Energy Emergency Alert (EEA)

An orderly, predetermined procedure for maximizing use of available Resources and, only if necessary, curtailing load during an Emergency Condition while providing for the maximum possible continuity of service and maintaining the integrity of the ERCOT System.

Energy Imbalance Service

An Ancillary Service that is provided when a difference occurs between the scheduled and the actual delivery of energy in Real-Time.

[NPRR1013: Replace the definition "Energy Imbalance Service" above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Energy Imbalance Service

The difference between the amount of energy cleared in the Day-Ahead Market (DAM) and through trades and the amount of delivery of that energy in the Real-Time Market (RTM).

Energy Offer Curve

A proposal to sell energy at a Settlement Point at a monotonically increasing price with increasing quantity.

Energy Storage Resource (ESR) (*see* Resource)

Energy Storage System (ESS)

A facility, process, or device(s) that receives electric energy and stores it, in any form, for the purpose of later releasing electrical energy.

Energy Trade

A QSE-to-QSE financial transaction that transfers responsibility for energy between a buyer and a seller at a Settlement Point.

Entity

Any natural person, partnership, municipal corporation, cooperative corporation, association, governmental subdivision, or public or private organization.

[NPRR863 and NPRR1096: Insert applicable portions of the following definition "ERCOT Contingency Reserve Service (ECRS)" upon system implementation:]

ERCOT Contingency Reserve Service (ECRS)

An Ancillary Service that provides operating reserves that is intended to:

(a) Restore Responsive Reserve (RRS) within ten minutes of a frequency deviation that results in significant depletion of RRS by restoring frequency to its scheduled value to return the system to normal;

(b) Provide energy or continued Load interruption to avoid or during the implementation of an Energy Emergency Alert (EEA);

(c) Provide backup regulation; and

(d) Be sustained at a specified level for two consecutive hours.

ERCOT Critical Energy Infrastructure Information (ECEII)

Specific engineering, vulnerability, or detailed design information concerning proposed or existing ERCOT System Infrastructure that:

(a) Relates details about the production, generation, transportation, transmission or distribution of energy;

(b) Could foreseeably be useful to a person planning an attack on ERCOT System Infrastructure;

(c) Is exempt from mandatory disclosure under the Freedom of Information Act, 5 U.S.C. § 552, and has not been disclosed to the public through lawful means; and

(d) Does not simply give the general location of the ERCOT System Infrastructure.

ERCOT-Polled Settlement (EPS) Meter

Any meter polled directly by ERCOT for use in the Settlement of the market.

ERCOT Region

The power region, as defined in P.U.C. SUBST. R. 25.5, Definitions, represented by the ERCOT Control Area.

ERCOT System

The interconnected power system that is under the jurisdiction of the PUCT and that is not synchronously interconnected with either the Eastern Interconnection or the Western Electricity Coordinating Council.

ERCOT System Demand

The sum of all power flows, in MW, on the DC Ties and from Generation Resources metered at the points of their interconnections with the ERCOT System at any given time.

ERCOT System Infrastructure

The transmission, distribution, and generation assets that comprise the ERCOT System and the physical and virtual cyber assets used to control the ERCOT System.

ERCOT Transmission Grid

All Transmission Facilities that are part of the ERCOT System.

Exceptional Fuel Cost

The hourly volume-weighted price of natural gas, purchased during an Operating Day or after the Day-Ahead nomination deadline of 1300 Central Prevailing Time (CPT) on the prior Operating Day, submitted in accordance with paragraph (1)(f) of Section 4.4.9.4.1, Mitigated Offer Cap.

External Load Serving Entity (ELSE)

An Entity that is registered as an LSE and is either:

(a) A distribution service provider (as that term is defined in P.U.C. Subst. R. 25.5, Definitions), which includes an electric utility, a Municipally Owned Utility (MOU), or an Electric Cooperative (EC) that has a legal duty to serve one or more Customers connected to the ERCOT System but that does not own or operate Facilities connecting Customers to the ERCOT System; or

(b) The CFE.

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Facilities

Equipment situated for the purpose of conducting service and/or business through use of the ERCOT System

Facility Identification Number

A number assigned to a renewable Resource facility by ERCOT.

Fast Frequency Response (FFR)

The automatic self-deployment and provision by a Resource of their obligated response within 15 cycles after frequency meets or drops below a preset threshold, or a deployment in response to an ERCOT Verbal Dispatch Instruction (VDI) within 10 minutes. Resources capable of automatically self-deploying and providing their full Ancillary Service Resource Responsibility within 15 cycles after frequency meets or drops below a preset threshold and sustaining that full response for at least 15 minutes may provide Responsive Reserve (RRS).

[NPRR1013: Replace the definition "Fast Frequency Response (FFR)" above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Fast Frequency Response (FFR)

The automatic self-deployment and provision by a Resource of their obligated response within 15 cycles after frequency meets or drops below a preset threshold, or a deployment in response to an ERCOT Verbal Dispatch Instruction (VDI) within 10 minutes. Resources capable of automatically self-deploying and providing their full Ancillary Service Resource award within 15 cycles after frequency meets or drops below a preset threshold and sustaining that full response for at least 15 minutes may provide Responsive Reserve (RRS).

Fast Responding Regulation Service (FRRS) (*see* Regulation Service)

Fast Responding Regulation Down Service (FRRS-Down) (*see* Regulation Service)

Fast Responding Regulation Up Service (FRRS-Up) (*see* Regulation Service)

15-Minute Rating (*see* Rating)

Financing Person

The lender, security holder, investor, partner, multilateral institution, or other Entity providing financing or refinancing for the business of another Entity, including development, construction, ownership, operation and/or maintenance of a facility or any portion thereof, or any trustee or agent acting on behalf of any of the foregoing.

Firm Fuel Supply Service (FFSS)

A service provided by certain Generation Resources in order to maintain Resource availability in the event of a natural gas curtailment or other fuel supply disruption.

Firm Fuel Supply Service Resource (FFSSR)

A Generation Resource that has an obligation to provide Firm Fuel Supply Service (FFSS).

Flowgate Right (FGR) (*see* Congestion Revenue Right (CRR))

Force Majeure Event

Any event beyond the reasonable control of, and that occurs without the fault or negligence of, an Entity whose performance is prevented by the occurrence of such event. Examples of such a Force Majeure Event may include the following, subject to the limitations of the above sentence: an act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, or a curtailment, order, regulation or restriction imposed by governmental, military, or lawfully established civilian authorities.

Forced Derate

The unavailability of a portion of a Resource's capacity based on its Seasonal net max sustainable rating provided through the Resource Registration process. For Qualified Scheduling Entities (QSEs) representing Intermittent Renewable Resources (IRRs), the loss of a portion of the capacity shall be due to the unavailability of a portion of the equipment and shall not include capacity changes due to changes in the power source (e.g., wind speed at the Wind-powered Generation Resource (WGR) facility for a WGR, or changes in solar irradiance at the PhotoVoltaic Generation Resource (PVGR) facility for a PVGR).

Forced Outage (*see* Outage)

Frequency Measurable Event (FME)

An event that results in a frequency deviation, identified at ERCOT's sole discretion, and meeting one of the following conditions:

(a) A frequency deviation that has a pre-perturbation [the 16-second period of time before t(0)] average frequency to post-perturbation [the 32-second period of time starting 20 seconds after t(0)] average frequency absolute deviation greater than 100 mHz (the 100 mHz value may be adjusted by ERCOT to capture 30 to 40 events per year); or

(b) A cumulative change in generating unit/generating facility, Direct Current Tie (DC Tie), and/or firm load pre-perturbation megawatt value to post-perturbation megawatt value absolute deviation greater than 550 MW (the 550 MW value may be adjusted by ERCOT to capture 30 to 40 events per year).

[NPRR1013: Insert the following definition "Frequency Responsive Capacity (FRC)" upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Frequency Responsive Capacity (FRC)

The telemetered portion of a Generation Resource's total output that represents the fraction of the output provided from capacity that is capable of providing Primary Frequency Response. Capacity not capable of providing Primary Frequency Response includes, but may not be limited to, capacity from duct firing, auxiliary boilers, and other methods that do not immediately respond, arrest, or stabilize frequency excursions following a disturbance without secondary frequency response or instructions from ERCOT.

Fuel Index Price (FIP)

The daily midpoint or average of the prices for natural gas fuel for the Katy area (Katy Hub), expressed in dollars per million British thermal units ($/MMBtu). ERCOT shall issue a Market Notice disclosing the name of the ERCOT-selected source for the average daily index prices used to calculate FIP. In the event that the ERCOT-selected source becomes unavailable, or ERCOT determines that the source has become unsuitable for the intended purpose, ERCOT may select a substitute source. ERCOT shall issue a Market Notice disclosing its intent to use a substitute source and the name of the substitute source at least 60 days prior to the beginning of its use, or as soon as practicable.

The effective dates for daily index prices shall be as indicated by the ERCOT-selected source. For validation of Three-Part Supply Offers in the Day-Ahead Market (DAM), Day-Ahead Reliability Unit Commitment (DRUC), and Hourly Reliability Unit Commitment (HRUC) occurring before midnight of the Operating Day, the FIP effective for the prior Operating Day will be used. For all other purposes the effective FIP for the Operating Day will be used. If the Katy Hub index is not available, the effective price for the most recent preceding Operating Day shall be used.

Fuel Oil Price (FOP)

An average of the daily index prices for fuel oil for each Operating Day, plus five cents per gallon, for U.S. Gulf Coast, Houston pipeline No. 2 oil, converted to dollars per million British thermal units ($/MMBtu). The conversion is 0.1385 MMBtu per gallon. The effective dates for daily index prices shall be as indicated in the ERCOT-selected index. In the event, at the time of settlement or calculation of generic costs, that the effective price for a particular Operating Day is not available, the effective price for the most recent preceding Operating Day shall be used.

ERCOT shall issue a Market Notice disclosing the name of the ERCOT-selected source for the average daily index prices used to calculate FOP. In the event that the ERCOT-selected index becomes unavailable, or ERCOT determines that the index has become unsuitable for the intended purpose, ERCOT may select a substitute index source. ERCOT shall issue a Market Notice disclosing its intent to use a substitute index source and the name of the substitute index source at least 60 days prior to the beginning of its use, or as soon as practicable.

Full Interconnection Study (FIS)

The set of studies conducted by a Transmission Service Provider (TSP) for the purpose of identifying any electric system improvements or enhancements required to reliably interconnect generation meeting the requirements of Planning Guide Section 5.2.1, Applicability. These studies may include steady-state studies, system protection (short-circuit) studies, dynamic and transient stability studies, facility studies, and sub-synchronous oscillation studies.

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Generation Entity

The owner of a Generation Resource or Settlement Only Generator (SOG) and, unless otherwise specified in these Protocols, is registered as a Resource Entity.

[NPRR995: Replace the above definition "Generation Entity" with the following upon system implementation:]

Generation Entity

The owner of a Generation Resource, Energy Storage Resource (ESR), Settlement Only Energy Storage System (SOESS), or Settlement Only Generator (SOG) and, unless otherwise specified in these Protocols, is registered as a Resource Entity.

Generation Resource (*see* Resource)

Generator Step-Up (GSU)

Transformer in a station with generation where the voltage is transformed from the voltage level of the generator terminals to a higher voltage. If the higher voltage is at or above 60 kV, the GSU may also be referred to as a Main Power Transformer (MPT).

Generic Transmission Constraint (GTC)

A transmission constraint made up of one or more grouped Transmission Elements that is used to constrain flow between geographic areas of ERCOT for the purpose of managing stability, voltage, and other constraints that cannot otherwise be modeled directly in ERCOT's powerflow and contingency analysis applications.

Generic Transmission Limit (GTL)

The value of the transmission flow limit associated with a GTC.

Generation To Be Dispatched (GTBD)

A dynamically calculated system total generation MW requirement used by Security-Constrained Economic Dispatch (SCED) for resource dispatch, calculated every four seconds.

Good Utility Practice

Any of the practices, methods, and acts engaged in, or approved by, a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods, and acts that, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act, to the exclusion of all others, but rather is intended to include acceptable practices, methods, and acts generally accepted in the region.

Governmental Authority

Any federal, state, local, or municipal body having jurisdiction over a Market Participant or ERCOT. A Governmental Authority that is also a Market Participant may not exercise its jurisdiction in any matter that involves the interests of that Market Participant where that matter also involves the interests or responsibilities of any other Market Participant or ERCOT, unless the matter is one in which the Market Participant has exclusive jurisdiction.

Governmental Cybersecurity Oversight Agency

A state or federal agency with cybersecurity oversight responsibility. Cybersecurity oversight includes the review, monitoring, supervision, and/or enforcement of cybersecurity laws, programs, activities, and policies.

Governor

The electronic, digital, or mechanical device that implements Primary Frequency Response of generating units/generating facilities or other system elements.

Governor Dead-Band

The range of deviations of system frequency (+/-) that produces no Primary Frequency Response.

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High Ancillary Service Limit (HASL)

A dynamically calculated MW upper limit on a Resource to reserve the part of the Resource's capacity committed for Ancillary Service, calculated as described in Section 6.5.7.2, Resource Limit Calculator. HASL is also included in Section 5.7.4.1.1, Capacity Shortfall Ratio Share, Section 6.8.3.1.1, Capacity Shortfall Ratio Share for an LCAP Effective Period, and in the Reliability Unit Commitment (RUC) optimization but is not adjusted for Non-Frequency Responsive Capacity (NFRC) as in Section 6.5.7.2.

