

Energy

Draft prepared with no materials- First Nations Microgrids for Diesel Reduction

MT:CC Sep. 21, 2017	Cabinet Sep. 27, 2017	TB/MBC TBC	Cabinet TBC
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This government's commitment	Where community support exists, Ontario would work with First Nation organizations to develop advanced microgrid solutions in First Nation communities – Ontario's Climate Change Action Plan – Released June 8, 2016.
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SUMMARY OF PROPOSAL

The Ministry of Energy (ENERGY) is seeking approval to work with First Nations to design and deliver a program that will seek to reduce diesel use in remote First Nation communities with the highest potential for diesel reduction and greenhouse gas emission (GHG) reductions.

The Climate Change Action Plan commits to supporting the development of initiatives to reduce diesel use through microgrids and other renewable technologies in remote First Nations. The cost of producing electricity using diesel fuel can be volatile, and is expected to continue to rise over time. Finding renewable alternatives provides an opportunity to mitigate some of those cost uncertainties.

What is the regulatory impact of this proposal?

There is no regulatory impact of the proposal.

What is the expected cost to government?

The Ministry has identified 3 options for funding levels to support the program and is recommending option 1. ENERGY will seek Treasury Board and Management Board of Cabinet (TB/MBC) approval of program design specifics as well as funding to support the project from the Greenhouse Gas Reduction Account (GGRA):

Commented [MK(1)]: Why do we say there are three options here if they are recommending one?

OPTION	Cost (\$ Millions)				SCOPE
	2017/18	2018/19	2019/20	2020/21	

Option 1	0.5	9.5	20	20	Targeting high penetration projects in a small number of communities.
Option 2	0.5	9.5	10	10	Target high penetration projects in fewer communities or support lower penetration projects in a larger number of communities.
Option 3	0.5	4.5	5	5	Targeted initiatives but would likely not achieve high diesel offset values.

How will the changes be communicated? [TBC]

A low profile approach is recommended with specific projects being announced as they are funded rather than announcing a new program which will have limited eligibility and targeted uptake. An allocation of funding for microgrids could be announced in the context of other CCAP commitments, particularly those directed towards Indigenous communities.

CABINET OFFICE ANALYSIS

Introduction

Twenty-five remote First Nation communities in Northwestern Ontario currently rely on local diesel generation systems. These remote First Nations face a number of social and economic challenges, making them particularly vulnerable and impacting their capacity to participate in programs offered by the provincial and federal governments. Many First Nations experience load restrictions due to the limited capacity of their diesel generation systems, and diesel fuel has a number of other drawbacks, including environmental risks associated with transporting it, high transportation costs, and high emissions.

Given the rising cost of diesel, local diesel generation systems are becoming more expensive and is forecast to continue increasing given the impact of cap and trade. Conversely, the cost of renewable generation and storage is coming down, with new technologies being tested and demonstrated in harsh climates and remote locations.

For 21 of the 25 diesel powered remote First Nations, Independent Electricity System Operator (IESO) analysis identifies grid connection as the most economical option for reducing diesel dependence and moving to a clean and resilient supply of power to meet community needs. Electricity service in Ontario's remote First Nation communities is a shared responsibility between Ontario and the federal government, as defined in historic agreements.

Through the Climate Change Action Plan (CCAP), the ministry was directed to work with the Ministry of Environment and Climate Change (MOECC), the Ministry of Indigenous Relations and Reconciliation (MIRR) and First Nation governments and organizations to develop a program for low-or-no-carbon-energy-powered micro grids and other alternative energy projects, with internal diesel use reduction targets of 50% in 2018, and 100% in 2020, unless a First Nation community identifies that they are not willing to implement these projects in their community.

Commented [MK(2)]: Do we know how many of the 25?

Commented [MK(3)]: Is this the major factor in the cost increase?

Commented [MK(4)]: Did IESO conduct a study? If so we should reference it.

Commented [MK(5)]: Bit of a run on sentence. Are these parts necessary in the introduction?

Proposal

The ministry is proposing to engage directly with remote First Nations and their representatives to develop a program that focuses resources on supporting projects in communities with the highest potential for diesel and greenhouse gas (GHG) emissions reductions.

To increase program uptake and effectiveness, the ministry is advising that a community driven approach to program development is fundamental to its success. The ministry is proposing that the program would work to support projects to integrate storage and renewable generation such as wind, solar, biomass, or hydro, into existing distribution systems. While program parameters are not yet developed, the ministry indicates that eligible program expenses could include:

- Project development costs (e.g. environmental studies, engineering services, technical studies);
- Materials, and costs related to transportation of materials;
- Labour costs, including project management costs;
- Training costs to support operations and maintenance;
- Maintenance costs;
- Infrastructure directly related to the project; and
- Monitoring and evaluation costs.

