

# Renewable Energy Partnerships and Project Economics

Research supporting Indigenous–utility partnerships  
and power purchase agreements

## EXECUTIVE SUMMARY

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September 2018

# Executive summary

## Introduction and research goals

Remote Indigenous communities in Canada primarily rely on fossil fuels to generate heat and power. The majority of the electricity generation infrastructure in these communities is diesel-based, with emissions from the combustion of diesel fuel contributing to climate change, environmental degradation of land and water and health impacts. This prolonged reliance on diesel-based electricity also contributes to difficult economic conditions, social challenges and inequalities, which negatively affect personal and community well-being. There are various approaches to reduce or eliminate diesel use, typically including a combination of technical, financial, regulatory and policy solutions. Less examined but equally important strategies are enhancing collaboration and partnership, information sharing, and skill development among those responsible for implementing remote renewable energy systems. This research therefore focuses on the partnership dimension of renewable energy development. It does so by first exploring the relationships that drive renewables in remote communities and then by discussing the ways in which these connections can improve project economics. Of particular interest and focus in this research are the interactions between Indigenous power proponents and public / private electric utilities that currently dominate electricity provisioning in remote communities.

Indigenous power proponents are leading the way in bringing renewable energy projects to their communities and utilities are increasingly committed to seeing the development of renewable projects as well. However, little research has been done into how these parties are working together, what their collaborations have generated thus far and what major barriers remain. This research aims to better understand their dealings to date and the potential to improve and expand upon these early endeavours. The two main objectives of this research are to:

- examine existing and proposed arrangements between Indigenous power proponents and utilities with the goal of understanding and illuminating how these parties relate to each other and could improve working relationships to advance renewable energy projects.
- examine how Indigenous power proponents and utilities are thinking about and navigating difficult project economics with special attention to power purchase agreements.

## Motivations

This work is motivated by the desire to understand and improve the relationship between Indigenous power proponents and utilities as well as the difficult project economics that slow the development of remote renewable energy projects. It aims to contribute to the well-being of Indigenous Peoples by paying special attention to the voices of Indigenous power proponents and the increased consideration Indigenous self-determination and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) require. This focus is meant to counteract the prevailing motivations behind research on remote renewable energy projects that prioritize technology deployment over Indigenous struggles for self-determination. This research attempts to identify and promote opportunities for Indigenous leadership within the current colonial, market-based reality of energy development and utility authority in the North. While this approach is obviously imperfect and fraught, it nonetheless seeks to support Indigenous power proponents in their goals.

## Research methods and scope

This research addresses renewable energy projects in remote communities, defined in this context as communities with microgrids that rely on diesel as the primary source of electricity. The research primarily examines the relationships between electric utilities (public and private) and Indigenous power proponents (often Indigenous governments or economic development corporations affiliated with Indigenous governments) but also considers the role of territorial governments. We explored these relationships using a qualitative research approach, relying on interviews with individuals representing Indigenous power proponents, utilities, and territorial governments. We conducted interviews before, during, and after the Pembina Institute's 2017 Renewables in Remote Communities conference. We also convened a half-day session at this conference to hear from additional individuals. The findings in this report are based on 11 initial interviews, five-follow up interviews and information collected from the special session.

Due to finite resources, this report only discusses projects in the Yukon, Northwest Territories and Nunavut even though there are remote communities in Nunatsiavut and Nunavik as well as in most provinces. Additionally, our research specifically examines how Indigenous power proponents and utilities are collaborating to displace diesel electricity generation with renewable energy. We did not investigate the ways in which renewable energy projects might displace diesel for heating or transportation although these are crucial areas of study along with energy conservation and efficiency measures. Also, in focusing on distributed generation, we specifically asked research participants to comment on community- and utility-scale projects rather than net metering

programs. This research is focused on larger projects that require direct integration with the utility's diesel infrastructure.