[NPRR1013: Delete the above definition "High Ancillary Service Limit (HASL)" upon system implementation of the Real-Time Co-Optimization (RTC) project.]

High Emergency Limit (HEL)

The limit established by the QSE describing the maximum temporary unsustainable energy production capability of a Resource. This limit must be achievable for a time stated by the QSE, but not less than 30 minutes.

High Impact Outage (HIO) (*see* Outage)

High Impact Transmission Element (HITE) (*see* Transmission Element)

High Sustained Limit (HSL)

[NPRR1014: Insert the following definition "High Sustained Limit (HSL) for an Energy Storage Resource (ESR)" upon system implementation:]

High Sustained Limit (HSL) for an Energy Storage Resource (ESR)

The limit established by the Qualified Scheduling Entity (QSE), expressed as a MW value that may be less than, equal to, or greater than zero, continuously updated in Real-Time. A positive HSL for an ESR describes the maximum sustained energy discharging capability of the ESR. A negative HSL for an ESR describes the minimum temporary energy charging capability of the ESR.

High Sustained Limit (HSL) for a Generation Resource

The limit established by the Qualified Scheduling Entity (QSE), continuously updated in Real-Time, that describes the maximum sustained energy production capability of the Resource.

High Sustained Limit (HSL) for a Load Resource

The limit calculated by ERCOT, using the Qualified Scheduling Entity (QSE)-established Maximum Power Consumption (MPC).

Hotline

The telecommunications capability of the ERCOT Wide Area Network (WAN) reserved for simultaneous communications with all Qualified Scheduling Entities (QSEs) with Resources, or their designated agents, or with all Transmission Operators (TOs).

Hourly Reliability Unit Commitment (HRUC)

Any RUC executed after the DRUC.

Hub

A designated Settlement Point consisting of a Hub Bus or group of Hub Buses and the associated Settlement price calculation methodology prescribed in the definition of the Hub in Section 3.5.2, Hub Definitions. Hubs may only be created by an amendment to Section 3.5.2. The list of Hub Buses and the Settlement price calculation methodology that define a Hub can never be modified, and a Hub, once defined, exists in perpetuity.

Hub Bus

(1) In the Day-Ahead Market (DAM) and Congestion Revenue Right (CRR) Auction, an energized power flow bus or group of energized power flow buses are defined as a single element in the Hub definition. The Locational Marginal Price (LMP) of the Hub Bus is the simple average of the LMPs assigned to each energized power flow bus in the Hub Bus. If all power flow buses within a Hub Bus are de-energized, the LMP of the Hub does not include the de-energized Hub Bus. If power flow buses within a Hub Bus are de-energized under contingency, the disconnected MWs are redistributed among remaining energized power flow buses. This is used solely for calculating the prices of existing Hub Buses defined in Section 3.5.2, Hub Definitions; or

(2) In the Real-Time Market (RTM), an energized Electrical Bus or group of energized Electrical Buses defined as a single element in the Hub definition. The LMP of the Hub Bus is the simple average of the LMPs assigned to each energized Electrical Bus in the Hub Bus. If all Electrical Buses within a Hub Bus are de-energized, the LMP of the Hub does not include the de-energized Hub Bus. This is used solely for calculating the prices of existing Hub Buses defined in Section 3.5.2.

Hub LMP (see Locational Marginal Price)

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Independent Market Information System Registered Entity (IMRE)

A Market Participant that has signed the Standard Form Market Participant Agreement (as provided for in Section 22, Attachment A, Standard Form Market Participant Agreement), and has completed applicable registration and approval for the sole purpose of accessing the MIS Secure Area.

Independent Market Monitor (IMM)

The Entity selected to monitor the wholesale electric market pursuant to the Public Utility Regulatory Act (PURA), TEX. UTIL. CODE ANN. § 39.1515 (Vernon 1998 & Supp. 2007) and P.U.C SUBST. R. 25.365, Independent Market Monitor.

Independent Organization

An independent organization as defined in the Public Utility Regulatory Act (PURA), TEX. UTIL. CODE ANN. § 39.151 (Vernon 1998 & Supp. 2007)

Initial Energization

The first time a Generation Resource or Settlement Only Generator (SOG) facility's equipment connects to the ERCOT System during commissioning.

[NPRR995: Replace the above definition "Initial Energization" with the following upon system implementation:]

Initial Energization

The first time a Generation Resource, Energy Storage Resource (ESR), Settlement Only Energy Storage System (SOESS), or Settlement Only Generator (SOG) facility's equipment connects to the ERCOT System during commissioning.

Initial Synchronization

The first time a Generation Resource or Settlement Only Generator (SOG) facility's new equipment injects power to the ERCOT System during commissioning.

[NPRR995: Replace the above definition "Initial Synchronization" with the following upon system implementation:]

Initial Synchronization

The first time a Generation Resource, Energy Storage Resource (ESR), Settlement Only Energy Storage System (SOESS), or Settlement Only Generator (SOG) facility's new equipment injects power to the ERCOT System during commissioning.

Interconnecting Entity (IE)

Any Entity that has submitted a Generation Interconnection or Change Request Application for a Generation Resource or Settlement Only Generator (SOG) and meets the requirements of Planning Guide Section 5.2.1, Applicability.

[NPRR995: Replace the above definition "Interconnecting Entity (IE)" with the following upon system implementation:]

Interconnecting Entity (IE)

Any Entity that has submitted a Generation Interconnection or Change Request Application for a Generation Resource, Energy Storage Resource (ESR), Settlement Only Energy Storage

System (SOESS), or Settlement Only Generator (SOG) and meets the requirements of Planning Guide Section 5.2.1, Applicability.

Intermittent Renewable Resource (IRR) (*see* Resource Attribute)

Interval Data Recorder (IDR)

A metering device that is capable of recording energy in each Settlement Interval under Section 9, Settlement and Billing, and Section 10, Metering.

Interval Data Recorder (IDR) Meter

An IDR where the ESI ID is required to be assigned a BUSIDRRQ Load Profile Type code and data is submitted in accordance with Section 10.3.3.3, Submission of Settlement Quality Meter Data to ERCOT.

Interval Data Recorder (IDR) Meter Data Threshold

The percentage of IDR Meter data, by Meter Reading Entity (MRE), that must be available before ERCOT will perform a True-Up Settlement as set forth in Section 9.5.8, RTM True-Up Statement.

Interval Data Recorder (IDR) Mandatory Installation Requirements

The kW (kVA) level at which the installation of an IDR is required for Settlement purposes as set forth in Section 18.6.1, Interval Data Recorder Mandatory Installation Requirements.

Intra-Hour Load Forecast (IHLF)

The Load forecast in five minute increments.

Intra-Hour PhotoVoltaic Power Forecast (IHPPF)

The forecast of PhotoVoltaic (PV) generation in MW in five minute increments.

Intra-Hour Wind Power Forecast (IHWPF)

The forecast of wind generation in MW in five minute increments.

Invoice

A notice for payment or credit due rendered by ERCOT.

Invoice Recipient

A Market Participant that receives an Invoice from ERCOT.

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Level I Maintenance Outage (*see* Outage)

Level II Maintenance Outage (*see* Outage)

Level III Maintenance Outage (*see* Outage)

Limited Impact Remedial Action Scheme (RAS) (*see* Remedial Action Scheme (RAS))

Load

The amount of energy in MWh delivered at any specified point or points on a system.

Wholesale Storage Load (WSL)

Energy that is separately metered from all other Facilities to charge a technology that is capable of storing energy and releasing that energy at a later time to generate electric energy. WSL includes losses for the energy conversion process that are captured by the WSL EPS Meter. WSL is limited to the following technologies: batteries, flywheels, compressed air

energy storage, pumped hydro-electric power, electro chemical capacitors, and thermal energy storage associated with turbine inlet chilling.

[PIR003: ERCOT Protocol Interpretation of Wholesale Storage Load (WSL):]

On June 11, 2013, ERCOT issued a Protocol Interpretation on the definition of Wholesale Storage Load (WSL) – providing guidance on which facilities are eligible for Settlement treatment under WSL. *See* Market Notice M-A061113-1, Protocol Interpretation Request – Wholesale Storage Load, at https://www.ercot.com/mktrules/nprotocols/pir_process for full details of the Protocol Interpretation of WSL.

[PIR004: ERCOT Protocol Interpretation of Wholesale Storage Load (WSL):]

On August 16, 2016, ERCOT issued a Protocol Interpretation on the definition of Wholesale Storage Load (WSL) – providing additional guidance on which facilities are eligible for Settlement treatment under WSL. *See* Market Notice M-A081616-01, Protocol Interpretation Request – Wholesale Storage Load, at https://www.ercot.com/mktrules/nprotocols/pir_process for full details of the Protocol Interpretation of WSL.

Load Frequency Control (LFC)

The deployment of those Generation Resources that are providing Regulation Service to ensure that system frequency is maintained within predetermined limits and the deployment of those Generation Resources that are providing Responsive Reserve (RRS) when necessary as backup regulation. LFC does not include the deployment of Responsive Reserve by Load Resources when deployed as a block under Energy Emergency Alert (EEA) procedures.

[NPRR863: Replace the above definition "Load Frequency Control (LFC)" with the following upon system implementation:]

Load Frequency Control (LFC)

The deployment of those Controllable Load Resources and Generation Resources that are providing Regulation Service to ensure that system frequency is maintained within predetermined limits and the deployment of those Controllable Load Resources and Generation Resources that are providing ERCOT Contingency Reserve Service (ECRS) when necessary as backup regulation. LFC does include the deployment of Responsive Reserve (RRS) (manual) and ECRS from Generation Resources and Controllable Load Resources. LFC does not include the deployment of ECRS or RRS by Load Resources when deployed as a block under Energy Emergency Alert (EEA) procedures.

Load Profile

A representation of the energy usage of a group of Customers, showing the Demand variation on an hourly or sub-hourly basis.

Load Profile ID

The Load Profile designation string that contains, the Load Profile Type Code, the Weather Zone Code, the Meter Data Type Code, the Weather Sensitivity Code, and the Time-Of-Use Schedule Code. An example of all Load Profile IDs are located in the Load Profiling Guide, Appendix D, Profile Decision Tree.

Load Profile Models

Processes that use analytical modeling techniques to create Load Profiles.

Load Profile Segment

A sub-classification of a Load Profile Group. High Winter Ratio (HWR) is an example. Together, the Load Profile Group and the Load Profile Segment form the Load Profile Type.

Load Profile Type

A classification of a group of Customers having similar energy usage patterns and that are assigned the same Load Profile.

Load Profiling

The set of processes used to develop and create Load Profiles.

Load Profiling Methodology

The fundamental basis on which Load Profiles are created. The implementation of a Load Profiling Methodology may require statistical Sampling, engineering methods, econometric modeling, or other approaches.

Load Ratio Share

The ratio of an Entity's AML to total ERCOT AML for an interval.

Load Resource (*see* Resource)

Load Serving Entity (LSE)

An Entity that sells energy to Customers or Wholesale Customers and that has registered as an LSE with ERCOT. LSEs include Competitive Retailers (which includes REPs) and NOIEs that serve Load and ELSEs.

Load Zone

(1) In the Day-Ahead Market (DAM) and Congestion Revenue Right (CRR) Auction, a group of power flow buses assigned to the same zone under Section 3.4, Load Zones. Every power flow bus in ERCOT with a Load must be assigned to a Load Zone for Settlement purposes.

(2) In the Real-Time Market (RTM), a group of Electrical Buses assigned to the same zone under Section 3.4. Every Electrical Bus in ERCOT with a Load must be assigned to a Load Zone for Settlement purposes.

(3) A Non-Opt-In Entity (NOIE) Load Zone is a type of Load Zone.

Load Zone LMP (*see* Locational Marginal Price)

Locational Marginal Price (LMP)

The offer and/or bid-based marginal cost of serving the next increment of Load at an Electrical Bus, which marginal cost is produced by the DAM process or by the SCED process.

Hub LMP

The price calculated for a Hub for each SCED interval according to the formula in Section 6.6.1.5, Hub LMPs, using LMPs at the Electrical Buses included in the Hub.

Load Zone LMP

The price calculated for a Load Zone for each SCED interval according to the formula in Section 6.6.1.4, Load Zone LMPs, using State Estimator Load data and LMPs at the Electrical Buses included in the Load Zone.

Low Ancillary Service Limit (LASL)

A dynamically calculated MW lower limit on a Resource to maintain the ability of the Resource to provide committed Ancillary Service.

[NPRR1013: Delete the above definition "Low Ancillary Service Limit (LASL)" upon system implementation of the Real-Time Co-Optimization (RTC) project.]

Low Emergency Limit (LEL)

The limit established by the QSE describing the minimum temporary unsustainable energy production capability of a Resource. This limit must be achievable for a period of time indicated by the QSE but not less than 30 minutes.

Low Power Consumption (LPC)

For a Load Resource, the limit established by the QSE, continuously updated in Real-Time, that describes the minimum sustained power consumption of a Load Resource. The LPC shall be a non-negative number in MW.

Low Sustained Limit (LSL)

[NPRR1014: Insert the following definition "Low Sustained Limit (LSL) for an Energy Storage Resource (ESR)" upon system implementation:]

Low Sustained Limit (LSL) for an Energy Storage Resource (ESR)

The limit established by the Qualified Scheduling Entity (QSE), expressed as a MW value that may be less than, equal to, or greater than zero, continuously updated in Real-Time. A negative LSL for an ESR describes the maximum sustained energy charging capability of the ESR. A positive LSL for an ESR describes the minimum temporary energy discharging capability of the ESR.