Eligible costs would be actual costs directly attributable to and necessary for the successful completion of the project, and details of the eligible costs would be outlined in the program guidelines to be developed. It is proposed that projects would also need to provide projected GHG reductions, and would also need to support one or more of the following priority areas:

2. First Nations that are not economic to connect to the provincial grid:

- Clean, renewable generation with advanced microgrid technologies to offset diesel use in the near and long term.
- Scalable technologies can be implemented and/or built upon to work incrementally towards renewable energy as the main source of power.
- Includes Fort Severn, Gull Bay, Weenusk, and Whitesand First Nations.

3. Critical infrastructure resilience:

- Provide back-up for one or more critical facility/building. Back-up could be sufficient to cover shorter outages but not sufficient for major critical events (ice storm, forest fire) which might cause prolonged outages (up to 2 weeks).

4. Alleviate load restrictions:

- Generation and storage capacity to support load restriction up to peak load value.
- Combined Heat and Power systems, and other efficient systems or conservation measures could reduce overall diesel use, creating space within current diesel system capacity.

The ministry would continue to work with MOECC and MIRR during program development and implementation.

Linkages

Ontario's Fair Hydro Plan – On June 1, 2017, the *Ontario Fair Hydro Plan Act, 2017* became law, reducing electricity bills for residential consumers and as many as half a million small businesses and farms across the province. The OFHP also helps electricity consumers by enhancing a number of electricity support programs, including the First Nation on Reserve Delivery Credit (FNDC). Many remote diesel reliant First Nation communities' electricity is provided for by Independent Power Authorities (IPAs) that are not regulated by the Ontario Energy Board. For this reason these communities are not eligible for the assistance under the FNDC program. The proposed program will help offset diesel consumption and reduce costs for communities in the longer term.

Remote Electrification: A First Nation-led proponent, Wataynikanayap Power (Watay), is developing the project to connect 16 of the 21 remote communities that are economic to connect to the provincial grid. On August 27, 2015, Watay signed a partnership with FortisOntario and RES Canada, industry partners with transmission development experience. It will be important to design the proposed program with some flexibility, keeping in mind that projects should not jeopardize the business case supporting grid connection for those communities where transmission is being pursued.

REINDEER Program

Climate Change Action Plan – Released in summer 2016, the CCAP reiterated the 2016 Budget commitment to greenhouse gas (GHG) emissions reductions and stated that Ontario intends to invest in initiatives that both reduce GHG emissions and ensure that the net impact of cap and trade would not result in an overall increase in electricity costs for commercial and industrial consumers. As mentioned, CCAP included ambitious commitments to eliminate remote First Nation reliance on diesel through microgrids and other means by 2020 (see page X- Risks and Considerations).

Federal programming?

Truth and Reconciliation Commission of Canada – In June 2015, the Truth and Reconciliation Commission released an Executive Summary of the findings in its multi-volume Final Report, including 94 "calls to action" for federal, provincial, territorial and Indigenous governments to further reconciliation between Canadians and Indigenous peoples. Ontario is working with Indigenous partners to address the legacy of residential schools, close gaps and remove barriers, create a culturally relevant and responsive justice system, support Indigenous culture, and reconcile relationships with Indigenous

Commented [HT6]: Energy please provide a paragraph describing program and linkage to current work.

Commented [HT7]: Energy: any federal programming that may be supporting similar objectives?

peoples. Ontario is investing more than \$250 million over the next three years on programs and actions focused on reconciliation.

Delivery

The ministry proposes to work closely with First Nation communities and organizations to develop and deliver this program, and has developed a targeted engagement strategy for implementation in the fall 2017 [TBC].

The delivery model will be refined through consultation with stakeholders, First Nations and representative organizations, given that there are a number of ways that responsibilities can be assigned allowing the Ministry to either take a stronger role in program delivery or to delegate administrative aspects of program delivery to a third party. There may be an opportunity for a co-delivery model or for the Ministry to delegate certain aspects of program delivery to Indigenous organizations to increase Indigenous control and ownership over funded projects.

Project proponents would be either First Nations or Indigenous organizations, ensuring that projects are being driven by community needs but also allowing the flexibility required to seek outside support to enhance project development and implementation capacity.

In addition, many remote communities have developed, or are in the process of developing, community energy plans through the IESO's Aboriginal Community Energy Plan program. The ministry intends to build off these plans where possible and implement community driven approaches. Implementation of community energy plans was a key take away from the Long-Term Energy Plan (LTEP) engagement sessions with communities, and will be featured as part of the ministry's forthcoming 2017 LTEP.

