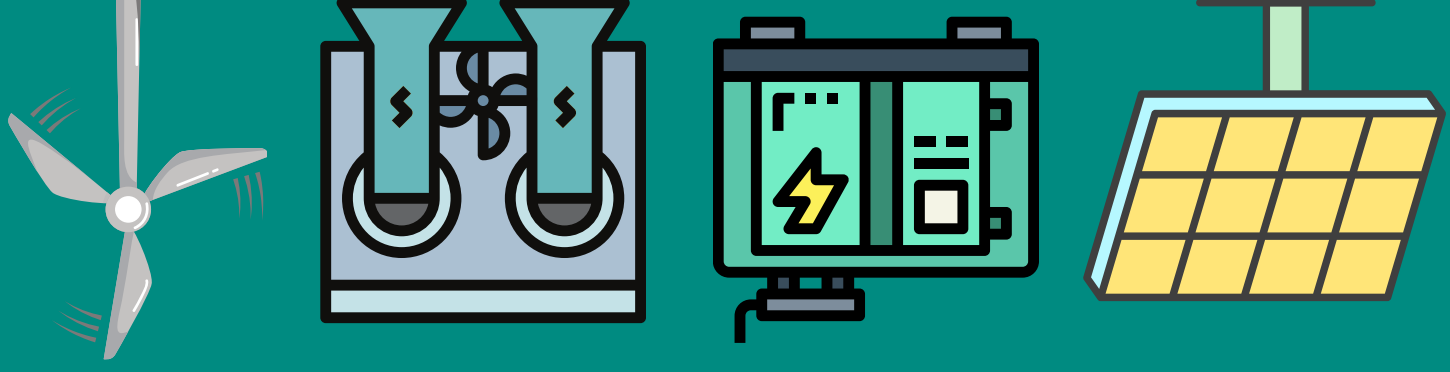
Microgeneration 101: the Ultimate Guide to Off-Grid Energy Systems

BORRUM
ENERGY SOLUTIONS



In this guide you will find:

- Answers to common questions about microgeneration
- How microgeneration can work for you

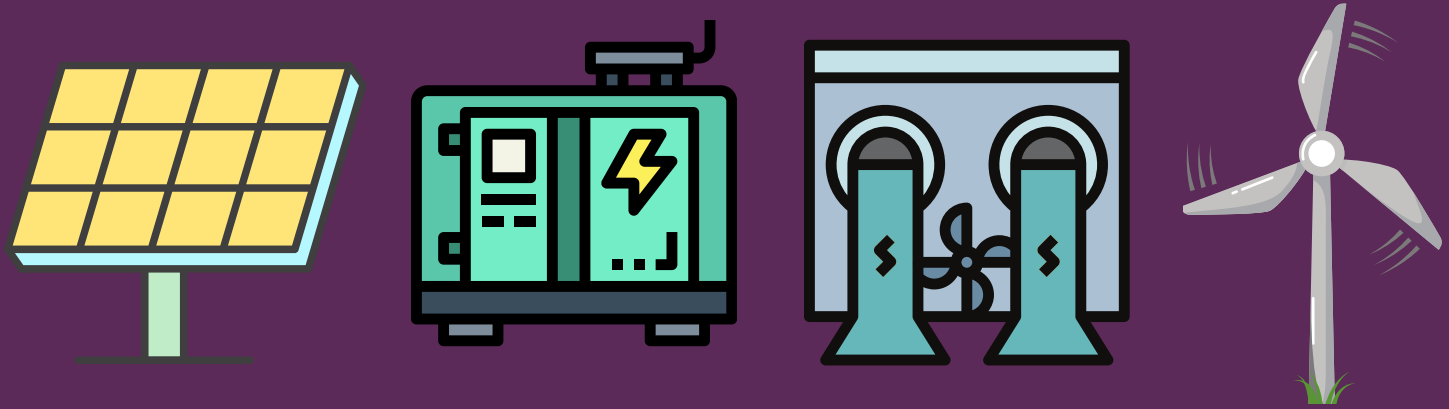
Here is a breakdown of what will be covered:

1 What is microgeneration?

2 Why should I care about it?

3 What are the different methods?

4 How can I get started?



What is microgeneration?

