Terms and Definitions

- **Carbon Free —** For electricity, carbon free means that power comes from sources that do not create any carbon emissions when producing energy. Examples of carbon-free power sources are wind, solar, geothermal, hydrogen and nuclear.
- **Carbon Neutral —** For electricity, carbon neutral means any carbon emissions that come from power production are offset or balanced by capturing and removing (sequestering) the same amount of carbon from the atmosphere.
- **Decommission —** When a power plant reaches the end of its operational life, it is shut down, or decommissioned. As part of decommissioning, operating permits end and, depending on future plans for the location, buildings and equipment are removed to support the clean-up and new use of the location.
- **Demand Response —** Demand Response is a way for electric customers — based on conditions on the ERCOT system and through their local utility — to shift and reduce their energy use during specific times to help balance supply and demand on an electric system. By reducing and shifting electric demand away from peak energy use times, customers can help keep overall electricity costs lower for the entire community. As part of Austin Energy's efforts to meet the community's priorities, we have made significant investments in technologies and innovations around Demand Response. Some examples of Austin Energy's Demand Response options include the Power Partner thermostat program, the Power Saver pilot program and the Commercial Demand Response program.
- **Dispatchable Energy —** Dispatchable energy means power that can be turned on and off when needed. This type of power can be adjusted to fit supply and demand needs as they change throughout any particular day. Examples of dispatchable sources of energy are natural gas, batteries and biomass.
- **Intermittent Energy —** Intermittent energy is power that is only available under specific conditions and cannot be turned on outside of those situations. This type of power cannot be adjusted to fit supply and demand needs as they change throughout any particular day. Examples of intermittent energy sources are wind and solar
- **Distribution —** The distribution system carries power short distances to homes and businesses. It connects to the high-voltage transmission system at substations where the energy voltage is lowered so distribution lines can carry that power to customers. It's a local thing. When you see wooden poles, power lines and green transformer boxes around town or neighborhoods, you are looking at pieces of the distribution system. The typical distribution voltage for Austin Energy is 12.5 kilovolts (kV). Eventually, the power reaches the majority of customers at 240 and 120 volts (V).
- **Electric Reliability Council of Texas (ERCOT) —** The Electric Reliability Council of Texas balances the flow of electric power to more than 27 million Texas customers — or about 90% of the state's electric use. ERCOT is commonly referred to as the Texas or statewide grid. We also refer to ERCOT as the electric marketplace where organizations buy and sell power. By law, Austin Energy is a part of ERCOT and participates in the electric market. That means all the power we generate is sold into the market and statewide grid, and we buy all the power used by our customers from the same market and grid.
- **Electric Utility Commission (EUC) —** The EUC is composed of eleven members appointed by the Austin City Council. Each member serves a four-year term. This commission advises the City Council on policies and procedures related to Austin Energy, including customer services, capital investments, new generation facilities, fuel type selection, fuel costs and charges and more.

