

ENERGY AND INFRASTRUCTURE GLOSSARY OF TERMS

Adapted by ArtsBuild Ontario from: Ministry of Energy and Infrastructure Glossary

A.

B.

Biomass - Energy resources derived from organic matter (from a plant or animal), including wood, agricultural waste, and other living-cell material that is available on a natural renewable basis, and that can be burned to produce heat energy.

C.

Conservation (of electricity) - Any activity which reduces the amount of electricity used overall, or shifts the consumption of the electricity from a peak time to a time of lower demand. Conservation includes energy efficiency, demand management, fuel switching, and customer-based generation.

Energy efficiency: using technologies that provide the same level of service but use less energy (e.g., compact fluorescent light bulbs).

Conservation behaviour/demand management: reducing or shifting electricity demand (e.g., turning off lights, load shifting).

Fuel switching: switching from electricity to another fuel for a given application (e.g., electric water heater to gas water heater).

Customer-based generation: reduced demand for electricity from the grid, due to on-site generation (e.g., solar photovoltaic panels).

D.

Demand Side Management - Measures undertaken to control the level of energy usage at a given time, by increasing or decreasing consumption or shifting consumption to some other time period.

Distribution - The delivery of energy to retail consumers connected to the low-voltage (50kV or less) power system.

E.

Emission - A discharge into the air, land, or water from an industrial process, transportation vehicle, household activity, or other source.

F.

G.

Geothermal - Geothermal systems use the relatively constant temperature of the ground to regulate the temperature of a home or building. These systems move heat from the ground to the home or building for heating — and in the opposite direction for cooling.

Gigawatt-hour (GWh) - A unit of electrical energy equal to one million kilowatt-hours.

Grid - A network of electric power lines and connections that transmit and distribute power across distances and has both sources of supply (generators) and load (customers) connected to it.

H.

Hydro Electric Generation - Power generating stations that convert the energy of falling or flowing water into electricity.

I.

Independent Electricity System Operator (IESO) - A non-profit, regulated corporation (established by the Electricity Act) that is responsible for both operating the wholesale electricity market and ensuring reliable operation of the electricity system.

J.

K.

Kilowatt (KW) - A unit of electrical energy equal to 1,000 watts (W).

Kilowatt-hour (KWh) - The amount of electrical energy produced or consumed by a one-kilowatt unit for one hour (1,000 watt hours).

L.

Local Distribution Company (LDC) - Also known as local electricity utilities, Local Distribution Company (LDCs) take power from high-voltage transmission lines, “step-down” the electricity to a low-voltage level (50 kV and under), and provide it to local customers of all sorts: homes, businesses, institutions and industry.

M.

Megawatt (MW) - A unit of electrical energy equal to 1,000 kilowatts (kW) or one million watts (W). Commonly used to measure the capacity of a large central generating station or the maximum demand of a large electricity consumer.

Megawatt-hour (MWh) - A measure of electricity that is produced or consumed over time; 1 MW of power produced or consumed over 24 hours is equal to 24 MWh of electricity.

N.

Net Metering - A government legislated program that allows electricity generated from small-scale renewable installations (e.g. wind, water, solar, agricultural biomass) to be sent to the electrical grid for a credit toward the producer's (homeowner, business owner, etc) electricity bill. The producer's electric utility subtracts the value of electricity the producer supplied to the grid from the value of what the producer took from the grid. What the producer sees on their bill is the "net" difference between those two amounts.

Non-Utility Generators (NUGs) - Generators owned by entities other than an electric utility. Also referred to as Independent Power Producers (IPPs).

O.

Ontario Energy Board (OEB) - A regulatory agency of the Ontario Government. It is an independent, quasi-judicial tribunal created by the Ontario Energy Board Act of Ontario. Although it reports to the Legislature through the Minister of Energy and Infrastructure, the Board operates independently from the Ministry and all other government departments in the performance of its regulatory functions and responsibilities.

Ontario Power Generation (OPG) - A company established in 1998 by the Electricity Act of Ontario, whose principal business is the generation and sale of electricity to customers in Ontario and interconnected markets. It is 100% owned by the Province of Ontario.

P.

Peak Capacity - The maximum power output for which a generating unit, generating station or other electrical apparatus is rated. Common units include kilowatts (kW) and megawatts (MW). Also used to refer to the maximum potential output for the entire electricity system

Peak Demand - A spike in electricity demand that occurs when the majority of consumers are using a lot of electricity at the same time.

Q.

R.

Rate Regulation - The process by which regulatory bodies determine the rates charged to customers in regulated industries, including gas and electricity. In Ontario, the Ontario Energy Board sets rates for natural gas distribution and electricity transmission and distribution based on cost estimates submitted by the utilities and allowances of an approved capital structure and return on capital. These costs are scrutinized by the Board prior to setting rates.

Regulator - An entity that, through power of law or some other legitimate means, has the authority to impose regulation.

Renewable Energy Generation Facility - A generation facility that generates electricity from a renewable energy source.

Renewable Energy Project - The construction, installation, use, operation, changing or retiring of a renewable energy generation facility.

Renewable Energy Source - An energy source that is renewed by natural processes including wind, water, biomass, biogas, biofuel, solar energy, geothermal energy, tidal forces.

Renewable Energy Testing Facility - Devices or structures used to gather information about natural conditions at the location of the structures or devices and related infrastructure.

Reserve Margin - The amount of generation capacity that must be available to meet unexpected reductions in supply or increases in load.

S.

Smart Meter - Unlike conventional electricity meters that can only measure the total amount of electricity used over a billing period, smart meters record how much and when electricity is used, typically hourly, and automatically transmits this information to the customer's electric distribution company. With the ability to measure when electricity is used, different prices can apply at different times of the day. With time-of-use pricing, electricity customers will have a new way to manage their electricity use and bills.

Solar Power - The radiant energy of the sun that can be converted into other forms of energy, such as heat (solar thermal) or electricity (photovoltaic).

T.

Time-of-use - Electricity fee rates that vary throughout the day. Rates tend to be higher during peak demand periods peak demand (when electricity demands tend to be high) and lower during off-peak hours.

Transmission - The movement or transfer of electricity or natural gas over an interconnected group of lines and associated equipment between points of supply and points at which it is transformed for delivery to consumers via distribution systems, or is delivered to other, separate electric/gas transmission systems. Transmission of electricity is done at high voltages (50kV or higher in Ontario); the energy is transformed to lower voltages for distribution over local distribution systems. Similarly, transmission of natural gas is done at relatively high pressure –sometimes in the range of 1000 PSI.

U.

V.

W.

Waterpower (or hydro electric) generation - Power generating stations that convert the energy of falling or flowing water into electricity.

Watt - The unit of electrical power equal to one ampere under a pressure of one volt. (A Watt is equal to 1/746 horsepower.)

Wind Power - Electricity produced from a system of airfoils or blades that capture the kinetic energy of the wind to spin a drive shaft to drive an electricity generator.

X.

Y.

Z.