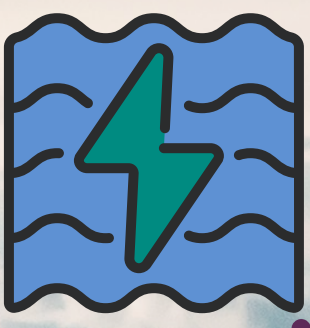
Definition

The harvesting of energy from a renewable resource used to contribute to the electricity usage of a single dwelling or nano-grid. The types of microgeneration are listed below:

Microgeneration is specific to off-grid applications where the generation is close to the point of consumption.

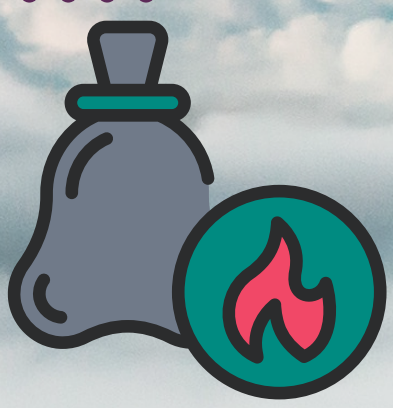
Solar

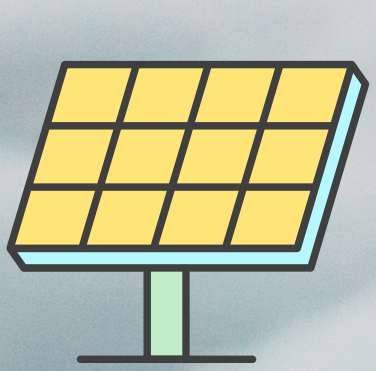
Wind

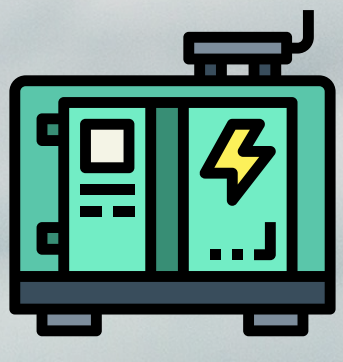


Hydro

Biomass

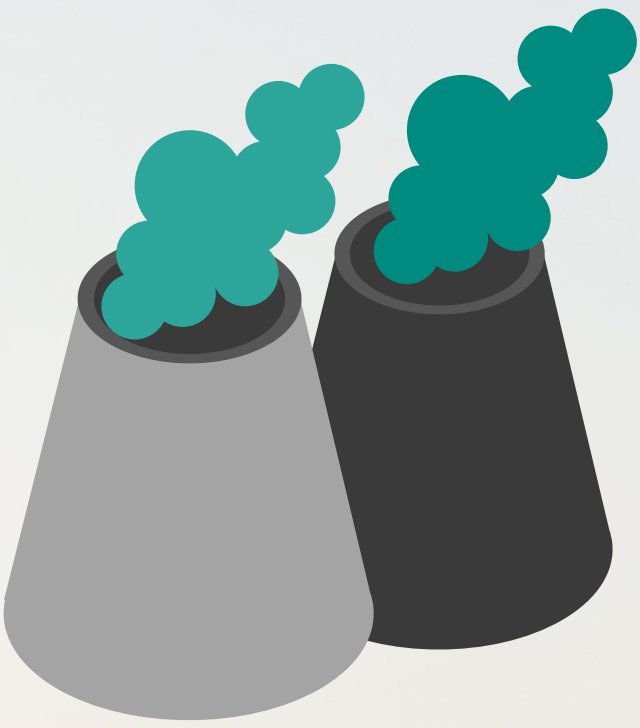