- **Electrification —** Electrification is the transition from fossil fuel technologies to appropriate electric-powered technologies. Examples include gas vehicles to electric vehicles and gas stoves to electric stoves.
- **Energy-Only Market —** The ERCOT energy market is designed as an energy-only market, where power generators are only paid for the energy they provide, with very few exceptions. This is in contrast to a capacity market where generators are paid for the generating capacity they have as well as the power they generate.
- **Generation —** Generation refers to the power plants that make electricity. In the same way that some cars use different fuels to take you down the road, like gasoline, diesel and electricity, different plants use different fuels or sources to make power. Some sources and fuels include natural gas, solar, wind, nuclear, coal, biomass, hydrogen, geothermal and flowing water.
- **Gigawatt (GW) —** A gigawatt is a unit of measurement for electricity. One gigawatt is 1,000 megawatts. For gigawatts, we often use this scale of measurement when we talk about total numbers for entire systems, like the total amount of electricity in ERCOT.
- **Greenhouse Gas —** Greenhouse gases trap heat close to the Earth's surface. These gases include carbon dioxide, methane, ozone, nitrous oxide, and chlorofluorocarbons. Power plants can produce greenhouse gases — especially those that burn fossil fuels.
- **Load —** Load is energy use. It's the amount of power required at any given time to meet all needs on the electric system. When residents use electricity to turn on their lights or run their appliances and when businesses run equipment, that's creating load. When we talk about the supply and demand of the electric grid, load is the demand side of the equation.
- **Load Growth —** Load growth is the increase in the amount of power needed to meet a growing need on an electric system. Load growth can come from a variety of sources, including more customers, electrification and new businesses that heavily rely on power, like data centers.
- **Load Shed —** Load shed is a controlled, temporary interruption of electric service that is used as a last resort to balance supply and demand on an electric system. Essentially, the need for load shed is what causes controlled outages. This happens when there is insufficient supply to meet demand, and ERCOT orders load shed as a last resort to avoid a full grid collapse.
- **Load Zone —** A geographic area of power use that is used to see where electricity is needed and to set prices for that area based on the availability of power and its ability to get there. Different load zones can have different prices. Austin Energy's load zone is basically the same as its service territory.
- **Market Event Liquidity —** This is the money Austin Energy needs to have on hand so it can cover the market participant costs of producing and consuming power in the ERCOT market. This could include payments to ERCOT, fuel suppliers and other organizations we've worked with on power trades. By law, Austin Energy sells all the power we produce into the ERCOT market, and we also buy all the power our customers use out of the market. When Austin Energy buys power for a particular day, we have to pay that cost within seven days, and when ERCOT requires market participants to have funds available in support of the statewide system, we have to make that money available and send it to ERCOT the next day. These costs can change suddenly, and Austin Energy has to be ready with these funds.
- **Megawatt (MW) —** A megawatt is a unit of measurement for electricity. One megawatt is 1,000 kilowatts. We often use megawatts when we talk about topics at the utility scale. Things like power plants, our generation portfolio and our demand are often measured in megawatts. According to ERCOT, a megawatt can power about 200 homes.

- **Municipally Owned Utility (MOU) —** As an electric utility, Austin Energy is what's known as a municipally owned utility. That means we are owned by the City of Austin, serve as a department of the City and are governed by the Austin City Council. In ERCOT, as a municipally owned utility, we have made the choice to stay out of retail electric competition. Austin Energy's service area was set by the Public Utility Commission of Texas, and those in our service area can only be served by us. The other side of that is Austin Energy can only offer retail electric service to those within our service area. As a municipally owned utility, Austin Energy also has the option to be vertically integrated — meaning we can generate power, transport power and sell power to customers.
- **Peak Load —** Peak load is the amount of electric use at a specific time when electric use is at its highest — significantly higher than the average load level. This peak time is often when the cost of electricity is at its highest. Reducing peak load helps lower costs and ease strain on the electric system by decreasing the amount of power the equipment has to handle.
- **Power Supply Adjustment (PSA) —** The PSA is a dollar-for-dollar pass through rate that allows Austin Energy to recover:
  - The cost of fuel for our power plants.
  - The cost of power purchase agreements for renewables or other sources.
  - The cost of electricity purchased from the ERCOT grid.
  - Any net charges experienced as Austin Energy sells power to the ERCOT grid.

