningful community consultation (CEP Interview 5). Appointing a committee in the form of a Green Team rather than just 1-2 champions is a wise practice for sustainability-related behavioral change as it leads to increased capacity and would likely guarantee greater and lasting impact (Community Energy Association 2008). A downside of this is that more coordination and funding for staff remuneration is needed. Although the community has these two long-term staff working on implementing aspects of the plan, a consultant hinted that capacity could remain an issue for the community: "many initiatives of this type fail because the client doesn't have the capacity to supervise and support the CEP project," as a lot of time and effort is required to do them properly (CEP Interview 2).

“Many initiatives of this type fail because the Client doesn’t have the capacity to even supervise and support the CEP project”

-CEP interview 2- consultant

Two long-term staff added that if given the funding and the time to hire a community liaison and project liaison to assist in community energy planning (e.g., applying for funding, doing the face-to-face engagement work, and handling marketing and coordination tasks), small communities would feel less pressure while completing their CEPs (CEP Interview 5). Such long-term staff already struggle to act as the main drivers for a community’s CEP and have limited ability to gather all the information needed and involve the community properly. In CEP Interview 5, two long-term staff members expressed appreciation for having a utility program manager partner with them to do face-to-face engagement work in the community; they compared this to having another staff member around who could help reduce some of the workload. In the meantime, progressive training and increasing responsibility can help motivate full-time staff over time and create stability in the role (CEP Interview 2). For the community, it also becomes easier for community members to get their questions and concerns addressed from a long-term staff member. The interview also revealed that both soft engagement with households and home energy assessments were conducted as part of the plan’s community engagement (CEP Interview 1).

### Support from Elected Leadership

According to leading frameworks, gaining support at higher levels could help carry the plan to implementation, with one consultant claiming that “if Chief and Council aren’t truly bought on, the priority is just not going to be given” (CEP Interview 2). Sometimes, however, getting Council’s direct involvement proves challenging because members either show disinterest in community energy planning or they trust their subordinates to carry out the work, especially when they are too involved with other projects. However, Snuneymuxw’s plan stood out in this respect, by mentioning members of Council who supported the plan.

### Community / Partner Engagement

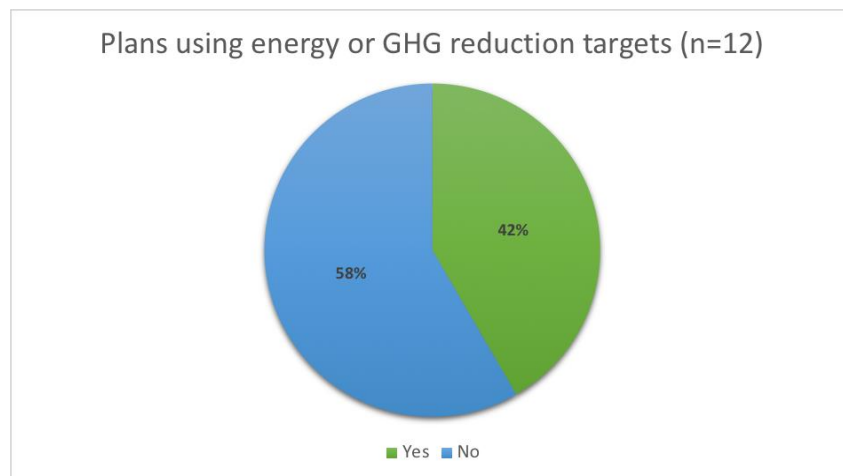
A CEP should also discuss community and partner engagement, describing its community visioning process, a number of engagement materials used, and an additional section for key partners and resources (sometimes this can be found in the action plan or implementation plan sections). Nuxalk Nation’s plan identified organizations within the community it could leverage. Kwadacha Nation’s plan did not explicitly list out funding partners or specific stewards, but the plan’s author mentioned an intention to do so. In CEP Interview 4, Chief and Council are more likely to pursue an opportunity like community energy planning if external consultants demonstrate that the project will incorporate local involvement, of youth and elders for instance, and present benefits for the community as a whole. One long-term staff member mentioned that any consultant or company that comes to an Indigenous community should demonstrate that they can build community capacity and even pursue educational or job training opportunities through their partnership (CEP Interview 4). In light of the fact that job creation and economic development drive enthusiasm, another consultant added that the economic development branch of government might be able to bring an entrepreneurship and leadership component that is required (CEP Interview 2). Another long-term staff member mentioned that partnerships with the local college are now being sought to support CEP activities (CEP Interview 5).

For communities that prioritize the inclusion of engagement in their plans, the community and/or consultant involved in writing and carrying out the plan has demonstrated that the community has gone the extra mile. Based on solely the desktop review, four of the twelve plans could improve in their discussions of engagement. Including a

full-fledged engagement section in a plan and weaving engagement throughout the plan (e.g., actions, implementation) is a determinant of a successful CEP. The Getting to Implementation framework, which incorporates in its checklist strategies like “Engage Elected Officials”, “Engage Community Partners”, “Engage Staff”, “Governance”, “CEP Oversight”, confirms this.

### Visions, goals, and targets: Target-setting

As seen in Figure 3, this section should highlight the goals and targets, ideally both short and long-term (i.e., 10 and 25-year time horizon). Only five of the twelve plans reviewed listed targets. Among these, four of the plans with targets included interim targets, fulfilling the framework criteria of having short and long-term targets. Target-setting is an essential component of community energy plans, according to most of the CEP guidelines and templates read in the Document Review stage. Ideally, they should be included in the Visions, Goals and Targets section of the plan, but could also be placed elsewhere in the report. The Community Energy Association recommends the inclusion of targets to enable the setting of goals so that policies and actions can be aligned towards them. Simply stated, targets help hold communities accountable in addressing energy and climate change concerns (Community Energy Association 2008). For the purposes of this review, a target should be straightforward and include a numerical percentage, baseline year, and target year. For example, the province of B.C. has a greenhouse gas (GHG) emissions reduction target of 33% by 2020 and 80% by 2050 compared to a 2007 baseline. When reviewed for their targets, almost half of the plans did not have targets reflecting this criterion. In addition, even for those plans with targets, they did not fit a standard, like the provincial GHG or energy consumption reduction targets. It should be understood that Indigenous communities may have reservations about aligning with provincial GHG or energy consumption reduction targets for a wide range of reasons.



**Figure 8.** Plans that included targets (for either energy consumption or GHG reduction)

Despite the recommendations revealed from the Document Review Stage, targets were either presented in terms of GHG emissions reductions or energy consumption reductions, but rarely both. Furthermore, targets were not always communicated in an obvious manner. In some plans (i.e., Kwadacha Nation Energy Management Plan) targets were shown in the form of a forecast based on different action scenarios (i.e., ambitious energy efficiency program vs. current energy efficiency program vs. BAU) from which you could extrapolate targets. Other plans listed targets in the following format: “reduce X% from baseline year emissions by X year.” This format is an easier way to represent targets, as it enables comparison between an individual community energy plan’s targets with the targets set by other levels of government (e.g., provincial climate action targets or those in the Kyoto Protocol). Some plans, such as the Haida Gwaii Island Energy Plan followed this format, using clear, numerical targets, including both interim and long-term targets of 2020 and 2032 respectively. These results show that the plans overall do not fit well with

Visions, Goals, and Targets recommendations put forth by CEP guiding frameworks.. In addition, targets should also be listed in the beginning of a plan as part of a strong opening paragraph or section for the CEP like in the Ktunaxa Community Energy and Emissions Plan. Based on the current state of community energy plans reviewed, plans overall do not fit well with the Visions, Goals, and Targets recommendations that guiding frameworks put forth. Without these elements, communities have limited accountability when it comes to CEP implementation.

