



*We put the sun to
work for you!*

NET METERING PROPOSAL

Created for Yorklands Green Hub

October 16, 2018

Executive Summary

NetMetering Proposal for Yorklands Green Hub

Guelph Solar has prepared the enclosed review of a solar net metering project at your location. Through our technical review and site inspections, we have developed an excellent opportunity for your home. Feel proud you are making your own clean local energy, Go-Solar.

Project Goals

- 1 Reduce financial cost of electricity used in your home.
- 2 Protect against future electricity rate increases.
- 3 Continue and strengthen the environmental commitment of your family in the community.
- 4 Own your power!

Project Location 785 York Rd

Project Description

Total Size (kWp)	8540
Number Panels	28

Business Case

Project Cost	\$ 18,939.43 +HST		
	- Includes all design, engineering, permitting, material, labour, commissioning, connection with Utility and warranty		
Current Cost per kWhr	\$0.15	Cost for Solar per kWhr	\$0.10
25 year internal rate of return	8.3%		
25 Year Savings	\$58,711		

Details of the Proposal

The details of the proposal are in the attached report. We trust you will find all the pertinent information available, but please do not hesitate to call if you have any questions.

Next Steps

After you have reviewed the proposal and decided to proceed, please let us know and we'll meet to take the next steps.

Sincerely,



Steve Dyck
President of Guelph Solar

Why We Are Here



STEVE DYCK
PRESIDENT AND CEO



ANTON LAMERS
PROJECT
MANAGER

Empowering
people to make
bright
investments *and*
help the planet!

You can save money, and have a great impact on our environment!

At Guelph Solar, we believe in solar power. We know that it can be tricky to understand all the different technologies, the paperwork, and to find high quality, locally made parts.

That's why we're here. We design custom systems that are built for the long haul. We source high quality parts with long warranties. We will install a thirty year system for you.

We stand behind our product, and our customers, too. Whether it's dealing with the local utility at the outset, or helping you get your system insured, we'll be there to help you each step of the way.

Join us! We'd love to help you put green energy into our grid for your family and your neighbours, and to help you feel good about where you're investing your money.



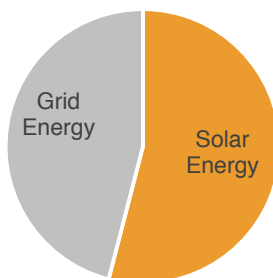
The Guelph Solar team

YOUR NET METERING POTENTIAL



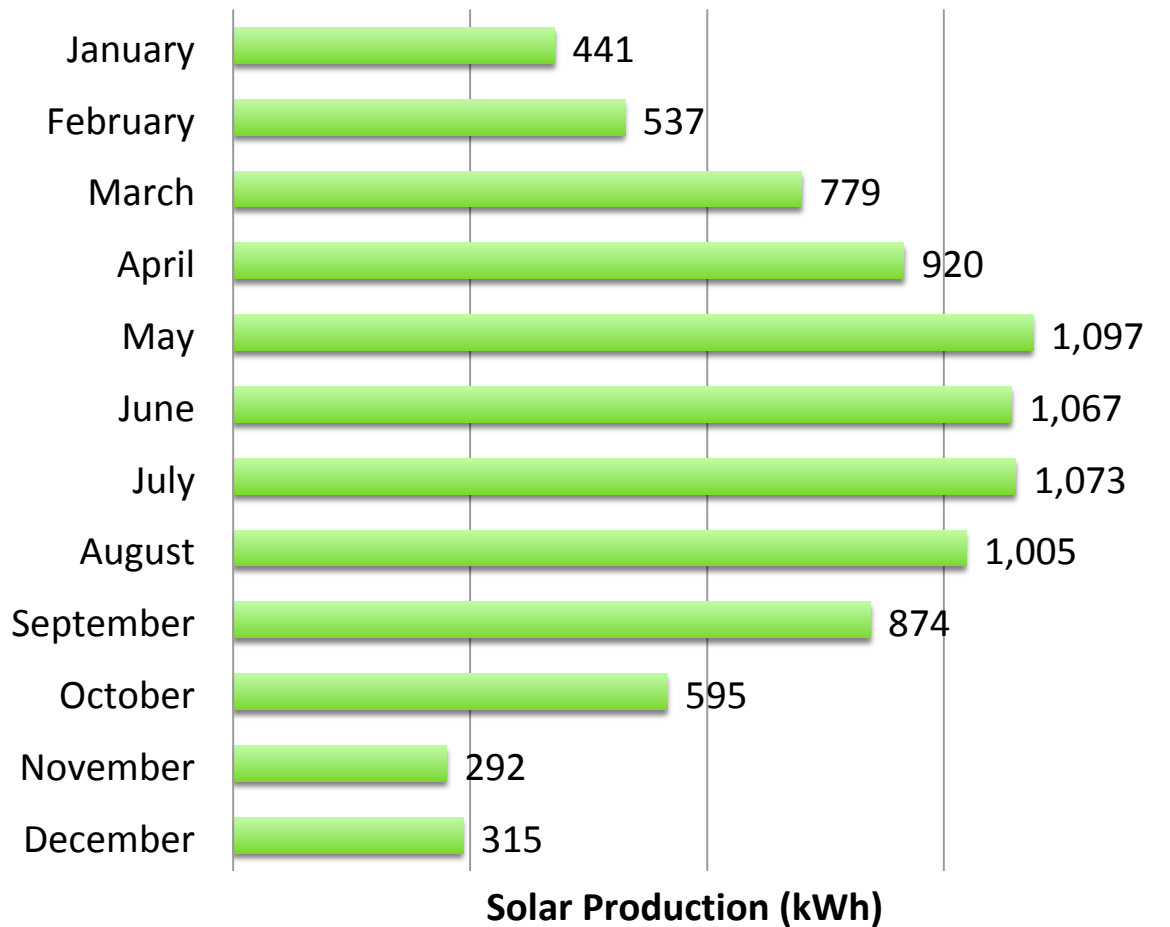
25 Year Hydro Cost Analysis

Old Monthly Bill	\$203.00	New Monthly Bill	\$107.64
Current \$/kWh	\$0.15	Solar \$/kWh	\$0.10
Current Annual Cost	\$2,436	New Annual Cost	\$1,292
Cost of Grid Power in 25 Years (\$/kWh)	\$0.43	Cost of Solar Power in 25 Years (\$/kWh)	\$0.10
Annual kWh Use	16164	Annual kWh Generation	8733



Potential Savings with Solar
\$1144 in Year One.
avg. annual savings over
25 yrs is \$2348
54 % of your Energy
Produced by 8540 kWp of
Solar panels

Solar Energy Production



Total Annual Production:
8,755 kWh



Tons of CO₂ offset per year:
6.0

Seedlings planted each year:
5,799

Calculated using data from EPA:
http://www.epa.gov/clean_energy/energy-resources/refs.html

YOUR PROJECT

785 York Rd



Customer Information

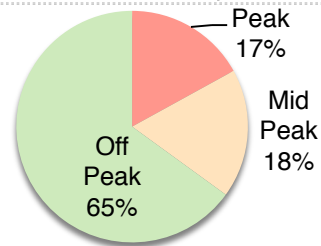
Name: Yorklands Green Hub
Email: jonszucs@gmail.com
Phone: 226-972-9024
LDC: GHESI Residential

System Information

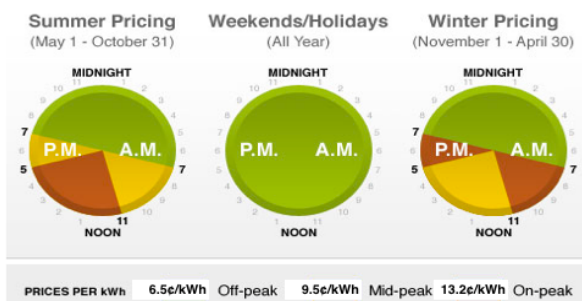
System Size (kW DC) 8.54
Number of Panels 28
Inverter(s) 1 x 6kW
Azimuth Mostly 200
Panel angles 18
Material Shingle

25 Year Energy Model Assumptions

Increase Energy Consumption	0.0%	Consumption per year	On 16,164
Increase Electricity Price yr 1-5	2.0%		
Increase Electricity Price yr 5-25	5.0%		
System Performance (kWh/kWp)	1,054		
Income Tax Bracket*	33%		



Time of Use Rates



Tiered Rates

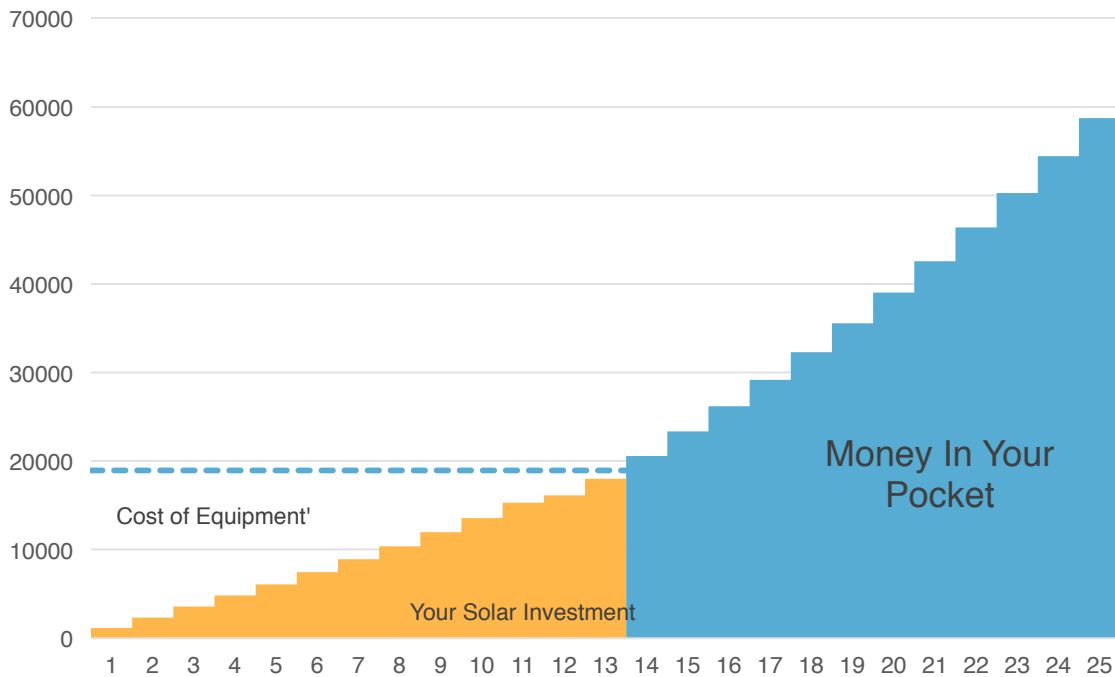
Once a customer signs up for Net metering they are switched to Tiered Rates

Season	Period	Price Threshold
Winter	Nov 1 - April 30	Up to 1,000 kWh = 7.7 ¢/kWh More than 1,000 kWh = 9.0 ¢/kWh
Summer	May 1 - Oct. 31	Up to 600 kWh = 7.7 ¢/kWh More than 600 kWh = 9.0 ¢/kWh

*Solar investment acts as a tax shelter

25 Year Cumulative Savings

Cost of Solar	\$ 18,939
Average Annual Savings	\$ 2,348
Payback (years)	14
25 yr savings	\$58,711
Internal Rate of Return	8.3%



Project Steps:

Step 1: File an application to connect with your local hydro distribution company (LDC). This process can take between 1 and 4 weeks and is sometimes associated with a fee.

