



SOLAR PROJECTS IN REMOTE FIRST NATIONS

Presented by:

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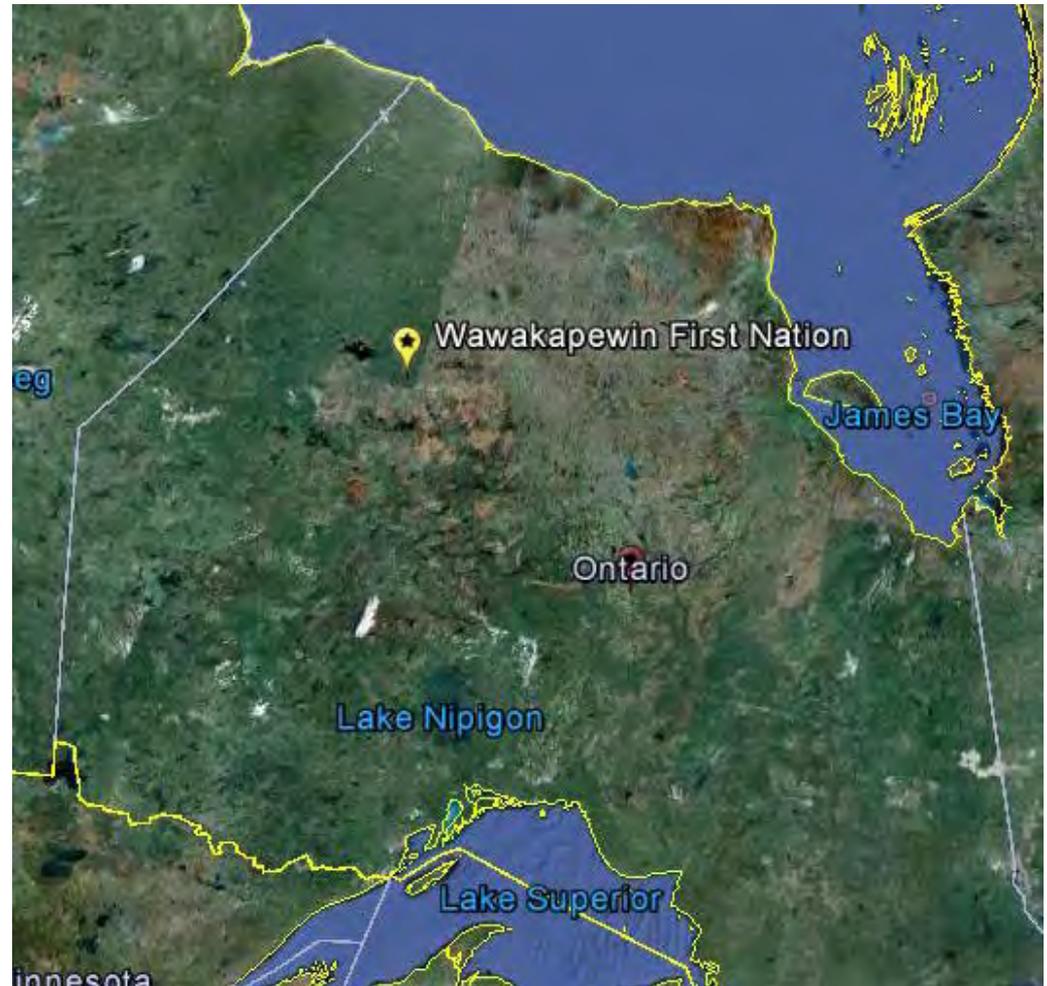


Wawakapewin First Nation Photovoltaic / Genset Project

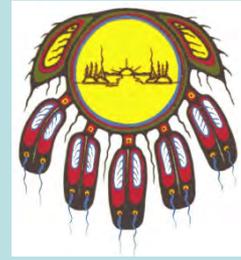


Background

- Small remote community
- Independent Power Authority
- Existing Diesel Generating Station has two 125kW generators



Wawakapewin First Nation Photovoltaic / Genset Project



Challenges of community power generation

- 1) Fluctuating community energy loads
- 2) Inefficiency of the generators
- 3) Cost of fuel
- 4) Cost of generator service and repair

Wawakapewin First Nation Photovoltaic / Genset Project



Project History

- Community Energy Baseline Study - Pembina Institute
- RETScreen Study - GPCo.
- INAC stimulus funding – First Nations Infrastructure Fund
- Detailed Analysis & Preliminary Design – Enermodal Engineering
- AANDC ecoENERGY funding
- Construction - G3 Renewable Energy (currently underway).

