



# *Growing*Forward2

## On-Farm Solar PV Grant Program

*4 Funding Level Categories and Grant Rates*

*Up to 100 kW or \$50,000 per Applicant*

*Primary Agriculture Only*

*Retroactive to April 1, 2013*





# On-Farm Solar PV Grant Program

- Presently open and accepting applications!
- However, we have announced a “Rate Review” ...
- <http://www.growingforward.alberta.ca/index.htm>
  - Select “Programs” tab, and navigate down program list

# OFSPV



Alberta.ca > Agriculture and Forestry > Growing Forward 2

Home About Growing Forward 2 **Programs** GF2 News FAQs Calendar Contact Us

Growing Forward 2 is a \$3 billion program by federal, provincial and territorial governments to support INNOVATION, COMPETITIVENESS AND GROWTH. IT INCLUDES \$2 billion for east-southwest Alberta to address the challenges of the oil and gas industry.

Growing Forward 2

Alberta.ca > Agriculture and Forestry > Growing Forward 2 > Programs

Home About Growing Forward 2 Programs GF2 News FAQs Calendar Contact Us

With the potential for a Canada Post mail service interruption, GF2 programs plan to provide alternate options for individual program pages for further clarity on alternate application submission methods in case of mail service interruptions. If mail service is disrupted, then business as usual (submit applications as per T&Cs and Application to business as usual will resume when it is resolved. Please watch our GF2 webpages for further information.

Please visit the [Programs at a Glance Page](#) for short descriptions of each of the programs or click on the program name.

For information on the new Accelerating Innovation program, scroll to bottom half of the [Programs at a Glance Page](#).

Legend:  Accepting Applications  Not Accepting Applications

Programs Accepting Applications	Programs Not Accepting Applications
<input checked="" type="checkbox"/> <a href="#">Accelerating Innovation</a>	<input type="checkbox"/> <a href="#">Agri Processing Automation and Efficiency - Livestock</a>
<input checked="" type="checkbox"/> <a href="#">Agri Processing Automation and Efficiency - Livestock</a>	<input type="checkbox"/> <a href="#">Agri Processing Product</a>
<input checked="" type="checkbox"/> <a href="#">Agri Processing Product and Market Development - Livestock</a>	<input type="checkbox"/> <a href="#">Animal Health Biosecurity</a>
<input checked="" type="checkbox"/> <a href="#">Agricultural Watershed Enhancement</a>	<input type="checkbox"/> <a href="#">Animal Health Biosecurity</a>
<input checked="" type="checkbox"/> <a href="#">Confined Feeding Operation Stewardship</a>	<input type="checkbox"/> <a href="#">Business Management Support</a>
<input checked="" type="checkbox"/> <a href="#">Food Safety Systems Delivery Agent</a>	<input type="checkbox"/> <a href="#">Business Opportunity</a>
<input checked="" type="checkbox"/> <a href="#">Food Safety Systems Processor</a>	<input type="checkbox"/> <a href="#">Livestock Welfare Delivery Agent</a>
<input checked="" type="checkbox"/> <a href="#">Food Safety Systems Producer</a>	<input type="checkbox"/> <a href="#">Livestock Welfare Product</a>
<input checked="" type="checkbox"/> <a href="#">Irrigation Conveyance Works</a>	<input type="checkbox"/> <a href="#">Traceability Pilot</a>
<input checked="" type="checkbox"/> <a href="#">Irrigation Efficiency</a>	
<input checked="" type="checkbox"/> <a href="#">Livestock Welfare Processor</a>	
<input checked="" type="checkbox"/> <a href="#">On-Farm Energy Management</a>	
<input checked="" type="checkbox"/> <a href="#">On-Farm Solar Photovoltaics</a>	
<input checked="" type="checkbox"/> <a href="#">On-Farm Stewardship</a>	

# OFSPV



## Growing Forward 2

Alberta.ca > Agriculture and Forestry > Growing Forward 2 > Programs

[Home](#) [About Growing Forward 2](#) [Programs](#) [GF2 News](#) [FAQs](#) [Calendar](#) [Contact Us](#)

[A](#) [A](#) [+](#)



**Growing Forward 2 is a \$3 billion dollar investment**  
by federal, provincial and territorial governments focused on  
INNOVATION, COMPETITIVENESS AND MARKET DEVELOPMENT.  
IT INCLUDES **\$2 billion** for cost-shared strategic initiatives  
TAILORED TO ADDRESS REGIONAL NEEDS.

Watch this space for updates.

Program Availability:  Accepting Applications

### On-Farm Solar Photovoltaics – On-Farm Energy Management Sub-Program

[Terms & Conditions](#)

[Link to fillable Application Form](#)

[Click here for help downloading the fillable Application](#)

[Application Form - print and hand fill](#)

Note: Repeat pages 2, 3, and 4 for each System you are submitting.

#### Program purpose statement

The program provides funding towards solar photovoltaics on Alberta farms. This enables producers to conserve non-renewable fossil fuels and reduce carbon emissions, ultimately reducing the environmental footprint of Alberta's agriculture industry.

The *Growing Forward 2* Solar Photovoltaics Program addresses two important industry priorities:

1. Improved environmental stewardship. When producers make investments in clean energy and reduced carbon emissions, they are recognized for their commitment to sustainable practices.

#### Program Contact

Kelly Lund (780) 644-1197  
kelly.lund@gov.ab.ca



Subscribe to Receive  
Program Announcements

#### Links & Other Resources

[Alberta Utility Commission info on Micro Generation](#)

[Micro Generation Regulation \(Alberta Queen's Printer\)](#)

[Solar PV Financial Calculator \(Excel-based\)](#)

[Managing Expectations with Solar Photovoltaic \(PV\) Technology](#)

[Solar PV Contractors \(trade credentials\)](#)

[Solar PV Contractors List](#)

[Wire Service Providers in Alberta](#)

[Approved Energy Assessment Provider List \(takes you to OFEM page, use link on far right to open list\)](#)

[Pilot Program Results Report](#)

#### Report Forms

[Interim Report form](#)

[Final Report form](#)



# OFSPV

<b>Installation Category</b>	<b>No Energy Assessment*</b>	<b>With Energy Assessment*</b>
Contractor-Installed	\$0.45/W to max 20%	\$0.60/W to max 25%
Applicant-Installed	\$0.15/W to max 10%	\$0.30/W to max 20%

\*Energy Assessment refers to a specific program under OFEM and requires that the Energy Assessment be completed by Program-approved assessors.

Information on Energy Assessments may be found at this website:

[http://www.growingforward.alberta.ca/Programs/index.htm?contentId=ON\\_FARM\\_ENRG\\_PRG&useSecondary=true](http://www.growingforward.alberta.ca/Programs/index.htm?contentId=ON_FARM_ENRG_PRG&useSecondary=true)



# OFSPV

## Requested Amount

Rate list as per Section 5.2 of the Terms and Conditions.

Category	Rate	Description	Use this Grant Rate <i>(Check only one)</i>
Rate 1	\$0.45/W to 20%	Contractor installed, no EA	<input checked="" type="checkbox"/>
Rate 2	\$0.60/W to 25%	Contractor installed, with EA	<input type="checkbox"/>
Rate 3	\$0.15/W to 10%	Applicant installed, no EA	<input type="checkbox"/>
Rate 4	\$0.30/W to 20%	Applicant installed, with EA	<input type="checkbox"/>

Grant Rate Calculation (excludes % cap)

Total System Nominal DC Watts <i>(see Box A)</i>		Grant Rate \$		Requested Grant Amount \$
13,250	<b>X</b>	\$0.45	<b>=</b>	\$5,962.50



## OFSPV

Multiple (meters)/Site ID's...allowed if all criteria are met

-MG approval can now be received for aggregated sites (based on Total Energy Load); some additional restrictions still apply from OFSPV process:

-Energy produced must match (or be less than) level related to Primary Agriculture on that site ID (or aggregated site ID's) (which may be smaller than MG approval level)\*\*

**-must feed into the same electrical service as the Primary Ag**

-To 100 kW maximum of all sites combined, or \$50,000, whichever comes first

-irrigation service may be a good example of multiple sites



# OFSPV

## Primary Agriculture

-Energy produced must match (or be less than) level related to Primary Agriculture (which may be smaller than MG approval level)\*\*

-Ex: may be approved for 22kW of MG (based on total load), but only have 15kW of related Primary Ag

-Funding limited to matching Primary Ag, and must remain MG overall

-“On-Farm” Processing (secondary agriculture) presently excluded



# How to Apply:

- Application form
- MG pre-approval, noting size in kW
- Electricity Bill (1 mo.)
- Work Plan
- Quote

**System 1**

Do you have an Energy Assessment (completed as per GF2 Energy Assessment program) for your farm?

---

**Part A: Solar PV Equipment**

Both new and existing Grid-tied PV systems are applicable in the program.  
 What type of system are you applying for?

*Please submit retroactive and new systems on separate applications, each with all required documentation.*

Legal Land Description

Solar PV Project Site ID (see electrical bill)

**Solar Modules** Use the Add and Remove buttons below to add or remove additional rows.

Manufacturer	Model	Rated DC Size, Watts (Nominal DC)	Quantity	System Size (Watts x Quantity)
Total Watts (Box A)				

Add Remove

**Solar Inverters** Use the Add and Remove buttons below to add or remove additional rows.

Manufacturer	Model	Rated AC Size, Watts	Quantity	Type (String or Microinverter)

Add Remove

**Solar Racking**

Manufacturer	Mechanical Tracking (Yes or No)	Style (Moveable or Fixed)

Add Remove

Solar Installer Company

Solar Equipment Retailer (if different from installer listed above)

Quote Attached

Project Total Quoted Installed Cost \$  ÷ Project Total Nominal DC Watts (see Box A)  = Project Total / Watt \$



# www.GrowingForward.alberta.ca

## Economics of Installing Solar PV Panels On-Farm

Input Variables	
Nominal System Size, kW	20.00
PV Potential, kWh/kW/year	1250
Installed Cost, \$/W	\$3.00
Total Delivered Cost of Energy, \$/kWh:	\$0.107
-- Electricity Retail Rate, \$/kWh	\$0.068
-- Transmission & Distribution, \$/kWh	\$0.039
Electricity Price Growth Rate (Annual)	1.7%
Transmission and Distribution Growth Rate (Annual)	1.7%
Percent of Electricity Exported (Annual)	50%
Tax Rate	27%
Depreciation Rate	50%
Salvage Value, %	0.0%
Insurance Premium, \$ (Annual)	\$100
Maintenance Cost, \$ (Annual)	\$10
Discount Rate	3.00%

PV Potential, kWh/kW/year (lookup)	
Grande Prairie	1186
Edmonton	1245
Red Deer	1265
Lethbridge	1331
Taber	1348
<a href="#">Other (click here)</a>	

Economic indicators	
Simple Pay-Back (Years)	20.81
ROI, % (Annual)	0.69%
Net Present Value, \$	(\$7,957.52)
Discounted ROI, % (Annual)	-0.53%

Calculated values	
Total Installed Cost, \$	\$60,000
Maintenance Cost, Total \$ (Annual)	\$200
Salvage Value, Total \$	\$0.00

