



## Glossary of Terms

- **AC - Alternating Current** is a current that flows alternately in one direction and then in the reverse direction. In North America, the standard for alternating current is 60 complete cycles each second. Such electricity is said to have a frequency of 60 hertz. Alternating current is used in power systems because it can be transmitted and distributed more economically than direct current.
- **Administration Charge** is a monthly charge levied to recover a Wire Service Provider's and/or Retailer's costs for customer service, billing, communication, and in some cases, other charges related to management of the energy supply portfolio such as risk, pool trading charges, etc.
- **Affiliated Retailers** are affiliated corporate bodies providing the supply of energy.
- **Allocated Losses** are energy losses usually allocated to customer groups based on allocators determined from distribution loss studies.
- **AMI - Automatic Metering Infrastructure** - Communication solution that creates a network between remote meters and a utility operation center allowing for real-time collection of data and information.
- **Ampere** is a unit of electric current that is equivalent to the steady current produced by one Volt applied across a resistance of one Ohm.
- **AMR - Automatic Meter Reading** - State-of-the-art technology that enables a utility company to read electric meters remotely.
- **Area Control Area** - Instantaneous difference between actual and scheduling interchange, taking into account the effects of frequency bias.
- **Automatic Generation Control** - Equipment that automatically adjusts a control area's generation, from a central location, to maintain frequency or interchange schedule, plus or minus frequency bias.
- **Base Load** - The minimum continuous load over a given period of time. Base load generating stations operate essentially at full output whenever possible.
- **Bilateral Transactions (Direct Sales)** An electric energy supply arrangement, the terms of which, including price, are negotiated between an electric energy retailer and a consumer.
- **Blend and Extend** is the opportunity for consumers to reopen an existing contract with a retailer in order to change the terms of the contract over an extended period.
- **BP - Balancing Pool** - The Balancing Pool plays a prominent role in managing the Power Purchase Arrangements of several major power plants. The Balancing Pool was established in 1999 by the Government of Alberta to help maintain the certain assets, revenues and expenses arising from the transition to competition in Alberta's electric industry. The Balancing Pool is now a separate corporate entity with a 5 member independent board of directors appointed by Alberta's Minister of Energy to govern the operations.
- **Broker** is an entity that arranges a market transaction but does not take title to the commodity, the sale of which they are brokering.
- **Bulk Electricity** is large amounts of electric power to transmission voltages, generally to run industrial plants and operations.



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- **Bundling Electricity** results from combining the costs of generation, transmission and distribution and services into a single rate charged to the retail customer.
- **Capacity** - The maximum sustainable amount of electric energy that can be carried or delivered in any instant; measured in Watt. This is a term that can be applied to a transmission system or to a piece of equipment such as a generating unit, electric service or appliance.
- **Capacity Factor** - For any equipment, the ratio of the average load during a defined time period to the rated capacity.
- **Code of Conduct Regulation** governs the relationship between a wire owner and its affiliated retailer and the release and exchange of customer information. The Code seeks to ensure that: retailers and consumers have equal access to regulated services; the wire owner protects the confidentiality of consumer information; retailers have equal access to information disclosed by wire owners; and consumers are dealt with fairly by affiliated retailers.
- **Cogeneration** is the process of simultaneous production of thermal (steam) and electric energy; the electric energy used for industrial plant use and/or sale and the heat for buildings and industrial processes. Cogeneration is a very efficient means of generating electric energy, but its application is limited to situations where there is a requirement for heat (steam load), which usually determines the capacity and location of such a generating unit.
- **Combined Cycle Gas Turbines** is the combination of combustion and steam turbines to generate electric energy from two thermodynamic cycles; exhaust gases from the combustion turbine are directed to a heat recovery steam generator which produces steam to power a steam turbine.
- **Congestion**  
This occurs when the transmission system cannot accommodate all transactions that would normally occur among consumers based on merit order dispatch due to physical or engineering limitations. The physical limitations are determined by the physical capacities of the transmission components. The engineering limitations are expressed through the application of accepted reliability operating criteria.
- **Consumer** in the context of the electricity business is the individual or legal entity that is the end user of electric energy and pays the bill for the cost of producing and delivering the electric energy to the location where electric energy is being consumed by the end user.
- **Contingency Reserve** is the amount of operating reserve sufficient to reduce area control error to zero following loss of generating capacity, which would result from the most severe single contingency all in a manner which adheres to Western Electricity Coordinating Council criteria.
- **Conventional Generation** is electricity produced at a generating station where the prime movers are driven by gases or steam produced by burning fossil fuels.
- **Coordination** - pooling of resources, loads and/or joint reservoir management between utilities to allow more efficient operation of existing dams and reservoirs.
- **Current** is the flow of electricity in a conductor. Current is measured in amperes.



