RENEWABLES IN REMOTE COMMUNITIES

PREPARED FOR

The Climate Reality Project
CANADA

Report on the conference hosted by the

PEMBINA INSTITUTE
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Traditional territories of the Kwanlin Dun and Ta'an Kwachan Council (Whitehorse, Yukon)

ABOUT THE AUTHOR

Recognizing that being a settler/ally, I bring my own set of beliefs and biases into the work of reporting on this conference and that engaging in reconciliation work requires us to bring our holistic selves into the process, I would like to spend a moment to introduce myself to the reader. My name is **SARAH NEWTON**. I use they/them pronouns. My mother was born in Cape Town, South Africa and my father is of Western European descent. I am honoured to have lived on the shared, current and traditional territories of the Kwanlin Dun First Nations and Ta'an Kwachan Council for the past twelve years. I have been involved in the work of advancing indigenous rights through environmental protection since moving North. I grew up on the traditional unceded territories of the Sto:lo Nation in what is now known as Langley, BC and I am so grateful to the Elders of that Nation who spent time teaching and influencing me as a young person.

KWANLIN DUN CULTURAL CENTRE

The Renewables in Remote Communities Conference was hosted by the Pembina Institute on the current and traditional territories of the Kwanlin Dun and Ta'an Kwachan Council in what is known as Whitehorse, Yukon in the beautiful Kwanlin Dun Cultural Centre. This specific location is significant to the local First Nations because the Cultural Centre represented a 'coming back to the River'. In the history of Whitehorse, the First Nation people have always lived close to the river which served as an important harvesting location as well as transportation network. In fact, Whitehorse was named for the dangerous rapids just upriver at Kwanlin *where the river narrows in Southern Tutchone* also known as Miles Canyon.

During the 1900's, First Nation residents of Whitehorse have had their communities continually moved, from Whiskey Flats, in what is now Rotary Park and the Legislative building, to what is now the Industrial Area, and then up the hill and away from the river to the current neighbourhood and settlement lands of the McIntyre subdivision. Kwanlin Dun First Nation now have their administrative buildings and most of their citizens' housing in that neighbourhood. The Cultural Centre was built in 2012 and represented an important step in reconciliation for our local First Nations. Today this Centre is used for many cultural events, arts festivals, workshops, educational series, as well as conferences, such as this one, where important topics related to implementing the Yukon's modern land claim titled the Umbrella Final Agreement are discussed.

The Yukon has a strong Independent Power Producer Policy (IPPP) which has supported the development of several renewable energy projects in its off-grid communities, including Old Crow, Beaver Creek, Watson Lake and Burwash Landing. The main grid in Yukon services about 40,000 people and faces the common challenges of a micro-grid. To address these challenges, the Yukon is building a battery bank to provide redundancy and stability to the electrical supply and is in the process of developing an additional hydro project which will connect the small BC community of Atlin to our grid.

During the conference, many different First Nation, Metis and Inuit groups came together to discuss renewable energy in remote communities and the important contribution these projects make to Canada's goal of reaching net zero emissions by 2050. The official conference opening was on Monday April 25, 2022 with the lighting of a sacred fire which burned until the conference closing Gala on Wednesday April 27, 2022. Two local fire keepers watched the fire and held ceremonial space for us during our sessions. Smudge was available and they were able to talk to anyone who needed to about the importance of protecting our lands and waters and taking care of our spirits while we were engaged in this important work. Some of our kin from Coastal British Columbia shared a couple of songs with us during the opening that they would traditionally sing while paddling into a host community.

KEY TAKEAWAYS

There is a huge opportunity for remote communities to participate in reducing Canada's greenhouse gas (GHG) emissions because so many of them rely primarily on diesel generators for electrical power production. For this opportunity to be seized, time is of the essence, as devastating climate impacts already bear down on us, such as flooding, fires and heat waves. Only if significant progress is made before 2030, can our collective goal of a net zero society by 2050 be attainable, as has been highlighted in the recently released Intergovernmental Panel on Climate Change Committee (IPCCC) report.

Regional Circumstances

Each region in so called Canada has several factors that serve to either encourage or create barriers to the development of renewable energy projects. One key factor was the existence and strength of a given utility board's Independent Power Producer Policy (IPPP). Local factors are also important in determining the viability of solar, wind, geothermal and hydro potential, as well as the ability of the community's electrical infrastructure to deal with the introduction of renewable energy generation. Utility boards are under provincial or territorial jurisdiction, so some regulatory factors are not necessarily in line with Canada's net zero electrical grid goals.

