

Community Solar Project Overview

SOLAR ARRAY

7,680 solar panels

Ground mounted bi-facial solar array

Collects light reflected off snow

The solar farm will cover an area equivalent to 46 NHL rinks



The solar farm will integrate with our current power grid. We propose that it is located across the bay, beside the former wind turbines site.

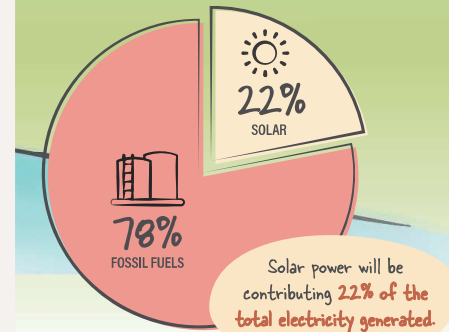
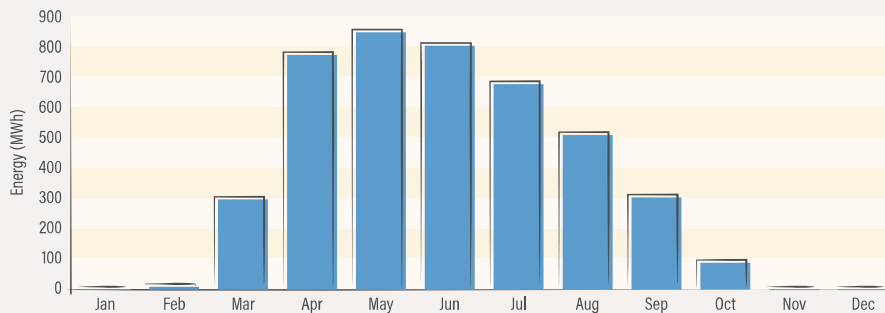
BATTERY STORAGE IN SEA CANS

Batteries: 2 Short Duration 3 MWh Batteries (6 MWh capacity)

Operates: -40°C to +55°C

Capacity: 2 to 4 hours of "diesel off"

AVAILABLE SOLAR ENERGY



DEFINITION

Diesel off: the system is sized so that the plant can be shut down for several hours during the summer days.

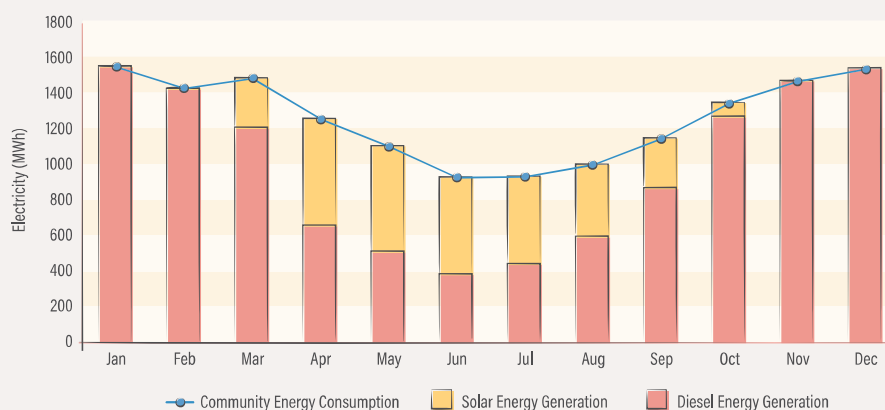
Solar generated electricity will **reduce 1.2 million litres of fuel per year**, or approximately 5,600 barrels.



	Solar Capacity (kW)	Annual Solar Production (MWh/year)	Diesel Offset (%)	Unused Production (%)	Advantages and Disadvantages
Option 1	1,000	1,446	9	0	▼ Low diesel offset ▲ Reasonable cost of energy
Option 2 (preferred)	3,000	4,339	22	6	▲ Medium diesel offset ▲ Reasonable cost of energy
Option 3	5,000	7,231	26	17	▲ High diesel offset ▼ Higher cost of energy

Option 2 aligns best with the community's forecasted electrical load. Option 1 lacks sufficient capacity to achieve "Diesel Off" operation and Option 3 generates more electricity than the community would need resulting in "unused production"

COMMUNITY ELECTRICITY GENERATION AND CONSUMPTION (2030)



The solar farm could reduce 3,300 tonnes of GHG per year. In 2019, we emitted almost 29,000 tonnes of GHG. This project would be equivalent to reducing our total GHG emissions as a community by 12%.

Equivalent to powering all residential units in Cambridge Bay (700 houses).



Frequently Asked Questions



Where are you at in this project?

- We have **optimized** how much solar electricity we can produce and **finalized** the size of the solar farm
- We have **identified** a preferred project location
- **Council** has shown support for the project and proposed location
- The project has received initial support from the **Elders of the Kitikmeot Heritage Society**
- A project application has been **submitted** to QEC
- We are **exploring** project equipment options
- We are **engaging** with the residents



What is next?

- **Collect feedback** from the community on the project and proposed location
- **Begin technical discussions** with QEC and **impact assessment** of project on the grid
- **Prepare for land administration** and **archeological assessment**
- **Prepare for NPC/NIRB review process**



Are there other communities in Nunavut that have implemented solar farms?

Communities in Nunavut that are implementing large scale solar projects include: Kugluktuk, Nauyasat, Coral Harbour, Resolute Bay, Kinngait, and Sanirajak.



Will the production of renewable energy decrease our energy bills?

Electricity produced at the project site will be **sold to QEC via the Independent Power Producer program** and has **no ability to influence the cost of electricity to end users**. The primary benefit of the solar project is to reduce community greenhouse gas emissions by reducing reliance on fossil fuels.



What are the benefits for the community?

- **Creation of local jobs** during construction well as ongoing maintenance and operation
- Depending on ownership structure, a **portion of profits from the sale of electricity** could be **reinvested into the community**
- **Environmental:** Decrease climate change inducing greenhouse gases and fossil fuels consumption
- **Quality of life:** turning off the generators in the summer would reduce noise and air pollution
- **Resiliency:** provide backup power in case of a catastrophic event at the power plant



What happens to the solar panels at the end of their life?

At the end of their lifespan, **solar panels are recycled to recover valuable materials** like silicon, silver, and aluminum. Advances in recycling technologies are making this process more efficient and **less costly**, reducing the environmental impact. The solar industry is also innovating in the design of panels to make them easier to recycle.



How can I get involved?

Contact Tom at trutherdale@auroraenergysolutions.ca



Team

This project is led by:

