XOLAR

2022 Net Metering Guide

Everything you need to know before going solar this year.

www.xolar.ca

2022 Net Metering Guide

Xolar Inc.

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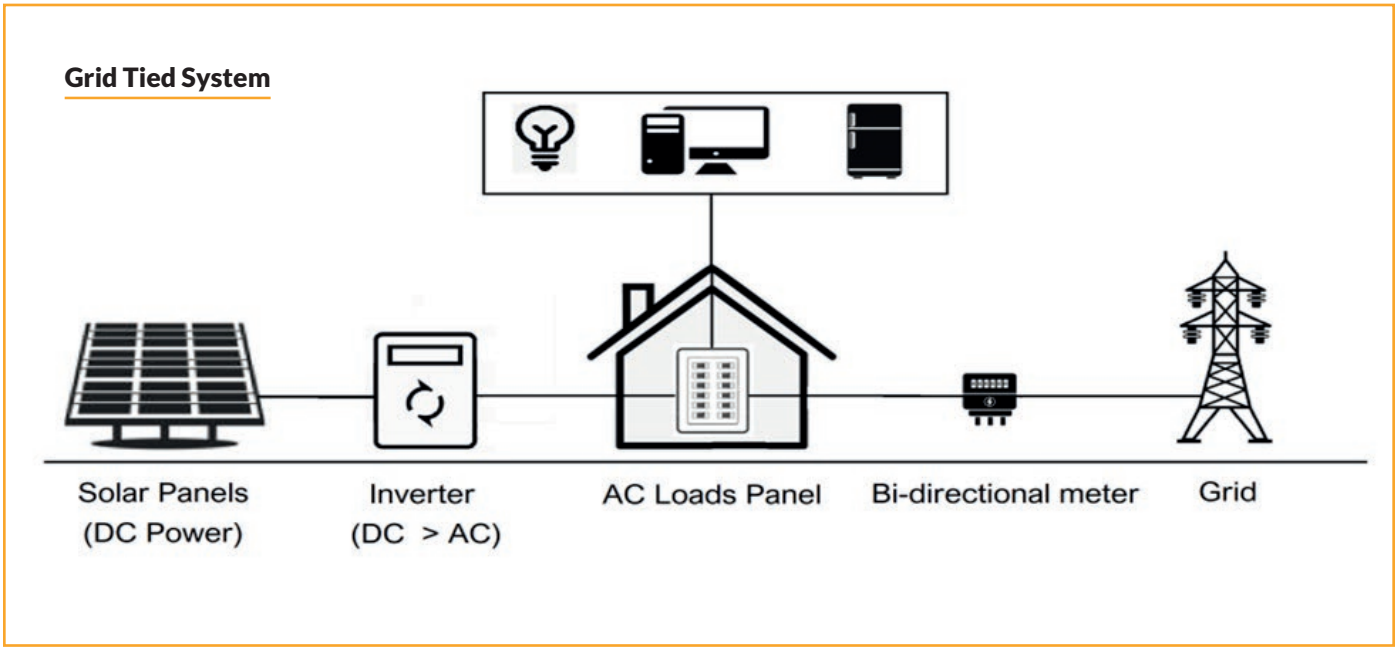
1. How Net Metering Works

A) Bi-directional metering

- When you go solar the power company installs a bi-directional meter that tracks how much power you import/export.
  - Your home or business will always prioritize using its solar generated power first before importing additional power from the grid. For this reason, not only do you reduce your reliance on grid energy, you greatly reduce your delivery fees as well.
  - You will only import additional power from the grid if your panels are not meeting your real-time energy demand. By going solar, you do not have to cut off your connection to the grid.
  - On the other hand, if your solar panels are generating more power in real-time than you are using, then your system will export the excess power to the power grid.
- The amount of kilowatt-hours (kWh) that you feed the grid will be recorded and credited on your next bill.
  - When you import energy your meter goes up, when you export energy your meter goes down. The difference between the amount you've imported and exported is your net kWh usage, hence why it is called "Net Metering". You are billed for the difference between how much power you use, and how much you export to the grid.
  - If at the end of the billing cycle you are in a net surplus, the amount of kWh that you provided the power grid will be credited to your account.
- We size your system to offset 100% of your annual power consumption by designing it to stack up credits during the long days of summer, which you will end up using during the shorter days of winter.