### Community Energy & Emissions Profile: Energy and emissions inventory and forecast

As stated in Figure 3, this section should indicate expected community growth and a community energy consumption and emissions profile, include baseline and forecast inventory of energy use and emissions, total energy consumption and emissions, and a breakdown of emissions and energy consumption by fuel type and by sector (buildings, transport and waste). Ten of twelve plans had an inventory consisting of community growth projections from a baseline. Eleven of twelve included baseline data for either energy consumption or GHG emissions. Most plans reported energy consumption data rather than emissions data, indicating that they were more energy-focused than climate action focused. On the one hand, this finding demonstrates that some plans are not being framed as climate action plans (which would involve including both energy consumption and GHG emissions calculations). This could be seen as an overall weakness in the inventory of most of the CEPs reviewed.

Within the plan inventory, data reporting of energy consumption or GHG emissions should be broken down into sectors, by fuel type and/or major sectors including buildings (residential, commercial), transport, and solid waste. This way, the inventory provides a comprehensive overview to guide potential GHG and energy consumption reductions with economic, social, and environmental benefits for the community. As seen in two charts below, most plans included inventories broken down by fuel type and sector.

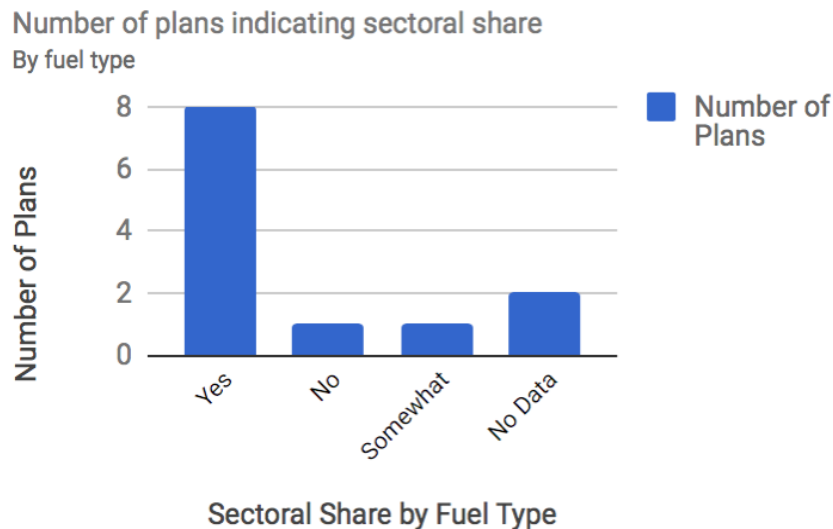
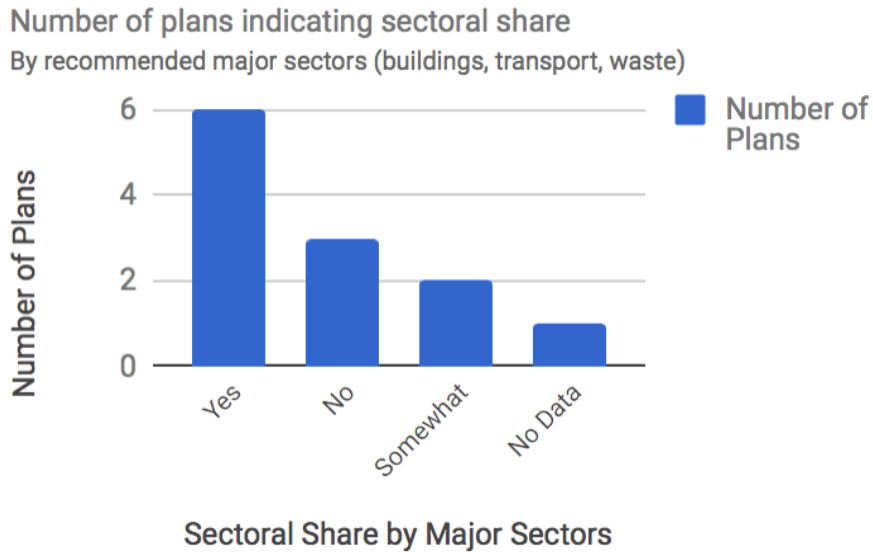


Figure 9. Plans that included sectoral share by fuel type

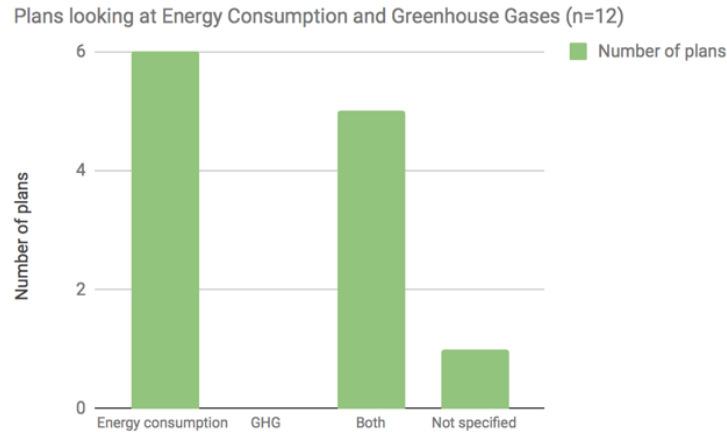


**Figure 10.** Plans that included sectoral share by recommended major sectors

Some plans only reported by fuel type, others only by sector. Despite the recommended sectoral breakdown, some communities focused on buildings exclusively. Based on interview results on this topic, reducing consumption from buildings appeared to be the major concern for Indigenous communities, whereas transportation and solid waste were rarely discussed. Emissions and energy consumption from transportation is difficult for small communities to manage due to their geographic layout and lack of jurisdiction over transportation emissions. Some communities did express interest or report existing projects on reducing energy consumption or emissions from transportation (e.g., green technology projects involving electric vehicles) and solid waste (e.g., renewable energy projects involving biomass). This overall finding makes sense in the context of Indigenous communities' history and present conditions. Residential housing is a priority for communities who face high household energy costs, want to conduct retrofits alongside building upgrades, and build new residential and/or mixed-use buildings.

Snuneymuxw First Nation's plan still included both GHG emissions and energy consumption from transportation, as well as solid waste due to interest in composting (CEP Interview 2). The Skidegate Band Council Energy Baseline Report also included a sectoral inventory of energy consumption divided into residential and commercial facilities/operations categories, which are nestled under the buildings sector, but the plan stated that a transport inventory was planned for a later date. In addition, Seabird Island's First Nation Community Energy and Emissions Plan from 2009 included a rough sectoral breakdown of both energy consumption and GHG emissions; the sectors did not fit neatly into the major categories proposed by some guiding CEP frameworks. This community also has intentions to complete a GHG emissions analysis for the solid waste sector at a later date.

Guiding frameworks from the CEA recommend that community energy plans also be community energy & emissions plans (also known as climate action plans). A greater number of plans reviewed did not focus on both energy consumption and GHG emissions. Half of the plans focused on or included data on energy consumption exclusively, rather than on both energy consumption and greenhouse gas emissions. None of the plans focused exclusively on GHG emissions in their inventory.