- ☐ Sign Connection Agreement
- ☐ Connection Application
- ☐ Single Line Drawing

LDC approves if there is grid capacity. Once the status has gone to Pending Connection, the LDC develops a Service Layout.



Step 2: Gather site details to determine if your location is viable for generating energy from solar, determine the appropriate solar design and business case.

- ☐ Develop system design
- ☐ Estimate annual solar production

Step 3: Where we are now:

- ☐ Review Solar Proposal

Step 4: Sign Installation Contract

- ☐ Review and Sign contract
- ☐ First payment is due
- ☐ Construction can now commence

Step 5: Engineering and upgrades

- ☐ Perform engineering assessment
- ☐ Obtain engineer's report
- ☐ Obtain building permit
- ☐ Perform structural upgrades if necessary*

(*We include structural upgrade costs in our quote, barring major improvements like rebuilding your roof. We'll let you know as soon as we do if there will be an additional cost.)

MERITS OF SOLAR

- Reduce CO2 emissions
- Increase our community's resilience into the future
- Reduces stress on electricity distribution and makes grid more efficient
- Generate power when the grid needs it most: peak power!
- Protect your family from the rising cost of energy.

FULL SERVICE

Guelph Solar will do all the paper work for you to make this a worry and hassle-free process.

How we will move forward:

Step 6: Construction of the solar array.

- ☐ Procure parts
- ☐ Install racking
- ☐ Install inverter
- ☐ Install panels

Step 7: Complete **electrical work**.

This requires that an electrician has access to the house.

- ☐ Perform all electrical work, including wiring, grounding, and disconnect/reconnect.
- ☐ Obtain Electrical Safety Authority (ESA) approval
- ☐ Install new bidirectional meter. Once the LDC has received an order to connect they will schedule a date for the meter to be installed which can take up to 3 weeks depending on location.



Step 9: Building Inspection.

- ☐ Inspectors must visit the site and determine that everything was installed as described. Scheduling can take up to 2 weeks depending on location.

Step 10:

- ☐ Install Ethernet cable (to router if possible), configure online monitoring system.

Step 11:

- ☐ Begin generating electricity credits

The Guelph Solar solar electric system is composed of: a racking system, optimizers, an inverter, and solar panels. Our aluminum racking attaches to your roof, the optimizers are then mounted to the racking, and finally, the panels are mounted on the racking above the optimizers. The Inverter will be installed beside your meter or inside your garage.

Solar Modules

SOLAR PANELS: CANADIAN SOLAR INC.

- Located in Guelph
- Strong framed module, passing mechanical load test of 5400Pa to withstand heavier snow load
- 235 quality control points in module production
- EL screening to eliminate product defects
- 10 year product warranty (materials & workmanship)
- 25 year linear module power output warranty (80% Original Power)
- 100% warranty term coverage
- Providing third party bankruptcy rights
- Insured by 3 world top insurance companies
- One of the world's largest solar module producers by manufacturing capacity



Roof Mount Systems

Racking



solar canada inc.

- Durable, customizable and easy to install.
- Lightweight.
- Helps with snow load.
- Backed by large company.
- Company is now manufacturing in Cambridge.



Inverter and Optimizers

solaredge

- Inverts power from DC/AC.
- System is wired in parallel, each panel works independently.
- Great in low-light conditions, and for Canadian climate.
- 25 year warranty standard for power optimizers.
- 12 year warranty for inverter - 25 year warranty available.
- Resistant to dust, debris and shading.
- 24/7 monitoring system for 25 years.
- All components on outside of the house.



Ground Mount Systems

Guelph Solar Mechanical solar systems are made up of three main parts: Guelph Solar seasonal adjustable system, a Fronius or a Solar Edge inverter depending on the application inverter and Canadian Solar CS6P Series solar panels.