## Partnership highlights

Seven key considerations emerged from the discussions on partnerships: trust, engagement, open and transparent communication, project objectives, ownership, role of territorial governments, and federal investment. Three themes emerged as particularly important to the formation and maintenance of partnerships:

**Trust** – Trust is paramount in building successful relationships, but distrust in utilities is a significant barrier preventing the development of renewable energy partnerships. The lack of trust in utilities is rooted in the historical and ongoing impacts of colonialism, which continue to disadvantage Indigenous peoples. Within the context of partnerships, it can be difficult for Indigenous power proponents to establish equal footing with utilities because utilities wield a comparatively large amount of political, financial, and organizational power and these imbalances do not go unnoticed. This is true of both private and public utilities although participants noted different struggles in each case. According to participants, overarching and partnership-specific distrust has resulted in many missed opportunities and project inefficiencies. Participants suggested that utilities could better establish trust through open and transparent communication as well as more concerted efforts to engage with Indigenous governments, organizations, and communities.

**Engagement** – Indigenous power proponents and utilities are only just beginning to work together after years of separate investigations into potential renewable energy projects. These new connections are being welcomed by all parties but there is considerably more to do. Indigenous power proponents would like to see utilities adopt an even more proactive role in establishing good working relationships by initiating, maintaining and strengthening engagement. Utility representatives acknowledged that engagement is a new norm and there is much to learn. Indigenous power proponents suggested that utilities begin by asking about appropriate protocols to follow. Respectfully following the desires, acknowledging the aspirations and recognizing the inherent rights of Indigenous governments is an important first step in correcting the power dynamics that favour utilities. Sustained engagement of this kind could then lead to closer relationships where parties feel more at ease in seeking each other out and proposing joint opportunities.

**Project objectives** – Each party may have different motivations for exploring renewable energy projects; transparency and sharing of these objectives is extremely important to gain an appreciation for possible different goals and to navigate the complexities of relationship dynamics when motivations differ. Different priorities are often a reality; objectives do not necessarily need to align but this does not mean these circumstances cannot be successfully navigated. This sharing should be done at the onset of partnership exploration and continually revisited throughout; open communication around underlying motivations will help everyone involved gain an appreciation for respective objectives. Spending time and being transparent on main project objective can offer great insight and appreciation between parties and can go a long way on establishing a good working relationship.

Reflecting on the stories and perspectives shared, there are some successes to note but there are more challenges and barriers that must be overcome to advance meaningful partnerships for renewable energy projects. Successes include the growing interest and commitment on both sides — albeit in only some jurisdictions — in establishing sincere, successful partnerships where mutual objectives can be achieved. Indigenous power proponents are voicing more interest, initiative and determination to develop and bring renewable energy projects to their communities. Some utilities are beginning to respond by demonstrating increased receptivity towards partnering with Indigenous power proponents and acknowledging the value Indigenous involvement and partnerships can bring. Federal investments over the past two years have generated optimism and opportunity among those seeking to displace diesel and prompted various parties to examine partnership options. The main barriers are the distrust towards utilities, lack of transparent information sharing, and meaningful engagement. There is awareness to these factors and recognition that these issues go deep, informed by many years of colonial governance and control over Indigenous communities that will take much effort to improve.

## Project economics highlights

Discussions on project economics identified key factors related to advancing business cases of projects — the role power purchase agreements (PPAs) play in project economics, the need for IPP policies to support PPAs, adequate PPA rates that reflect renewable energy transition and support good economics and finally, the entire regulatory regime governing utility action and setting PPA rates.

## The role of PPAs in project economics

It is difficult to establish strong business cases for remote renewable energy projects against the artificially low-cost, highly subsidized diesel-based systems that dominate remote communities. Power purchase agreements (PPAs) are one way to support more favourable project economics. They do not guarantee a strong business alone but they have played an important role in attracting financing for Indigenous power projects elsewhere in Canada. PPAs are now gaining traction in the North as a small handful of Indigenous power proponents move forward in their negotiations with utilities.

Although not the primary financial mechanism supporting a strong business case, a long-term power purchase contract (through an established government IPP policy) backed by a fair power purchase rate is one enabling component to facilitate the growth of renewable energy projects. With a PPA contract in place, lender confidence and financing options will only improve.