**Figure 11.** Plans that included energy consumption or GHG calculations in their inventory

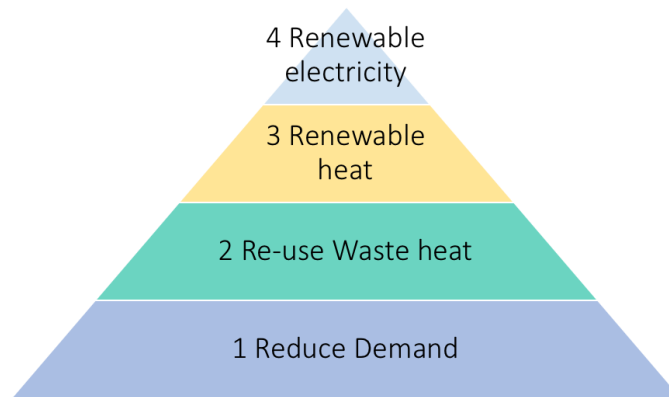
One reason why plans may not include GHG emissions is because of the difficulty in accessing data to generate the inventory, which makes it a time consuming and labour-intensive task. While the provincial Community Energy and Emission Inventory (CEEI) Initiative (Community Energy and Emissions Inventory n.d.) regularly provides local governments with energy and GHG inventories; no comparable initiative exists for Indigenous communities in BC. . Another interpretation is that certain communities will seek out and report data in a way that fits their goals for the CEP. For instance, one consultant recognized that, for certain community energy plans, it is fine if communities choose to report data in terms of energy consumption only and not in terms of GHG emissions as introducing energy savings, more so than climate action, is a motivator for the community (CEP Interview 1). Including a GHG emissions inventory may be useful for accessing government funding (CEP Interview 2). This explains why Snuneymuxw First Nation reported data in its inventory both in terms of GHG emissions and energy consumption. A long-term staff member referred to the energy plan as a stepping stone for obtaining additional funding in general (CEP Interview 5). Therefore, communities with limited financial capital might benefit from including emissions data, not just energy consumption data, in their CEPs. Also given the CEP is frequently referenced and often made consistent with other major strategic plans, having a summary of GHG and energy statistics among other information in one document adds convenience for daily work tasks (CEP Interview 2; CEP Interview 5).

### Action Plan

According to Figure 3, this section should ideally highlight both demand-side management and clean energy opportunities and follow the 4 R's framework (see Figure 12) where reductions in energy demand are prioritized. It should also include short and long-term actions, funding, and mention of community engagement, jobs and education opportunities. The action plans were relatively strong for most plans. Eight of twelve plans included short and long-term actions. Eleven of twelve plans listed energy conservation (via energy efficiency actions) and eight of twelve listed clean energy actions.

The 4 R's framework, part of BC Hydro's CEEP Terms of Reference, is a tool used to help communities prioritize energy conservation and demand-side management (DSM) measures over clean energy projects or supply-side measures. Based on results from this CEP review, this guideline was followed in diverse ways. Two out of twelve plans included the 4 R's pyramid as a guiding framework for their CEP's action period section, which could be seen as a strength. However, 3 out of 12 plans reviewed did not state whether conservation measures or clean energy measures would be prioritized over the other. One of the plans, the Energy Management Plan for Tsay Keh Dene, discussed DSM actions but no clean energy actions. Interview results showed that clean energy options (e.g., biomass) have indeed been explored in the past for this community, but energy conservation measures are a focal

point as they fit well within the community's housing construction and renovation plans (CEP Interview 1). In these specific cases, it proved challenging to determine whether or not the plans were following the 4 R's framework. When asked about the process and outcomes of one respective community's CEP, a long-term staff focused the conversation overwhelmingly on clean energy projects (CEP Interview 4). This should raise questions about whether communities have been neglecting demand-side management measures in favor of more appealing renewable energy projects. The aforementioned DSM measures generally have a better return on investment, which is important considering many Indigenous communities may be facing so-called energy poverty and want to manage this issue.



**Figure 12.** BC Hydro's 4 R's of Sustainable Community energy Planning

### Implementation Plan

Guiding frameworks recommend that CEPs include a detailed implementation plan to ensure the plan's timely execution. Measuring the presence of an implementation plan presented itself as a difficult task that required some subjectivity, as these were so varied. According to Figure 3, proxies for a "strong" implementation plan include the presence of a timeline (the more detailed, the better), a description of funding and support options, a description of roles and responsibilities by department and/or individual, some commentary about jobs, education, and/or community engagement, and a monitoring and evaluation plan. Although ten of twelve plans had some form of implementation section, only seven of twelve plans included a timeline for implementation and half the plans reviewed (6/12) included funding or support options. This could be seen as problematic as communities do not understand the funding options available to them, pursue those funding option, and then lever funding from multiple sources to advance CEP actions. 7/12 plans included a jobs, education and engagement plan; examples include training or educational programs and future employment opportunities.

Seabird Island's First Nation Community Energy and Emissions Plan from 2009 exhibited a detailed timeline outlining roles and responsibilities. The Haida Gwaii Island Energy Plan had a strong implementation section as well, indicating key partners and resources. It even included a meticulously written Sustainability Manager job description as well as an energy-related educational program for the community. The Clean Energy Action Plan for the Coastal First Nations incorporated an impressive 11-page timeline in chart form in its appendix. Other plans such as the Oweekeno (Wuikinuxv) First Nation Community Energy Plan had implementation plans, although these lacked some of the components recommended for this section; one might question whether they were implementation plans at all. The Energy Management Plan for Tsay Keh Dene had an implementation/ monitoring plan with an elaborate Community Engagement, Jobs and Training Section, one of the plan's strengths. Although findings from the Document Review reveal that CEPs ought to use a 25-year time frame for the forecast and targets, the shorter time frame in the monitoring plan allows for yearly monitoring cycles and revisions, making it more likely for actions to be implemented. One consultant critiqued the community energy process for generally being piecemeal and proposed using a more "living process" (CEP Interview 1). When asked about why the consultants and Tsay Keh Dene community members chose to focus so much on Community Engagement, Jobs, and Training, the consultant

responded, “the ideal reason for us is to eventually staff off... and let the community do a lot more of their energy management work” (CEP Interview 1). Kwadacha Nation’s Energy Management Plan includes a 5-year implementation plan with near term energy efficiency actions to be completed. This plan, too, did not identify funding partners or specific stewards although this community mentions its intention to do so. These findings overall demonstrate the diversity in the plans and the variety of approaches they rely on to support implementation.

### Discussion for CEP Scan and Review

In response to the first research question, I aimed to understand the status quo of Indigenous community energy planning in B.C. through a review of a small sample of plans. The findings from the desktop review demonstrated that there is no standard approach among the Indigenous CEPs observed. This finding was further supported by the in-depth review, which produced mixed results with regards to whether the plan’s content followed guiding frameworks for community energy planning. 4/12 plans aligned very well with guidelines or templates from the Document Review, for example by incorporating all details for the engagement section, effectively communicating targets, prioritizing energy conservation actions, and emphasizing capacity building opportunities like job training and education to support plan implementation. An additional four plans stayed somewhat true to frameworks but were missing certain sections or not including all the recommended content for each section. Remaining plans lacked quite heavily in terms of their alignment with guiding frameworks. Frameworks are needed to guide communities on how to structure their planning efforts but should also provide enough leeway in approaches so that communities can tailor them based on their needs and wants.

**One major finding is that existing frameworks may not adequately support Indigenous CEPs and may need to change to accommodate their small population size, unique governance arrangements, staff capacity, and geographical, historical and socio-economic circumstance.** A majority of frameworks used to evaluate Indigenous communities’ CEPs catered to local governments (including non-Indigenous ones) more broadly. One might interpret the design of frameworks and guidelines as inappropriate for smaller communities, especially those that are economically disadvantaged or short in capacity. MIRR’s template for CEPs was extremely detailed, but small communities with capacity issues could be limited in their ability to complete a plan in this level of detail, especially on their own. Two long-term staff members critiqued the current CEP process as being “hurried” and suggested that if funding were extended over two fiscal years instead of just one, the planning process could be done with more care (CEP Interview 5).