Cash Flow by Year	0	1	2	3	4



# www.GrowingForward.alberta.ca

## Economics of Installing Solar PV Panels On-Farm

Input Variables	
Nominal System Size, kW	20.00
PV Potential, kWh/kW/year	1250
Installed Cost, \$/W	\$2.25
Total Delivered Cost of Energy, \$/kWh:	\$0.107
-- Electricity Retail Rate, \$/kWh	\$0.068
-- Transmission & Distribution, \$/kWh	\$0.039
Electricity Price Growth Rate (Annual)	1.7%
Transmission and Distribution Growth Rate (Annual)	1.7%
Percent of Electricity Exported (Annual)	50%
Tax Rate	27%
Depreciation Rate	50%
Salvage Value, %	0.0%
Insurance Premium, \$ (Annual)	\$100
Maintenance Cost, \$ (Annual)	\$10
Discount Rate	3.00%

Calculated values	
Total Installed Cost, \$	\$45,000
Maintenance Cost, Total \$ (Annual)	\$200
Salvage Value, Total \$	\$0.00

PV Potential, kWh/kW/year (lookup)	
Grande Prairie	1186
Edmonton	1245
Red Deer	1265
Lethbridge	1331
Taber	1348
<a href="#">Other (click here)</a>	

Economic indicators	
Simple Pay-Back (Years)	16.13
ROI, % (Annual)	1.90%
Net Present Value, \$	\$3,277.36
Discounted ROI, % (Annual)	0.29%

Cash Flow by Year	0	1	2	3	4
-------------------	---	---	---	---	---



# *Contact the* On-Farm Solar PV Program

General Information:

[www.GrowingForward.Alberta.ca](http://www.GrowingForward.Alberta.ca)

Email: [Growingforward@gov.ab.ca](mailto:Growingforward@gov.ab.ca)

310-FARM (3276)

Kelly's Office:

Phone: 780-644-1197

Email: [kelly.lund@gov.ab.ca](mailto:kelly.lund@gov.ab.ca)



## *Implications of “Rate Review” for OFSPV Program*

- Program grant level rate is likely to increase upon publishing of new Terms and Conditions
  - No “with Energy Assessment” category
- Projects processed under current Terms and Conditions are ineligible for any future grant or “top up” if rates do increase
- Projects currently initiated will be ineligible under new Terms and Conditions (start dates will coincide with publish dates)



## *Implications of “Rate Review” for OFSPV Program*

- If you’ve already started a project – apply now!!
- If you haven’t started a project – “probably” wait!



## *Unknowns for “Rate Review” / TC Revisions*

- Applicant funding caps, for size (kW) and \$\$
- Expansion of scope of applicant eligibility
- “Retroactivity”
- Publish date



## *Comments on:* *On-Farm Energy Management Program*

- OFEM currently suspended; apps not accepted
- “May possibly” open to new apps this summer:  
would have revised rates and caps
- Subscribe for email notifications



## *What to do?*

- Sign up for notifications on webpage:





## *Contact the*

On-Farm Solar PV Program OR On-Farm Energy Management Program

General Information:

[www.GrowingForward.Alberta.ca](http://www.GrowingForward.Alberta.ca)

Email: [Growingforward@gov.ab.ca](mailto:Growingforward@gov.ab.ca)

310-FARM (3276)

Kelly's Office:

Phone: 780-644-1197

Email: [kelly.lund@gov.ab.ca](mailto:kelly.lund@gov.ab.ca)

Jason's Office:

Phone: 780-427-4181

Email: [jason.price@gov.ab.ca](mailto:jason.price@gov.ab.ca)