Capacity Building

Through the development of renewable energy projects, there is a significant potential and need to address capacity gaps in infrastructure and human resources. Intergenerational impacts of poor energy efficiency in homes greatly influence the viability of electrical heating systems such as heat pumps and electric thermal storage units. Electrical grids that were designed to deliver diesel generated power have technical vulnerabilities that need to be assessed and adequately addressed as renewable energy generation is introduced. This has an impact on the economics of different projects depending on the degree of upgrades needed to support the projects. This is part of the reason that current penetration rates (how much renewable energy can be introduced to a given system) on diesel electrical

Independent Power Producer Policies

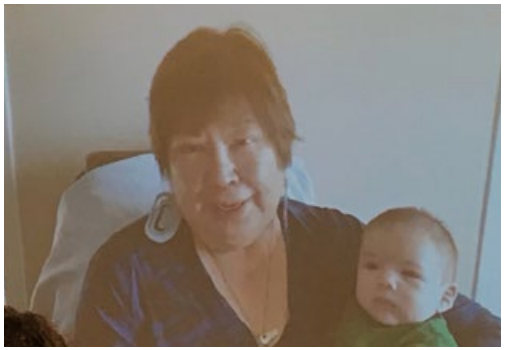
Throughout the conference, there was a lot of discussion about the need for strong Independent Power Producer Policies (IPPP). IPPPs are developed under provincial or territorial Utility Acts and allow for private citizens or organizations to sell power to the grid at a specific rate and are essential for small, renewable energy projects to be financially lucrative. There are some challenges that utility boards face in developing these policies because they are already heavily invested in the electrical infrastructure that is already in place. Additionally, as the flow rates of renewable energy such as wind and solar are variable, they can create issues within the systems that were not designed to support them. Some of the upgrades needed to facilitate better penetration of renewables in the systems are costly and will be needed in the medium term (prior to 2050) in order to reach Canada's target of a net zero electrical grid. In the absence of these policies, renewable energy projects are forced to take a 'behind the grid' approach, where local systems use local batteries to store power within a building or connected district and reduce draw on the main grid and the subsequent energy costs. The main jurisdictions who were identified at the conference as being behind the mark on developing IPPPs are Saskatchewan, Manitoba, Northwest Territories and Nunavut.

grids is estimated to be between 20-40% currently. In Nunavut, aging diesel infrastructure provides an opportunity for some of these upgrades to occur in the near term but will require significant investment, government buy in and the support of local and external expertise. Human resource capacity building is also an important consideration as training locals to maintain these systems long term is critical to the success of the projects. For example, the failure to adequately build human resource capacity within First Nation communities is a factor in the failure of water and wastewater systems in some communities.

Community Support

Throughout the sessions, the importance of community level education and support for the projects was talked about extensively. Many community leaders spoke about how their Elders readily understood and supported projects because the sun, wind, earth and water has always been how the community supported itself. Energy planning at the community level can identify and address social issues including inadequate and inefficient housing, and community resources that contribute to the success of projects. Youth are taking leadership roles within their communities are voicing their growing concerns at the state of our planet. The support of youth leadership may help to alleviate the mental health impacts of climate change and the substance abuse epidemic in communities by giving people an important role in their communities and widespread acknowledgement of the value of youth led initiatives.

Indigenous Jurisdiction and Leadership



Throughout our colonial history, indigenous communities have been left out of decision-making spaces and this continues through the jurisdiction of provincial, territorial and utility board decisions that effect renewable energy project development. The Federal Government has been responsive to the expressed needs of communities in their Northern Reach funding program, with flexible intakes, multi year agreements and a phased approach to renewable projects.

Renewable energy is one of the best opportunities that we have as a country to engage in genuine economic reconciliation, because each project has revenue generating potential and allows for communities to use the natural resources that they have always been in relationship with to create the energy needed for their communities. The importance of the United Nations Declaration on the Rights of Indigenous People (UNDRIP) cannot be overstated in this process as one of its important principles is that of free, prior and informed consent (FPIC). When Nations choose to pursue renewable energy as an economic development pathway, they are asserting their rights and utilizing resources in a way that genuinely benefits the community and has the potential to reduce energy costs over the long term. In addition, it reduces the community's dependence on diesel which

frequently cannot be produced locally and is subject to high volatility in price due to its value on the international market.

