Renewable Solutions for Off-Grid Diesel Communities

Standalone diesel generation is the source of power for 25 of the NWT's 33 communities. New projects to replace a portion of the NWT's diesel generation with renewable energy sources will reduce greenhouse gas emissions, lower the cost of living and demonstrate innovative solutions for off-grid diesel communities in Canada's remote north.

Projected Cost: $140 million

Inuvik Wind Project

- Develop 2 to 4 megawatts of wind energy at the site and build a 10-kilometre transmission line to the Town of Inuvik.
- The Inuvik Wind Project would reduce GHG emissions by 4,300 tonnes per year.
- Increasing the production and transmission of renewable and alternative energy in remote Northern communities reliant on diesel and other fossil fuels is a priority of both the Government of the Northwest Territories and the Government of Canada.
- The Inuvik wind project would eliminate the need for 1.3 million litres of diesel annually in the largest thermal community in the Northwest Territories, and help reduce the cost of living for residents.
- Project can be initiated immediately and could be in service by 2019. It would be the first large scale wind project north of the Arctic Circle in Canada.

High penetration solar

- Install high penetration solar with batteries or efficient variable speed generators in 15 diesel communities.
- Batteries and variable generators are the only way to significantly decrease GHG emissions in remote communities, and can achieve diesel/GHG reduction of 20 to 25% as opposed to the 2 to 4% from solar alone.

National Priority: *Green Infrastructure: Clean Air, Clean Water*

"Investments in sustainable infrastructure are needed to support greenhouse gas emission reductions; enable greater climate change adaptation and resilience; and ensure that communities can provide clean air and safe drinking water for their citizens. Projects that may receive these additional investments include, among others: inter-provincial transmission lines that reduce reliance on coal-fired power generation and the development of new low-carbon/renewable power projects."

- Annual GHG reduction for these projects would be 2,600 tonnes per year for the 15 diesel communities.
- Approach has already been successfully demonstrated in Colville Lake and Aklavik, NWT.
- High penetration solar projects in remote communities would improve community energy security and replace the use of imported diesel fuel for power generation that would reduce the cost of living.
- Projects could begin in 2017.

Transmission line to Fort Providence

- Construct transmission line to connect Fort Providence – one of the NWT's largest diesel communities – to Taltson hydroelectric system.
- The transmission line would reduce GHG emissions by 4,900 tonnes per year and permanently supply renewable power to a large diesel community.
- Transmission of renewable hydropower is more reliable than wind or solar.