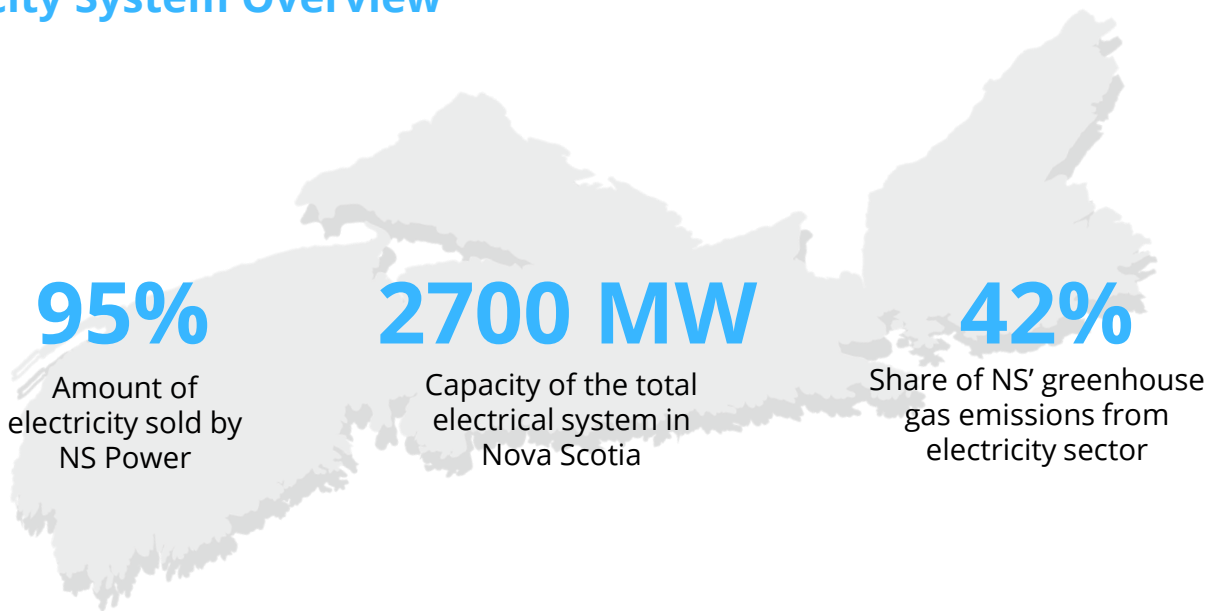


Nova Scotia Electricity Fact Sheet

Electricity System Overview



- **Nova Scotia plans to achieve 80% renewable energy by 2030.** New energy resources will help transition away from coal, including:
 - **1000MW of onshore Wind**
 - **300MW of local Solar through programs**
 - **300MW of Grid-scale batter storage**
- Government recently tabled legislation to create the Nova Scotia Independent Energy System Operator, which would be responsible for managing how energy flows in the system.
- **Nova Scotia Power Inc. (NSPI)** is a privately owned monopoly utility that maintains 95% of the power lines. **Five** smaller **Municipal Electric Utilities (MEUs)** provide the remaining **5%**.
- Nova Scotia has a **peak electricity demand** typically on cold evenings in **January or February** when most people are home with their heat and lights on while running major appliances (e.g., stove).

Roles & Responsibilities



Government

Sets laws, policy and planning, creates programs and incentives.



UARB

Direct oversight of utilities to enforce laws. Operates like a court system.



System Operator

Direct the flow of electricity, and permissions to use wires



Nova Scotia Power

Owns generation, lines, facilities, maintains system and operations.

Nova Scotia Electricity Fact Sheet

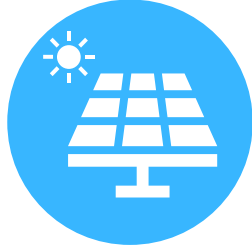
Technical Terminology

- **Watts:** unit of measurement how much energy something produces or consumes.



Watts (W)

An incandescent lightbulb consumes **60 watts**.



Kilowatt (kW)

= 1000 watts
average rooftop solar installation is **10-12 kW**.



Megawatt (MW)

= 1 million watts
average wind turbine size is **5 MW**.



Gigawatt (GW)

= 1 billion watts
The NS electricity system has generating capacity of **3 GW**

- **Kilowatt/Megawatt hour (kWh or MWh):** measure of electrical energy output by a technology such as wind or solar per hour or how much electricity is consumed by a particular facility per hour. The amount of energy produced both depends on technology and the resource (i.e. how windy it is, how sunny it is).
 - An **average NS household consumes 10 MWh** per year
 - One **5 MW wind turbine** produces **~20,000 MWh** per year.
 - A **350 MW wind** procurement produces an estimated **1100 GWh** per year; this could **power ~25% of all homes** in Nova Scotia for a year.
- **Volts and Kilovolt (kV): unit of measurement** for the electrical potential for transmission of electricity **from point A to point B** along a wire.
 - *E.g., A distribution line is 25 kV. A transmission line is 345 kV.*
- **Grid reliability vs resiliency:** **Reliability** refers to the ability to provide electrical service to the **end-customer consistently** (i.e., keep the lights on). **Resiliency** refers to the **strength of the system** to withstand and resume service after a difficult situation like disruptions (i.e., storms, power generation failure, transmission line outages).
- **Battery Storage:** Batteries can be **charged by renewable energy** resources to be **stored** and made available when the **energy is needed the most** by the system. These batteries are just like the ones you use in a flashlight, just on a much bigger scale.