**As a second significant finding, issues of client capacity arose as a factor that hinders implementation of a CEP.** One consultant explained that CEP initiatives often fail due to the client’s lack of capacity to supervise and support such a lengthy and complex project (CEP Interview 2). Consultants can co-lead in the process because even dedicated community members wear multiple hats but should not lead it alone (CEP Interview 3). Hearing someone who sits on the review panel for CEP funding admit, “we want to see some real training happen for that community” (CEP Interview 3), indicates the importance for Indigenous communities to emphasize the jobs, education, and community engagement aspect in their plans. Increasing consultant job shadow opportunities and developing educational training for both behaviour change and green technology serve as good examples. Other avenues of supporting long-term staff should still be sought, either through providing additional funding to hire a qualified individual(s) to take on the long-term, remunerated energy champion role (e.g., community liaison) or extending funding cycles for lengthy CEP processes, as emphasized by two-long staff (CEP Interview 5).



“Many communities need significant help to get their CEP completed”

-CEP Interview 2 –consultant

“When sitting on a review panel, we want to see some real training happen for that community”

-CEP Interview 3- funder

**As a third significant finding, knowledge and skills transfer is highly valued in CEP processes.** In the absence of such an approach, the community will lose out on the valuable soft skills, such as project management, and the technical skills such as energy management that give a community edge, economically and socially. As long as there is demonstrated evidence of engagement with the community (e.g. hiring a job shadow during the consulting process for a CEP), funders will be willing to support a CEP project (CEP Interview 3). In addition, elected officials in a community will usually entertain projects that have made obvious the potential impact for the community (CEP Interview 5). Communities should look for opportunities to use the CEP process to support engagement, education and skills development for their members. Funders should consider including evaluation criteria in their programs that encourages genuine opportunities for education and capacity development during community energy planning processes. CEP frameworks could also provide guidelines to better support education and capacity development. This can be done through joining community events early on and having face-to-face conversations with youth, elders, and individuals from the community in leadership positions.

**A fourth significant finding is that CEPs have the potential to be a highly referenced document with many applications for a community, much like a Comprehensive Community Plan or economic development plan.** The most obvious outcome is the ability of a community to make sound energy management decisions by including both behaviour and technological changes to drive down energy use and costs. However, CEPs also provide statistics on energy consumption and emissions to drive future decision making such as green technology feasibility studies and housing and infrastructure projects. CEPs can include valuable information on sustainable pathways of economic development and provide complementary measures for development, both in terms of housing and energy use. Communities can even use them as a blue print for future funding applications. Strong, implementable CEPs were those that detailed their engagement section, defining roles and responsibilities as much as possible. By linking CEPs to other foundational or strategic plan (e.g., the CCP), just as local governments embed GHG targets, policies and actions into their Official Community Plans., CEPs have longevity.

### **What is the future of community energy planning in Indigenous communities?**

One possibility for moving forward with community energy planning in Indigenous communities is exploring the benefit of a CEP platform for tracking, peer networking, and mutual learning. Local governments can join open-source platforms like the Compact of Mayors and Covenant of Mayors and have their plans approved and compared with other municipalities worldwide. However, local governments who join these are often larger in size and therefore have the resources and interest in participating in such climate action initiatives. Even smaller-sized local governments can join the Federation of Canadian Municipalities' Partners of Climate Protection to have their action plans measured up against a common framework (consisting of five milestones) and publicly shared online. Members of this platform also have the opportunity to engage in peer networking and knowledge sharing. Further research could be conducted to see what additional resources are needed to support Indigenous communities involved in community energy planning and if there are benefits and opportunities to design knowledge-sharing, benchmarking, or peer networking platforms for Indigenous communities.

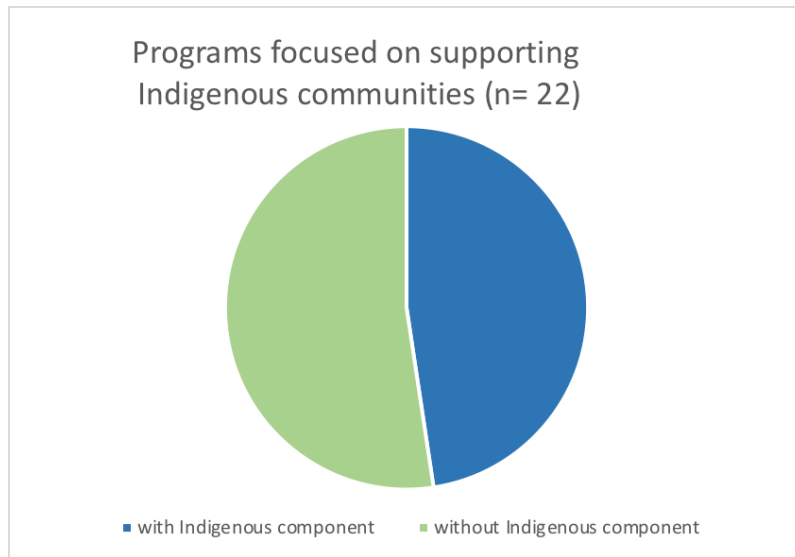
### 4b. Findings from the DSM Program Scan

As seen in Table 3, the DSM Program Scan uncovered around 22 programs from 19 different utilities, government agencies, or non-profit organizations in Canada and the United States. Based on the chart below, almost half of the programs surveyed had a focus on supporting Indigenous communities. The remaining programs could be classified as income-eligible programs that may have Indigenous customers as participants. Programs with a focus on Indigenous customers were all led by Canadian utility companies. American utility companies offered programs tailored to income-eligible customers, but these did not target Indigenous customers exclusively. Among the Canadian programs, utility programs like those run by, HydroOne, and Manitoba Hydro are tailored specifically to Indigenous customers. Provincial government ministries such as the B.C. Ministry of Mines and Petroleum Resources and the B.C Ministry of Indigenous Relations and Reconciliation and charitable non-governmental organizations like Fraser Basin Council also have dedicated programs for Indigenous communities. Recently, strategic partnerships to coordinate efforts between the federal and provincial levels of government to support demand-side management and clean energy initiatives in Indigenous communities have arisen, such as through Western Economic Diversification's B.C Indigenous Clean Energy Initiative.

## Support for Conservation & Energy Management in Indigenous Communities

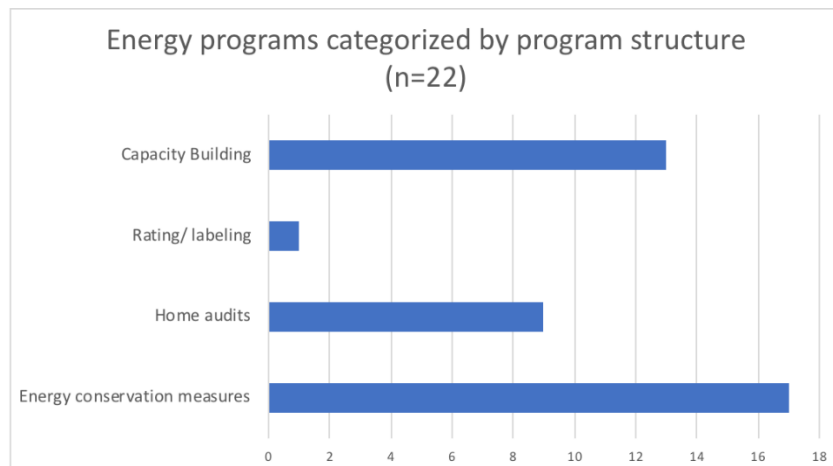
**Table 3.** An overview of energy programs and organizations included within the DSM Program Scan