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- **DA - Deposit Account** - Funds used for REA capital system upgrades, improvements and rebuilds not paid by the individual members, or as directed by the REA membership as per by-law passed at an annual general or special general meeting. (Also DRA - Deposit Reserve Account or DR - Deposit Reserve)
- **DC - Direct Current** is a current that flows continuously in the same direction (as opposed to alternating current). For example, the current supplied from a battery is a direct current.
- **Deferral Account** – An account applied to a cost/revenue not in the control of the utility and which has been approved by the AUC to accumulate the difference between the forecast and the actual cost/revenue. The refund or collection of a deferral account is through a rate rider which has been approved by the AUC.
- **Deregulation** - The conversion of a regulated generation market to a competitive unregulated generation and retail market.
- **DFO - Distribution Facility Owner** - Term used to describe an electric distribution system wire owner.
- **DG - Distribution Connected Generator** is a generating unit that is interconnected with an electric distribution system.
- **Dispatch** is a direction from the Alberta Electric System Operator (AESO) to a pool participant to cause, permit or alter the exchange of electric energy or ancillary services.
- **Distributed Generation** is a generating unit that is interconnected with an electric energy distribution system.
- **Distribution (also Electric Distribution System)** is the plant, works equipment, systems and services necessary to distribute electric energy in a service area at a voltage of 25,000 volts or less.
- **Distribution Access Service** - The services required to transport electric energy by means of an electric distribution system to customers or from distributed generation to the interconnected electric system.
- **Distribution Billing Tariffs** - An account for distribution access service provided to a retailer or regulated rate provider.
- **DSO - Distribution System Operator** is a contractor authorized by the wire owner of an electric distribution system to perform certain operating and maintenance functions on behalf of the wire owner.
- **DT - Distribution Tariff** is the rates and the terms and conditions that a distribution facility owner charges for providing service to its customers.
- **Electric Industry** - The business and system of: supply, transmission, distribution and services required to provide electric energy to consumers, from the location of electric energy generation to the location where customers consume electric energy.
- **Exchange** - to provide electric energy to, or receive electric energy from, the interconnected electric system.



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- **Exit Fee** is a fee paid by a customer when there is a switch from one retailer to another, while under contract to a retailer.
- **Flow Through** charge is for electric energy determined in accordance with section 4 (2) of Regulated Default Supply.
- **Forward Market** - instruments to manage price risk, reduce financial uncertainty, and bring greater economic performance into the electricity market.
- **Frequency** is the number of repetitions of a periodic process in a unit of time. The standard frequency of the change in polarity of an alternating current via which electric energy is being delivered in the electric energy market, in Canada and the US, is 60 Hertz per second.
- **FTA - Fair Trading Act** - Regulated by the Alberta Ministry of Service Alberta, the Act enhances consumer protection through remedies, enforcement tools, and tougher penalties intended to discourage marketplace fraud.
- **Generating Unit** - component of a power plant that produces, from any source, electric energy and ancillary services, and includes facilities that are necessary for the safe, reliable and economic operation of a generating unit.
- **Generation** is the process by which thermal, mechanical, chemical or nuclear energy is converted into electrical energy, using an energy source, which may include natural gas, coal, nuclear fuel, wind, water (hydroelectric), biomass (waste products), solar heat, or any other means of converting basis energy contained in an energy source to electric energy.
- **Generator** is the producer of electric energy.
- **Giga** = one billion.
- **Gigawatt** = a measure of capacity equal to one million kilowatts or one billion watts.
- **GJ - Gigajoule** = one billion Joules or a thousand Mega Joules.
- **GRA - General Rate Application** is made by an investor owned utility seeking to change its electricity rates. (Sometimes called GTA - General Tariff Application)
- **Grid** is a network of electric energy transmission lines and connections.
- **Heat Rate** is a measure of electric energy system efficiency; the amount of natural gas required to generate one Megawatt-hour of electric energy.
- **Hedging** is the practice of speculating on the price for a future commodity to avoid exposure to the risk of unacceptably large variations in real time price movements. There is usually a price to be paid for purchasing a future commodity at a hedged price; the price charged for the commodity commonly includes an extra charge to protect the seller against the risk of losing money through selling a commodity that he may have to purchase in the future at a price that is possibly higher than the price at which he contracts to provide it.
- **Hertz** = a unit of frequency equal to one cycle per second.
- **Horse Power** is a unit of power equal to 746 Watt - the amount of power that a horse exerts in pulling.



