

The Future of Energy in Canada's North Report

Whitehorse – August 9, 2017



Executive Summary

On August 9, officials from Natural Resources Canada joined the Yukon College in welcoming 35 participants from businesses/industries, representatives from Indigenous communities, provincial and municipal government organizations, academics and engineers to a workshop on the future of energy in Canada's North for Generation Energy. The workshop was facilitated by Stephen Mooney, Director of Cold Climate Innovation at the Yukon Research Centre.

WORKSHOP OVERVIEW

The workshop included open discussions and breakout exercises that addressed a series of questions:

1. What will Canada's north look like in 2050 in terms of energy? (a vision)
2. What are the long-term challenges and opportunities related to the vision for Canada's north?
3. What are the values that will help guide the way?
4. What are the actions and outcomes needed to support this vision of the future?

KEY INSIGHTS FROM PARTICIPANTS

1. In 2050, Canada's North will be predominantly powered through community and individual ownership of energy projects, which would lead to energy independence. To reduce its diesel dependence, the North will move to a more varied energy portfolio that is predominantly renewables. Future energy jobs will include more localized opportunities, which will ensure that profits are circulated within one's own community. First Nations will continue to be intimately involved in the energy businesses and share their success stories.
2. Participants voiced concerns that government policies are slow in implementation and need to catch up with real life situations. Communities are looking for longer-term financing options. Currently, government support is too short to be effective.
3. Upfront cost of energy projects, updating and connecting to the grid, and building transmissions lines across the North is expensive. However, the high cost of energy in the North makes renewable sources far more competitive, and the lack of grid connections can be a strong motivator to enhance storage technology. Uncreated, new advancements and cutting-edge technology may play an important role during the transition.
4. Self-sufficiency/ self-reliance on energy, sustainable development of energy projects, community empowerment, and awareness and collaboration were all considered important values that will help guide the path forward.
5. Government should not be able to direct communities but should instead support communities in their energy production direction. Participants spoke of support through financing, training and stable policymaking.

POINTS TO REGISTER

Question 1: Canada's North in 2050

Community and individual ownership: The majority of future energy projects in the North will be community and/or individually owned – a shift from being stakeholders to becoming shareholders. This decentralized energy system means that every citizen will play a larger role in his or her own power generation, from the supply and demand side.

- The concept of the 100 miles diet for energy was raised: “local generation for local use and create local benefits.”

Diversification of energy sources: To reduce its diesel dependence, the North will move to a more varied energy portfolio that is predominantly renewables. The chosen energy source will be reflective of the energy resources of the community. Small amounts of fossil fuel imports are still expected for back-up capacity.

Leadership, knowledge sharing and capacity: Education needs to be more than just providing a brochure; it should involve personalized interactions and live demonstrations of energy issues.

Energy Economy: Future energy jobs will include more localized opportunities, which will ensure that profits are circulated within one's own community.

- Communities are and will be the leaders in energy innovation and finding the long-term renewable energy solution.

Indigenous Partnerships: All future projects will be viewed through the lens of reconciliation. First Nations will continue to be intimately involved in the energy businesses and share their success stories.



Question 2: Opportunities and Challenges

- **Policy and decision-making (challenge):** Participants voiced concerns that government policies are slow in implementation and need to catch up with real life situations. In addition, 4 year leadership terms (or shorter) leads to short-sighted visions and unstable program development, which in turns makes it difficult to pursue and develop energy projects. A point was also raised about the lack of mandate for municipalities to get involved in energy issues.
- **Independent Power Producers (IPPs) and Power Purchase Agreements (PPAs) (challenge):** Participants mentioned that under current agreements, producers have to pay to connect to the grid. This was seen as a huge limiting factor in developing renewable energy projects. In addition, the regulatory environment too often affects the development and implementation of IPPs and PPAs. Access to capital for future projects also presents a challenge.
- **Population increase, cost and distance (challenge):** Population increase causes increase pressure on energy demand. In addition, increased mining activities may also create strain on the system. Updating and connecting to the grid, and building transmissions lines across the North is expensive.
 - Participants emphasized that the North has small, isolated grids, which means a small rate base. The high costs associated with connecting to the grid hinders local communities in two ways: without a connection, there is no ability to sell the surplus power produced, and there is not enough consumers to pass on the cost of installing transmission lines to connect to the grid.
 - Participants raised that the North is not necessarily a big market; therefore, it is not a big draw for large private companies. As such, the high up front cost of renewable projects must be absorbed somehow.
- **Emerging demand for new building stock (opportunity):** The warmer winters (weather) can potentially encourage more tourism and migration of permanent residents in the Yukon. This would mean that new housing/infrastructure would likely be needed. This presents an opportunity to “future proof” these new structures (e.g., retrofit or removal of older buildings, passive energy buildings).
- **Energy costs (challenge & opportunity):** The high cost of energy in the North makes renewable sources far more competitive. The current unreliable grid are strong motivators for individuals and households to start producing their own energy sources. In addition, the lack of grid connections (can’t sell surplus power) can be a strong motivator to enhance storage technology.



Question 3: Values

- **Self-sufficiency/ self-reliance:** Historically, there has always been a sense of personal ownership when it comes to energy use as many Yukoners live off the grid and are very familiar with living off the land.
- **Sustainable Development:** Participants brought up an example of the values they use to evaluate future energy projects - SERV. The project must demonstrate Social responsibility (education), protect the Environment, Respect the culture (involve the local community) and be economically Viable.
- **Community empowerment, awareness and collaboration:** Participants agreed that communities are and will be the leaders in energy innovation and finding long-term solutions. A strong entrepreneurial culture exists across the North. Participants viewed local solutions as a critical aspect of long-term success.

Question 4: Actions and Outcomes

Government role: Government should not be able to direct communities but should instead support communities in their chosen path forward. Participants spoke of support through:

- Financing – providing initial capital cost (grants or subsidies). This would not only shorten the payback period of the project, but also provide confidence to the communities in recognizing the value and importance of the projects.
- Training – educating and building capacity among local communities. This would include a bigger role for community colleges.

- Policy – participants voiced that if new policies cannot “create ease” for new sustainable energy projects, then they should instead create “roadblocks” for the opposite. In addition, participants raised long-term programming multiple times as a priority.

Pilots and demonstration projects: Participants mentioned that they need more than just a “brochure” when it comes to considering new energy projects. They desire a local team, who can provide live demonstrations of the projects. In keeping it local, this would build a sense of trust and belief that the project skills and results are indeed transferable. The reasoning was that installing solar panels in California would require a different skillset and understanding from installations in the North.