## IPP policy developments

IPP policies are slowly advancing in the territories. Yukon and Nunavut are moving in a similar direction toward a formal IPP policy in the past few years, with the NWT orienting more towards community-scale renewable energy guidelines. Yukon is close to passing legislation on their IPP policy and Nunavut, now having developed their net-metering policy, is looking towards designing an enabling IPP policy that will open up the opportunity for independent power development in the territory. As a whole and looking historically, progress on establishing IPP policies that open up the possibility of Indigenous power proponent opportunities is slow and cumbersome.

There are some interesting regional differences in current IPP approaches and the lack of details behind respective policies and slowness in bringing IPP policies to light have created a level of uncertainty and frustration for interested Indigenous power proponents. Specific differences in policy design include supporting third-party involvement in projects, the role (and perception) of privatization, and acceptable levels of profit in remote communities where electricity is highly subsidized. On privatization, there are a mixture of perceptions and fear that offering more IPP contracts will be seen as privatization of government-controlled electricity system (i.e. offloading responsibility) and that this privatization will lead to increased electricity rates. This is driven by the assumption that the profit that third parties would need to earn on a project can only be achieved by increasing electricity rates (even though this is not actually allowed under current legislative limitations without approval). The intertwined nature of privatization and profit is an interesting area to address.

## PPA rates

On PPA rates, this research suggests that detailed negotiations on a fair PPA rate is one of the most challenging and time consuming aspects of negotiations and that there is not a clear understanding of what the term “fair PPA” constitutes. The research also indicates that the concept and terms *marginal* and *avoided cost* of energy are not fully understood and calculating the cost of energy varies and is complicated. Different approaches currently taken by territories exploring possible PPA contract scenarios (whether through an IPP policy or through community renewable guidelines) shows there is not a consistent approach to negotiating a PPA rate, where this rate falls on the marginal-avoided cost spectrum, whether the rate is considered fair and how to evaluate this. The negotiating process is hampered by the lack and transparency of data and utilities using the defense that overall electricity rates cannot increase and hence only low rates can be offered. Absent in PPA rate negotiations however is what effect subsidization has on marginal and avoided costs of electricity, what the true unsubsidized cost of electricity is and if and how subsidy savings from reducing diesel consumption can be shifted to renewable energy PPA rates. More work is required to advance the understanding and interplay of subsidies and increasing fair PPA rates.

## Regulatory constraints

Finally, progress towards rates that take a more holistic approach in considering the effect of subsidies and the economic/social benefits that can be realized with a fair PPA rate is hindered by a significant barrier: regulations that govern utilities and electricity rates have an economic bottom-line focus that drives decision-making.

To find solutions to these complex challenges and to truly advance this area requires cooperation and leadership by utilities, regulatory bodies and their governments. They need to work together to adapt to the changing industry and to meet larger climate mitigation and greenhouse gas goals but they must share the responsibility of supporting Indigenous leadership and for advancing innovative regulations and regulatory processes that currently dictate economic-only analysis and ultimately obstruct progress.

## Next steps

The top recommended next steps from this research are:

- **Support information sharing and relationship building** – Indigenous power proponents have recent rich experience negotiating and developing projects with utilities. Great benefit would be achieved if the details of these experiences are captured; for example, processes followed, principles that governed the relationship, barriers and roadblocks encountered, solutions found, lessons learned, contract negotiations and details on power purchase rate discussions. Considering jurisdictions in the territories are on the cusp of releasing new government IPP policies, a synthesis of lessons learned would be useful to draw parallels and further disseminate this important information. This information should also be integrated into existing training programs and other learning exchanges so stronger relationship can be built among all parties involved. Funding should be considered to support the involvement of Indigenous power proponents and communities in contributing and compiling this information.
- **Cultivate an ethos of engagement** – There is a clear message that the current engagement model used by utilities needs to transition to a deeper, more authentic and genuine approach — one that respects Indigenous culture, empathizes with the effects of colonial history and current colonial structures and power imbalances, honours and respects Indigenous rights and self-determination, is more transparent and is driven by the greater goal of building trust. Utilities must continue deepening engagement without their own preconceptions or agenda and respecting Indigenous engagement. Utilities are seen to be improving their engagement initiatives, but this new ethos of engagement is needed and this leadership needs to come from them.
- **Support knowledge creation and investigate emerging issues such as ownership** – With the novelty of remote renewable energy projects, the need is high for knowledge creation that serves the interest of Indigenous power proponents. By this, we mean collaborative research that helps Indigenous power proponents and utilities learn what they need to know in order to build better relations. This synthesis of information should tackle pressing questions and differences that are being noted across different jurisdictions. Ownership (equity vs physical asset ownership) and governance models are examples of issues that deserve more attention.
- **Get consensus on how to calculate the cost of energy** – All major actors involved in northern renewable energy development should work towards clarity



