Pembina Institute comments on Qulliq Energy Corporation's proposed IPP policy

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Summary

- A well-designed IPP policy in Nunavut would create valuable opportunities for Indigenous communities and project proponents in developing renewable energy projects.
- Competitive rates, data availability, transparency, and a streamlined contract process are key factors in the success of community-led renewable energy projects.
- QEC can learn from leading jurisdictions and communities in the design of their IPP policy.

Context

- The Qulliq Energy Corporation (QEC) Act was amended in November 2018 to allow electricity in Nunavut to be generated by independent power producers (IPPs) and sold to QEC under a power purchase agreement (PPA).
- The Pembina Institute (Pembina) is providing these recommendations based on QEC's intention to develop an IPP policy that will allow for community-led renewable energy projects in Nunavut's 25 remote communities. Based on information provided by QEC thus far, it is our understanding that this IPP policy is driven by the desire to promote community energy self-reliance, reduce carbon emissions and reduce dependency on diesel fuel.
- Pembina's role as a co-delivery agent for the federal government's Indigenous Off-Diesel Initiative[1] involves identifying and encouraging effective policies, programs and regulations that support remote Indigenous communities in developing renewable energy and diesel reduction projects.

Considerations

Power purchase rates beyond the marginal cost of energy

- In many cases, tangible operation and maintenance (O&M) savings and deferred capital replacement costs can be realized when a renewable energy project displaces a significant amount of diesel generation on a well-designed microgrid system. These

[1] Natural Resources Canada, "Indigenous Off-Diesel Initiative." https://impact.canada.ca/en/challenges/off-diesel

benefits are highest when the diesel generator can be turned off for several days or weeks at a time. Offering a PPA rate for the avoided cost of energy could be based on direct diesel O&M savings and need not lead to additional costs for QEC or ratepayers.

- In leading jurisdictions such as the Yukon, PPA rates that are 10-20% higher than marginal cost have enabled more projects and achieved operational cost savings in the diesel system. A higher PPA rate can make a measurable difference in creating a favourable business case and revenue stream for a community-owned IPP.
- For more information on the marginal, avoided and true cost of diesel energy, see our recent backgrounder on this topic.[2]

Recognizing the social and economic benefits of community-driven IPPs

- There is a strategic opportunity for the Government of Nunavut and QEC to lead by example by including a social benefit adder in the rate offered to IPPs, as has been explored in some jurisdictions.
- Taking into account the full benefits of diesel reduction, including local health, air quality and economic development impacts, presents significant benefits to the community. It would also represent an important step by utilities and their governments in advancing community goals of self-governance and economic development.
- A social adder could potentially be implemented without additional impact to ratepayers — for example, through a fixed production incentive credit, funded by the federal government and through collaboration with the Government of Nunavut.

Modernizing remote community microgrids

- Preparing for higher levels of renewable energy in the future should be considered when replacing end-of-life infrastructure in communities. For example, traditional diesel generators should be replaced with variable speed or "renewable-ready" generators, or high-efficiency units at a minimum. Distribution infrastructure should also be sized and planned to accommodate future renewable energy projects.
- Acknowledging that Nunavut has an extreme climate and some of the most geographically isolated communities in the world, recent advancements and cost decreases in technology,[3] such as battery energy storage and advanced microgrid

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[2] Dave Lovekin and Dylan Heerema, *The True Cost of Energy in Remote Communities: Understanding diesel electricity generation terms and economics* (Pembina Institute, 2019). https://www.pembina.org/pub/diesel-true-cost

[3] Claudia Pavarini, "Commentary: Battery storage is (almost) ready to play the flexibility game," *International Energy Agency*, February 7, 2019. https://www.iea.org/newsroom/news/2019/february/battery-storage-is-almost-ready-to-play-the-flexibility-game.html

controllers, may allow for high renewable energy seasonal penetration levels (up to 100% in some communities).[4]

- Intermittent renewable energy limits should be determined on a project-by-project basis, based on the proposed technology and resource availability. Grid impact studies can be provided by a third party (for example, the Northern Energy Innovation group at Yukon College) in order to foster trust and transparency between all stakeholders.