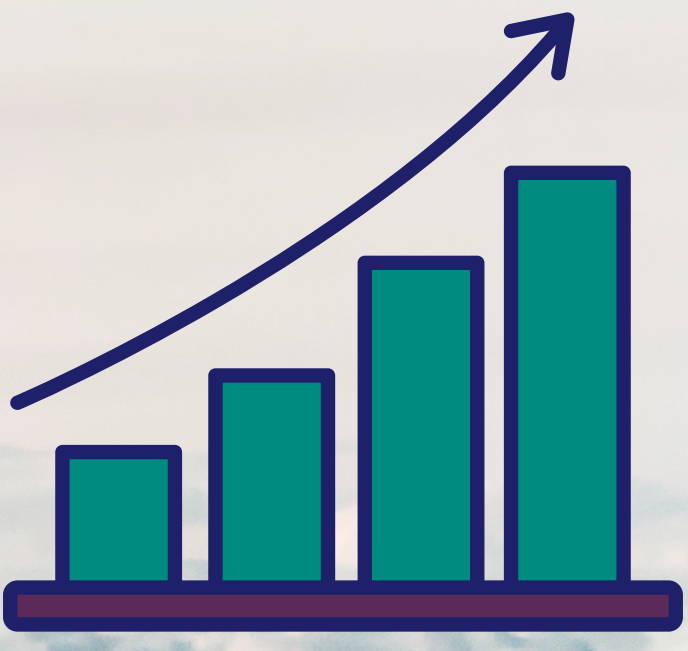
Why should I care about it?

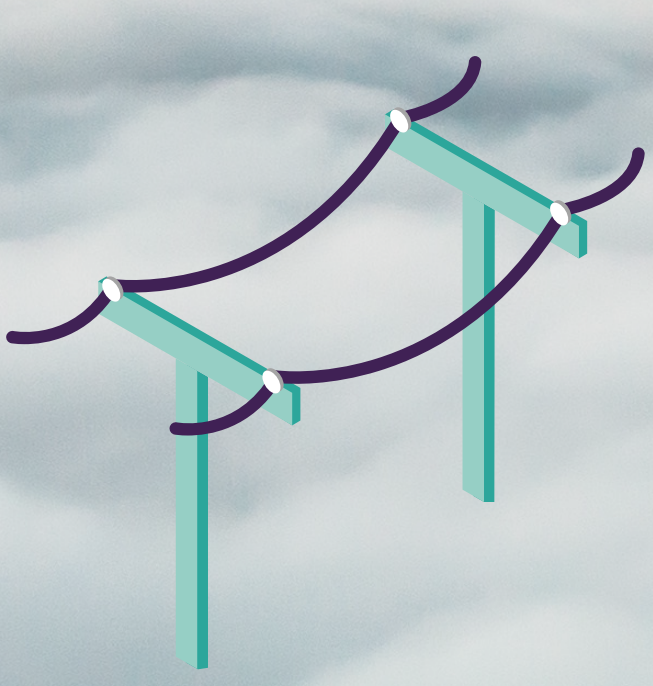
Investing in a microgeneration system for your home will reduce your carbon footprint, and save you money.



Energy production for the utility grid accounts for **25%** of global greenhouse gas emissions.

If action is not taken to reduce these, average temperatures will rise by **2 degrees Celsius by 2050.**

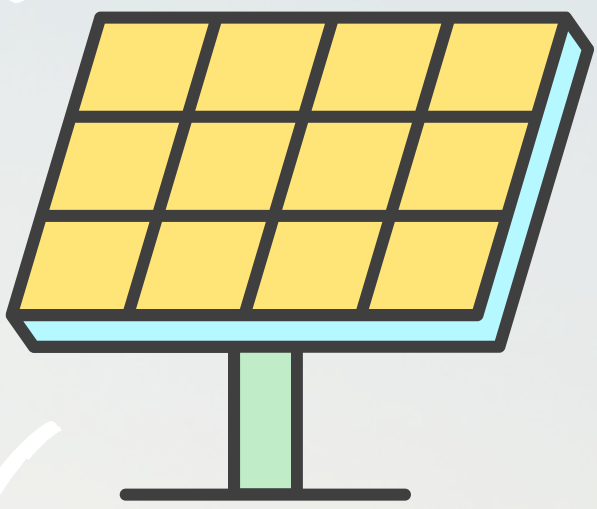




Microgeneration increases energy security by reducing your reliance on the grid.