Performance measurement for the program will be based on the number of projects deployed, successful operation and maintenance of the systems over time, the amount of diesel and GHG reductions achieved, and the cost per tonne of GHG reductions. [TBC]

Stakeholder and Partner response

First Nations – Neutral to positive – The ministry reports that First Nations have indicated significant interest in microgrids and renewable energy projects, so it is anticipated that a program to support this type of project will be well-received. It will be important to manage communities' expectations with respect to where these systems have the highest potential. Many communities are interested in a government-funded microgrid as it is viewed as an opportunity to access an unlimited supply of low-cost power and offset members' need to draw 'expensive' electricity from the grid. However, installing and maintaining these systems in remote locations is complex and very costly, and the business case for the technology depends largely on a community's location, needs, and alternatives for grid connected power. This program will need to be communicated in the context of other initiatives to reduce diesel dependence and provide lower-cost power supply, in particular the remote grid connection initiative currently underway.

Commented [HT8]: What is the critical path for having the program operational? How long are you planning to do engagement? When do you anticipate putting a call out for proposals?

Commented [HT9]: Energy: how many?

Indigenous Organizations – Neutral – It is expected that there will be general support for the program but that the Chiefs of Ontario and Political Territorial Organizations may be concerned with limited scope of eligibility. The ministry will develop a proactive communications plan to respond to concerns about program scope by emphasizing the other program supports available, including funding for the implementation of community energy plans (once announced).

eNGOs – Positive –

Local Distribution Companies (LDCs) – Neutral to Positive –

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Commented [HT11]: Energy: Please provide anticipated response

Risks and Considerations

Remote Conditions and Capacity

Renewable energy projects in remote communities face a number of challenges, both in terms of project execution as well as ongoing operations and maintenance after the project concludes. Many First Nations face capacity constraints in their ability to plan and implement projects, as well as to maintain high-tech systems in the community for the life of the assets. If systems are not maintained or operated in accordance with manufacturers' recommendations, there is a significant risk that projects will not have the intended impact to overall diesel usage. Even with experienced operators, maintenance is more challenging due to the scarcity of parts and skilled labour in remote communities.

Involvement of the LDCs (e.g. Hydro One Remotes Communities Inc. (HORCI), or IPAs) in the project is critical to ensure that the project can be integrated into the existing distribution system and for reliability and safety to be maintained.

The ministry also proposes to further mitigate this risk through a community engagement centred approach. ENERGY anticipates that if the community owns the asset and is trained and engaged directly in its operation, there is a greater likelihood that the system will maximize the potential for diesel savings.

CCAP Objective- 100% Diesel Reduction by 2020

The province is unlikely to meet its CCAP objective of 100% diesel reduction in remote First Nations by 2020. This is due to many factors including the long project lead times for grid connection, First Nations' willingness to partner on initiatives, realities of operating energy systems in remote and harsh environments, state of renewable and storage technologies and the need for certain levels of reliability and energy load, and limited participation from the federal government to date. The proposal will assist in the deployment of projects for diesel reduction, but may also not ultimately eliminate the need for diesel generators in unconnected communities, until storage technology matures.

Federal Government Involvement

Costs for electricity service in remote First Nation communities are a shared responsibility between Ontario and the federal government, as defined in historic agreements. The

Federal government has made action on indigenous issues a priority including reducing diesel use in remote communities. There may be an opportunity to seek support from the federal government, through program funding or by allowing flexibility in the way that First Nations claim expenses related to electricity (ie. redirect their operating funds to support a project).

ENERGY will continue to engage the federal government to negotiate a path forward that recognizes that in addition to community benefits, these projects have the potential for mutual gain for both Ontario and Canada.

It is also possible that projects could impact the way that standard-A rates are applied in HORCI serviced communities, and have the un-intended consequence of shifting operating costs from the Federal government to Ontario ratepayers or taxpayers. This can be mitigated by working closely with RemoteCo and ensuring that they are active partners in projects proposed to interact with their systems.

Other options

- A. Meet diesel reduction commitments through existing programming- unlikely to be successful.
- B. Design an open program with broad eligibility- unlikely to be successful within proposed funding envelope or to develop projects in communities with the greatest needs and highest opportunities for GHG reductions.

PROPOSED CABINET MINUTE

- High level minute where possible

DRAFT

APPENDIX A: Multi-Year Action Plan (Insert Item Name)

Below is an extract taken from the MYAP which demonstrates the overall strategic plan for the initiative that this policy submission supports. This excerpt represents the approved plan to date, and may not reflect the specific policy and delivery timelines identified in the Cabinet Minute above.

CO Pre-Amble on the context of the decision in the broader plan

- Identify where this policy submission fits within the submission to draw attention to a specific area (i.e. What year, what is the name of the milestone)?
- What other milestones and/or MYAP swim lane(s) are dependent on the submission?