Organization	Organization Type	Jurisdiction	Programs	Indigenous Programs?
<b>BC Hydro</b>	Utility Company	BC, Canada	Energy Savings Kit Energy Conservation Assistance Program	Yes
<b>Fortis BC</b>	Utility Company	BC, Canada	Energy Savings Kit Energy Conservation Assistance Program	Yes
<b>Fraser Basin Council</b>	Charitable Non-Profit	BC, Canada	First Nations Home EnergySave Program	Yes
<b>Manitoba Hydro</b>	Utility Company (partners with social enterprise, Aki Energy)	MB, Canada	Indigenous Power Smart Program Affordable Energy Program Community Geothermal Program	Yes
<b>B.C. Ministry of Indigenous Relations and Reconciliation</b>	Provincial Government	BC, Canada	First Nations Clean Energy Business Fund	Yes
<b>B.C. Ministry of Energy Mines and Petroleum Resources</b>	Provincial Government	BC, Canada	Community Energy Leadership Program	Yes
<b>Western Economic Diversification Canada</b>	Federal Government	BC, Canada	B.C. Indigenous Clean Energy Initiative	Yes
<b>Sask Power</b>	Utility Company	SK, Canada	First Nations Power Authority	Yes
<b>Hydro One</b>	Utility Company	ON, Canada	First Nations Conservation Program	Yes
<b>Independent Energy Service Operator</b>	Utility Company	ON, Canada	Aboriginal Community Energy Plan Program 2013-2015	Yes
<b>Bonneville Power Administration</b>	Utility Company	WA, OR, ID, MT, WY, UT, NV, CA, United States	Regional Low Income Energy Efficiency Workgroup	No
<b>Alliant Energy</b>	Utility Company	IA, WI, United States	Home Energy Assessment for Iowa Customers Home Energy Assessment for Wisconsin Customers	No
<b>MidAmerican Energy</b>	Utility Company	IA, IL, United States	Low Income Home Energy Assistance Program (IA) Heating Cooling and Water Heating (IL)	No
<b>Consumers Energy</b>	Utility Company	MI, United States	Home Performance with ENERGY STAR New Home Construction Builders	No
<b>Lansing Board of Water &amp; Light (BWL)</b>	Utility Company	MI, United States	Michigan Saves 0.0% Financing	No
<b>CoServ Electric</b>	Utility Company	TX, United States	Heat Pump Rebates	No
<b>Idaho Power</b>	Utility Company	ID, United States	Weatherization Assistance Program	No
<b>Seattle City Light</b>	Utility Company	WA, United States	HomeWise Weatherization Program	No
<b>Tacoma Power</b>	Utility Company	WA, United States	Home Weatherization	No



**Figure 13.** Programs included within DSM Scan focused on supporting Indigenous customers

For the purpose of analysis, I divided program structure into the four categories: 1) energy conservation measures (e.g., rebates, direct installations or giveaways, grants and funding, and financing), 2) home audits, 3) rating and labeling, and 4) capacity building (e.g., information sharing, training, technical support, grants and funding for salary support or planning). As seen in Figure 14 below, within the sample of energy programs (n=22), energy conservation measures, particularly rebates, comprised the most common program structure. This program structure was followed by capacity building and home audits which represent typical approaches as well. The DSM Program Scan uncovered energy savings and program participation rates for some Indigenous-focused DSM programs (see Appendix C for detailed results).



**Figure 14.** Energy programs included within DSM Scan categorized by program structure

### Discussion for DSM Program Scan

Many Canadian organizations focus on delivering programs to specifically assist Indigenous communities. This approach is appropriate given that Indigenous households exhibit different needs apart from low income households, just as Indigenous communities exhibit different circumstances from mainstream urban local governments. As gleaned from the interviews, capacity building and financial and technical assistance for upgrades should be incorporated more into energy programs designed for Indigenous communities. When combined with the results from the Community Energy Plan Evaluation, these findings help answer the second research question of how BC Hydro can support Indigenous communities in advancing conservation and energy management. The DSM Program Scan provided insights which could inform the expansion of B.C. Indigenous-focused conservation and energy management programs more broadly as well.

Interviews with consultants and community members highlighted the importance of partnership with communities in the development of community energy or energy management plans and delivery of energy conservation and clean energy projects. Program managers from two Canadian utility companies explained the need for flexibility as their lessons learned for working with Indigenous communities (EPS Interviews 1 and 2). Many Indigenous communities are capital-constrained and therefore require additional assistance to overcome barriers to install energy efficient or renewable energy equipment. To be accommodating, one utility company included in the scan covers the insulation costs, including labour costs for installation, for Indigenous communities and pays the supplier directly (EPS Interview 1). Other companies like HydroOne also offer free upgrades to lower household energy bills for Indigenous communities in Ontario and have serviced over 5,400 customers leading to \$2.1 million in energy savings (HydroOne 2018). Both HydroOne and Manitoba Hydro partner with Indigenous-owned businesses as part of their program delivery. A more face-to-face delivery approach can help foster social learning experiences between organizations providing programs and Indigenous communities. One program manager claimed that Indigenous communities often require assistance when filling out applications for the programs they are eligible for, given the unique structure of these communities (EPS Interview 2). Long-term staff from a B.C. Indigenous community expressed gratitude for this more personalized program delivery approach; for them, this compared to adding another staff member to take on energy planning duties (CEP Interview 5).

With regards to home ownership, band councils will sometimes own the homes, and therefore, utility companies must work with band councils rather than individual customers when doing upgrades to residential buildings. In its support for local Indigenous communities, Fortis BC has paid for half of the Smart Thermostats through ECAP as part of a larger consumer pilot project, the results of which will be realized in 2019 (EPS Interview 2). It also funds other capacity building initiatives, such as community dinners, presentations, and community events (EPS Interview 2). This is something unique to Indigenous community programs which would not be administratively or financially feasible if done for other customers. IESO's program provides additional guidance for how to structure future utility programs for its focus on building relationships, understanding community needs, and barriers presented by geography, history, etc. (Fotheringham 2018 as cited in Whiddon 2018). Energy programs ought to go beyond just introducing technologies. Program managers should learn how to deliver services that fit well to the local context and to the community's needs. Fostering energy literacy in Indigenous communities is vital to ensuring that communities reduce their energy consumption even with new installations.

An additional point is that funding programs documented in this DSM Program Scan typically have a focus on energy, either through energy conservation or clean energy measures. However, especially when designed around Indigenous communities, energy funding could be integrated with funding for housing construction and renovations, which is run by Indigenous Services Canada (ISC). As suggested by a CEP consultant, energy upgrades and renovations often occur concurrently, and such integration would ease the burden on communities and consultants who must navigate two different funding pockets (CEP Interview 1). Therefore, in the future, organizations like ISC and utility companies like BC Hydro could collaborate to consolidate housing and energy funding. A CEP funder suggested an add-on approach instead of making consultants and/or community members fill out different applications for renovations, energy efficiency upgrades, etc. (CEP Interview 3).

## V. Summary and Recommendations

In response to the challenges faced by Indigenous communities in B.C., conservation and energy management could steer communities away from a cycle of dependence and so-called energy poverty and towards economic and social opportunity and justice. Jojola (2008) describes in his work on Indigenous Planning: “until relatively recently, indigenous voices have been subsumed by non-native practitioners who, by and large, have used approaches to community development that are attuned to urban mainstream environments” (p 41). Despite their good intentions, utility program managers, contractors, and consultants should ensure when guiding communities through capacity building and energy saving measures that these approaches are not just suited to mainstream urban environments. Therefore, program managers should refer to some of the positive examples provided in this report of training programs or projects where Indigenous community members have been hired on. Challenges still exist for small communities with staff who must manage various tasks at once. In addition, rural and remote communities are often short of capital. Therefore, communities, consultants, funders and utility companies should come to a mutual understanding that capacity remains an issue for these communities and flexibility, engagement, and commitment is needed. Funders must understand the capacity challenges communities face while also rewarding community-driven conservation and energy management initiatives. Consultants should pay attention to knowledge transfer during their appointments within a community; this will also increase the likelihood of retrieving funding for future projects and uptake by chief, council, and long-term staff who can carry a plan toward implementation.