Indigenous community leadership

- In keeping with QEC's stated intention of supporting community energy self-reliance, the IPP policy should be designed to prioritize projects that are initiated, owned, or otherwise championed by Inuit communities, governments, economic development corporations, businesses and entrepreneurs. Giving first priority to communities and Inuit organizations rather than external third-party developers or corporations is an important element of policy design that demonstrates allyship and a commitment to reconciliation.
- Projects that demonstrate an equitable partnership between third-party developers and Indigenous communities should be considered next in priority. An Indigenous ownership component is a stated goal of the Yukon's IPP policy,[5] and there are examples of successful project partnerships across Canada that offer 50% or greater ownership in projects to the Indigenous partner.[6]
- IPPs led by Indigenous communities and businesses can generate local revenue, jobs and economic opportunities.

Transparent and effective process

- Accurate, detailed and transparent diesel consumption and energy consumption data for communities is critical to properly sizing and assessing renewable energy projects. QEC should establish detailed diesel and electricity consumption baselines for each community and make that information freely available to project proponents.
- A standardized and efficient contract process for PPAs is important to lessen the administrative burden on communities, proponents and the utility. Learnings from

[4] Government of Vuntut Gwitchin First Nation, "Vuntut Gwitchin Government and ATCO Electric Yukon reach an Electricity Purchase Agreement for Old Crow Solar Project," media release, June 19, 2018. https://www.vgfn.ca/pdf/Old%20Crow%20Solar%20Project%20Media%20Release%20EPA%20June%202018%20.pdf

[5] Government of the Yukon, *Yukon's Independent Power Production Policy* (2018). https://yukon.ca/sites/yukon.ca/files/emr/emr-yukon-independent-power-production-policy.pdf

[6] Emilee Gilpin, "Kanaka Bar four steps ahead of climate change," *National Observer,* February 15, 2018. https://www.nationalobserver.com/2018/02/15/first-nation-four-steps-ahead-climate-change

other jurisdictions, where one-off PPA negotiations have significantly slowed project timelines, should be considered in QEC's policy.

- Indigenous communities from outside Nunavut, such as Vuntut Gwichin (Old Crow), YT[7]; Kluane First Nation (Burwash Landing), YT[8]; Kiashke Zaaging Anishinaabek (Gull Bay), ON[9]; and Taku River Tlingit First Nation (Atlin), BC[10], that have existing PPAs for innovative (and 100% Indigenous-owned) renewable energy projects should be consulted to capture learnings and best practices from the contract negotiation process.

[7] Kallan Lyons, "Vuntut Gwitchin First Nation plugs in Old Crow solar power project," *Yukon News*, June 25, 2018. https://www.yukon-news.com/business/vuntut-gwitchin-first-nation-plugs-in-old-crow-solar-power-project/

[8] Kluane Community Development Corporation, "Kluane N'tsi (Wind) Project." http://kluanekcdc.ca/projects/kluane-ntsi-wind-project/

[9] IESO, "Fully-integrated microgrid at Gull Bay First Nation first of its kind in Canada," June 20, 2018. http://www.ieso.ca/en/Powering-Tomorrow/Efficiency/Fully-integrated-microgrid-at-Gull-Bay-First-Nation-first-of-its-kind-in-Canada

[10] Xeitl LP, "Atlin Hydro Electric Project." http://atlinhydro.ca/

Recommendations

1. QEC's IPP policy should offer proponents a rate that — at a minimum — takes into account avoided O&M and deferred capital (an *avoided cost* rate) on the diesel system.
2. A social adder to account for the true costs of diesel energy should also be considered, with the federal government potentially providing innovative funding mechanisms and policies to support this shift.
3. End-of-life diesel infrastructure in communities should be replaced with technologies that better support the future integration of renewable energy.
4. Penetration limits and grid impacts for intermittent renewable energy projects proposed by IPPs should be considered on a case-by-case basis, based on good research and meaningful data.
5. An IPP policy for Nunavut should promote and prioritize projects that are directly led, owned and/or championed by Indigenous communities and/or businesses themselves, rather than by external third-party organizations. Alternatively, a partnership that includes an Indigenous community ownership component should be considered a minimum.
6. The IPP policy should also give due consideration for the potential of renewable energy projects to advance Indigenous communities' goals of self-governance and energy independence, and governments' goals of reconciliation.
7. Energy baseline data for each community should be improved and made available to project proponents.
8. A standardized and transparent contract process for PPAs should be established, building from lessons learned in other jurisdictions over the past several years.

The authors are happy to discuss any of these topics further as we continue to advance effective policy for community-led projects under the federal Indigenous Off-Diesel Initiative.

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