2. Solar Readiness Check

A) Roof suitability

- You will want to make sure that your roof is in good condition before installing solar panels, because it will cost money to remove and reinstall the solar panels later.
- Solar panels protect the roof they are installed on top of. This is because long term sun exposure causes shingles to dry out and curl or crack over time, which then opens you up to water damage. A roof with solar will last a very long time.
  - Ensure that the material your roof is made of is safe to drill through. Asphalt shingles & metal roofs are safe to drill through, while slate tiles and other material would need to be removed.
  - East and west facing solar panels will provide a good return on investment, south facing will provide the best possible return, and north facing should generally be avoided. This is because in the northern hemisphere, the sun is always due South.
  - Be mindful of trees and large buildings adjacent to the solar array, they will cause shade which negatively impacts your ability to generate power. You may need to relocate the panels, or trim the trees. If the tree is on the north side of the array, it will not be a problem.
  - Vents, chimneys, skylights, dormers can all get in the way of racking, you need sections of unobstructed roof space to lay everything down flush with the roof.
  - Each panel is approximately 25 square feet, and you need to allow 1 foot berth from the edge of the roof. Make sure you have enough space to install the panels.

Summer sun reducing summer solar gain

B) Energy consumption

- While you can go solar on a budget, solar panels generally make more economic sense for larger power users, due to fixed installation costs. If you already spend less than $100 per month on power, a grid tied solar solution may not be economically feasible.
- As the size of the solar array increases, the fixed costs to engineer, permit, install and ship equipment represent a lower % of the total project cost, so it becomes increasingly efficient for the consumer.
- Generally speaking, we do not recommend grid tied solar if you spend under $100 per month for electricity on average.

C) Electric compatibility

- Connecting a solar array on your property causes a considerable amount of power to flow through your electric panel. We always perform a site inspection prior to installing each project to determine if the existing breaker size can support the system.
- You will require open slots on the main breaker, and a busbar rated to support the added electricity flow - the necessary amount will vary depending on how many solar panels you install.
- If your current main breaker panel is deemed insufficient, you can either down-size the array, install a new breaker with more amperage, or do a partial line-side install where the power is exported immediately rather than flowing through your home.

D) Financial requirements

- While solar offers a great return on investment, it is a large ticket purchase that will require you to either have access to large sums of cash, or the ability to secure financing.
- Before rebates, the average residential solar installation will cost somewhere between $20,000 - $30,000 depending on how many panels you require, while a heavy power consumer may spend upwards of $50,000 for a larger installation.
- Most people finance their solar installation, so the payments are comparable to their regular power bill.
- In order to access this type of financing or line of credit, you will need to have good credit, proof of income, and manageable outstanding debt.

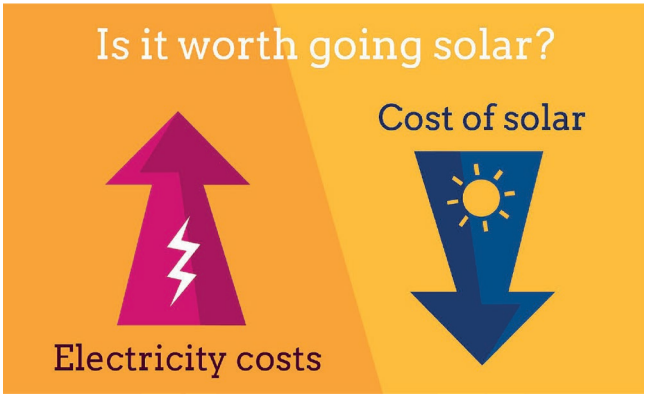
3. Return on Investment

A) Hedging utility prices

- For Canadians, electricity is one of the largest monthly expenses after the mortgage. By going solar, you can invest in your future by eliminating this bill today.
- By going solar, you are essentially freezing your electricity cost, while electricity rates will continue to rise higher and higher every year.
- Your solar investment will continue to become more and more valuable over time as the cost of electricity rises.
- If you finance solar, you can amortize the payments to less than your power bill, meaning that not only do you eliminate the bill in the long term but you reduce your ongoing costs in the short term as well.