### 5a. Recommendations from Community Energy Plan Evaluation

- Consider that community energy planning can come in different forms and that communities may tailor frameworks for structuring CEP content to their unique needs and goals;
- Allow for flexibility in CEP frameworks to be more tailored for small-sized communities and remote communities (i.e., shorter timelines, alternative inventory approaches), as these comprised the majority of communities observed;
- Provide additional guidelines for how external consultants should engage in the community energy planning process to support capacity-building;
- Emphasize the importance of having long-term staff and/or hired community members as the CEP champions within the community who can carry the plan toward implementation;
- Alternatively, provide additional funding and flexibility in CEP funding structure to allow communities to hire a staff member to oversee CEP development and implementation;
- Explore flexible funding timelines that extend over more than just one fiscal year to allow communities to optimize the community energy planning process and do proper engagement;
- Document everything in the CEP - some CEPs did not state the same detailed information that was found when conducting interviews- since a CEP is a living document and highly referenced, documentation is important;
- Explore opportunities for providing support for Indigenous communities pursuing community energy planning that involve knowledge sharing, peer networking, and open-source benchmarking.

### 5b. Recommendations from DSM Program Scan

- Enhance utility program structures to focus more on capacity building in addition to energy saving measures;
- Follow the examples of innovative utility programs like IESO’s Aboriginal Community Energy Plan Program and Manitoba Hydro’s Community Geothermal Program (see Case Studies) that prioritize relationships building, flexible financing, and social learning in their community outreach;
- Explore the possibility of streamlining funding for renovations and energy efficiency upgrades to ease the burden on applicants, perhaps via an add-on approach;
- Maintain a flexible approach when working with Indigenous communities (e.g., covering costs partially or fully, using face-to-face interaction, extending funding timelines, etc.).

# Case Studies

## Energy Conservation: IESO Case Study

IESO's Aboriginal Energy Partnership represents one such model of utility programs. It provides wide-reaching support to engage First Nation and Métis communities as well as local governments, public sector organizations and cooperatives in the development of energy projects (Whiddon 2018; Aboriginal Energy Partnership Program n.d.). The Ontario-based program has an overwhelming focus on capacity building but also some financing. The program, which ran from 2013 to 2015 provided a diverse array of support, such as through its energy efficiency education program for First Nations and Métis, funding to support new or existing community energy planning endeavors in remote communities, and funding for projects that are required to complete the deliverables included in approved proposals (IESO 2018a). Support included customized energy conservation services for residential and commercial buildings within a geographically diverse set of communities (southern, near north, and remote). The programs achievements include more than 3,000 retrofitted homes and verified net savings of 8 Gigawatts. This program modelled after a low-income Home Assistance Program, offered detailed home energy audits, direct installations of energy-efficient equipment, and how-to advice. Low energy light bulbs, advanced power bars, low-flow shower heads, faucet aerators, electric water heat blankets, and ENERGY STAR certified freezers, refrigerators, and window air conditions were among the measures used. This program's strength, however, rested not in the technology it provided, but in the trust building strategies it employed with local communities and the social learning opportunity for the utility company. (Fotheringham 2017 as cited in Whiddon 2018).

In its outreach, IESO learned how to deal with barriers for its future engagement, learnings which are transferable for other utilities as well. For example, it learned lessons about gaining buy-in from communities, considering seasonal variations (i.e., hunting traditions) which utility staff must be aware of when inviting communities to participate in their programs, specific conditions about the local building stock, issues of accessibility for remote communities, and measures to manage end-of-life disposal. To build trust, this program partnered with an engineering firm owned and operated by Aboriginal community members. Engagement activities included holding kick-off events, distributing educational and promotional materials on energy efficiency, creating local jobs like community coordinators, canvassers, and energy auditors, forming training opportunities, and utilizing other forms of marketing such as word of mouth and community events. Based on its description, this model took advantage of the complex governance structures found in many Aboriginal communities and strove towards Indigenous empowerment and self-sufficiency. The way this program was delivered matches the feedback from some of the interview respondents who emphasize training opportunities and involving the community as much as possible when undergoing community energy planning. (Fotheringham 2017)

IESO was also able to understand some of the building stock issues. A notable finding, which aligns with the interview findings in this report is the issue of coordination, particularly between housing and energy measures. During the duration of its program, IESO discovered that various agencies provided funding to deal with housing issues, but this fragmented system created barriers for communities who had to coordinate the submission of different funding applications. Suggested improvements included streamlining procedures and partnering between various agencies across levels of government and sectors to deliver energy conservation programs and measures. Overall the wise practices espoused by IESO included employing a tailored approach to carry out Indigenous community energy programs and a willingness to learn from local community members.

BC Hydro also supports a number of projects, particularly through its Remote Community Electrification Fund. However, one critique that emerged from the interview process, was that BC Hydro could expand its support, particularly through its Sustainable Communities program, to reach communities with whom BC Hydro has not previously had relations as a way to advance the overall wellbeing and autonomy of various First Nations across the province.

### Clean Energy: Manitoba Hydro & Aki Energy Case Study

Remote Indigenous communities often rely on diesel generators for electricity given the absence of other reliable alternatives. Individual home ownership in these communities is rare, so individuals are less likely to invest in building upgrades. Moreover, credit access proves challenging for such capital-strapped communities, especially those with high unemployment, seasonal income, or low property ownership rates. In effort to provide clean, reliable, and affordable energy for non-grid-connected communities, a partnership between the social enterprise Aki Energy and Manitoba Hydro was formed. Aki Energy, consisting of non-Indigenous and Indigenous members, installed solar and geothermal energy production systems using Pay-as-you-save (PAYS) financing from Manitoba Hydro. The financing covered capital costs which are recovered on a monthly basis over the span of twenty years. Enabled by the Energy Savings Act, the customer pays less than they would have pre- installation. The financing covers the entire cost of the installation at an interest rate of 3.95%. In an effort to foster economic development, Manitoba Hydro also offers grants of \$3900 to each household to install the geothermal system. With its bulk buying power, Manitoba Hydro can negotiate pricing for geothermal heat pumps. Manitoba Hydro also pays the distributor for the geothermal directly and pays the installers (e.g., First Nation Development Corporation) for the remaining labour and materials. Savings equated to around \$1,100 per house due to unique financing structure. The program also offers capacity building features. Aki Energy's site supervisor runs the training and with experience over time, band members are empowered to install this complex technology on their own. Using a flexible approach for Indigenous customers, Manitoba Hydro's Community Geothermal Program deals directly with the community's concerns about credit access by paying for clean energy while reducing household utility bills.