Low Sustained Limit (LSL) for a Generation Resource

The limit established by the Qualified Scheduling Entity (QSE), continuously updatable in Real-Time, that describes the minimum sustained energy production capability of a Resource.

Low Sustained Limit (LSL) for a Load Resource

The limit calculated by ERCOT, using the Qualified Scheduling Entity (QSE)-established Low Power Consumption (LPC).

Low System-Wide Offer Cap (LCAP) Effective Period

The period in which the System-Wide Offer Cap (SWCAP) is set to the LCAP.

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Main Power Transformer (MPT)

Transformer in a station with generation where voltage is transformed from a voltage lower than 60 kV to a voltage at or above 60 kV. If the voltage lower than 60 kV is the voltage level of the generator terminals, the MPT may also be referred to as a Generator Step-Up (GSU).

Maintenance Outage (*see* Outage)

Make-Whole Charge

A charge made by ERCOT to a QSE for a Resource to recapture all or part of the revenues received by a QSE that exceed the Make-Whole Payment for a Resource.

Make-Whole Payment

A payment made by ERCOT to a Qualified Scheduling Entity (QSE) for a Resource to reimburse a QSE for allowable startup and minimum energy costs of a Resource not recovered in energy revenue when a Resource is committed by Reliability Unit Commitment (RUC) and the QSE has not elected to opt out of RUC Settlement, or when a Resource is committed by the Day-Ahead Market (DAM).

[NPRR1013: Replace the definition "Make-Whole Payment" above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Make-Whole Payment

A payment made by ERCOT to a Qualified Scheduling Entity (QSE) for a Resource to reimburse a QSE for allowable startup and minimum energy costs of a Resource not recovered in energy or Ancillary Service revenue when a Resource is committed by Reliability Unit Commitment (RUC) and the QSE has not elected to opt out of RUC Settlement, or when a Resource is committed by the Day-Ahead Market (DAM).

Mandatory Installation Threshold

A peak demand greater than 700 kW (or 700 kVA).

Market Clearing Price for Capacity (MCPC)

The hourly price for Ancillary Service capacity awarded in the Day-Ahead Market (DAM) or a Supplemental Ancillary Services Market (SASM).

[NPRR1013: Replace the definition "Make-Whole Payment" above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Market Clearing Price for Capacity (MCPC)

The price for Ancillary Service capacity awarded in the Day-Ahead Market (DAM) or the Real-Time Market (RTM).

Market Information System (MIS)

An electronic communications interface established and maintained by ERCOT that enables Market Participants, as a group or individually, to access certain information through the use of authenticated credentials.

Market Information System (MIS) Certified Area

The portion of the MIS that is available only to a specific Market Participant.

Market Information System (MIS) Secure Area

The portion of the MIS that is available only to registered Market Participants.

Market Notice

A notice required by the Protocols or any Other Binding Document, or at ERCOT's discretion, regarding market-relevant information that shall be communicated through ERCOT publicly-subscribed electronic distribution channels.

Market Participant

An Entity, other than ERCOT, that engages in any activity that is in whole or in part the subject of these Protocols, regardless of whether that Entity has signed an Agreement with ERCOT. Examples of such an Entity include but are not limited to the following:

(a) Load Serving Entity (LSE);

(b) Qualified Scheduling Entity (QSE);

(c) Transmission and/or Distribution Service Provider (TDSP);

(d) Congestion Revenue Right (CRR) Account Holder;

(e) Resource Entity;

(f) Independent Market Information System Registered Entity (IMRE); and

(g) Renewable Energy Credit (REC) Account Holder.

[NPRR857: Replace the above definition "Market Participant" with the following upon system implementation and satisfying the following conditions: (1) Southern Cross provides ERCOT with funds to cover the entire estimated cost of the project; and (2) Southern Cross has signed an interconnection agreement with a TSP and the TSP gives ERCOT written notice that Southern Cross has provided it with: (a) Notice to proceed with the construction of the interconnection; and (b) The financial security required to fund the interconnection facilities:]

Market Participant

An Entity, other than ERCOT, that engages in any activity that is in whole or in part the subject of these Protocols, regardless of whether that Entity has signed an Agreement with ERCOT. Examples of such an Entity include but are not limited to the following:

(a) Load Serving Entity (LSE);

(b) Qualified Scheduling Entity (QSE);

(c) Transmission and/or Distribution Service Provider (TDSP);

(d) Direct Current Tie Operator (DCTO);

(e) Congestion Revenue Right (CRR) Account Holder;

(f) Resource Entity;

(g) Independent Market Information System Registered Entity (IMRE); and

(h) Renewable Energy Credit (REC) Account Holder.

Market Restart

The processes by which ERCOT market-related systems and activities are returned to normal operations during and/or following a Market Suspension.

Market Segment

The segments defined in Article 2 of the ERCOT Bylaws.

Market Suspension

The time period during which market-related systems and activities are terminated due to a triggering event that disables all, or a significant portion of, the necessary data and/or infrastructure for operations of those systems and markets. Such triggering events may include, but are not limited to, Blackouts, Partial Blackouts, and Force Majeure Events.

Mass Transition

The transition of ESI IDs from one CR to a Provider of Last Resort (POLR) or designated CR, or from one TDSP to another TDSP, in a quantity or within a timeframe identified by Applicable Legal Authority.

Master Qualified Scheduling Entity (QSE) (*see* Qualified Scheduling Entity (QSE))

Maximum Daily Resource Planned Outage Capacity

The aggregate maximum MW of Resource Planned Outages that will be approved by ERCOT for any time period within a given day, calculated pursuant to Section 3.1.6.13, Maximum Daily Resource Planned Outage Capacity.

Maximum Power Consumption (MPC)

For a Load Resource, the limit established by the QSE, continuously updated in Real-Time, that describes the maximum sustained power consumption of a Load Resource. The MPC shall be a positive number in MW.

Messaging System

The ERCOT-to-QSE communications system used to send Real-Time notices and Dispatch Instructions to QSEs.

Meter Data Acquisition System (MDAS)

The system used to obtain revenue quality meter data from EPS meters and Settlement Quality Meter Data from TSPs and DSPs for Settlement and to populate the DAS and Data Archive.

Meter Reading Entity (MRE)

A TSP or DSP that is responsible for providing ERCOT with ESI ID level consumption data as defined in Section 19, Texas Standard Electronic Transaction. In the case of an EPS Meter or ERCOT-populated ESI ID data (such as Generation Resource site Load), ERCOT will be identified as the MRE in ERCOT systems.

Metering Facilities

Revenue Quality Meters, instrument transformers, secondary circuitry, secondary devices, meter data servers, related communication Facilities and other related local equipment intended to supply ERCOT settlement quality data.

Minimum-Energy Offer

An offer for the costs incurred by a Resource in producing energy at the Resource's LSL expressed in $/MWh.

Minimum Point-to-Point (PTP) Option Bid Price

A value of $0.010 representing the minimum price that can be submitted into the CRR Auction for a PTP Option bid.

Minimum Reservation Price

The lowest price that a seller is willing to accept.

Mitigated Offer Cap (MOC)

An upper limit on the price of an offer as detailed in Section 4.4.9.4.1, Mitigated Offer Cap.

[NPRR826: Replace the above definition "Mitigated Offer Cap (MOC)" with the following upon system implementation:]

Mitigated Offer Cap (MOC)

An upper limit on the price of an offer as detailed in Section 4.4.9.4.1, Mitigated Offer Cap, and Section 4.4.9.4.3, Mitigated Offer Cap for RMR Resources.

Mitigated Offer Floor

A lower limit on the price of an offer as detailed in Section 4.4.9.4.2, Mitigated Offer Floor.

Mitigation Plan (*see* Constraint Management Plan)

Mothballed Generation Resource (*see* Resource Attribute)

Move-In Request

A request submitted by a CR on behalf of a Customer to initiate service at a Premise with the requesting CR.

Move-Out Request

A request submitted by a CR on behalf of a Customer to terminate service at a Premise with the requesting CR.

Municipally Owned Utility (MOU)

A utility owned, operated, and controlled by a nonprofit corporation, the directors of which are appointed by one or more municipalities, or a utility owned, operated, or controlled by a municipality.

Municipally Owned Utility (MOU) / Electric Cooperative (EC) Non-BUSIDRRQ Interval Data Recorder (IDR)

An IDR that is not assigned a BUSIDRRQ Load Profile Type and is located in an MOU or an EC area that is offering Customer Choice. Data submittal for these recorders will be as per Retail Market Guide, Appendix G, ERCOT Specified File Format for Submission of Interval Data for Advanced Metering Systems.

Must-Run Alternative (MRA)

A resource operated under the terms of an Agreement with ERCOT as an alternative to a Reliability Must-Run (RMR) Unit.

[NPRR885 and NPRR995: Replace applicable portions of the above definition "Must-Run Alternative (MRA)" with the following upon system implementation:]

Must-Run Alternative (MRA)

A resource operated under the terms of an Agreement with ERCOT as an alternative to a Reliability Must-Run (RMR) Unit. An MRA may be one of the following:

Generation Resource MRA

A generator that is registered with ERCOT as a Generation Resource that is dispatchable in Security-Constrained Economic Dispatch (SCED) and is providing Must-Run Alternative (MRA) Service under an Agreement with ERCOT.

Other Generation MRA

Unregistered generation, or generation registered with ERCOT that is not dispatchable in Security-Constrained Economic Dispatch (SCED), that is providing Must-Run Alternative (MRA) Service under an Agreement with ERCOT. An Other Generation MRA may include, but is not limited to, Settlement Only Generators (SOGs), Settlement Only Energy Storage Systems (SOESSs), and Distributed Generation (DG).

Demand Response MRA

A Load providing Must-Run Alternative (MRA) Service under an Agreement with ERCOT by reducing energy consumption in response to an ERCOT instruction. A Demand Response MRA may be an unregistered Load or a registered Load Resource other than a Controllable Load Resource.

Weather-Sensitive MRA

A type of Must-Run Alternative (MRA) Service in which a Demand Response MRA provides MRA Service only after meeting the qualification requirements for weather sensitivity set forth in paragraph (5) of Section 3.14.3.1, Emergency Response Service Procurement.

[NPRR885: Insert the following definition "Must-Run Alternative (MRA) Contracted Hour(s)" upon system implementation:]

Must-Run Alternative (MRA) Contracted Hour(s)

The hour(s) during which an MRA is contracted under an MRA Agreement to provide MRA Service.

[NPRR885: Insert the following definition "Must-Run Alternative (MRA) Contracted Month(s)" upon system implementation:]

Must-Run Alternative (MRA) Contracted Month(s)

The month(s) during which an MRA is contracted under an MRA Agreement to provide MRA Service.

[NPRR885: Insert the following definition "Must-Run Alternative (MRA) Service" upon system implementation:]

Must-Run Alternative (MRA) Service

The use by ERCOT, under contracts with Qualified Scheduling Entities (QSEs), of capacity and energy from MRAs as an alternative to Reliability Must-Run (RMR) Service.

[NPRR885: Insert the following definition "Must-Run Alternative (MRA) Site" upon system implementation:]

Must-Run Alternative (MRA) Site

An individually metered component of an aggregated MRA.

[NPRR1026 and NPRR1077: Insert applicable portions of the following definition "MW Injection" upon system implementation:]

MW Injection

The instantaneous Megawatt (MW) energy injected into the ERCOT System as measured at the Point of Interconnection (POI) or Point of Common Coupling (POCC).

[NPRR1026 and NPRR1077: Insert applicable portions of the following definition "MW Withdrawal" upon system implementation:]

MW Withdrawal

The instantaneous Megawatt (MW) energy withdrawn from the ERCOT System as measured at the Point of Interconnection (POI) or Point of Common Coupling (POCC).

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Net Dependable Capability

The maximum sustained capability of a Resource as demonstrated by performance testing.

Net Generation

Gross generation less station auxiliary Load or other internal unit power requirements metered at or adjusted to the POI with the ERCOT Transmission Grid at the common switchyard.

Network Operations Model

A representation of the ERCOT System providing the complete physical network definition, characteristics, ratings, and operational limits of all elements of the ERCOT Transmission Grid and other information from Transmission Service Providers (TSPs), Resource Entities, and Qualified Scheduling Entities (QSEs).

[NPRR857: Replace the above definition "Network Operations Model" with the following upon system implementation and satisfying the following conditions: (1) Southern Cross provides ERCOT with funds to cover the entire estimated cost of the project; and (2) Southern Cross has signed an interconnection agreement with a TSP and the TSP gives ERCOT written notice that Southern Cross has provided it with: (a) Notice to proceed with the construction of the interconnection; and (b) The financial security required to fund the interconnection facilities:]

Network Operations Model

A representation of the ERCOT System providing the complete physical network definition, characteristics, ratings, and operational limits of all elements of the ERCOT Transmission Grid and other information from Transmission Service Providers (TSPs), Direct Current Tie Operators (DCTOs), Resource Entities, and Qualified Scheduling Entities (QSEs).

Network Security Analysis

A processor used by ERCOT to monitor Transmission Elements in the ERCOT Transmission Grid for limit violations and to verify Electrical Bus voltage limits to be within a percentage tolerance as outlined in the Operating Guides.