Racking

- Durable, customizable and easy to install
- Seasonal Adjustable
- Lightweight
- Backed by large company



Inverter and Optimizers

- Inverts power from DC/AC.
- The most cost effective systems for ground mount installed facing south, with the perfect angle and in full sun.
- 10 year warranty for inverter - 20 year warranty available.
- Resistant to dust, debris and shading.
- 24/7 monitoring system for 25 years.
- One-component solution.



Site Diagram



Quote

GUELPH SOLAR MECHANICAL INC NET METER SOLAR PACKAGE				8540 Wp
Line	Item	Product Description	Quantity	Total
1	Module	Canadian Solar CS6K 305W photovoltaic modules	28	\$ 18,939.43
2	Inverter	SolarEdge Inverter 6 kW	1	
3	Racking	Standard Racking system and all associated hardware	1	
4	Electrical	Electrical hardware and labour (not including a new service if required)	1	
5	Labour	Full installation of solar system	1	
6	Monitoring	25 year online monitoring	1	
7	Utility	Any associated connection fees and paperwork	1	
8	Inspections	Any associated inspection fees for ESA or building permits	1	
9	Engineering	Engineering and minor structural upgrades	1	

HST	\$ 2,462.13
Total	\$ 21,401.55

Cost per Watt	\$ 2.22
Estimated Savings (annual)	\$ 2,348.43
Internal Rate of Return over 25 years	8.3%

What's not included in the above cost			
1	Critter Guard	Screening to protect cables from damage by squirrels	On Request
2	Electrical service	Assume no upgrades to Service	If Required
3	Upgrades	Major structural upgrade costs	If Required
4	25 year Inverter	25 year Inverter Warranty is optional (plus HST)	\$977
5	Attic Inspection	Vapour barrier integrity inspection	\$400 -Typical
6	Snow Guards	Guards to prevent snow and ice from sliding off	On request

Testimonials

Thanks for an exceptional experience throughout the installation process – great customer service!

Karen Farbridge (former Guelph Mayor) and Peter Cameron, Guelph

Our retirement plan just got a boost.our home will provide its own power.

Lloyd Longfield, Guelph

From his article published 08/21/2014, Guelph Chamber of Commerce Moving Business Forward

Steve...can be counted on to make considered decisions, is thoroughly consultative with the client and perhaps of greatest importance, is wholly trustworthy and honest. I have also been very pleased with the system's performance.

Ben Polley

President - Evolve Builders Group

Thanks to Guelph Solar we have a 10 KW net-metering system that saves us lots of money on electricity throughout the year. Steve and his team did an excellent job from start to finish, completing everything quickly with little fuss and for the price quoted. We couldn't be more pleased with our system and with Guelph Solar's efforts.

Ellen Wall

Home Owner - Puslinch, Solar Net Metering customer

We wanted to say a big thanks to everyone at Guelph Solar for the great job you did with our new rooftop solar system. Everything looks great! Thanks for working in the cold, and on the snowy roof to install the panels, inverter and electrical connections. We really appreciate it! We highly recommend Guelph Solar to anyone interested in setting up a solar system.

Rob Unruh

Home Owner - Kitchener

If you would like to contact some of our customers, the following individuals have stated that they are happy to share their experience. Feel free to get in touch.

Frank Webster - 226-500-3347, fwebst0953@rogers.com, 9 Latenda Place Guelph

Ami Dehne - 519-766-3141, ami.dehne@gmail.com, 28 Inkerman

George Bailak - 519-780-0442, george.bailak@gmail.com, 7701 Maltby Road Puslinch

Frank Valeriote - 519-837-2100, 36 Garth Street Guelph (Apartment with Solar PV and Thermal)

Examples of Past Projects



University of Guelph, 2015



Residential Home, Guelph, 2016