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- **IDP - Information Disclosure Procedure** strikes a balance between masking information to protect confidentiality and revealing it, to promote efficient forward pricing and self policing of TPG (Trading Practices Guidelines).
- **Interconnected Electric System** - All electric energy transmission facilities and all distribution systems in Alberta (or any other jurisdiction or combination of jurisdictions) that are interconnected. The Alberta Electric Utilities Act excludes from the definition the service area of the City of Medicine Hat. It is, in essence, a system consisting of two or more individual electric energy systems connected together by tie lines.
- **Interval (Time-of-Use) Meter** measures at intervals of 60 minutes or less the amount of electric energy consumed by a customer and satisfies the standards for revenue collection under the Electricity and Gas Inspection Act (Canada) and the Weights and Measures Act (Canada).
- **IOU - Investor-Owned Utility** is usually a publicly traded company, which is organized as a tax-paying business and financed by the sale of securities in the capital market. It is regulated and achieves an allowed rate of return.
- **Joule** is an International System unit of electrical, mechanical, and thermal energy; the unit of work or energy equal to the work done by a force of one newton acting through a distance of one meter.
- **Kilo** = one thousand.
- **KVA** = Kilo Volt Amp (or 1,000 multiplied by volts multiplied by amp)
- **KW** = Kilowatt (or unit of power equal to 1.34 horsepower)
- **KWh** = Kilowatt Hour (or 1kW used for one hour)
- **LDC** Local Distribution Company
- **LL - Load Limiter** is a device that allows for a limited amount of electricity to flow to a residential customer.
- **LMP - Locational Marginal Prices** internalizes real-time congestion costs.
- **Load** is defined as the instantaneous amount of electric energy delivered or required at any specific point of points in Alberta's Interconnected System.
- **Local Access Fee** is a fee paid by utilities to local governments in lieu of access to municipal right-of-way and property taxes on linear property. (Also Franchise Fee)
- **LS - Load Settlement** - A computer system and associated operations and interfaces operated by load settlement agents used to determine the load responsibility of each unit of the settlement interval for each retailer operating within the settlement zone.
- **LSA - Load Settlement Agent** is the party conducting load settlement calculations for a particular settlement zone.
- **Margin** is defined as the difference between the sale price and the purchase price.
- **Market** is any type of forum through or under which an offer, purchase, sale trade or exchange of electricity, electric energy, electricity services or operating reserves takes



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place in relation to the production or consumption of electricity, electric energy, electricity services or operating services.

- **Market Liquidity** is a situation in which there are sufficient numbers of credit-worthy buyers and sellers, and therefore, sufficient trading volumes to permit discovery of a credible price in the market for a given time period.
- **Market Participant** is any person who supplies, generates, transmits, distributes, trades, exchanges, purchases or sells electricity, electric energy, electricity services or ancillary services.
- **Market Signal** is price movements that may cause a market participant to respond by taking some action.
- **Mass Retail Market** is the residential and small commercial market comprised of consumers with annual consumption at a single site of less than 250 MWh.
- **Mega** = one million.
- **Member** is the customer shareholder of a rural electrification association (REA) power cooperative.
- **Merchant Energy Company** is a company that builds electric energy generation plants on an at-risk basis. (Also Merchant Generator)
- **Merit Order** - a list of supply offers and demand bids for each hour of the day, compiled by AESO schedulers.
- **Metering** is measuring the amount of electric energy consumed by a customer.
- **Municipally-owned Utility** is a distribution system owned by a municipality.
- **MVA** = Mega volt amp or 1000 kVA
- **MW** = Megawatt or 1,000 kW or 1,340 horsepower
- **MW - Megawatt** = measure of electric energy capacity or load equal to 1 million Watt or 1,000 kilowatts
- **MWh** = Megawatt Hour or 1000 kW used for one hour.
- **MWh - Megawatt Hour** = a measure of electric energy equivalent to one Megawatt of electric energy, supplied, produced or consumed for one hour.
- **Notice Period** is the period of time before a consumer can switch to another retailer after giving notice to his current retailer.
- **O & M - Operations and Maintenance** - All associated functions to do with upgrading and maintaining facilities to applicable provincial legislation and prudent industry practices and standards i.e. electric distribution systems including vegetation management, upgrading, changing faulty transformers, preventative maintenance, system power quality, system planning, maintaining customer records, maintaining distribution system mapping.
- **Ohm** is a unit of electrical resistance equal to the resistance of a circuit in which an electric potential difference of one volt produces a current of one ampere.