Non-Competitive Constraint

A contingency and limiting Transmission Element pair or group of Transmission Elements associated with a GTC that is not determined to be a Competitive Constraint under the process defined in Section 3.19, Constraint Competitiveness Tests.

Non-Frequency Responsive Capacity (NFRC)

The telemetered portion of a Generation Resource's High Sustained Limit (HSL) that represents the sustainable non-Dispatched power augmentation capability from duct firing, inlet air cooling, auxiliary boilers, or other methods which does not immediately respond, arrest, or stabilize frequency excursions during the first minutes following a disturbance without secondary frequency response or instructions from ERCOT.

[NPRR1013: Delete the above definition "Non-Frequency Responsive Capacity (NFRC)" upon system implementation of the Real-Time Co-Optimization (RTC) project.]

Non-Metered Load

Load that is not required to be metered by applicable transmission or distribution tariff.

Non-Opt-In Entity (NOIE)

An EC or MOU that does not offer Customer Choice.

Non-Opt-In Entity (NOIE) Load Zone

A Load Zone established by a NOIE or a group of NOIEs using a one-time NOIE election.

Non-Spinning Reserve (Non-Spin)

An Ancillary Service that is provided through use of the part of Off-Line Generation Resources that can be synchronized and ramped to a specified output level within 30 minutes (or Load Resources that can be interrupted within 30 minutes) and that can operate (or Load Resources that can be interrupted) at a specified output level for at least four consecutive hours. Non-Spin may also be provided from unloaded On-Line capacity that meets the 30-minute response

requirements, that is reserved exclusively for use for this service and that can be sustained at a specified level for at least four consecutive hours.

Non-Wholesale Storage Load (WSL) Energy Storage Resource (ESR) Charging Load

The metered or calculated charging Load withdrawn by an Energy Storage Resource (ESR) that is not receiving Wholesale Storage Load (WSL) treatment.

[NPRR995: Insert the following definition "Non-Wholesale Storage Load (WSL) Settlement Only Charging Load" upon system implementation:]

Non-Wholesale Storage Load (WSL) Settlement Only Charging Load

The metered or calculated charging Load withdrawn by a Settlement Only Distribution Energy Storage System (SODESS) or Settlement Only Transmission Energy Storage System (SOTESS) that is not receiving Wholesale Storage Load (WSL) treatment.

Normal Ramp Rate

The rate of change (up and down) in MW per minute of a Resource, which is specified by the QSE to ERCOT by up to ten segments; each segment represents a single MW per minute value (across the capacity of the Resource) that describe the available rate of change for the given range (between HSL and LSL) of generation or consumption of a Resource. In Real-Time SCED Dispatch, the up and down Normal Ramp Rates are telemetered by the QSE to ERCOT and represent the total capacity (in MW) that the Resource can change from its current actual generation or consumption within the next five minutes divided by five.

Normal Rating (*see* Rating)

North American Electric Reliability Corporation (NERC) Regional Entity

An Entity with delegated authority from the North American Electric Reliability Corporation (NERC) and approved by the Federal Energy Regulatory Commission (FERC) to propose and enforce NERC Reliability Standards in the ERCOT Region.

Notice or Notification

The sending of information by an Entity to Market Participants, ERCOT, or others, as called for in these Protocols. Notice or Notification may be sent by electronic mail, facsimile transmission, or U.S. mail.

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Off-Line

The status of a Resource that is not synchronously interconnected to the ERCOT System.

On-Line

The status of a Resource that is synchronously interconnected to the ERCOT System.

On-Peak Hours

Hours ending in 0700 to 2200 CPT from Monday through Friday excluding NERC holidays.

Operating Condition Notice (OCN)

The first of three levels of communication issued by ERCOT in anticipation of a possible Emergency Condition.

Operating Day

The day, including hours ending 0100 to 2400, during which energy flows.

Operating Hour

A full clock hour during which energy flows.

Operating Period

A two-hour period comprised of the Operating Hour and the clock hour preceding the Operating Hour.

Operating Reserve Demand Curve (ORDC)

A curve that represents the value of reserves at different reserve levels based on the probability of reserves falling below the minimum contingency level and the Value of Lost Load (VOLL), as further described in the Methodology for Implementing Operating Reserve Demand Curve (ORDC) to Calculate Real-Time Reserve Price Adder.

[NPRR1013: Delete the above definition "Operating Reserve Demand Curve (ORDC)" upon system implementation of the Real-Time Co-Optimization (RTC) project.]

Opportunity Outage (*see* Outage)

[NPRR1092: Insert the following definition "Opt Out Snapshot" upon system implementation:]

Opt Out Snapshot

A record of a Resource's Current Operating Plan (COP) used to determine whether the Resource will opt out of Reliability Unit Commitment (RUC) Settlement for a block of RUC-Committed Hours. The Opt Out Snapshot is taken at the earlier of:

(a) Two hours prior to the end of the Adjustment Period for the first hour of a contiguous block of RUC-Committed Hours; or

(b) Two hours prior to the beginning of the hour that is at least N hours prior to the first hour of the contiguous block of the RUC-Committed hours, where N is the start time contained in the ERCOT computer system at the time of the RUC execution associated with the RUC instruction corresponding to the Resource's warmth state. If the RUC-Committed Hours are an extension of a Qualified Scheduling Entity (QSE)-Committed Interval either before or after, N will be set to zero. For a Combined Cycle Generation Resource within a Combined Cycle Train, including a RUC to a different configuration with additional capacity, the start time is the start time corresponding to the specific configuration of the RUC-committed Combined Cycle Generation Resource.

Other Binding Documents List

List of Other Binding Documents as managed in paragraph (3) of Section 1.1, Summary of the ERCOT Protocols Document.

Outage

The condition of a Transmission Facility or a portion of a Facility, or Generation Resource that is part of the ERCOT System and defined in the Network Operations Model that has been removed from its normal service, excluding the operations of Transmission Facilities associated with the start-up and shutdown of Generation Resources.

Forced Outage

An Outage initiated by protective relay, or manually in response to an observation by personnel that the condition of equipment could lead to an event, or potential event, that poses a threat to people, equipment, or public safety.

For a Generation Resource, an Outage that requires immediate removal, either through controlled or uncontrolled actions, of all or a portion of the capacity of the Resource from service through automated or manual means. This type of Outage usually results from immediate mechanical/electrical/hydraulic control system trips and operator-initiated actions in response to a Resource's condition.

High Impact Outage (HIO)

A Planned Outage or Rescheduled Outage that interrupts flow on a High Impact Transmission Element (HITE).

Maintenance Outage

An Outage initiated manually to remove equipment from service to perform work on components that could be postponed briefly but that is required to prevent a potential Forced Outage and that cannot be postponed until the next Planned Outage. Maintenance Outages are classified as follows:

(1) **Level 1 Maintenance Outage** – Equipment that must be removed from service within 24 hours to prevent a potential Forced Outage;

(2) **Level II Maintenance Outage** – Equipment that must be removed from service within seven days to prevent a potential Forced Outage; and

(3) **Level III Maintenance Outage** – Equipment that must be removed from service within 30 days to prevent a potential Forced Outage.

Opportunity Outage

An Outage that may be accepted by ERCOT when a specific Resource is Off-Line due to an Outage.

Planned Outage

An Outage that is planned and scheduled in advance with ERCOT, other than a Maintenance Outage or Opportunity Outage.

Rescheduled Outage

An Outage on a High Impact Transmission Element (HITE) that was originally submitted as a Planned Outage with more than 90-days' notice and approved, but is then rescheduled due

to withdrawal of approval by ERCOT of the original Planned Outage or subsequent Rescheduled Outage(s).

Simple Transmission Outage

A Planned Outage or Maintenance Outage of any Transmission Element in the Network Operations Model such that when the Transmission Element is removed from its normal service, absent a Forced Outage of other Transmission Elements, the Outage does not cause a topology change in the LMP calculation and thus cannot cause any LMPs to change with or without the Transmission Element that is suffering the Outage.

Outage Adjustment Evaluation (OAE)

A study performed by ERCOT when it forecasts an inability to meet applicable reliability standards and has exercised all other reasonable options and needs to delay or to cancel and reschedule one or more Resource Outages, unless the issue is due to transmission reliability and is limited to Resources at a single site.

Outage Schedule Adjustment (OSA)

An adjustment to delay or to cancel and reschedule a Resource's Planned Outage that has already been accepted or approved by ERCOT. The OSA is issued by ERCOT to the Qualified Scheduling Entity (QSE) representing the Resource.

Outage Schedule Adjustment (OSA) Period

The portion of a Resource's Planned Outage schedule for which ERCOT issues an OSA. The OSA Period will commence at the planned start time for the Resource Outage, based on the Resource's Planned Outage existing in the Outage Scheduler at the time the Outage Adjustment Evaluation (OAE) is performed, and will end at the time stated in the OSA.

Outage Scheduler

The application that Transmission Service Providers (TSPs) or Qualified Scheduling Entities (QSEs) use to submit Notification of Outages or requests for Outages to ERCOT for approval, acceptance, or rejection.

[NPRR857: Replace the above definition "Outage Scheduler" with the following upon system implementation and satisfying the following conditions: (1) Southern Cross provides ERCOT with funds to cover the entire estimated cost of the project; and (2) Southern Cross has signed an interconnection agreement with a TSP and the TSP gives ERCOT written notice that Southern Cross has provided it with: (a) Notice to proceed with the construction

of the interconnection; and (b) The financial security required to fund the interconnection facilities:]

Outage Scheduler

The application that Transmission Service Providers (TSPs), Direct Current Tie Operators (DCTOs), or Qualified Scheduling Entities (QSEs) use to submit Notification of Outages or requests for Outages to ERCOT for approval, acceptance, or rejection.

Output Schedule

The self-scheduled output for every five-minute interval of a Resource provided by a QSE before the execution of SCED.

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Partial Blackout (*see* Blackout)

Participating Congestion Revenue Right (CRR) Account Holder (*see* Congestion Revenue Right (CRR) Account Holder)

Peak Load Season

Summer months are June, July, August, and September; winter months are December, January, and February.

PhotoVoltaic (PV)

Of or pertaining to a material or device in which electricity is generated as a result of exposure to light.

PhotoVoltaic Generation Resource (PVGR) (*see* Resource Category)

PhotoVoltaic Generation Resource Production Potential (PVGRPP)

The generation in MWh per hour from a PVGR that could be generated from all available units of that Resource allocated from the 80% probability of exceedance of the Total ERCOT PhotoVoltaic Power Forecast (TEPPF).

Physical Responsive Capability (PRC)

A representation of the total amount of frequency responsive Resource capability On-Line in Real-Time.

Planned Outage (*see* Outage)

Planning Reserve Margin (PRM)

The net of total capacity for the Peak Load Season, less firm peak Load for the Peak Load Season, divided by the firm peak Load for the Peak Load Season (expressed as a percentage).

[NPRR1077: Insert the following definition "Point of Common Coupling (POCC)" upon system implementation:]

Point of Common Coupling (POCC)

Any point where a Distribution Service Provider's (DSP's) facilities are connected to the Facilities of a Customer or a Generation Entity.

Point of Interconnection (POI)

Any physical location where a Generation Entity's Facilities electrically connect to the Transmission Service Provider's (TSP's) Facilities.

[NPRR1098: Replace the above definition "Point of Interconnection (POI)" with the following upon system implementation and satisfying the following conditions: (1) Southern Cross Transmission LLC (Southern Cross) provides ERCOT with funds to cover the entire estimated cost of the project; and (2) Southern Cross has signed an interconnection agreement with a Transmission Service Provider (TSP) and the TSP gives ERCOT written notice that Southern Cross has provided it with: (a) Notice to proceed with the construction of the interconnection; and (b) The financial security required to fund the interconnection facilities:]

Point of Interconnection (POI)

Any physical location where a Generation Entity's Facilities or any Direct Current Tie (DC Tie) Facilities electrically connect to a Transmission Service Provider's (TSP's) Facilities.

Point of Interconnection Bus (POIB)

For a Generation Resource connecting to the ERCOT Transmission System through a Transmission Service Provider (TSP) substation, the Electrical Bus at that TSP substation that is electrically closest to the Generation Resource's Point of Interconnection (POI), or any electrically equivalent Electrical Bus in that substation. For a Generation Resource connecting to the ERCOT Transmission System through a non-TSP substation, the Electrical Bus at that non-TSP substation that is electrically closest to the Generation Resource's POI, or any electrically equivalent Electrical Bus in that substation.

[NPRR1098: Replace the above definition "Point of Interconnection Bus (POIB)" with the following upon system implementation and satisfying the following conditions: (1) Southern Cross Transmission LLC (Southern Cross) provides ERCOT with funds to cover the entire estimated cost of the project; and (2) Southern Cross has signed an interconnection agreement with a Transmission Service Provider (TSP) and the TSP gives ERCOT written notice that Southern Cross has provided it with: (a) Notice to proceed with the construction of the interconnection; and (b) The financial security required to fund the interconnection facilities:]

Point of Interconnection Bus (POIB)

For a Generation Resource or Direct Current Tie (DC Tie) connecting to the ERCOT Transmission System through a Transmission Service Provider (TSP) substation, the Electrical Bus at that TSP substation that is electrically closest to the Generation Resource's or DC Tie's Point of Interconnection (POI), or any electrically equivalent Electrical Bus in that substation. For a Generation Resource connecting to the ERCOT Transmission System through a non-TSP substation, the Electrical Bus at that non-TSP substation that is electrically closest to the Generation Resource's POI, or any electrically equivalent Electrical Bus in that substation.

