

RAILBELT ENERGY GLOSSARY

AEA: Alaska Energy Authority. Alaska's state energy office.

AIPPA: Alaska Independent Power Producers Association. A non-profit entity representing the interests of IPPs in Alaska.

AKR: Alaska Renewables. An Independent Power Producer operating in the Railbelt.

ARTEC: Alaska Railbelt Cooperative Transmission and Electric Company.

Balancing Authority: A entity that ensures that power system demand and supply are always balanced in a specific region, which maintains safe and reliable operation of the power system. Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs) are examples of balancing authorities.

Bcf: Billion cubic feet. Natural gas is often measured by volume in Mcf (thousand cubic feet).

Btu: British Thermal Unit. A measure of energy. A kWh is equivalent to 3,412 Btus.

Bulk Power System: A bulk power system (BPS) is a network of electrical generation and transmission facilities that delivers electricity from power plants to consumers.

Capacity: Refers to the maximum amount of power, usually expressed in megawatts (MWs), that a given generation plant is capable of providing.

Capacity Factor: Refers to the proportion of electricity actually produced by a given generation plant during the year, relative to the amount of electricity that would be produced if the plant were running at its maximum capacity during every hour of the 8,760 hours in the year.

CCUS: Carbon capture, utilization, and storage. CCUS is a set of technologies that capture and manage carbon dioxide (CO₂) emissions from large sources, like power plants and refineries

CIRI: Cook Inlet Regional, Inc. An Independent Power Producer in Southcentral Alaska.

Clean Energy: Typically, used to refer to the electricity that is generated by facilities that do not directly emit greenhouse gases such as carbon dioxide during the generating process. Clean energy includes renewable energy sources, nuclear power and sources where the carbon emissions are captured and stored.

Cooperative (Co-op): An electric utility owned by its member-customers. There are four electric co-ops in the Railbelt.

GVEA Golden Valley Electric Association serves customers from Healy to Fairbanks.

MEA Matanuska Electric Association serves customers from Eagle River to Talkeetna.

HEA Homer Electric Association serves customers on the Kenai Peninsula.

CEA Chugach Electric Association serves Anchorage and Girdwood.

ENSTAR: A heating utility in Southcentral Alaska providing natural gas to its customers.

ERO: Electric Reliability Organization. A general term for an entity responsible for the security and reliability of a power system. In the Railbelt, the Railbelt Reliability Council (RRC) fills this role.

IPP: Independent Power Producer. An IPP is a private entity that owns and operates facilities to generate electricity for sale to end users and utilities. IPPs are also known as non-utility generators (NUGs).

IRP: Integrated Resource Plan. IRP planning is used by electric utilities to identify and evaluate the most cost-effective mix of energy resources (both supply-side generation and demand-side management) to meet future electricity needs for their customers, considering factors like reliability, environmental impact, and cost, while engaging with stakeholders throughout the planning process to create a roadmap for meeting future energy demands in a balanced and cost-efficient way. The RRC is charged with developing an IRP for the Railbelt region.

ISO: Independent System Operator. A type of balancing authority. Typically a non-profit, non-asset owning entity that oversees generation and transmission planning for a region and sets protocols for competition within the system. System operators assert operational control over generation assets to assure merit-order, "economic dispatch" of electricity across a region.

kW: kilowatt. The amount of instantaneous power equivalent to one thousand watts.

kWh: kilowatt-hour. The amount of electricity delivered by a kilowatt of power for one hour. In the Railbelt, the average home uses about 600 kWhs each month.

LBA: Load balancing area. An area where supply and demand of electricity are balanced to maintain safe and reliable operation of the power system.

LNG: Liquefied Natural Gas. Liquefied natural gas (LNG) is natural gas that has been cooled to a liquid state, at about -260° Fahrenheit, for shipping and storage. The volume of natural gas in its liquid state is about 600 times smaller than its volume in its gaseous state. This process makes it possible to transport natural gas to places pipelines do not reach.

Mcf: Thousand cubic feet. Natural gas is often measured by volume in Mcf.

MMBtu: (Million Btu) LNG and natural gas are often measured in energy units of MMBtu. 1 ton of LNG, by weight, contains roughly 53.3 MMBtu. In Cook Inlet, 1 Mcf of natural gas contains roughly 1 MMBtu.

MW: Megawatt. The amount of instantaneous power equivalent to one million watts.

MWh: Megawatt-hour. The amount of electricity delivered by a megawatt of power for one hour. The total Railbelt electricity consumption during 2022 was 4,685,898 MWhs.

Municipal Utility: A public utility owned by a local government. There is one municipal utility in the Railbelt.

SES Seward Electric System

PPA: Power Purchase Agreement. The contract between an Independent Power Producer and an off-take buyer, typically a utility.

Reliability Standard: An electric reliability standard. Reliability standards are requirements that ensure the safe and reliable operation of the electric grid. They include requirements for grid operators to communicate and receive training; requirements for grid operators to have plans in case of emergencies and; requirements to protect the bulk power system from cyber threats. The North American Electric Reliability Corporation (NERC) develops and enforces reliability standards for the bulk power system in North America.

Renewable Energy: Energy derived from inexhaustible sources such as wind, solar, geothermal and water (rivers, tides and waves).

Renewable IPP: An IPP operating in the Railbelt.

RCA: Regulatory Commission of Alaska. The public utility commission for the state of Alaska. All tariffs, including any change to a utility's tariff, must be approved by the RCA.

RCC: Regulatory Cost Charge. The charge on customer's bills to pay for the RCA.

RRC: Railbelt Reliability Council. The entity which fulfills the role of an ERO in Alaska. The RRC is also charged with developing IRPs for the Railbelt region.

RTO: Regional Transmission Organization. Generally, an RTO is a type of balancing authority. It is an electric power transmission system operator (TSO) that coordinates, controls, and monitors a multi-state electric grid.

RTO: Railbelt Transmission Organization. An organization created in House Bill 307 to develop and propose a transmission cost recovery tariff for the Railbelt transmission system.

RPS: Renewable Portfolio Standard. A state policy that requires utilities to generate a certain percentage of electricity with renewable sources by a date certain or face non-compliance penalties.

Transco: A transmission company. A transmission-only utility. Typically a for-profit entity.

USO: Unified System Operator. A regional system operator that manages a specific area of an electric grid. USOs are also known as independent system operators (ISOs). Their responsibilities include scheduling and dispatching power plants, operating the transmission system, facilitating wholesale markets and setting market prices.