Solar Power

Solar power is generated when the suns rays hit a photo-voltaic panel that converts the light into electricity.



Pros:

- Low-Maintenance
- Unlimited clean energy
- Widely accessible

Cons:

- Sunshine hours dependent
- Large space requirement
- Efficiency drops the further you are from the equator

Verdict:

Solar panels are a good option if you live in an area that receives lots of sunlight, and have room for a large enough solar array to suit your needs. If you are in Canada check out the solar map to see an estimate of how much power you could generate!

Wind Power

Wind power is generated by the force of the wind spinning blades attached to a generator. Home turbines are typically adjacent to the home mounted on a tower.

Pros:

- Produces power 24 hours a day
- Small footprint
- 5-10 year payback period

Cons:

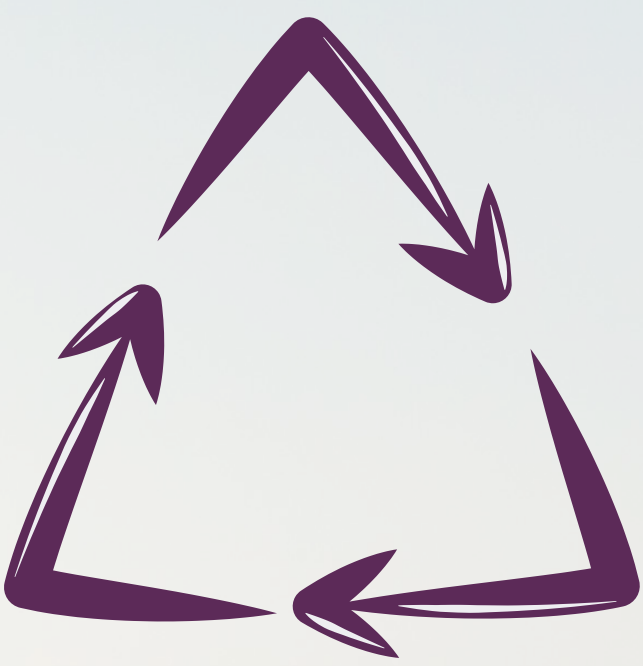
- Power output depends on wind velocity

Verdict:

Wind power is an excellent option for almost anyone given its constant nature and small footprint. Just be sure to check if there is enough wind in your area. We can provide the wind profile for your area, just ask!

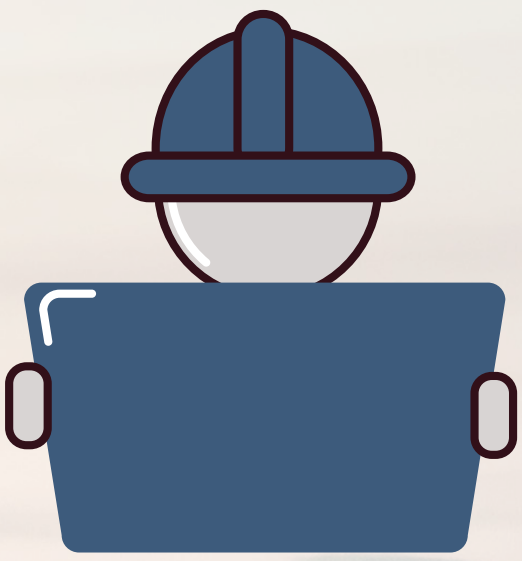
Hydro Power

Hydro power is generated by the action of water flowing across a turbine attached to a generator.



Pros:

- Unlimited clean energy
- No interruptions



Cons:

- Intense installation
- Water source must meet minimum flow requirement
- Requires the most infrastructure

Verdict:

If you have running water on your property, a small hydro system would be the best option but will still be a more extensive installation process than wind or solar.