Point-to-Point (PTP) Obligation (*see* Congestion Revenue Right (CRR))

Point-to-Point (PTP) Obligation with Links to an Option (*see* Congestion Revenue Right (CRR))

Point-to-Point (PTP) Option (*see* Congestion Revenue Right (CRR))

Point-to-Point (PTP) Option Award Charge

A charge placed on each PTP Option bid awarded where the clearing price for the PTP Option bid awarded is less than the Minimum PTP Option Bid Price as further described in Section 7.7.1, Determination of the PTP Option Award Charge.

Power System Stabilizer (PSS)

A device that is installed on Generation Resources to maintain synchronous operation of the ERCOT System under transient conditions.

Pre-Assigned Congestion Revenue Right (PCRR) Nomination Year

The calendar year that is three years after the year containing a PCRR nomination process.

Pre-Contingency Action Plan (PCAP) (*see* Constraint Management Plan)

Premise

A Service Delivery Point or combination of Service Delivery Points that is assigned a single ESI ID for Settlement and registration.

Presidio Exception

The losses associated with keeping the 69 kV line from the Gonzales substation to the ERCOT BLT Point at Presidio constantly energized in order to maintain connectivity and allow for rapid response to contingencies impacting the reliability for Customers in the Presidio area when there is no BLT of Load from the ERCOT Control Area to a non-ERCOT Control Area. The TDSP responsible for the Presidio BLT Point metering shall witness and maintain records of meter verification no less than every four years.

Primary Frequency Response

The immediate proportional increase or decrease in real power output provided by Settlement Only Transmission Generators (SOTGs), Settlement Only Transmission Self-Generators (SOTSGs), Generation Resources, Controllable Load Resources, and the natural real power dampening response provided by Load in response to system frequency deviations. This response is in the direction that stabilizes frequency.

[NPRR989 and NPRR995: Replace applicable portions of the above definition "Primary Frequency Response" with the following upon system implementation:]

Primary Frequency Response

The immediate proportional increase or decrease in real power output provided by Settlement Only Transmission Generators (SOTGs), Settlement Only Transmission Self-Generators (SOTSGs), Settlement Only Transmission Energy Storage Systems (SOTESSs), Generation Resources, Energy Storage Resources (ESRs), Controllable Load Resources, and the natural

real power dampening response provided by Load in response to system frequency deviations. This response is in the direction that stabilizes frequency.

Prior Agreement

Any previous Agreement between an Entity, its Affiliate, or its predecessor in interest and ERCOT about performance under the ERCOT Protocols.

Private Microgrid Island (PMI)

A temporary configuration in which a Resource provides electricity to Customer Load through privately-owned transmission and/or distribution infrastructure when the Resource and Customer Load are disconnected from the ERCOT System due to an Outage on the transmission and/or distribution system.

Private Use Network

An electric network connected to the ERCOT Transmission Grid that contains Load that is not directly metered by ERCOT (i.e., Load that is typically netted with internal generation).

Program Administrator

The Entity approved by the PUCT that is responsible for carrying out the administrative responsibilities for the Renewable Energy Credit Program as set forth in P.U.C. SUBST. R. 25.173.

Protected Information

Information protected from disclosure as described in Section 1, Overview.

Provider of Last Resort (POLR)

The designated CR as defined in the P.U.C. SUBST. R. 25.43, Provider of Last Resort (POLR), for default Customer service, and as further described in Section 15.1, Customer Switch of Competitive Retailer.

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Qualified Scheduling Entity (QSE)

A Market Participant that is qualified by ERCOT in accordance with Section 16, Registration and Qualification of Market Participants, for communication with ERCOT for Resource Entities and Load Serving Entities (LSEs) and for settling payments and charges with ERCOT.

Data Agent-Only Qualified Scheduling Entity (QSE)

A limited type of QSE that is registered with ERCOT pursuant to Section 16.2.1.1, Data Agent-Only Qualified Scheduling Entities, for the sole purpose of acting as an agent for a QSE that meets all the criteria of Section 16.2.1, Criteria for Qualification as a Qualified Scheduling Entity, relating to the exchange of certain communications and data over the ERCOT Wide Area Network (WAN), as provided in Nodal Operating Guide Section 7, Telemetry and Communication.

Master Qualified Scheduling Entity (QSE)

A QSE designated by Resource Entities owning or controlling a Generation Resource that has been split into two or more Split Generation Resources as set forth in Section 3.8.1, Split Generation Resources, that provides ERCOT data and dispatch on total Generation Resource basis in accordance with the Protocols.

QSE Level 1

A limited type of QSE that does not represent LSEs or Resource Entities. A QSE Level 1 may participate in the Day-Ahead Market (DAM) by submitting Energy-Only Offers, Energy Bids, Energy Trades, Capacity Trades, Direct Current Tie (DC Tie) Schedules, and DAM Point-to-Point Obligation bids.

QSE Level 2

A limited type of QSE that in addition to QSE Level 1 may represent LSEs. A QSE Level 2 does not represent Resource Entities.

QSE Level 3

A limited type of QSE that in addition to QSE Level 2 may represent Resource Entities. A QSE Level 3 does not participate in Ancillary Service or Emergency Response Service (ERS) markets.

QSE Level 4

A limited type of QSE that in addition to QSE Level 3 may participate in Ancillary Service markets.

Qualified Scheduling Entity (QSE) Clawback Interval

Any QSE-Committed Interval that is part of a contiguous block that includes at least one RUC-Committed Hour unless it is:

(a) QSE-committed in the COP and Trades Snapshot before the first RUC instruction for any RUC-Committed Hour in that contiguous block;

(b) Part of a contiguous block of a QSE-Committed Intervals, at least one of which was committed by the QSE in the COP and Trades Snapshot before the RUC instruction described in paragraph (a) above; or

(c) Part of a contiguous block of QSE-Committed Intervals, at least one of which is a RUC Buy-Back Hour.

[NPRR1013: Replace the definition "Qualified Scheduling Entity (QSE) Clawback Interval" above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Qualified Scheduling Entity (QSE) Clawback Interval

Any QSE-Committed Interval that is part of a contiguous block that includes at least one Reliability Unit Commitment (RUC)-Committed Hour unless it is:

(a) QSE-committed in the RUC Snapshot before the first RUC instruction for any RUC-Committed Hour in that contiguous block;

(b) Part of a contiguous block of a QSE-Committed Intervals, at least one of which was committed by the QSE in the RUC Snapshot before the RUC instruction described in paragraph (a) above; or

(c) Part of a contiguous block of QSE-Committed Intervals, at least one of which is a RUC Buy-Back Hour.

Qualified Scheduling Entity (QSE)-Committed Interval

A Settlement Interval for which the QSE for a Resource has committed the Resource without a Reliability Unit Commitment (RUC) instruction to commit it. For Settlement purposes, a Resource with a Current Operating Plan (COP) Resource Status of OFFQS will not be considered as QSE-committed for the Settlement Interval unless that interval has been committed due to a Day-Ahead Market (DAM) award for energy.

Qualifying Facility (QF)

A qualifying small power production facility or qualifying cogeneration facility under regulatory qualification criteria as defined in 16 U.S.C.A. § 796(17)(C) and (18)(B).

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Rating

Conductor/Transformer 2-Hour Rating

The two-hour MVA rating of the conductor or transformer only, excluding substation terminal equipment in series with a conductor or transformer, at the applicable ambient temperature. The conductor or transformer can operate at this rating for two hours without violation of National Electrical Safety Code (NESC) clearances or equipment failure.

Emergency Rating

The two-hour MVA rating of a Transmission Element, including substation terminal equipment in series with a conductor or transformer, at the applicable ambient temperature. The Transmission Element can operate at this rating for two hours without violation of NESC clearances or equipment failure.

15-Minute Rating

The 15-minute MVA rating of a Transmission Element, including substation terminal equipment in series with a conductor or transformer, at the applicable ambient temperature and with a step increase from a prior loading up to 90% of the Normal Rating. The Transmission Element can operate at this rating for 15 minutes, assuming its pre-contingency loading up to 90% of the Normal Rating limit at the applicable ambient temperature, without violation of NESC clearances or equipment failure. This rating takes advantage of the time delay associated with heating of a conductor or transformer following a sudden increase in current.

Normal Rating

The continuous MVA rating of a Transmission Element, including substation terminal equipment in series with a conductor or transformer, at the applicable ambient temperature. The Transmission Element can operate at this rating indefinitely without damage, or violation of NESC clearances.

Relay Loadability Rating

The MVA rating below which no load-responsive phase-protection relay tripping is expected. The Relay Loadability Rating is calculated based on the trip points of protective devices at the equipment terminals of the affected Transmission Element under a set of operating criteria defined by the Transmission Element owner.

Reactive Power

The product of voltage and the out-of-phase component of alternating current. Reactive Power, usually measured in MVAr, is produced by capacitors, overexcited generators and other capacitive devices and is absorbed by reactors, under-excited generators and other inductive devices.

Real-Time

The current instant in time.

[NPRR1013: Insert the following definition "Real-Time Market (RTM)" upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Real-Time Market (RTM)

A Real-Time, co-optimized market in the Operating Day for Ancillary Service capacity and energy.

Real-Time Market (RTM) Energy Bid

A proposal to buy energy in the RTM at a monotonically non-increasing price with increasing quantity.

Real-Time Market (RTM) Final Statement (*see* Settlement Statement)

Real-Time Market (RTM) Initial Statement (*see* Settlement Statement)

Real-Time Market (RTM) Resettlement Statement (*see* Settlement Statement)

Real-Time Market (RTM) True-Up Statement (*see* Settlement Statement)

Real-Time Off-Line Reserve Price Adder

A Real-Time price adder that captures the value of the opportunity costs of Off-Line reserves based on the defined ORDC as detailed in Section 6.7.5, Real-Time Ancillary Service Imbalance Payment or Charge.

[NPRR1013: Delete the above definition "Real-Time Off-Line Reserve Price Adder" upon system implementation of the Real-Time Co-Optimization (RTC) project.]

Real-Time On-Line Reliability Deployment Price

A Real-Time price for each 15-minute Settlement Interval reflecting the impact of reliability deployments on energy prices that is calculated from the Real-Time On-Line Reliability Deployment Price Adder.

[NPRR1013: Delete the above definition "Real-Time On-Line Reliability Deployment Price" upon system implementation of the Real-Time Co-Optimization (RTC) project.]

Real-Time On-Line Reliability Deployment Price Adder

A Real-Time price adder that captures the impact of reliability deployments on energy prices for each Security-Constrained Economic Dispatch (SCED) process as detailed in Section 6.5.7.3.1, Determination of Real-Time On-Line Reliability Deployment Price Adder, and Section 6.7.5, Real-Time Ancillary Service Imbalance Payment or Charge.

[NPRR1013: Delete the above definition "Real-Time On-Line Reliability Deployment Price Adder" upon system implementation of the Real-Time Co-Optimization (RTC) project.]

Real-Time On-Line Reserve Price Adder

A Real-Time price adder that captures the value of the opportunity costs of On-Line reserves based on the defined ORDC as detailed in Section 6.7.5.

[NPRR1013: Delete the above definition "Real-Time On-Line Reserve Price Adder" upon system implementation of the Real-Time Co-Optimization (RTC) project.]

[NPRR1013: Insert the following definition "Real-Time Reliability Deployment Price" upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Real-Time Reliability Deployment Price

Real-Time Reliability Deployment Price for Ancillary Service

A Real-Time price for each 15-minute Settlement Interval determined for each Ancillary Service reflecting the impact of reliability deployments on Ancillary service prices, which

is calculated from the Real-Time Reliability Deployment Price Adder for Ancillary Service.

Real-Time Reliability Deployment Price for Energy

A Real-Time price for each 15-minute Settlement Interval reflecting the impact of reliability deployments on energy prices that is calculated from the Real-Time Reliability Deployment Price Adder for Energy.

[NPRR1013: Insert the following definition "Real-Time Reliability Deployment Price Adder" upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Real-Time Reliability Deployment Price Adder

Real-Time Reliability Deployment Price Adder for Ancillary Service

A Real-Time price adder that captures the impact of reliability deployments on prices for each Ancillary Service for each Security-Constrained Economic Dispatch (SCED) process, as detailed in Section 6.5.7.3.1, Determination of Real-Time Reliability Deployment Price Adders.

Real-Time Reliability Deployment Price Adder for Energy

A Real-Time price adder that captures the impact of reliability deployments on energy prices for each Security-Constrained Economic Dispatch (SCED) process as detailed in Section 6.5.7.3.1, Determination of Real-Time Reliability Deployment Price Adders.

Real-Time Reserve Price for Off-Line Reserves

A Real-Time price calculated for Off-Line reserves for each 15-minute Settlement Interval using the data and formulas as detailed in Section 6.7.5.

[NPRR1013: Delete the above definition "Real-Time Reserve Price for Off-Line Reserves" upon system implementation of the Real-Time Co-Optimization (RTC) project.]

Real-Time Reserve Price for On-Line Reserves

A Real-Time price calculated for On-Line reserves for each 15-minute Settlement Interval using the data and formulas as detailed in Section 6.7.5.

[NPRR1013: Delete the above definition "Real-Time Reserve Price for On-Line Reserves" upon system implementation of the Real-Time Co-Optimization (RTC) project.]