### B.C. Indigenous Clean Initiative Strategic Partnership

Although more of a federal strategic partnership initiative than an independent program, the BCICEI is delivered alongside Western Economic Diversification to provide three-year funding of \$4.2 million. The initiative specifically helps remote communities to transition away from conventional diesel power generation but also attempts, more generally, to increase participation of Indigenous communities in economic development, clean energy, energy efficiency, and energy storage projects. It also targets post-engagement activities of a community energy plan that could lead to implementation. Activities may include securing funding partners, obtaining financing for feasibility analyses and construction, and reaching purchase agreements with utility providers. The flexible funding supports projects for up to \$150,000 and can go to completing studies, permitting applications, and engineering and design work. Although the funding is also open to communities pursuing energy efficiency work (e.g., providing funding to support heat pump installation at Cowichan First Nation), BCICEI focuses on supporting clean energy project as their criteria are centred on economic development. The funding is demand-driven and example criteria for application approval include community involvement, capacity and management, and likelihood of reaching an energy purchasing agreement. This partnership results from feedback and general guidance from an Advisory Committee consisting of federal and provincial government, Indigenous community and private sector representatives. This Committee saw a gap between provincial funding (e.g., FNCEBF) and federal funding, where one supports early stage engagement and the other, a later stage (through equity investment). Those working on BCICEI work with departments in provincial and federal levels to coordinate funding for all players involved to ensure good outcomes from the early planning stages through to the final implementation stages. The program began in 2016 and will be complete by spring of 2019. So far, 31 projects have been approved and supported, 117 applications were received. Among these applications, 89 came from unique Indigenous local governments/ Nations. Western Diversification is currently seeking renewal funding through federal bodies. This strategic partnership is responding to various needs raised by Indigenous communities and correlates with findings from IESO's 2018 report. This report concluded that a lack of coordination, particularly of provincial and federal levels, lack of funding source information, and inadequate funding for hiring committed staff, and lack of flexibility in delivery according to the criteria and timetables provided by funders create barriers for Indigenous communities trying to achieve better energy futures (IESO 2018b).



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# Appendices

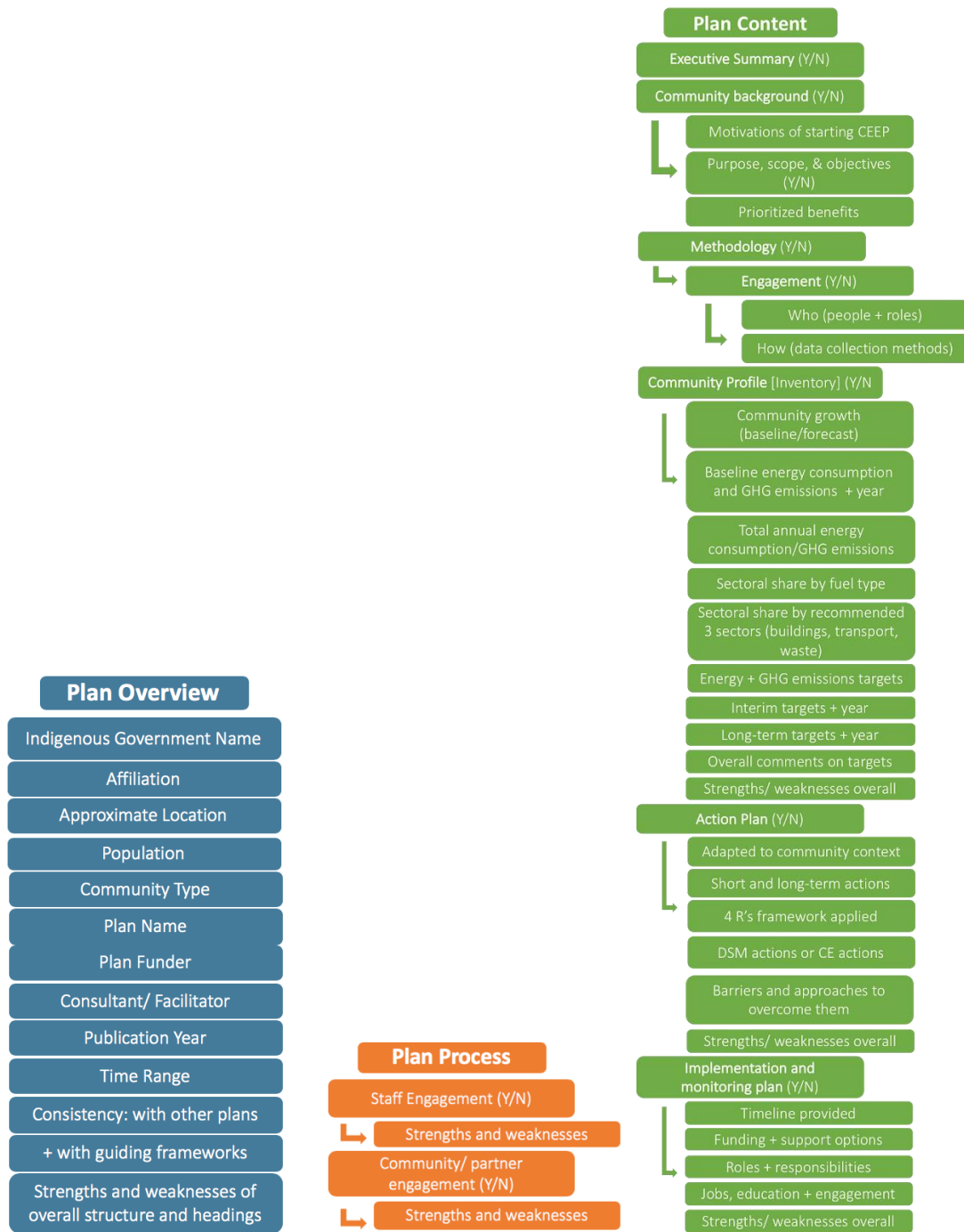
## Support for Conservation & Energy Management in Indigenous Communities

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**Appendix A. Guiding frameworks for in-depth CEP evaluation** (Community Energy Planning Getting to Implementation online tool used for interviews on community energy planning process AND frameworks for desktop review of community energy plans)

<b>The Framework</b>	<b>Implementation Readiness Survey</b>
Strategy 1 <b>Develop a Rationale</b>	Strategy 2 <b>Engage Elected Officials</b>
Strategy 3 <b>Governance</b>	Strategy 4 <b>CEP Oversight</b>
Strategy 5 <b>Engage Staff</b>	Strategy 6 <b>Define the Value Proposition</b>
Strategy 7 <b>Engage Community Stakeholders</b>	Strategy 8 <b>Monitor and Report</b>
Strategy 9 <b>Budget</b>	Strategy 10 <b>Plans and Policies</b>
<b>Appendices</b>	<b>Contact Us</b>

# Support for Conservation & Energy Management in Indigenous Communities



## Support for Conservation & Energy Management in Indigenous Communities

### Appendix B. CEP Evaluation Interview Guide

CEP Pilot Project		
DRAFT Interview Framework		
Strategic Action	Examples	Community Approach
<b>1. RATIONALE</b>		
Community vision	Vision Statement Elders' Statement Other	
Prioritized benefits	Environment Economic Health Social Resilience Self-Sufficiency Other?	
<b>2. COUNCIL ENGAGEMENT</b>		
Commitment		
Involvement		
Council Champion		
CEP Adoption		
<b>3. GOVERNANCE</b>		
New governance model to oversee CEP	New committee  Expand scope of existing committee  Energy Champion	
Committee ToR	Membership Schedule Remuneration	
<b>4. OVERSIGHT</b>		
Department to oversee CEP implementation		
Staff lead identified		
<b>5. ENGAGING STAFF</b>		

All relevant departments involved		
Embed CEP actions in job descriptions		
<b>6. DEFINE VALUE PROPOSITION</b>		
Outlined in CEP		
Plain language version		
Communications strategy		
<b>7. ENGAGEMENT</b>		
Member Engagement	CEP scope of work CEP process CEP implementation	
Off-reserve members		
Other stakeholders	Health Authority School District Utilities Developers Federal Government Neighbour municipalities NGOs Other?	
<b>8. MONITOR AND REPORT</b>		
GHG Target		
Means to monitor progress		
Follow up energy inventory		
Council reports		
<b>9. FUNDING</b>		
Annual implementation budget	Dedicated staff Capital projects OM costs Program costs Consultants	
Economic opportunity evaluation		

#### Additional Questions:

- Did you use any guiding frameworks to structure your plan (e.g., MIRR template)?
- Is the plan consistent with other plans (e.g., CCP, EcDev plan)
- What could have been done differently? What was missing?
- Is the work complete, in progress, or stalled?
- What are the next steps planned?
- What additional support is needed?