Biomass

Biomass microgeneration consists of a traditional boiler heated by burning biomass rather than fossil fuels like coal or oil.

What is Biomass?

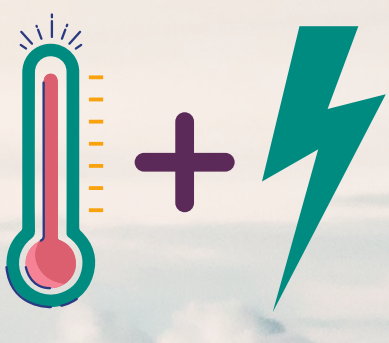
The biomass burned for heat and electricity generation is typically sourced from wood in the form of chips, pellets and logs!

Pros:

- Carbon Neutral
- Inexpensive fuel (about $260/ton)

Cons:

- Usually only a heating system but can generate power with additional equipment
- Fuel may not be available in your area

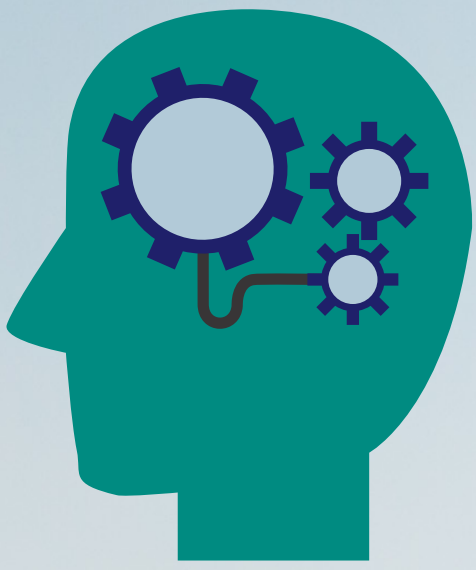


Verdict:

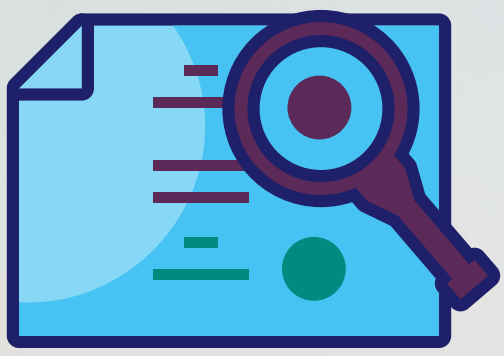
Consider biomas if you are looking for a microgeneration system strictly for heating purposes.

How can I get Started?

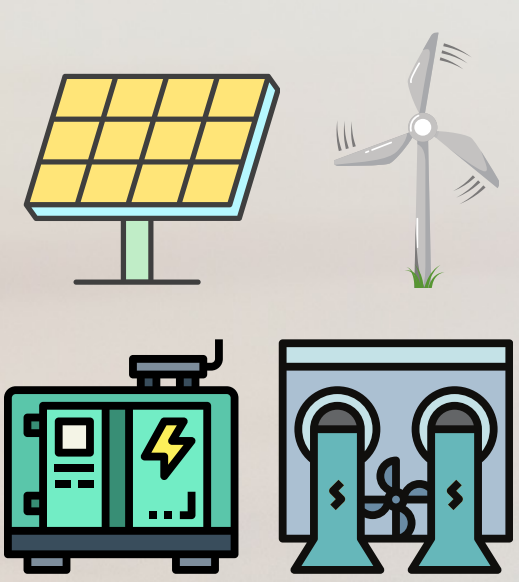
Figure out which microgeneration solution fits your needs based on the resources available at your location. Contact us for assistance figuring out what resources you have available!



Reach out to explore what grants are available in your area and what the regulations are.



Decide on a system, or a combination of systems, and start generating your own clean electricity!



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inquiries@borrumenergysolutions.ca
519.743.9463 (WIND)
borrumenergysolutions.ca
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