

# THINGS YOU SHOULD KNOW

## Customer Information Net Metering

### INTRODUCTION

In 2012, the Government of the Northwest Territories (GNWT) released its Solar Energy Strategy which provides the framework for encouraging greater use of solar and less reliance on diesel fuel in NWT communities.

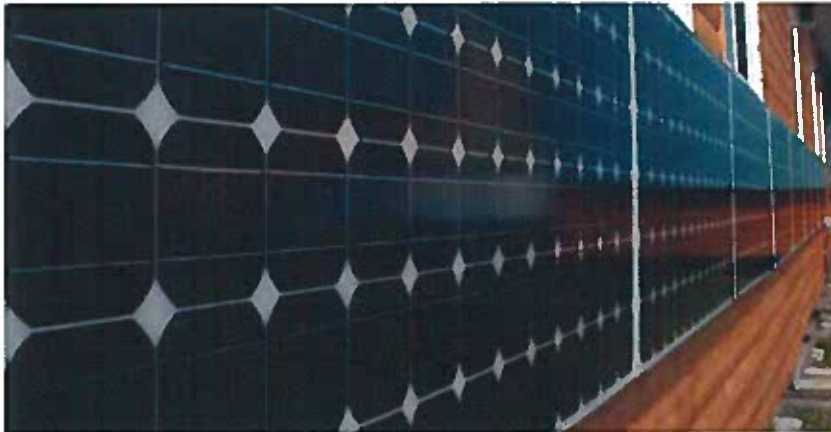
One tool that can be used to support meeting the solar energy targets is through Net Metering.

As of January 31, 2014 the Public Utilities Board (PUB) approved the implementation of Net Metering by the utilities in the Northwest Territories. The program is open to electricity customers who own small, commercially-proven, renewable energy generators.

Net Metering allows customers to accumulate energy credits monthly for any excess electricity they produce to be used against those months when their usage exceeds their production. If in the event there are any credits left at the end of the Net Metering cycle on March 31, they will be reset to zero. See Table 1.

Customers in Net Metering receive a credit in kilowatt hours equal to the excess energy, calculated at the full retail rate.

Improving your home business with renewable energy technologies can be an expensive proposition, but funding is available to help you purchase your renewable energy technology system and through Net Metering your utility is paying for metering costs.



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# Net Metering

If you are a residential or business customer of the utilities', the Arctic Energy Alliance will be your contact or if you have a community-based project, the Department of Energy and Natural Resources (ENR) will assist you as outlined later in this brochure.

We've developed a stream-lined Application, Interconnection Guideline and a Schematic to help you with the process.

If you're interested you can find these materials on our website.

NUL and NTPC will provide the metering requirements for each selected location.

## Eligibility

- NTPC and NUL customers (eligibility for GNWT and Federal Government accounts have been approved but the implementation has been delayed until the Utilities' next Phase II proceeding). Check our website for updates.
- Renewable energy installations with a rated capacity generally not exceeding 5kW.
- NTPC customers are exempt from standby charges for intermittent generation.
- Customers with small, commercially proven wind generators, mini-hydro, solar, or other renewable energy technologies looking to displace their own energy requirements with self-generation.

**Please note** that the PUB will review Net Metering compensation rates as part of its regular review of rates and rate structures. As such, Net Metering compensation rates are subject to change from time to time.

## Application Process

The application process is illustrated in the attached diagram. Interested customers should complete and submit the application form which is located on your local utility's web site.

## Compensation

Net Metering participants receive a credit in kilowatt hours equal to the excess energy, calculated at the full retail rate. Customers can use excess generation up until March 31 of each year and use the credit in the winter months when they are most needed. The excess energy credits for each Net Metering customer will be reset to zero at the end of each annual netting period.

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# Net Metering

*"The investment to hook your technology into our system is as low as its likely going to get."*



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## Participant Costs

Customers participating in Net Metering are responsible for all costs associated with purchasing and installing the renewable energy system. Participants are also responsible for any costs associated with permits, inspection or other requirements to make the system compliant with relevant codes and standards.

**Note participants will continue to be billed the basic monthly charge.**

## Utility Costs

Net Metering provides the participating customer with a meter to track how much renewable energy is supplied to the distribution system at the cost of the utility.

## Technical Requirements

Renewable energy installations must meet the requirements of the NTPC / NUL *Distributed Resource Technical Interconnection Guideline*. This document can be downloaded from the NTPC / NUL website.

Only commercially proven renewable energy technologies will be considered.

All equipment in the project must be Canadian Standards Association (CSA) or Underwriter's Laboratory of Canada (ULC) approved and the installation must meet all requirements of the current Canadian Electrical Code.

The first step of your project is to submit your Net Metering Application to your utility for approval:

## Northwest Territories Power Corporation

Erin Ladouceur, Manager, Billings  
PO Box 2250  
(Jackfish - Junction Hwy 3 & 4)  
Yellowknife, NT X1A 2P7  
Telephone: (867) 669-3307  
Fax: 867-669-3316  
email: eladouceur@ntpc.com  
Or

## Northland Utilities (Yellowknife) Limited

General Manager  
481 Range Lake Road  
Yellowknife, NT X1A 3R9  
Telephone: (867) 873-4865  
Fax: (867) 920-2099  
email: northlandutilitiesyk@atco.ca

Once your utility approves your application, you will require an electrical permit to do the work. Electrical inspections in the Northwest Territories must be approved by a certified electrical inspector. Inspections are available through the regional Public Works and Services (PWS) office.