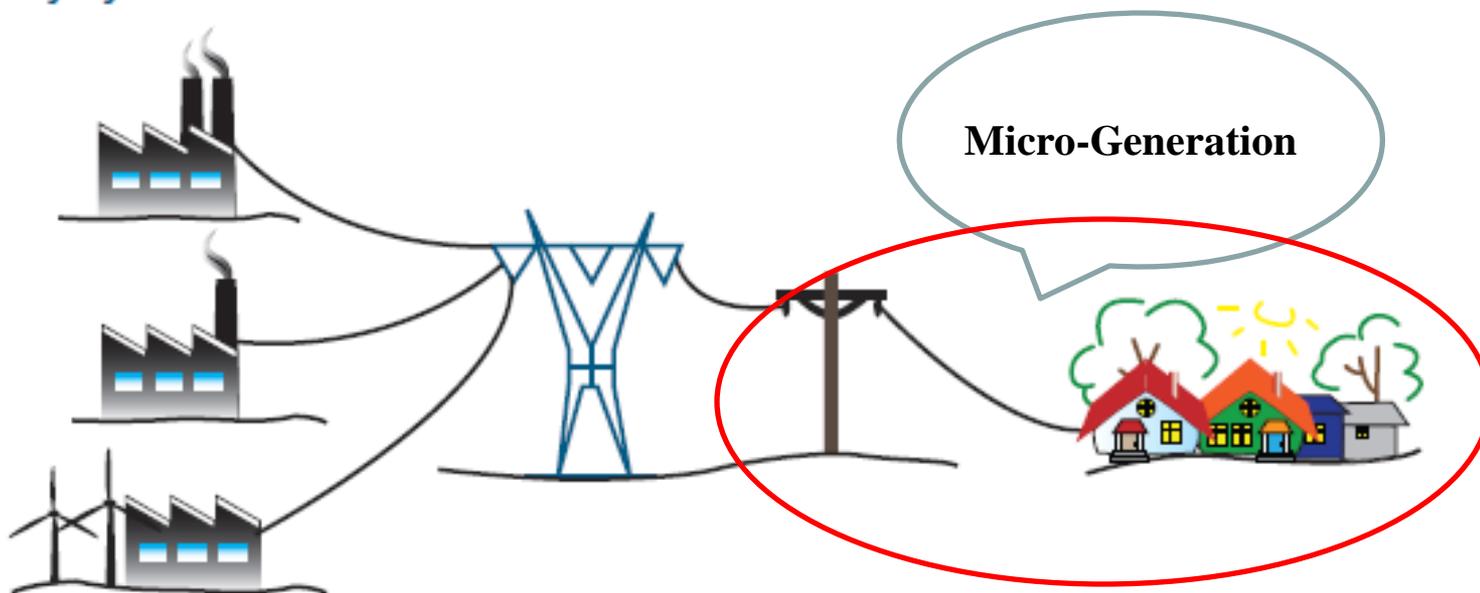


## *Extra Stuff in case of Questions*



# Alberta's Electricity System

## Electricity System Overview



Generation	Transmission	Distribution	Retail/Customer
<ul style="list-style-type: none"> <li>• Competitive/market based</li> <li>• Private investment</li> <li>• Energy only market design</li> </ul>	<ul style="list-style-type: none"> <li>• Fully regulated</li> <li>• Cost-of-Service Model</li> <li>• One rate for Albertans</li> </ul>	<ul style="list-style-type: none"> <li>• Fully regulated</li> <li>• Supports retail competition</li> </ul>	<ul style="list-style-type: none"> <li>• Partially deregulated</li> <li>• Competitive Contracts</li> <li>• Regulated rate option for small consumers</li> </ul>