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- **Open Access** is the fair and equitable access for generators and consumers of electric energy to the transmission system.
- **Operating Reserves** - The capability above system demand available to Alberta's Interconnected Electric System within 10 minutes following a supply contingency required to provide for system regulation and local area protection and to correct or stabilize the system in the event of contingencies, load forecasting errors and forced outages to Generating Units.
- **PBR - Performance Based Rates** - a concept of providing incentives to improve productivity while sharing the gains between customers and shareholders.
- **POD - Point of Delivery** is the conceptual point of delivery from the transmission system. A POD is the point at which energy is deemed to be delivered from the transmission system to the distribution system.
- **Pool Price** for electric energy during an hour, established and reported by the AESO in accordance with the AESO rules for electric energy exchanged through the power pool.
- **Postage Stamp Transmission Tolls** are transmission rates averaged so that consumers pay the same transmission rate regardless of their location or distance from generation facilities.
- **Power Marketer** is a person who is engaged in buying and selling electric energy.
- **Power Pool** is operated by the Alberta Electric System Operator (AESO); it is a market providing the exchange of energy and financial settlement for the exchange of electric energy.
- **Power Purchase Agreement Auction** and derivative contracts are associated with Power Purchase Agreements and managed by the Balancing Pool.
- **PPA - Power Purchase Agreement** is a legal agreement as described in Regulation for the purposes of selling electric energy from generating plants built prior to 1996 to a buyer of the electric energy. It must include a determination of the manner in which excess electric energy produced by the generating unit is to be exchanged by the purchaser of the PPA through the power pool for the benefit of the owner of the generating unit.
- **Price Cap** is the maximum price for electric energy or related services set by a government or regulatory agency.
- **Price Volatility** is the rate of change of price over time.
- **Rate Rider** is the same as Deferral Account.
- **RDS - Regulated Default Supply** - the rate offered by the distribution facility owner for customers/members who have not chosen a competitive retailer (formally, the Regulated Rate Option, changed 2004 – and due for change in 2016)
- **REA - Rural Electrification Association** is a not-for-profit cooperative, incorporated or continued under the Rural Utilities Act, which owns an electric distribution system and supplies electric energy to members in a rural region of Alberta.



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- **Regulated Default Supply** is the weighted monthly average price of actual weighted hourly average prices at which energy has been delivered at non-hedged prices during a given calendar month.
- **Regulating Reserve** is an amount of spinning reserve response to automatic generation control, which is sufficient to provide normal regulating margin.
- **Regulator** is a regulatory agency such as the Alberta Utilities Commission (AUC).
- **Restructuring** is the process of allowing competitive markets to replace regulation for those parts of the system where competitive markets can function (non-monopoly services).
- **Retail Access** is the ability for consumers to access electric energy supply directly from unregulated retailers.
- **Retail Electricity Services** are provided directly to a customer but does not include electricity services provided to eligible customers under a regulated rate tariff.
- **Retailer** is an entity that sells (retails) electricity to end-users.
- **RTM - Real-time market**
- **SC - System Controller** manages real-time operations.
- **Self-Generation** of electric energy by a consumer for his own use.
- **Self-Retailer** is an entity that makes its own supply arrangements directly with the wholesale market.
- **Service Area** is determined under the Hydro and Electric Energy Act in which the owner of an electric distribution system may distribute electric energy to consumers, or in the case of REAs, their members.
- **Settlement Interval** is a period beginning on the hour and ending 60 minutes later and is the time increment that MWh amounts are settled financially by the AESO.
- **Settlement Zone** - The collection of sites that are jointly settled by a load settlement system and over which UFE (unaccounted for energy) is calculated and allocated.
- **Slamming** is defined as the circumstances where a retailer has updated the data necessary to become the retailer of record without receiving the customer's permission to become that customer's retailer.
- **SMP - System Marginal Price** - The price of the last block of electric energy dispatched to meet the physical requirements of the system in Alberta, excluding exports and imports. The SMP is updated in real-time every minute; the time weighted average of the 60 one-minute SMPs is the market price or pool price for that hour.
- **Spinning Reserve** is unloaded generation which is synchronized and ready to serve additional demand. It consists of Regulating Reserve and Contingency Reserve.
- **Spot Market** is the real-time market where price is determined upon delivery.
- **Statutory Corporation** is a business that is established as a result of Legislative direction.