To fully embrace reconciliation, several key recommendations were made by the indigenous leaders of the conference for non-indigenous Canadians. There is a need for us to move away from 'safe spaces' and into 'courageous conversations.' These conversations are sometimes going to be difficult, emotional and challenge deeply held beliefs within our country. These conversations are essential. Every Canadian needs to read the Calls to Action from the Truth and Reconciliation Commission and UNDRIP. They should work to find themselves within these documents and understand how they can work towards reconciliation within their own scope of influence. Each community has a unique story of colonization and its impacts. We can all learn about our local histories and how colonization has impacted each of our communities. AJ Esquega of Gull Lake First Nation told the story about how his community was excluded from accessing the power from a hydro project. When the lake flooded, the community's cemetery was destroyed, sweeping the ancestors bodies into the water and causing deep spiritual harm. Years later, a diesel generator was installed to finally bring electricity to this community. Now that the community is working on its own renewable energy project, there is an opportunity to talk about the harm that was caused in the past, work towards reparations, invest in a new, positive project and build new economic resiliency.

Site C

Former Chief Judith Sayers of the Nuu-chah-nulth Tribal Council on Vancouver Island brought up another aspect of the Site C hydro dam project in BC that relates to renewable energy development across that province. Site C is the third hydro dam on the Peace River, which feeds into the heavily impacted watershed of the Mackenzie. The project not only seeks to provide energy for the entire province of BC, but facilitates the development of further LNG (liquified natural gas) projects by providing the significant energy needed to cool the gas to -260 degrees Fahrenheit. The $16 billion project has faced massive cost over runs and is facing serious geotechnical issues. It also constitutes an immense breach of Aboriginal Rights for Treaty 8 Nations that have already faced the cumulative severing of their rights through forestry, oil and gas development throughout their territories. In addition to the impacts on Aboriginal rights, the BC utility board no longer has any incentive to invest in dispersed renewable energy projects to small communities throughout BC. This means the opportunities for economic reconciliation and energy sovereignty for these communities is diminished to the point that many projects are not currently financially viable, as they would not have a market for the extra energy produced.

RENEWABLE ENERGY PROJECTS

Here are some of the communities featured during the conference and some details where possible about their projects. It was impossible to attend all of the sessions as the pre/post conference had multiple sessions at one time, but I've tried to provide enough information that one can research relevant projects as necessary.

NORTH

Kluane First Nation, YT - Wind energy, battery storage Technical assessment of Kluane electric power system | Yukon University

Watson Lake, YT – Solar Watson Lake solar project | Yukon University

Old Crow, YT – Solar Power system impact study for Old Crow solar project | Yukon University

Paulatuk, NWT - Wind Paulatuk - Arctic Energy Alliance (aea.nt.ca)

Beaufort Delta Region (Inuvik, Aklavik, Tuktoyuktuk), NWT - Wind, solar and battery storage Nihtat Energy Ltd

Kivalliq Region, NU – Solar, wind, battery storage Kivalliq Alternative Energy Limited - Inuit Firm Registry Database (tunngavik.com)

Nunavut Nukkiksautiit - Corporation Nunavut Nukkiksautiit Corporation - Qikiqtaaluk Corporation (qcorp.ca)

BC

Tsay keh Dene, BC – Biomass Down with diesel? Tsay Keh Dene Nation looks to biomass for heating needs - Canadian Biomass Magazine

Heilsuk Tribal Council, BC – Heat pumps, hydro, Haíłzaqv Climate Action (heiltsukclimateaction.ca)

Taku River Tlingit, BC – Hydro Atlin Hydro Expansion Project – Taku River Tlingit First Nation (trtfn.com)

Fort Nelson First Nation, BC – Geothermal Home — Tu Deh-Kah (tudehkah.com)

PRAIRIES

Fort Chipewyan, AB – Solar Three Nations Energy - Clean Energy Projects In Fort Chipewyan, AB (3ne.ca)

Kinoosao, SK – Energy efficiency in homes PBCN SaskPower Prefeasibility Report 2016 - FINAL.pdf (usask.ca)

Sayisi Dene First Nation, MB - Projects | Kisik Clean Energy

ONTARIO

Gull Bay First Nation, ON – Solar, energy storage Mashkawiziiwin Energy - Gull Bay First Nation

QUEBEC

Nergica - Northern Quebec Renewable energy : let's build a sustainable future - Nergica

ATLANTIC

NunatuKavut - Labrador Community Clean Energy Planning, Training and Implementation Planning in NunatuKavut (nrcan.gc.ca)

The Climate Reality Project
CANADA

The Climate Reality Project Canada's (CRPC) office is located on land which has long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg Nations. CRPC honours, recognizes and respects these Nations as the traditional stewards of the lands and waters on which we are today.

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