Government of
Northwest Territories

Solar Energy in the NWT

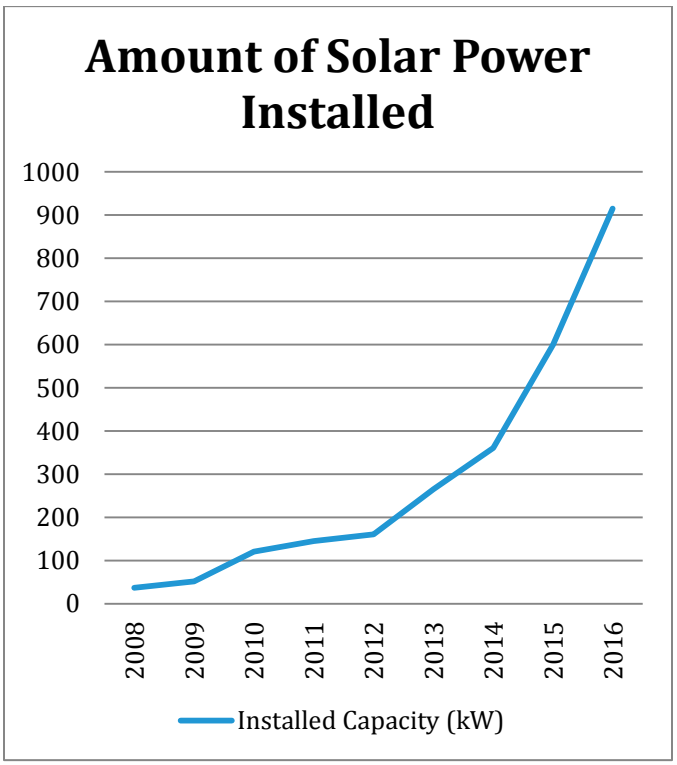
Solar energy in the North is not a new idea. For years, many cabin owners have been using solar panels to generate heat and power. Our long summer daylight hours balance the lack of sunlight in the winter, making solar energy just as feasible in the NWT as in many southern locations.

The past decade has seen the use of solar power systems connected to the electrical grid increase dramatically because of cheaper technology.

Installing solar power in thermal communities (communities that use diesel to generate electricity) helps reduce dependence on fossil fuels as well as reducing greenhouse gas emissions. However, the variability of solar energy limits how much can be installed without making electricity unreliable.

In the NWT we have a **Net-Metering Program** that allows customers to connect small solar power systems to the grid and reduce their electricity purchases. Customers that produce more electricity than they need receive credits towards future electricity bills.

Although their ability to produce electricity gradually diminishes, new solar panels can remain operational for thirty years or more.



Key Facts

- Since 2001, 915 kilowatts (kW) of grid-connected solar PV systems have been deployed in the NWT.
- An estimated 200,000 litres of is diesel is offset per year.
- The NWT currently ranks second in the country after Ontario on an installed per capita, basis according to the Canadian Solar Industries Association.
- Since 2010, the cost of solar panels has decreased by over 50%.

Project Feasibility Factors

The economic feasibility of a particular solar project depends on several factors. The GNWT prioritizes communities for solar projects based on:

- Cost of diesel
- Remoteness of the community
- Close proximity of solar site to the diesel plant or power lines
- Communities with little or no existing renewable energy generation
- Interest from the community

Amount of Installed Solar in Diesel Communities and Remaining Installation Capacity		
Community	Total Installation Capacity (kW)*	Remaining Installation Room (kW)
Wha Ti	47	37
Gameti	34	29
Lutselk'e	43	10
Fort Simpson	175	51
Fort Liard*	64	5
Wrigley	16	0
Nahanni Butte	11	6
Jean Marie River	7	0.7
Inuvik	720	660
Norman Wells	194	186
Tuktoyaktuk	98	93
Fort McPherson	83	83
Aklavik	71	63
Deline	64	64
Fort Good Hope	68	63
Paulatuk	35	28
Sachs Harbour	23	4
Tsiigetchic	17	17
Uluhaktok	48	48
Tulita	57	47
Colville Lake**	136	0
Total	**1,885 kW**	**1,518 kW**
***Capacity may be increased with additional investments in electronics or batteries. ****135 Kw high penetration solar/battery storage pilot**		