Source: AUC



# *Micro-Generation and Net Billing*

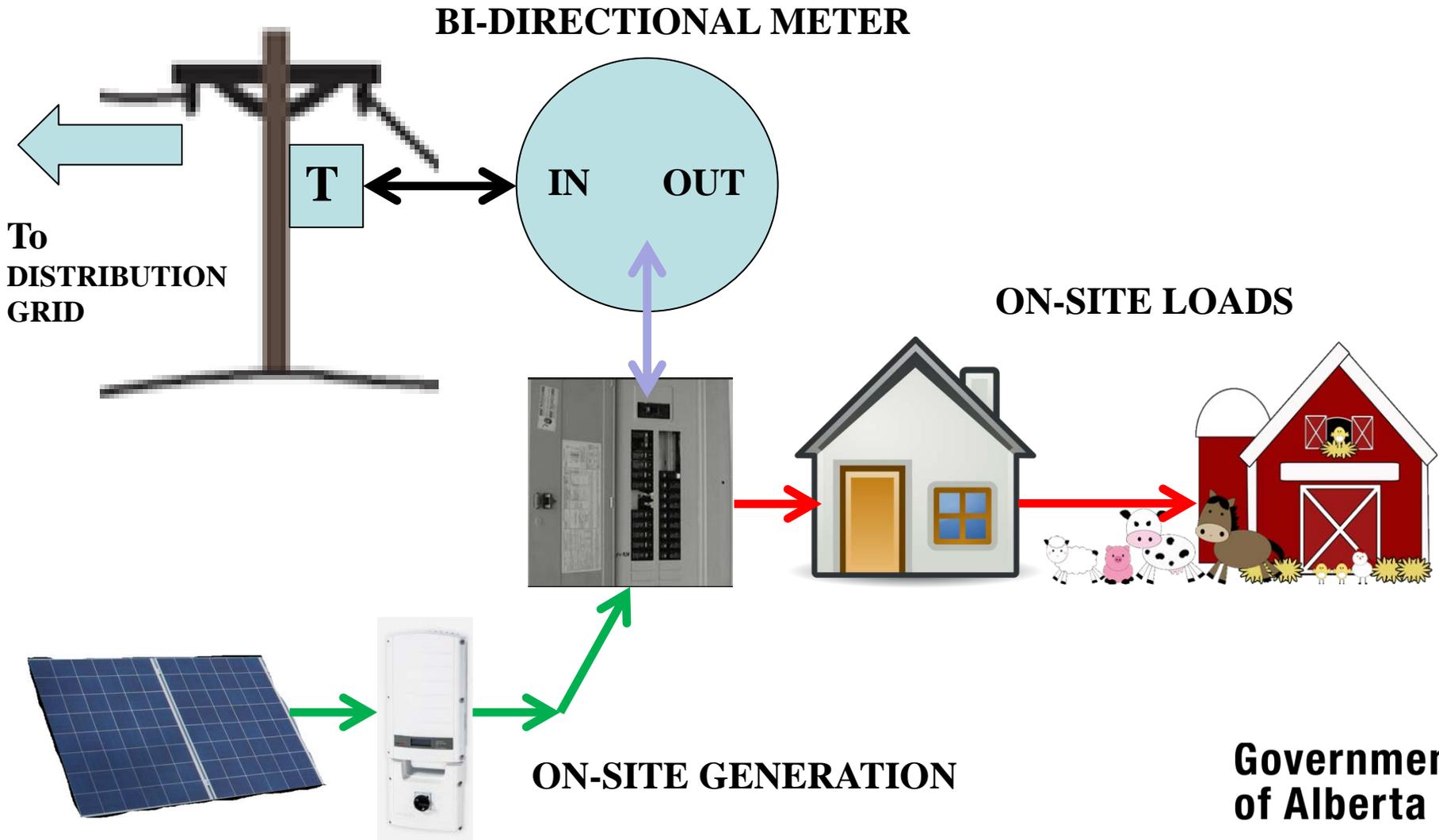
## Electricity Usage, Delivery, and Billing

- Paying for “Energy” plus “Infrastructure”:
  - Electricity charges (variable, per kWh)
  - Transmission charges (usually variable)
  - Distribution charges (usually fixed plus variable)
  - Local access fee
  - Billing administration fee
  - Balancing Pool rider





# Micro-Generation and Net Billing





## *Micro-Generation and Net Billing*

**A Micro-Generator will get the most value for electricity they produce that they can use themselves at the time it is produced (to Avoid Import and associated variable charges)!!**

Use as produced (to Avoid Import):

- save variable Energy charge at retail rate, per kWh: say, 5.5 cents/kWh
- save Transmission charge, per kWh: say, 3.9 cents/kWh
- save variable portion Distribution (if any), per kWh: say, 1.5 cents/kWh
- total avoided per kWh: 10.9 cents/kWh

Credit received on Export:

- variable Energy charge at retail rate, per kWh: 5.5 cents/kWh