- and consensus on the terms used to describe the cost of energy – including the marginal cost of energy and the avoided cost of energy. These terms and the principles behind them are crucial to transforming discussions and can be used to better guide PPA negotiations. Having utilities be more transparent and provide evidence of their marginal cost of energy would be a helpful starting point.
- **Implement IPP policies and ensure Indigenous involvement** – Formalized IPP policies are forthcoming in the territories. Governments should continue working with Indigenous governments and organizations to ensure Indigenous involvement is prioritized in the process and that IPP policies are truly enabling and open up opportunities for Indigenous power proponents.
  - **Advance understanding of fair power prices** – Alignment is also needed in what constitutes a fair PPA rate considering marginal and avoided cost of energy, the possible net economic benefits of renewables that reduce diesel operating costs, a deeper understanding of diesel subsidies (the financial savings incurred from not paying subsidies when diesel fuel is not used) and the increased environmental and social benefits that could be incorporated into negotiated rates. This is a rich, complicated area of research that has the potential to significantly advance the deployment of renewable projects through the establishment of a well-understood framework, a common understanding of these terms and PPA negotiations that going beyond the *de facto* approach of PPA rates that hover around the marginal cost of energy and often do not progressively support a good business case for renewable energy projects.
  - **Research into regulatory innovation** – Regulatory innovation and new ways of thinking are required to break down the systemic economic-only, lowest-cost electricity ceiling in current regulations. Utilities, regulators and policy makers should brainstorm regulatory innovations to remove current constraints that prioritize economic decision making above all else. Not until there is a change in regulation or signal from government policy to support a new approach will this significant roadblock be addressed. This change, innovation and leadership must begin with utilities and their governments, who must work together instead of passing on their responsibilities. There are a few good examples in Canadian jurisdictions where these stakeholders have supported policy, mandated directives and pushed the envelope on how to advance renewables under rigid regulations. Reframing the role of the regulator from one of restricting rate increases to overseeing more prudent decision-making that encompasses not just economic decisions will help advance this.

## Concluding thoughts

This work emphasizes the importance of mutually beneficial relationships between Indigenous power proponents and utilities and the role that PPAs can play in improving the business case of renewable energy projects in remote communities. With regards to partnerships, the barriers are clear: partnership and the opportunities for Indigenous inclusion are currently rooted in the colonial, market-based reality of energy development in the North, power imbalances between utilities and Indigenous power proponents (where utilities currently have the authoritative advantage) and lack of transparent information sharing. With regards to government policies and systems change, new IPP policies are required that enable Indigenous power proponents to build projects, and where PPA rates extend past marginal and avoided cost of energy and account for the needed restructuring of diesel subsidies. New approaches are needed that address all of these barriers — approaches that require not only cooperation among federal governments, territorial governments and their utilities, but also direct inclusion and contribution from Indigenous power proponents so their voices are heard, their knowledge appreciated and their leadership used.

We hope this research fosters an appreciation of some of the more human and financial challenges that impede the adoption of renewable energy projects in the North. Solutions to these complex challenges require cooperation by all, and especially acknowledgment from governments, regulators and their utilities that significant barriers exist that they have responsibility to address. This work also requires new innovative thinking that is driven by principles of Indigenous rights and self-determination, where the involvement of Indigenous power proponents needs to be considered a right and not a favour. Adopting renewable energy in remote Indigenous communities through sound government policy and leadership is a very relevant facet of improving federal nation-to-nation relationships. We look forward to seeing commitment grow to advance better policies, innovative thinking and supporting Indigenous leadership and the critical role Indigenous power proponents play in the remote community clean energy transition.