Wawakapewin First Nation Photovoltaic / Genset Project



Design & Modeling

- 20kW photovoltaic system & 50 kW generator
- Total Project Funding of \$810k (FNIF & ecoENERGY)
- Payback period of 14 years
- Annual offset of 14,350L of fuel and 10.5 tonnes of greenhouse gases

Wawakapewin First Nation Photovoltaic / Genset Project

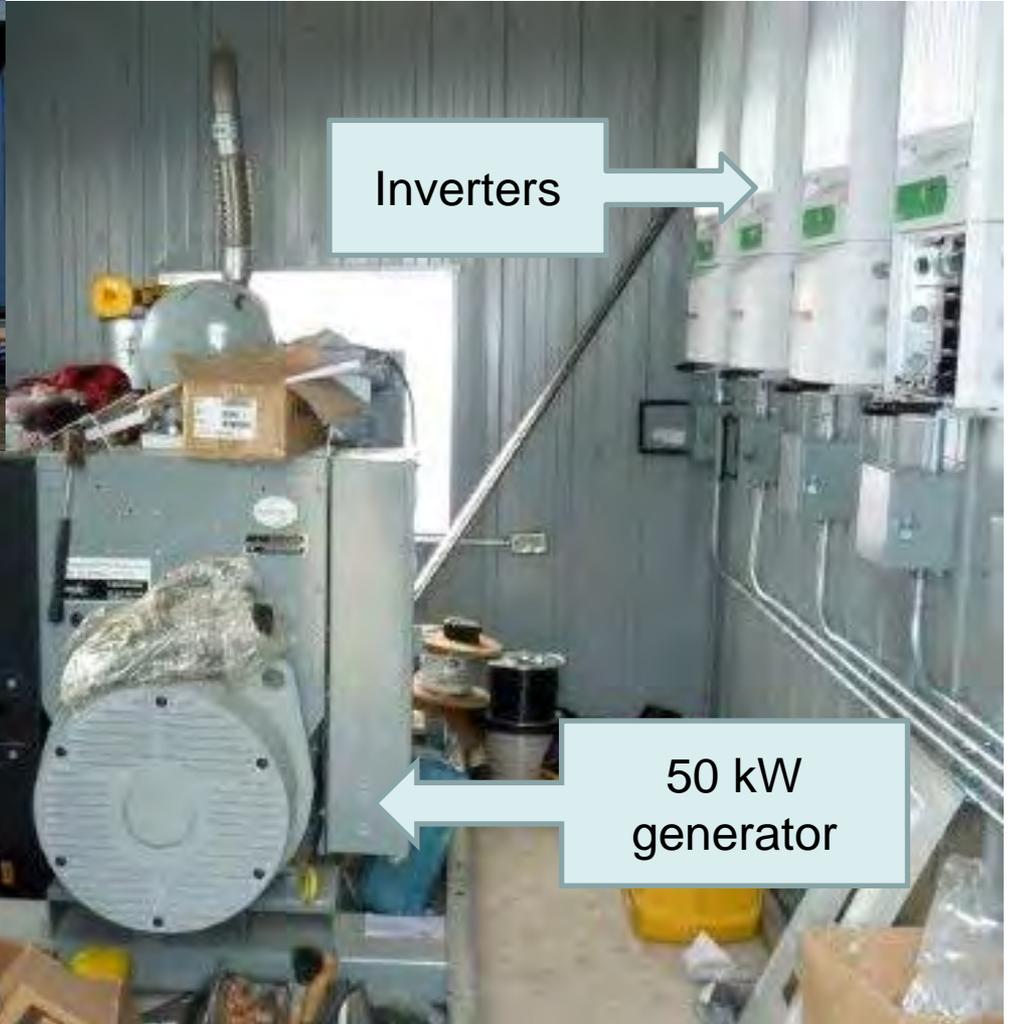


Construction

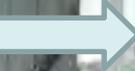
- Tendered & awarded January 2012
- Short winter road season limited mobilization of materials
- Materials delivered by float plane / helicopter
- Site work initiated September 1, 2012.
- Anticipated completion October 15, 2012.







Inverters



50 kW generator



Wawakapewin First Nation Photovoltaic / Genset Project



Construction Challenges

- Pilot project
- Inverters
- Controls
- Site conditions
- Site access
- Schedule



SOLAR PROJECT DEVELOPMENT IN REMOTES

Load Displacement Projects

- Offset hydro bills paid by the Band
 - Hydro One Remote Communities: Standard “A” Rate (\$0.88/kWh) vs. General Service Rate (\$0.09/kWh to \$0.16/kWh)
 - AANDC subsidies

Stand Alone Generating Projects

- REINDEER Program through Hydro One Remote Communities Inc.
- Technical Considerations

SOLAR PROJECT DEVELOPMENT IN REMOTES

Technical Considerations

- Roof vs. ground mounted systems
- System size
- Impacts to existing system
- Vandalism
- Engineering required
- Inspections

QUESTIONS?

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