B) Calculating ROI

- You can calculate your return on investment by comparing the annual kWh production of your system with how much your power company charges for each kWh. Once you have a dollar figure for your annual savings, divide that number by the total cost of your solar array.
- For example, assume a South facing array that produces 12,000 kWh annually that costs $22,000. Assume the price of electricity is $0.16 per kWh. 12,000 x $0.16 = $1920 annually. $1920 / $22,000 = 8.7% ROI.
- At this rate, it takes approximately 12 years for the system to pay for itself. While 12 years may seem long, the alternative is to continue paying for power infinitely.
- Another way to calculate ROI is to compare the cost of solar to how much you will save over the 25 year warranty period.
- $1920 annual savings x 25 year warranty period = $48,000 total savings. $48,000 savings - $22,000 system cost = $26,000 net savings.
    - $26,000 net savings on a $22,000 investment over 25 years is an annual return of 4.72% per year.
- Keep in mind that this savings figure is based on the current rate of power, without factoring in any inflation in electricity prices, so the real savings will be much more.
- In summary, solar not only reduces your current month to month electricity bills, it avoids future price inflation, but also puts an expiration date on your power cost.
    - Keep in mind that when you invest into solar, it is with money that you would have otherwise paid to your power bill. So it is fundamentally different from investing into stocks. Whether you invest into stocks or not, you will still have a power bill. Having solar turns that monthly liability into an asset that appreciates with the rate of power inflation.



C) Tax advantages

- If you are a business or self employed, you can write off part or all of your solar purchase against your income tax as a utility cost, depending on how much of the utility bill is caused by “business activity”.
- While the savings with solar appreciate over time, it is a physical asset that can be depreciated over time on your balance sheet.

D) Incentives

- There are often government incentives offered to people going solar, such as rebates, tax credits, or preferred financing programs.
- There is currently the Greener Homes Grant by the federal government of Canada, which is for $1 per installed watt, up to a maximum of $5000.
- These programs are usually geography based, and will differ from Province to Province.
- The government typically does not advertise these programs, so make sure that you research if there is anything that your solar installation will qualify for.

4. Choosing a Contractor

A) Comparing quotes

- **Equipment** - Not all solar panels are created equally, even if they are the same wattage or made from the same material. Some brands are known for having longer-lasting equipment, better warranties, or simply being manufactured by a more bankable brand. The worst thing that can happen is that the manufacturer warranty is worthless because the manufacturer goes out of business in 5 years. If there is a corner, someone will try to cut it - make sure the solar panels being offered are manufactured by a bankable brand.
- **Price** - If both companies are offering similar quality equipment and services, getting the best price can greatly improve your ROI.
- **Hidden fees** - Some unreputable contractors will attempt to obfuscate the total cost of the project by only showing their price, while omitting all of the other fees that you will incur during the course of the solar project. Fees such as building permits, engineering reports, bi-directional meter installation, and any applicable interconnection fees from the power company etc. Ask for an all-inclusive up-front price.
- **Financing** - Do they offer financing, or help you get financing? Some solar companies will offer to help you get the best rate for your solar project. Ask what rates or financing plans their other customers have gotten.

B) Reputation check

Check each contractor's social media, Google reviews page as well as BBB reviews page to see what people their past customers are saying about them. There are a lot of reputable solar installers, ensure that you avoid working with the few bad apples.

C) Warranties & post-installation service policy

- Ask each contractor what their post-installation service policy is like, what kind of labor warranty they provide.
- Ask whether they will assist you with setting up system monitoring.
- Ask if they will assist you in replacing parts covered under warranty if needed, or if you will have to do so on your own.
- Be wary of companies that promise too-good-to-be-true warranties, such as overly long labor warranties. If the company is less than 5 years old, why are they promising a 25 year labor warranty? Remember, a warranty is only as valuable as the company providing it to you.

5. Project Milestones.

A) Site inspection

The purpose of the site inspection is so that the company can verify the following:

- Verify that your electric panel has the capacity needed for the system. This is a vital step to determine the best way to install your system, and if any preliminary electrical work will be required.
- Measure the trusses, rafters, joists to ensure the roof, to later assist in securing the engineering documents. The city building department will want to see that your roof can support the added weight of the solar panels.
- Evaluate the optimal location to install the inverter, and the most efficient route to wire the power meter and electric panel.
- Determine whether any additional work (i.e trenching, electrical, roof reinforcement) will be required prior the installation.
- Ensure no major shading will impact the system, and evaluate whether optimizers are required to ensure consistent performance.