  Austin Energy adjusts the Power Supply Adjustment rate to reflect the current price of fuel, projected Austin Energy power purchases, and any existing over/under recovery of those expenses. The utility can make small adjustments to this charge throughout the year, as conditions require.
- **Price Separation —** In the energy market, price separation is when the price of power goes up in an area because power can't economically flow to that area. This is often caused by transmission congestion.
- **Public Utility Commission of Texas (PUCT) —** The PUCT is the state agency responsible for the economic regulation of Texas' electric, telecommunication, and water and wastewater utilities. The PUCT oversees the state's competitive utility markets, including oversight of the Electric Reliability Council of Texas, which runs the electric grid for 90% of the state's electric use.
- **Reliability Must Run (RMR) —** Reliability Must Run is a requirement from ERCOT that would keep a generating unit operating past its planned retirement date. After a thorough analysis and exhausting other options, ERCOT would use the RMR designation to keep that generating unit running to address reliability concerns on the statewide grid that could occur if that generation wasn't available. RMR units are only paid for their basic costs to operate and do not receive market prices for their generation.
- **Resource Generation Plan —** A resource generation plan is a long-term guide for a utility to meet future energy requirements. It analyzes risks, costs, technologies and opportunities around future power supply and demand possibilities to come up with options on how to meet those energy needs within a utility's priorities. Austin Energy's Resource, Generation and Climate Protection Plan to 2035 is looking to plot a course to Austin's new energy future while aligning with community values of affordability, equity, reliability and environmental sustainability.
- **Reliability Unit Commitment (RUC) —** The Reliability Unit Commitment is an ERCOT process in which the grid operator requires a generating unit to come online for the purpose of reliability, not market economics. The generating unit is compensated at its production cost and not the market settlement price during this period. A RUC instruction is used when there is a reliability concern in a local area or on the larger statewide grid.

- **Rolling Blackouts —** We call these controlled outages. Controlled outages are meant to be temporary interruptions of electrical service directed by ERCOT when electricity-generating resources cannot meet the electricity demand in the ERCOT region. Each electric utility must reduce demand by cutting power to customers in an amount directed by ERCOT. For Austin Energy's controlled outages, they typically last up to 40 minutes before rotating to another location. Depending on the situation, these outages may turn into extended outages that cannot be rotated.
- **Substation —** A substation is like a hub for electricity. Power flows into a substation so it can be changed into a different voltage before it continues its path to customers. Substation equipment includes power lines, transformers and circuit breakers. There are both transmission substations and distribution substations, depending on the voltage it is meant to handle.
- **Tail Risk —** Tail risk looks at situations that are not likely to happen very often but cause significant impacts if they do. These impacts could affect costs, reliability or environmental performance. Situation examples include price spikes for fuels like natural gas, extreme winter storms, long-term droughts and unforeseen effects of new technology developments. In resource planning, utilities analyze tail risks to assess how portfolios would perform under these extreme conditions.
- **Transformers —** Transformers are pieces of equipment that literally transform electricity from one voltage to another. You can find large transformers as parts of substations, but you can also see smaller versions attached to poles or located on concrete pads near homes and businesses. Changing voltage is important for transporting power from power plants all the way to customers.
- **Transmission —** There are power sources all over Texas, and that power has to reach people. The transmission system handles high-voltage electricity and carries it over long distances. The high voltage is needed for efficiency, and that power flows into a substation to reduce the voltage level so it can continue its way to customers. This system often includes large equipment — tall metal towers and hundreds of miles of power lines. Transmission voltages for Austin Energy include 345 kV, 138 kV and 69 kV.
- **Transmission Congestion —** Transmission congestion is a choke point or bottleneck for power that limits the amount of electricity that can flow through power lines from power plants to the customers who need it. Congestion leads to higher prices for power and possibly power shortages. If enough power cannot be brought in to meet power needs, and there is not enough generation locally, that would cause local outages.
- **Vertically Integrated —** A vertically integrated utility has the ability to generate power, transport power and sell power to customers. In the competitive areas of ERCOT, individual organizations can only provide one of these services. They can't provide multiple services. Because Austin Energy is a municipally owned utility, we are still allowed to be vertically integrated, so we:
  - » Own our own power generation and contract for additional energy sources.
  - » Own and operate transmission and distribution equipment that transports power from generation sources to homes and businesses.
  - » Sell electricity to customers.
- **Voltage —** Voltage is like water pressure for electricity. It helps push electricity through power lines and other electric equipment. The higher the voltage, the further electricity can travel, and then the voltage is lowered so people can use it. Voltage is measured in volts (V) or kilovolts (kV).

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