[NPRR1013: Insert the following definition "Real-Time System-Wide Offer Cap (RTSWCAP)" upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Real-Time System-Wide Offer Cap (RTSWCAP)

The RTSWCAP shall be determined in accordance with Public Utility Commission of Texas (PUCT) Substantive Rules.

Redacted Network Operations Model

A version of the Network Operations Model, redacted to exclude Private Use Network Load data and the following defined Resource Parameters as applicable:

(a) Normal Ramp Rate curve;

(b) Emergency Ramp Rate curve;

(c) Minimum On-Line time;

(d) Minimum Off-Line time;

(e) Hot start time;

(f) Intermediate start time;

(g) Cold start time;

(h) Maximum weekly starts;

(i) Maximum On-Line time;

(j) Maximum daily starts;

(k) Maximum weekly energy;

(l) Hot-to-intermediate time;

(m) Intermediate-to-cold time;

(n) Minimum interruption time;

(o) Minimum restoration time;

(p) Maximum weekly deployments;

(q) Maximum interruption time;

(r) Maximum daily deployments;

(s) Minimum notice time; and

(t) Maximum deployment time.

Regional Planning Group (RPG) Project Review

The evaluation of a proposed transmission project pursuant to the process described in Section 3.11.4, Regional Planning Group Project Review Process.

Regulation Down Service (Reg-Down) (*see* Regulation Service)

Regulation Service

An Ancillary Service that consists of either Regulation Down Service (Reg-Down) or Regulation Up Service (Reg-Up).

Fast Responding Regulation Service (FRRS)

A subset of Regulation Service that consists of either Fast Responding Regulation Down Service (FRRS-Down) or Fast Responding Regulation Up Service (FRRS-Up). Except where otherwise specified, all requirements that apply to Regulation Service also apply to FRRS.

[NPRR1013 and NPRR1014: Delete the above definition "Fast Responding Regulation Service (FRRS)" upon system implementation of the Real-Time Co-Optimization (RTC) project; or upon system implementation of NPRR1014, respectively.]

Regulation Down Service (Reg-Down)

An Ancillary Service that provides capacity that can respond to signals from ERCOT within five seconds to respond to changes in system frequency. Such capacity is the amount available below any Base Point but above the Low Sustained Limit (LSL) of a Generation Resource and may be called on to change output as necessary throughout the range of capacity available to maintain proper system frequency. A Load Resource providing Reg-Down must be able to increase and decrease Load as deployed within its Ancillary Service

Schedule for Reg-Down below the Load Resource's Maximum Power Consumption (MPC) limit.

[NPRR1013 and NPRR1014: Replace applicable portions of the definition "Regulation Down Service (Reg-Down)" above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project; or upon system implementation of NPRR1014, respectively:]

Regulation Down Service (Reg-Down)

An Ancillary Service that provides capacity that can respond to signals from ERCOT within five seconds to respond to changes in system frequency. Such capacity is the amount available below any Base Point but above the Low Sustained Limit (LSL) of a Generation Resource and may be called on to change output as necessary throughout the range of capacity available to maintain proper system frequency. An Energy Storage Resource (ESR) providing Reg-Down must be able to modify its energy withdrawal or injection as deployed for Reg-Down across the full range of capacity available to maintain proper system frequency. A Load Resource providing Reg-Down must be able to increase and decrease Load as deployed within its Ancillary Service award for Reg-Down below the Load Resource's Maximum Power Consumption (MPC) limit.

Fast Responding Regulation Down Service (FRRS-Down)

A subset of Regulation Down Service (Reg-Down) in which the participating Resource provides Reg-Down capacity to ERCOT within 60 cycles of either its receipt of an ERCOT Dispatch Instruction or its detection of a trigger frequency independent of an ERCOT Dispatch Instruction. Except where otherwise specified, all requirements that apply to Reg-Down also apply to FRRS-Down.

[NPRR1013 and NPRR1014: Delete the above definition "Fast Responding Regulation Down Service (FRRS-Down)" upon system implementation of the Real-Time Co-Optimization (RTC) project; or upon system implementation of NPRR1014, respectively.]

Regulation Up Service (Reg-Up)

An Ancillary Service that provides capacity that can respond to signals from ERCOT within five seconds to respond to changes in system frequency. Such capacity is the amount available above any Base Point but below the High Sustained Limit (HSL) of a Generation Resource and may be called on to change output as necessary throughout the range of capacity available to maintain proper system frequency. A Load Resource providing Reg-Up must be able to increase and decrease Load as deployed within its Ancillary Service Schedule for Reg-Up above the Load Resource's Low Power Consumption (LPC) limit.

[NPRR1013 and NPRR1014: Replace applicable portions of the definition "Regulation Up Service (Reg-Up)" above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project; or upon system implementation of NPRR1014, respectively:]

Regulation Up Service (Reg-Up)

An Ancillary Service that provides capacity that can respond to signals from ERCOT within five seconds to respond to changes in system frequency. Such capacity is the amount available above any Base Point but below the High Sustained Limit (HSL) of a Generation Resource and may be called on to change output as necessary throughout the range of capacity available to maintain proper system frequency. An Energy Storage Resource (ESR) providing Reg-Up must be able to modify its energy withdrawal or injection as deployed for Reg-Up across the full range of capacity available to maintain proper system frequency. A Load Resource providing Reg-Up must be able to increase and decrease Load as deployed within its Ancillary Service award for Reg-Up above the Load Resource's Low Power Consumption (LPC) limit.

Fast Responding Regulation Up Service (FRRS-Up)

A subset of Reg-Up in which the participating Resource provides Reg-Up capacity to ERCOT within 60 cycles of either its receipt of an ERCOT Dispatch Instruction or its detection of a trigger frequency independent of an ERCOT Dispatch Instruction. Except where otherwise specified, all requirements that apply to Reg-Up also apply to FRRS-Up.

[NPRR1013 and NPRR1014: Delete the above definition "Fast Responding Regulation Up Service (FRRS-Up)" upon system implementation of the Real-Time Co-Optimization (RTC) project; or upon system implementation of NPRR1014, respectively.]

Regulation Up Service (Reg-Up) (*see* Regulation Service)

Relay Loadability Rating (*see* Rating)

Reliability Monitor

An Entity selected by the Public Utility Commission of Texas (PUCT) to monitor compliance with all state reliability-related laws, rules, and ERCOT procedures, including Protocols, processes, and any other operating standards applicable to the ERCOT Region.

Reliability Must-Run (RMR) Service

An Ancillary Service provided from an RMR Unit under an Agreement with ERCOT.

Reliability Must-Run (RMR) Unit

A Generation Resource operated under the terms of an Agreement with ERCOT that would not otherwise be operated except that it is necessary to provide voltage support, stability or management of localized transmission constraints under Credible Single Contingency criteria where market solutions do not exist.

Reliability Unit Commitment (RUC)

A process to ensure that there is adequate Resource capacity and Ancillary Service capacity committed in the proper locations to serve ERCOT forecasted Load.

Reliability Unit Commitment for Additional Capacity (RUCAC)-Hour

An Operating Hour for which a Combined Cycle Generation Resource is Qualified Scheduling Entity (QSE)-committed and receives a Reliability Unit Commitment (RUC) instruction from ERCOT to transition to a configuration with additional capacity above the configuration that was QSE-committed.

Reliability Unit Commitment for Additional Capacity (RUCAC)-Interval

A Settlement Interval within the hour for which there is a Reliability Unit Commitment (RUC) instruction from ERCOT for a Combined Cycle Generation Resource to transition to a configuration with additional capacity above the configuration that was Qualified Scheduling Entity (QSE)-committed.

Reliability Unit Commitment (RUC) Buy-Back Hour

An Operating Hour for which a Resource that is not a Reliability Must-Run (RMR) Unit has been committed to come On-Line by a RUC process or RUC Verbal Dispatch Instruction (VDI) and the Resource's Qualified Scheduling Entity (QSE) has chosen to opt out of RUC Settlement in accordance with Section 5.5.2, Reliability Unit Commitment (RUC) Process.

[NPRR1092: Replace the above definition "Reliability Unit Commitment (RUC) Buy-Back Hour" with the following upon system implementation:]

Reliability Unit Commitment (RUC) Buy-Back Hour

An Operating Hour for which a Resource that is not a Reliability Must-Run (RMR) Unit has been committed to come On-Line by a Day-Ahead Reliability Unit Commitment (DRUC) or Hourly Reliability Unit Commitment (HRUC) process and the Resource's Qualified Scheduling Entity (QSE) has chosen to opt out of RUC Settlement in accordance with Section 5.5.2, Reliability Unit Commitment (RUC) Process.

Reliability Unit Commitment (RUC) Cancellation

An ERCOT instruction, prior to breaker close, to cancel a previously issued RUC instruction.

Reliability Unit Commitment (RUC)-Committed Hour

An Operating Hour for which a RUC has committed a Resource to be On-Line and the QSE has not designated a RUC Buy-Back Hour.

Reliability Unit Commitment (RUC)-Committed Interval

A Settlement Interval for which there is a RUC instruction to commit a Resource.

[NPRR1013: Insert the following definition "Reliability Unit Commitment (RUC) Snapshot" upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Reliability Unit Commitment (RUC) Snapshot

A record of a Qualified Scheduling Entity's (QSE's) Capacity Trades, Energy Trades, Ancillary Service Positions, Ancillary Service Offers, Direct Current Tie (DC Tie) imports and most recent Current Operating Plan (COP) at the time the snapshot is taken.

Reliability Unit Commitment (RUC) Study Period

As defined under Section 5.1, Introduction.

Remedial Action Plan (RAP) (*see* Constraint Management Plan)

Remedial Action Scheme (RAS)

A scheme designed to detect predetermined ERCOT System conditions and automatically take corrective actions on areas of the ERCOT System that are part of the Bulk Electric System, as that term is defined in the North American Electric Reliability Corporation (NERC) Glossary of

Terms Used in NERC Reliability Standards. These corrective actions include, but are not limited to, adjusting or tripping generation (MW and MVAr), tripping Load, or reconfiguring a System(s) to maintain a secure system. RASs do not include under-frequency or under voltage Load shedding, the isolation of fault conditions, or out-of-step relaying (not designed as an integral part of an RAS). RASs shall not be implemented on Interconnection Reliability Operating Limits (IROLs). Additional criteria that are excluded from being classified as RAS are outlined in the Operating Guides.

Limited Impact Remedial Action Scheme (RAS)

A RAS that by inadvertent operation or failure to operate does not cause or contribute to ERCOT System cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations.

Remedial Action Scheme (RAS) Entity

Any Market Participant that owns Facilities that are included in a RAS.

Renewable Energy Credit (REC)

A tradable instrument that represents all of the renewable attributes associated with one MWh of production from a certified renewable generator.

Renewable Energy Credit (REC) Account

An account maintained by ERCOT for the purpose of tracking the production, sale, transfer, purchase, and retirement of RECs or Compliance Premiums by a REC Account Holder.

Renewable Energy Credit (REC) Account Holder

An Entity registered with ERCOT to participate in the REC Trading Program.

Renewable Energy Credit (REC) Trading Program

The Renewable Energy Credit Trading program, as described in Section 14, State of Texas Renewable Energy Credit Trading Program, and P.U.C. SUBST. R. 25.173, Goal for Renewable Energy.

Renewable Portfolio Standard (RPS)

The amount of capacity required to meet the requirements of Public Utility Regulatory Act (PURA), TEX. UTIL. CODE ANN. § 39.904 (Vernon 1998 & Supp. 2007) and P.U.C. SUBST. R. 25.173(h).

Renewable Production Potential (RPP)

The maximum generation in MWh per interval from an Intermittent Renewable Resource (IRR) that could be generated from all available units of that Resource. The RPP depends on the renewable energy that can be generated from the available units (wind, solar radiation, or run-of-river water supply), current environmental conditions and the energy conversion characteristics of each unit.

Repowered Facility

An existing facility that has been modernized or upgraded to use renewable energy technology to produce electricity consistent with P.U.C. SUBST. R. 25.173, Goal for Renewable Energy.

Rescheduled Outage (*see* Outage)

Reserve Discount Factor (RDF)

A representation of the average amount of system-wide capability that, for whatever reason, is historically undeliverable during periods of high system demand. The RDF will be verified by ERCOT and then approved by the Reliability and Operations Subcommittee (ROS).

Resource

The term is used to refer to an Energy Storage Resource (ESR), a Generation Resource, or a Load Resource. The term "Resource" used by itself in these Protocols does not include a Settlement Only Generator (SOG) or an Emergency Response Service (ERS) Resource.

[NPRR995: Replace the above definition "Resource" with the following upon system implementation:]

Resource

The term is used to refer to an Energy Storage Resource (ESR), a Generation Resource, or a Load Resource. The term "Resource" used by itself in these Protocols does not include a Settlement Only Generator (SOG), Settlement Only Energy Storage System (SOESS), or an Emergency Response Service (ERS) Resource.

Energy Storage Resource (ESR)

An Energy Storage System (ESS) registered with ERCOT for the purpose of providing energy and/or Ancillary Service to the ERCOT System.