B) Grid application & fees

- In order to connect to the grid, you must sign an interconnection agreement with your power company agreeing to their policy, and you must receive an approval which includes an offer to connect to the grid.
- Your application to the grid will include details about your system such as how much power it will produce, which meter will receive the power, who will be installing the system, as well as electrical schematic drawings detailing the project for review.

- Once they have received the completed and signed application forms, as well as the necessary fees they will approve the project and you may install your solar project once you receive municipal permits (if required).
- Once the system is installed, the power company will do a final inspection to ensure that it is in accordance with the original design and electrical code.
- Most power companies charge a fee to interconnect, and a separate fee to install the bi-directional meter.

Be careful of hidden costs:

- Some solar contractors will win your business by not including these extra costs in their bid, making their price seem artificially low. Make sure to ask them what is or isn't included.
- Potential hidden costs include site inspections, structural engineer's report, building permits, electrical permit, electrical upgrades, wire trenching, interconnection fees, bi-directional meter install fee.
- Be wary of companies that charge by the hour, or don't commit to a fixed cost before starting your project.

C) What to do if you get rejected by the hydro company

- If grid space is limited, you may want to try re-applying for the net metering program with a smaller system size.
- Alternatively, instead of net-metering you can purchase batteries and store your energy locally rather than transporting energy back to the grid. If your power does not cross the meter you do not need approval from the power company.
- The power company will sometimes offer to charge a fee to upgrade the local transformers, which depending on the cost may or may not be an option for you.

D) Building Permit

- Most municipalities require a building permit in order to install solar panels. Call your town hall and inquire whether or not your solar project requires a building permit and if so, what the cost will be.
- Your building permit application will require stamped drawings from a structural engineer proving that the home can support the added weight of the solar panels.
- The added load of solar panels is very minimal on the roof, so this step is mostly a formality, however it can pose a unique challenge as your contractor will require access to the attic to view the trusses and beams that support the roof.
- It is possible to discover pre-existing problems with your roof after the engineer reviews it. Prioritize fixing your roof as these problems worsen over time!
- Ensure that your installer is following protocol and that if a building permit is required that they get one for you - otherwise you may run into problems down the road.

E) Installation

- Ask to see testimonials from other satisfied clients, and make sure to check the reviews. Search for bad reviews as well as good reviews to get an accurate picture.
- Ask your installer about their method of securing the solar panels, especially if it is being installed on the roof.
  - What kind of racking is being used, is it built to withstand wind lift or snow load?
  - What kind of flashing and weather sealing methods are in place to guarantee the integrity of the roof? How many penetration points in the roof?
  - Does the installation method comply with the product warranty?
  - Will wires be buried underground, or aerially? In conduit?
  - What safety measures are taken to ensure worker safety on the roof?
  - Do they have insurance to protect you in the event of misfortune?
  - How many projects have they installed?
  - Where are their installers located incase service is needed?

WHY CHOOSE XOLAR INC?

- We care about your roof - and treat it with the respect it deserves. We carry a $5million insurance policy to protect our customers.
- Experienced installers with 100's of projects completed. No corner cutting.
- Top of the line, cutting edge products.
- Upfront, all inclusive prices.
- Finance partners help you get home improvement financing
- Our done-for-you approach means no stress for you.
- Our comprehensive project proposal de-risks your investment by including savings, costs, and power generation numbers.
- We are a local Canadian corporation headquartered in Ontario and abide by all electrical and building code requirements
- Our technical sales team will thoroughly explain your options when designing your custom home solar system.
- Dedicated project managers, meaning your project gets the priority it deserves.
- If we can't get your project approved by the authorities, you don't pay.
- We have an amazing referral program which allows our customers to become our greatest ambassadors - your system will pay for itself in more ways than one!

If you are interested in getting a quote on solar for your home or business, please visit our website **www.xolar.ca** and we will be happy to build a custom system proposal catered to your individual needs. Our team has completed hundreds of residential solar projects here in Canada, and we have access to the best solar products and network of professionals to ensure the quality of each project.

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