

# Grids Explained

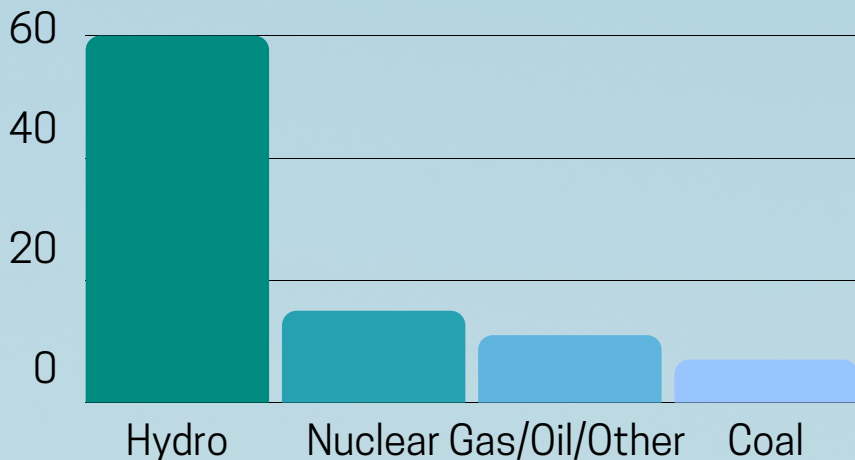
Utility Grids, Micro Grids, and Nano Grids



**BORRUM**<sup>TM</sup>  
ENERGY SOLUTIONS

## The Utility Grid

- Large-scale centralized power production
- Vast networks of transmission lines
- The adjacent graph shows Canada's energy mix



## Drawbacks of Large-scale Power Production

- **Transmission Losses:** Energy is dissipated as it travels through the distribution network
- **Cost of Delivery:** Consumers pay for these losses as a proportion of their electricity bills
- Power can be shut-down for maintenance or if lines are damaged at any point on the grid
- Largest cost driver for electricity in a rural dwelling comes from the transmission and distribution stages.



## Nano-Grid

- Essentially a small micro-grid serving a single customer
- Enables user to have total control over their energy source



## Micro-Grid

- An electrical grid powered by distributed energy sources
- Serves a small area like a campus or neighbourhood

## Advantages of a Micro and Nano-Grids

- Both can operate connected to the utility grid or as standalone
- "islands" Can serve remote areas more effectively
- Increased energy security due to short transmission lines and greater control





# BORRUM<sup>TM</sup>

## ENERGY SOLUTIONS

### Key Terms:

#### Microgeneration

The harvesting of energy from a renewable resource used to contribute to the electricity usage of a single-dwelling or nano-grid. View our Microgeneration 101 infographic for more info.

#### Distributed Energy Resources

Electricity Producing resources connected within a micro or nano-grid for use by those connected to it. Check out our infographic on the Benefits of Distributed Energy Resources (DER) to learn more.

#### Grid-Tied

A microgeneration system that can send power to the grid and draw power from it when production does not meet demand.

#### Off-Grid

A microgeneration system not connected to the utility grid. Also known as a behind-the-meter system.

See these sources for more detail: [Transmission Losses](#) [Microgrids](#) [Canada's Energy Mix](#) [Cost of Delivery](#)



### CONTACT US TO GET STARTED

inquiries\_borrumentergysolutions@outlook.com  
519.743.9463 (WIND)  
borrumenergysolutions.ca