**Public Works and Services** Electrical / Mechanical Safety Laing Building, 1st Floor Box 1320  
Yellowknife, NT X1A 2L9 Phone: (867) 873-7957 Fax: (867) 873-0117  
www.pws.gov.nt.ca  
Hay River: (867) 874-7008 Inuvik: (867) 777-4351



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# Net Metering

**Table 1**  
**Sample Account -- How Net Metering Works**

Month	kWh Generated	kWh Used	Excess kWh Generated	Net Accumulated kWh	kWh Billed
April	375	800	0	0	425
May	450	750	0	0	300
June	525	700	0	0	175
July	600	500	100	100	0
August	600	500	100	200	0
September	525	600	0	125	0
October	500	600	0	25	25
November	350	750	0	0	375
December	300	800	0	0	500
January	300	850	0	0	550
February	400	800	0	0	400
March	500	450	50	50 <sup>1</sup>	0
April	550	600	0	50	50

<sup>1</sup> Will be reset to zero on March 31.

**Please note: Customer will continue to be billed the basic monthly charge.**

That the PUB will review Net Metering compensation rates as part of its regular review of rates and rate structures. As such, Net Metering compensation rates are subject to change from time to time.

## Available Funding

Funding is available to support the purchase of your renewable energy system.

For **residential** and **businesses** installations, contact:

**Arctic Energy Alliance  
Yellowknife Office**  
101-5102 51st Street  
Yellowknife NT X1A 1S7  
Phone: (867) 920-3333  
Toll Free: 1-877-755-5855  
Fax: (867) 873-0303

Regional offices are also located in the Tlicho, Beaufort Delta, Dehcho, and Sahtu. For details refer to the **Arctic Energy Alliance's website at:** [www.aea.ca](http://www.aea.ca)

For **community** projects contact:

**Department of Environment and Natural Resources**  
Environment Division  
Wade Carpenter  
Alternative Energy Specialist  
PO Box 1320  
Yellowknife, NT X1A 2L9  
Telephone: (867) 873-7654  
Fax: (867) 873-0221



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## Available Capacity for Renewables by Community

Every community has a different average electricity load. This means that every community grid has a different capacity to absorb electricity that is generated by intermittent renewables.

The table below lists each NTPC community and the available capacity limit of the electricity grid for renewable generation, as of January 31, 2018. It includes all installed solar capacity including installations that are part of the Net Metering Program as well as NTPC installations.

	Community Average Load	Intermittent Renewable Energy Capacity Allowed (kW)	Current Solar Capacity Installed (kW)	Planned Projects (kW)*	Current Available Capacity (kW)**
Aklavik	363	73	18	58	0
Behchoko	814	163	33	0	130
Colville Lake	77	15	137	0	0
Déline	314	63	0	0	63
Dettah			7.2	0	
Fort Good Hope	313	63	5	0	58
Fort Liard	259	52	60	0	0
Fort McPherson	397	79	5	0	74
Fort Resolution	293	59	0	0	59
Fort Simpson	867	173	148	5	20
Fort Smith	3,000	600	5	0	595
Gamèti	121	24	10	0	14
Inuvik	3,349	670	95	36	539
Jean Marie River	38	8	8	0	0
Lutselk'e	170	34	35	0	0
Nahanni Butte	45	9	5	0	4
Norman Wells	1108	222	0	12.86	209
Paulatuk	166	33	7	0	26
Sachs Harbour	109	22	20	0	2
Tsilgehtchic	89	18	0	0	18
Tuktoyaktuk	481	96	0	15	81
Tulita	277	55	10	45	0
Ulukhaktok	235	47	0	0	47
Wha Ti	201	40	15	0	25
Wrigley	84	17	10	0	7
<b>Total</b>	<b>13,170</b>	<b>2,635</b>	<b>633</b>	<b>172</b>	<b>1830</b>

### For further information:

Contact NTPC at: [netermetering@ntpc.com](mailto:netermetering@ntpc.com)

or by calling toll-free: 1-855-575-NTPC (6872)

[www.ntpc.com](http://www.ntpc.com)

February 2018

## ADDING RENEWABLES TO ELECTRICITY GRIDS

### Community Interest in Renewables

A number of communities have expressed interest in pursuing renewable and alternative energy projects to help reduce diesel fuel consumption. NTPC shares this desire to incorporate proven alternative technologies into our electricity systems and is actively pursuing a number of projects that will result in reduced or more efficient diesel consumption, reduced greenhouse gas emissions and lower electricity prices for customers.

The Net Metering Program is just one of the ways that NTPC is encouraging greater use of renewable and alternative energy to generate electricity in the Northwest Territories.



### Current Situation

Diesel generation currently provides base load electricity in most communities in the Thermal Zone and all of the backup power in the Hydro Zone. All generation connected to an electricity grid introduces the potential for generator cycling and grid instability. Cycling generators operate less efficiently which leads to an increase in operational and maintenance lifecycle costs. This has the long-term impact of increasing electricity rates for customers, which is not acceptable.

Renewable generation sources like solar and wind are challenging for electricity grids to absorb because they are intermittent – this means that they do not generate electricity all the time. High levels of solar and wind in power grids create large, rapid load swings for the baseload generation (hydro and thermal) and increases the potential for outages.

Small, isolated grids are particularly vulnerable to the negative impacts from a high penetration of renewables. These grids already experience instability because any shift in demand can have a big impact on the thermal generators. Grid controls would be further complicated by the addition of solar and wind generation because they increase unpredictability.

### Cap on Intermittent Renewables

In order to maintain grid reliability, NTPC and other utilities have determined that a cap of 20% must be placed on intermittent renewable generation. The cap is not intended to discourage the use of this technology but rather reflects the reality that our current electricity systems are not designed to reliably absorb a large volume of alternative generation.

As new technologies such as variable speed generators and improved battery storage systems are introduced to electricity systems, the 20% cap may be increased or removed altogether. At the present time, however, the cap must remain in place to protect customers from higher electricity rates and an increased number of outages.