[NPRR1029: Insert the following definition "DC-Coupled Resource upon system implementation:]

DC-Coupled Resource

A type of Energy Storage Resource (ESR) in which an Energy Storage System (ESS) is combined with wind and/or solar generation in the same modeled generation station and interconnected at the same Point of Interconnection (POI), and where these technologies are interconnected within the site using direct current (DC) equipment. The combined technologies are then connected to the ERCOT System using the same direct current-to-alternating current (DC-to-AC) inverter(s). To be classified as a DC-Coupled Resource, the generator(s) and ESS(s) at a site must meet the following conditions:

(1) The ESS component of the Resource must have a nameplate rating of at least ten MW and ten MWh, or the MW rating must equal or exceed 50% of the nameplate MW rating of the inverter; and

(2) All intermittent renewable generators must meet the conditions for aggregation stated in paragraph (13) of Section 3.10.7.2, Modeling of Resources and Transmission Loads, except to the extent any such condition requires the generator to be a Resource.

Distribution Energy Storage Resource (DESR)

An Energy Storage Resource (ESR) connected to the Distribution System that is either:

(1) Greater than ten MW and not registered with the Public Utility Commission of Texas (PUCT) as a self-generator; or

(2) Greater than one MW that chooses to register as a Resource with ERCOT to participate in the ERCOT markets.

Generation Resource

A generator capable of providing energy or Ancillary Service to the ERCOT System and is registered with ERCOT as a Generation Resource.

Distribution Generation Resource (DGR)

A Generation Resource connected to the Distribution System that is either:

(1) Greater than ten MW and not registered with the Public Utility Commission of Texas (PUCT) as a self-generator; or

(2) Greater than one MW that chooses to register as a Generation Resource to participate in the ERCOT markets.

Transmission Generation Resource (TGR)

A Generation Resource connected to the ERCOT transmission system that is either:

(1) Greater than ten MW and not registered with the Public Utility Commission of Texas (PUCT) as a self-generator; or

(2) Greater than one MW that chooses to register as a Generation Resource to participate in the ERCOT markets.

Load Resource

A Load capable of providing Ancillary Service to the ERCOT System and/or energy in the form of Demand response and registered with ERCOT as a Load Resource.

Aggregate Load Resource (ALR)

A Load Resource that is an aggregation of individual metered sites, each of which has less than ten MW of Demand response capability and all of which are located within a single Load Zone.

[NPRR1131: Replace the above definition "Aggregate Load Resource (ALR)" with the following upon system implementation:]

Aggregate Load Resource (ALR)

A Controllable Load Resource that is an aggregation of individual metered sites, each of which has less than ten MW of Demand response capability and all of which are located within a single Load Zone.

Controllable Load Resource

A Load Resource capable of controllably reducing or increasing consumption under Dispatch control by ERCOT.

Settlement Only Generator (SOG)

A generator that is settled for exported energy only, but may not participate in the Ancillary Services market, Reliability Unit Commitment (RUC), Security-Constrained Economic Dispatch (SCED), or make energy offers. These units are comprised of:

[NPRR995: Delete the above definition "Settlement Only Generator (SOG)" upon system implementation.]

Settlement Only Distribution Generator (SODG)

A generator that is connected to the Distribution System with a rating of:

(1) One MW or less that chooses to register as an SODG; or

(2) Greater than one and up to ten MW that is capable of providing a net export to the ERCOT System and does not register as a Distribution Generation Resource (DGR).

SODGs must be registered with ERCOT in accordance with Planning Guide Section 6.8.2, Resource Registration Process, and will be modeled in ERCOT systems for reliability in accordance with Section 3.10.7.2, Modeling of Resources and Transmission Loads.

[NPRR995: Delete the above definition "Settlement Only Distribution Generator (SODG)" upon system implementation.]

Settlement Only Transmission Generator (SOTG)

A generator that is connected to the ERCOT transmission system with a rating of ten MW or less and is registered with the Public Utility Commission of Texas (PUCT) as a power generation company. SOTGs must be registered with ERCOT in accordance with Planning Guide Section 6.8.2, Resource Registration Process, and may be modeled in ERCOT systems for reliability in accordance with Section 3.10.7.2, Modeling of Resources and Transmission Loads.

[NPRR995: Delete the above definition "Settlement Only Transmission Generator (SOTG)" upon system implementation.]

Settlement Only Transmission Self-Generator (SOTSG)

A generator that is connected to the ERCOT transmission system with a rating of one MW or more and is registered with the Public Utility Commission of Texas (PUCT) as a self-generator. SOTSGs must be registered with ERCOT in accordance with Planning Guide Section 6.8.2, Resource Registration Process, and will be modeled in ERCOT systems for reliability in accordance with Section 3.10.7.3, Modeling of Private Use Networks.

[NPRR995: Delete the above definition "Settlement Only Transmission Self-Generator (SOTSG)" upon system implementation.]

Resource Attribute

Specific qualities associated with various Resources (i.e., specific aspects of a Resource or the services the Resource is qualified to provide).

Aggregate Generation Resource (AGR)

A Generation Resource that is an aggregation of generators, with the exception of Intermittent Renewable Resources (IRRs) pursuant to paragraph (13) of Section 3.10.7.2, Modeling of Resources and Transmission Loads, each of which is less than 20 MW in output, which share identical operational characteristics and are located behind the same Main Power Transformer (MPT).

Black Start Resource

A Generation Resource under contract with ERCOT to provide Black Start Service (BSS).

Combined Cycle Train

The combinations of gas turbines and steam turbines in an electric generation plant that employs more than one thermodynamic cycle. For example, a Combined Cycle Train refers to the combination of gas turbine generators (operating on the Brayton Cycle) with turbine exhaust waste heat boilers and steam turbine generators (operating on the Rankine Cycle) for the production of electric power. In the ERCOT market, Combined Cycle Trains are each registered as a plant that can operate as a Generation Resource in one or more Combined Cycle Generation Resource configurations.

Decommissioned Generation Resource

A Generation Resource for which a Resource Entity has submitted a Notification of Suspension of Operations or a Notification of Change of Generation Resource Designation, for which ERCOT has declined to execute a Reliability Must-Run (RMR) Agreement, and which has been decommissioned and permanently retired.

Dynamically Scheduled Resource (DSR)

A Resource that has been designated by the Qualified Scheduling Entity (QSE), and approved by ERCOT, as a DSR status-type and that follows a DSR Load.

[NPRR1000: Delete the definition "Dynamically Scheduled Resource (DSR)" above upon system implementation.]

Intermittent Renewable Resource (IRR)

A Generation Resource that can only produce energy from variable, uncontrollable Resources, such as wind, solar, or run-of-the-river hydroelectricity.

Intermittent Renewable Resource (IRR) Group

A group of two or more IRRs whose performance in responding to Security-Constrained Economic Dispatch (SCED) Dispatch Instructions will be assessed as an aggregate for Generation Resource Energy Deployment Performance (GREDP) and Base Point Deviation. An IRR Group cannot contain any IRRs that are Split Generation Resources. Additionally, only IRRs that have the same Resource Node can be mapped to an IRR Group. Resource Entities can choose to group IRRs and shall provide the grouping information in a timely manner for ERCOT review prior to the scheduled database loads.

[NPRR1013: Replace the definition "Intermittent Renewable Resource (IRR) Group" above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Intermittent Renewable Resource (IRR) Group

A group of two or more IRRs whose performance in responding to Security-Constrained Economic Dispatch (SCED) Dispatch Instructions will be assessed as an aggregate for Generation Resource Energy Deployment Performance (GREDP) and Set Point Deviation. An IRR Group cannot contain any IRRs that are Split Generation Resources. Additionally, only IRRs that have the same Resource Node can be mapped to an IRR Group. Resource Entities can choose to group IRRs and shall provide the grouping information in a timely manner for ERCOT review prior to the scheduled database loads.

Inverter-Based Resource (IBR)

A Resource that is connected to the ERCOT System either completely or partially through a power electronic converter interface.

Mothballed Generation Resource

A Generation Resource for which a Resource Entity has submitted a Notification of Suspension of Operations, for which ERCOT has declined to execute a Reliability Must-Run (RMR) Agreement, and which has not been decommissioned and retired.

Quick Start Generation Resource (QSGR)

A Generation Resource that in its cold-temperature state can come On-Line within ten minutes of receiving ERCOT notice and has passed an ERCOT QSGR test that establishes an amount of capacity that can be deployed within a ten-minute period.

Split Generation Resource

Where a Generation Resource has been split to function as two or more independent Generation Resources in accordance with Section 10.3.2.1, Generation Resource Meter Splitting, and Section 3.10.7.2, Modeling of Resources and Transmission Loads, each such functionality independent Generation Resource is a Split Generation Resource.

Switchable Generation Resource (SWGR)

A Generation Resource that can be connected to either the ERCOT Transmission Grid or a non-ERCOT Control Area.

Resource Category

The generation technology category designated for a Generation Resource in its Resource Registration documentation.

Combined Cycle Generation Resource

A specified configuration of physical Generation Resources (gas and steam turbines), with a distinct set of operating parameters and physical constraints, in a Combined Cycle Train registered with ERCOT.

PhotoVoltaic Generation Resource (PVGR)

A Generation Resource that is powered by PhotoVoltaic (PV) equipment exposed to light. PV equipment may be aggregated together to form a PVGR as set forth in paragraph (13) of Section 3.10.7.2, Modeling of Resources and Transmission Loads.

Wind-powered Generation Resource (WGR)

A Generation Resource that is powered by wind. Wind turbines may be aggregated together to form a WGR as set forth in paragraph (13) of Section 3.10.7.2, Modeling of Resources and Transmission Loads.

Resource Commissioning Date

The date on which ERCOT declares that a Resource has completed all qualification testing administered by ERCOT as part of the Resource Interconnection process so that a Resource is approved for participation in ERCOT market operations.

Resource Connectivity Node (*see* Electrical Bus)

Resource Entity

An Entity that owns or controls a Generation Resource, a Settlement Only Generator (SOG), or a Load Resource and is registered with ERCOT as a Resource Entity.

[NPRR989 and NPRR995: Replace applicable portions of the above definition "Resource Entity" with the following upon system implementation:]

Resource Entity

An Entity that owns or controls a Generation Resource, an Energy Storage Resource (ESR), a Settlement Only Generator (SOG), a Settlement Only Energy Storage System (SOESS), or a Load Resource and is registered with ERCOT as a Resource Entity.

Resource ID (RID)

A unique identifier assigned to each Resource used in the registration and Settlements systems managed by ERCOT.

Resource Node

Either a logical construct that creates a virtual pricing point required to model a Combined-Cycle Configuration or an Electrical Bus defined in the Network Operations Model, at which a Settlement Point Price for a Generation Resource or Energy Storage Resource (ESR) is calculated and used in Settlement. All Resource Nodes shall be identified in accordance with the Other Binding Document titled "Procedure for Identifying Resource Nodes."

Resource Parameters

Resource-specific parameters required for use in ERCOT business processes. This is a subset of Resource Registration data that can be changed in the MIS in Real-Time.

Resource Registration

Provision of information required by ERCOT to register Generation Resources, Settlement Only Generators (SOGs), Load Resources, and Energy Storage Resources (ESRs).

[NPRR995: Replace the above definition "Resource Registration" with the following upon system implementation:]

Resource Registration

Provision of information required by ERCOT to register Generation Resources, Settlement Only Generators (SOGs), Load Resources, Settlement Only Energy Storage Systems (SOESSs), and Energy Storage Resources (ESRs).

Resource Status

The operational state of a Resource as provided in Section 3.9, Current Operating Plan (COP).

Responsive Reserve (RRS)

An Ancillary Service that provides operating reserves that is intended to:

(a) Arrest frequency decay within the first few seconds of a significant frequency deviation on the ERCOT Transmission Grid using Primary Frequency Response and interruptible Load;

(b) After the first few seconds of a significant frequency deviation, help restore frequency to its scheduled value to return the system to normal;

(c) Provide energy or continued Load interruption during the implementation of the Energy Emergency Alert (EEA); and

(d) Provide backup regulation.

[NPRR863: Replace the above definition "Responsive Reserve (RRS)" with the following upon system implementation:]

Responsive Reserve (RRS)

An Ancillary Service that provides operating reserves that are intended to:

(a) Arrest frequency decay within the first few seconds of a significant frequency deviation on the ERCOT Transmission Grid using Primary Frequency Response, Fast Frequency Response (FFR), and interruptible Load;

(b) After the first few seconds of a significant frequency deviation, help arrest and stabilize frequency; and

(c) Provide energy or continued Load interruption during the implementation of the Energy Emergency Alert (EEA).

Retail Business Day (*see* Business Day)

Retail Business Hour

Any hour within a Retail Business Day.

Retail Electric Provider (REP)

As defined in P.U.C. SUBST. R. 25.5, Definitions, an Entity that sells electric energy to retail Customers in Texas but does not own or operate generation assets and is not an MOU or EC.

Retail Entity

An MOU, generation and transmission cooperative or distribution cooperative that offers Customer Choice; REP; or IOU that has not unbundled pursuant to Public Utility Regulatory Act (PURA), TEX. UTIL. CODE ANN. § 39.051 (Vernon 1998 & Supp. 2007).

Revenue Quality Meter

For EPS Meters, a meter that complies with the Protocols and the Settlement Metering Operating Guide. For TSP- or DSP-metered Entities, a meter that complies with Governmental Authority-approved meter standards, or the Protocols and the Operating Guides.

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Sampling

The process of selecting a subset of a population of Customers that statistically represents the entire population.

Scheduled Power Consumption

Expected Load, in MW, reported by a QSE for a Controllable Load Resource pursuant to Section 6.5.5.2, Operational Data Requirements.