## Support for Conservation & Energy Management in Indigenous Communities

### Appendix C. DSM Program Scan results

Table 1 (DSM Programs by organization and type)

Organization	Program Name	Program Type
<b>BC Hydro</b>	Energy Savings Kit Energy Conservation Assistance Program	Financing, building policies, CBA of EE measures, relationship building for funders and with FN housing management staff, energy assessments, training materials, capacity building via (training, facilitation, workshops, and events), EE awareness building, mentorship programs
<b>Fortis BC</b>	Power Sense/ Low Income Energy Conservation Assistance Program (with BC Hydro)	Rebates on high EE appliances & equipment, free home energy assessment, free EE advice, free installation of energy-saving products (i.e., energy-saving light bulbs, kitchen and bathroom faucet aerators, water-efficient showerheads, hot water pipe wrap, exterior door weather stripping, capacity building for First Nations (face to face delivery approach), funding for ambassadors program, funding for local jobs in energy planning, provision of heat pumps for households, rebates and technical support for new EE homes and commercial buildings
<b>Fraser Basin Council</b>	First Nations Home EnergySave Program	EE building upgrades, education, capacity building, training, knowledge sharing, peer networking
<b>Manitoba Hydro</b>	Indigenous Power Smart Program (part of Affordable Energy Program)	Training alongside band housing manager for EE upgrades, training and rebates for insulation program, energy saving measures (i.e., LED light bulbs; insulated pipe wrap; draft proofing; faucet aerators; low-flow showerheads as part of direct install kits), education, how-to advice
<b>Manitoba Hydro</b>	Affordable Energy Program	EE home energy assessments, free EE giveaways, heating system upgrades via rebates for natural gas boilers, etc.
<b>Manitoba Hydro &amp; Aki Energy</b>	Community Geothermal Program	Training local businesses on installation and maintenance of geothermal heat pump systems, Pay As You Save (PAYS) financing
<b>B.C. Ministry of Indigenous Relations &amp; Reconciliation</b>	First Nations Clean Energy Business Fund	Capacity funding for conducting CEPs, feasibility studies, or other project engagement, equity funding for clean energy projects, revenue sharing agreements
<b>B.C. Ministry of Energy Mines and Petroleum Resources</b>	Community Energy Leadership Program	Funding for energy performance modelling, designed of new or retrofitted net zero energy ready building systems, engineering, construction contract labour and equipment, training costs for operations and maintenance, EE, CE, associated materials, Relationship building, training, funding CEMs and CEPs
<b>Western Economic Diversification Canada</b>	BC Indigenous Clean Energy Initiative via New Relationship Trust	capacity building for clean energy projects, pathfinding support for navigating development processes and leveraging other federal, provincial, and regional clean energy supports, including funding (including for DSM); facilitating private sector engagement and partnerships critical to moving clean energy projects forward; an early stage funding for clean energy projects

## Support for Conservation & Energy Management in Indigenous Communities

<b>Sask Power</b>	First Nations Power Authority	Streamlining process for Indigenous power producers, capacity building
<b>HydroOne</b>	First Nations Conservation Program	home assessments, free EE upgrades (i.e., LED light bulbs, smart power strips, low flow showerheads, weather stripping, faucet aerators, attic/basement insulation, programmable thermostats, block heater timers, hot water tank wrap insulation, ENERGY STAR certified refrigerators/ freezers/ dehumidifiers/window conditioners), technical support, partnership with Indigenous-owned businesses for program delivery
<b>Independent Electricity System Operator (IESO)</b>	Aboriginal Community Energy Plan Program 2013-2015 (no longer active)	EE education program for First Nations and Metis, funding to create new CEP and update an existing plan for remote communities, funding for projects that are considered reasonably necessary to complete work, activities, and deliverables in approved proposals
<b>Bonneville Power Administration</b>	Regional Low-Income Energy Efficiency Workgroup	Information sharing and best practice development to increase low income residents' access to and uptake of EE services
<b>Alliant Energy</b>	Home Energy Assessment for Iowa Customers / Focus on Energy for Wisconsin Customers	Free Electric-only basic Home Energy Assessment or comprehensive home energy assessment, rebates for heat pumps, appliances, insulation, direct installations
<b>MidAmerican Energy</b>	Low Income Home Energy Assistance Program	Rebates for heat pump water heaters for residential electric-only customers without natural gas access
<b>Consumers Energy</b>	Home Performance with ENERGY STAR	Home energy assessments and electric-only, residential EE incentives
	New Home Construction Builders	Offers builders rebates for high EE heating, cooling and water heating equipment, building rating/ labeling, trade ally incentives
<b>Lansing Board of Water &amp; Light (BWL)</b>	Michigan Saves 0.0% Financing	Financing for residential customers for EE installation like heating, cooling, and insulation systems
<b>CoServ Electric</b>	Heat Pump Rebates (Think Green Rebate program)	Rebates for builders to offset capital cost of high EE heating, cooling and water heating equipment that are necessary to meet the highest EPA energy efficiency guidelines.
<b>Idaho Power</b>	Weatherization Assistance Program	Information / education, Free / giveaways for customers with electrically- heated homes, building shell



## Support for Conservation & Energy Management in Indigenous Communities

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<b>Seattle City Light</b>	HomeWise Weatherization Program	Financing, Home Energy Assessments, Direct installation, Free / giveaways, Custom, Building shell, Space heating, Space cooling, Air distribution/ventilation, Water heating, Repair / tune-up, Appliances and electronics
<b>Tacoma Power</b>	Home Weatherization	Rebates for windows/insulation, Trade ally incentives, Financing, Grants, Building shell, Air distribution/ventilation

## Support for Conservation & Energy Management in Indigenous Communities

Table 2 (DSM Programs selected for in-depth review)

Organization	Program Name	Savings	Program Participation	
<b>BC Hydro</b>	Energy Savings Kit Energy Conservation Assistance Program		- 3626 homes in Indigenous communities completed ECAP basic - 1299 with Indigenous housing providers completed ECAP basic	
<b>FortisBC</b>	Energy Conservation Assistance Program (ECAP)	- same as BCH's ECAP savings	- 4 Indigenous bands within electricity servicing area participated - ECAP: 60-80% of eligible participation	
<b>Fraser Basin Council</b>	First Nations Home EnergySave Program	- Energy Efficiency Retrofit Pilot, \$50,000 funding, with an average contribution of \$5,000 per home-estimated payback of a maximum of 5 years (averaged across all homes).	broader network: 660 members (includes non-First Nations such as support organizations and private companies with an interest in energy efficiency)	
<b>Manitoba Hydro</b>	Indigenous PowerSmart Program (part of Affordable Energy Program)	3260 kWh per home of annual savings over last few years		
<b>Manitoba Hydro and Aki Energy</b>	Community Geothermal Program	- \$12,265 per install (unique to MBHydro) - saved 4.6 M kWh annually or 4.6 B gWh annually	4 Indigenous communities actively participating, but can't grow the program because ISC won't allow a loan to be placed on their energy bill since Indigenous communities are often capital-constrained; 375	1. Insulation program: - 3,730/ 3,911 homes needing insulation upgrades have been upgraded - 49 / 63 communities participated 2. Direct Install EWS Kits program: - 5,200/ 14,350 of eligible homes (36% of target market)

## Support for Conservation & Energy Management in Indigenous Communities

			geothermal installations in 5 communities	
<b>IESO</b>	Aboriginal Community Energy Plan Program	- over 8 GWH in verified net savings	- more than 85 communities participated	
<b>HydroOne (and SaveOn Energy)</b>	First Nations Conservation Program	- \$2.1 million in savings	- 5,400 Indigenous customers reached	