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- **Stranded Costs** are costs that arise in any circumstance where costs invested by a utility are no longer supported by current operations. An example would be where a generation market was developed and the prices in the market did not support the costs of a generator approved by the regulator in the regulated world. These unsupported costs are considered stranded and need to be dealt with by the regulator.
- **Stranded Investment** are utility assets that would lose value in a competitive market.
- **Supplier of Last Resort** is defined under the Electric Utilities Act (2003); this term is replaced by the regulated default supplier under the regulated rate tariff.
- **System Controller** is the person within the AESO who is responsible for keeping supply and demand in balance by dispatching the next offers or bids in the merit order to ensure the reliability of the overall system.
- **T & D** is Transmission and Distribution
- **TFO - Transmission Facility Owner** is the term used by regulatory agency to describe an electric transmission system wire owner.
- **TFO Tariff** charges related to the provision of transmission access services to retailers, regulated rate providers and direct connect consumers and recovered from the AESO.
- **TPG** Trading Practices Guidelines
- **Transmission Line Losses** are losses from the electricity that flows from the generators through the wires to consumers. Wires have a small level of resistance that works against the flow of the electric current. The grid consumes a small amount of the power in overcoming this resistance and the power consumed in this way is referred to as losses. (AESO web site definition)
- **Transmission Operations Coordinator** is the committee accountable to the AESO with membership made up of transmission facility owners, charged with the on-going review and upgrading of all operating standards and guidelines for coordinated operation of the transmission system.
- **Transmission System** is the total wires and other facilities for the transportation of electric energy at greater than 25,000 volts and generally over longer distances. (also Transmission Facility)
- **Turbines** convert the mechanical energy inherent in the linear flow of a fluid (liquid or gas) to rotational mechanical energy that, if coupled to an electric generator, can be used to produce electric energy. Sometimes the coupling of a turbine to an electric generator is done through a direct shaft, but often, especially in the case of modern wind turbines, it is done through a gearbox.
- **UFE - Unaccounted for Energy** is the difference between: a) the distribution system total load for the hour, and b) the sum of the allocated hourly loads at the customers' meters, plus their allocated losses.
- **Unbundled Bill** is a billing process that provides a breakdown of the various cost elements included in a customer bill, such as generation (electric energy costs), transmission, distribution, retail charges, and other service charges identified by the regulator.



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- **Utility** are regulated and non-regulated entities that participate in the electricity business to provide consumers with electric energy and electric energy services.
- **Volt** is a unit of electric potential difference and electromotive force equal to the difference of potential between two points in a conducting wire carrying a constant current of one ampere when the electric energy dissipated between those two points is equal to one watt and equivalent to the potential difference across a resistance of one ohm when one ampere is flowing through it.
- **Voltage** = electric potential expressed in volts
- **Watt** is the basic unit used to measure electricity, power equal to the work done at the rate of one joule per second (1/746th of a horse power).
- **Wheeling** is the transmission of electric energy generated by one party to another using the transmission system of a third party.
- **Wholesale Access** is the ability of wholesale customers to access electric energy supplies directly from the grid.
- **Wholesale Market** is a market in which electric energy is sold to market participants for resale to end-users.
- **WO - Wire Owner** is the owner of a regulated electricity distribution system or electricity transmission system wires and related facilities.
- **WSP - Wire Service Provider** is the body given the authority to operate certain functions relating to operating and maintenance (O & M) of an electric distribution system for a Wire Owner (WO) and as defined within the Electric Utilities Act (EUA).