Scheduled Power Consumption Snapshot

A snapshot, taken by ERCOT, of the Scheduled Power Consumption provided by the QSE for a Controllable Load Resource at the end of the adjustment period and used in determining the Controllable Load Resource Desired Load.

Season or Seasonal

Winter months are December, January, and February; Spring months are March, April, and May; Summer months are June, July, and August; Fall months are September, October, and November.

Seasonal Operation Period

The period in which a Generation Resource has identified it is available for operation.

Securitization Default Balance

The amount financed by ERCOT pursuant to Public Utility Regulatory Act (PURA) Chapter 39, Restructuring of Electric Utility Industry, Subchapter M, Winter Storm Uri Default Balance Financing, as authorized by the Public Utility Commission of Texas (PUCT), but which may not exceed $800 million.

Securitization Default Charge

Charges assessed to Qualified Scheduling Entities (QSEs) and Congestion Revenue Right (CRR) Account Holders to repay the Securitization Default Balance.

Securitization Uplift Balance

The amount of money ERCOT securitized under Public Utility Regulatory Act (PURA) Chapter 39, Restructuring of Electric Utility Industry, Subchapter N, Winter Storm Uri Uplift Financing,

pursuant to the Debt Obligation Order (DOO) issued by the Public Utility Commission of Texas (PUCT) in PUCT Docket No. 52322, Application of Electric Reliability Council of Texas, Inc. for a Debt Obligation Order to Finance Uplift Balances Under PURA Chapter 39, Subchapter N, and for a Good Cause Exception.

Securitization Uplift Charge

A charge assessed to a Qualified Scheduling Entity (QSE) that represents an obligated Load Serving Entity (LSE) that will be used to pay the Securitization Uplift Balance, interest charges, and other financing related expenses.

Securitization Uplift Charge Opt-Out Entity

An eligible entity under Public Utility Regulatory Act, TEX. UTIL. CODE ANN. § 39.653(d) (Vernon 1998 & Supp. 2007) (PURA) that qualified to opt-out of paying Securitization Uplift Charges, as documented through the filing of opt-out notices in Public Utility Commission of Texas (PUCT) Project No. 52364, Proceeding for Eligible Entities to File an Opt Out Pursuant to PURA § 39.653(d) and for Load-Serving Entities to File Documentation of Exposure to Costs Pursuant to the Debt Obligation Order in Docket No. 52322, and as addressed in Findings of Fact 38-46 and Ordering Paragraphs 20-25 of the Debt Obligation Order in Docket No. 52322, Application of the Electric Reliability Council of Texas, Inc. For a Debt Obligation Order to Finance Uplift Balances Under PURA Chapter 39, Subchapter N, for an Order Initiating a Parallel Docket, and for a Good Cause Exception.

Security-Constrained Economic Dispatch (SCED)

The determination of desirable Generation Resource output levels using Energy Offer Curves while considering State Estimator output for Load at transmission-level Electrical Buses, Generation Resource limits, and transmission limits to provide the least offer-based cost dispatch of the ERCOT System.

[NPRR1013 and NPRR1014: Replace the definition "Security-Constrained Economic Dispatch (SCED)" above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project; or upon system implementation of NPRR1014, respectively:]

Security-Constrained Economic Dispatch (SCED)

A process for determining Ancillary Service awards and Base Point instructions for Resources using Energy Offer Curves, Energy Bid/Offer Curves, RTM Energy Bids, Ancillary Service Offers and Ancillary Service Demand Curves. A SCED execution results in Ancillary Service awards and Base Point instructions that maximize bid-based revenues less offer-based costs while considering State Estimator output for Load at transmission-level Electrical Buses,

Resource limits, and transmission limits to maximize bid-based revenues less offer-based costs.

Self-Arranged Ancillary Service Quantity

The quantity of an Ancillary Service that a Qualified Scheduling Entity (QSE) secures for itself using Resources represented by that QSE and Ancillary Service Trades.

[NPRR1013: Replace the definition "Self-Arranged Ancillary Service Quantity" above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Self-Arranged Ancillary Service Quantity

The quantity of an Ancillary Service that a Qualified Scheduling Entity (QSE) secures for itself in the Day-Ahead Market (DAM) using Resources represented by that QSE and Ancillary Service Trades.

[NPRR1026 and NPRR1077: Insert applicable portions of the following definition "Self-Limiting Facility" upon system implementation:]

Self-Limiting Facility

A modeled generation station that includes one or more Generation Resources, Energy Storage Resources (ESRs), and/or Settlement Only Generators (SOGs) with an established limit on the total MW Injection that is less than the total nameplate capacity of all registered generators or Energy Storage Systems (ESSs) within the Facility. A Facility with one or more ESRs may also have an established limit on the MW Withdrawal that is less than the total nameplate MW Withdrawal rating of all ESRs within the facility.

Self-Schedule

Information for Real-Time Settlement purposes that specifies the amount of energy supply at a specified source Settlement Point used to meet an energy obligation at a specified sink Settlement Point for the QSE submitting the information.

Service Address

The street address associated with an ESI ID as recorded in the Customer Registration Database. This address shall conform to United States Postal Service Publication 28.

Service Delivery Point

The specific point on the system where electricity flows from the TSP or DSP to a Customer.

Settlement

The process used to resolve financial obligations between a Market Participant and ERCOT.

Settlement Calendar

A calendar that provides information on when Settlement Statements and Invoices shall be posted, payment due dates, and dispute deadlines. Additional information is provided in Section 9.1.2, Settlement Calendar.

Settlement Interval

The time period for which markets are settled.

Settlement Invoice

A notice for payment or credit due rendered by ERCOT based on data contained in Settlement Statements.

Settlement Meter

Generation and end-use consumption meters used for allocation of ERCOT charges and wholesale and retail Settlements.

[NPRR995: Insert the following definitions "Settlement Only Energy Storage System (SOESS)", "Settlement Only Distribution Energy Storage System (SODESS)", and "Settlement Only Transmission Energy Storage System (SOTESS)" upon system implementation:]

Settlement Only Energy Storage System (SOESS)

An Energy Storage System (ESS) that is settled for imported/exported energy only, but may not participate in the Ancillary Services market, Reliability Unit Commitment (RUC), Security-Constrained Economic Dispatch (SCED), or submit energy offers or bids. These units are comprised of:

Settlement Only Distribution Energy Storage System (SODESS)

An Energy Storage System (ESS) connected to the Distribution System with a rating of:

(1) One MW or less that chooses to register as an SODESS; or

(2) Greater than one and up to ten MW that is capable of providing a net export to the ERCOT System and does not register as a Distribution Energy Storage Resource (DESR).

Settlement Only Transmission Energy Storage System (SOTESS)

An Energy Storage System (ESS) connected to the ERCOT transmission system with a rating of ten MW or less that has not been registered as an Energy Storage Resource (ESR).

[NPRR995: Insert the following definitions "Settlement Only Generator (SOG)", "Settlement Only Distribution Generator (SODG)", "Settlement Only Transmission Generator (SOTG)", and "Settlement Only Transmission Self-Generator (SOTSG)" upon system implementation:]

Settlement Only Generator (SOG)

A generator that is settled for exported energy only, but may not participate in the Ancillary Services market, Reliability Unit Commitment (RUC), Security-Constrained Economic Dispatch (SCED), or submit energy offers. These units are comprised of:

Settlement Only Distribution Generator (SODG)

A generator that is connected to the Distribution System with a rating of:

(1) One MW or less that chooses to register as an SODG; or

(2) Greater than one and up to ten MW that is capable of providing a net export to the ERCOT System and does not register as a Distribution Generation Resource (DGR).

SODGs must be registered with ERCOT in accordance with Planning Guide Section 6.8.2, Resource Registration Process, and will be modeled in ERCOT systems for reliability in accordance with Section 3.10.7.2, Modeling of Resources and Transmission Loads.

Settlement Only Transmission Generator (SOTG)

A generator that is connected to the ERCOT transmission system with a rating of ten MW or less and is registered with the Public Utility Commission of Texas (PUCT) as a power generation company. SOTGs must be registered with ERCOT in accordance with Planning Guide Section 6.8.2, Resource Registration Process, and may be modeled in ERCOT systems for reliability in accordance with Section 3.10.7.2, Modeling of Resources and Transmission Loads.

Settlement Only Transmission Self-Generator (SOTSG)

A generator that is connected to the ERCOT transmission system with a rating of one MW or more and is registered with the Public Utility Commission of Texas (PUCT) as a self-generator. SOTSGs must be registered with ERCOT in accordance with Planning Guide Section 6.8.2, Resource Registration Process, and will be modeled in ERCOT systems for reliability in accordance with Section 3.10.7.3, Modeling of Private Use Networks.

Settlement Only Generator (SOG) (*see* Resource)

Settlement Only Distribution Generator (SODG) (*see* Resource)

Settlement Only Transmission Generator (SOTG) (*see* Resource)

Settlement Only Transmission Self-Generator (SOTSG) (*see* Resource)

Settlement Point

A Resource Node, Load Zone, or Hub.

Settlement Point Price

A price calculated for a Settlement Point for each Settlement Interval using LMP data and the formulas detailed in Section 4.6, DAM Settlement, and Section 6.6, Settlement Calculations for the Real-Time Energy Operations.

Settlement Quality Meter Data

Data that has been edited, validated, and is appropriate for ERCOT to use for Settlement and billing purposes.

Settlement Statement

A statement issued by ERCOT reflecting a breakdown of administrative, miscellaneous, and market charges for the applicable market services, as further described in Section 9.2, Settlement Statements for the Day-Ahead Market, and Section 9.5, Settlement Statements for Real-Time Market.

Day-Ahead Market (DAM) Resettlement Statement

The Settlement Statement issued for a particular DAM using corrected Settlement data, in accordance with Section 9.2.5, DAM Resettlement Statement.

Day-Ahead Market (DAM) Statement

The Settlement Statement issued for a particular DAM, as further described in Section 9.2.4, DAM Statement.

Real-Time Market (RTM) Final Statement

The RTM Settlement Statement issued at the end of the 55th day following the Operating Day, as described in Section 9.5.5, RTM Final Statement.

Real-Time Market (RTM) Initial Statement

The first iteration of an RTM Settlement Statement issued for a particular Operating Day, as further described in Section 9.5.4, RTM Initial Statement.

Real-Time Market (RTM) Resettlement Statement

The RTM Settlement Statement using corrected Settlement data, in accordance with Section 9.5.6, RTM Resettlement Statement.

Real-Time Market (RTM) True-Up Statement

The RTM Settlement Statement issued 180 days following the Operating Day, as further described in Section 9.5.8, RTM True-Up Statement.

Shadow Price

A price for a commodity that measures the marginal value of this commodity; that is, the rate at which system costs could be decreased or increased by slightly increasing or decreasing, respectively, the amount of the commodity being made available.

Shift Factor

A measure of the flow on a particular Transmission Element due to a unit injection of power from a particular Electrical Bus to a fixed reference Electrical Bus.

Short-Term PhotoVoltaic Power Forecast (STPPF)

An ERCOT produced hourly 50% probability of exceedance forecast of the generation in MWh per hour from each PVGR that could be generated from all available units of that Resource.

Short-Term Wind Power Forecast (STWPF)

An ERCOT produced hourly 50% probability of exceedance forecast of the generation in MWh per hour from each WGR that could be generated from all available units of that Resource.

Simple Transmission Outage (*see* Outage)

Split Generation Resource (*see* Resource Attribute)

Startup Cost

All costs incurred by a Generation Resource in starting up and reaching Low Sustained Limit (LSL), as described in the Verifiable Cost Manual. The Startup Cost is in dollars per start.

Startup Loading Failure

A type of Forced Outage that results when a Generation Resource is unable to operate at Low Sustained Limit (LSL) at the time scheduled in the Current Operating Plan (COP) which occurs while the unit is ramping up to its scheduled MW output. A Startup Loading Failure ends when the Resource:

(a) Achieves its LSL;

(b) Is scheduled to go Off-Line; or

(c) Ceases the attempt to start the Generation Resource and changes its Resource Status to OUT.

Startup Offer

An offer for all costs incurred by a Generation Resource in starting up and reaching Low Sustained Limit (LSL). The Startup Offer is in dollars per start.

State Estimator

A computational algorithm that uses Real-Time inputs from the network's Supervisory Control and Data Acquisition (SCADA) system that measure the network's electrical parameters, including its topology, voltage, power flows, etc., to estimate electrical parameters (such as line flows and Electrical Bus voltages and Loads) in the ERCOT Transmission Grid. The State Estimator's output is a description of the network and all of the values (topology, voltage, power flow, etc.) to describe each Electrical Bus and line included in the system model.

State Estimator Bus

An electrical node of common voltage at a substation that consists of one or more Electrical Buses tied together with closed breakers or switches.

Study Area

A geographic region designated by ERCOT, separate from a Weather Zone or Load Zone. Study Areas are used primarily for study purposes. Study Areas shall be developed by ERCOT.

Subsynchronous Oscillation (SSO)

Coincident oscillation occurring between two or more Transmission Elements or Generation Resources at a natural harmonic frequency lower than the normal operating frequency of the ERCOT System (60 Hz).

Subsynchronous Resonance (SSR)

Coincident oscillation occurring between Generation Resources and a series capacitor compensated transmission system at a natural harmonic frequency lower than the normal operating frequency of the ERCOT System (60 Hz), including the following types of interactions:

Torsional Interaction

Torsional Interaction is the interplay between mechanical system of a turbine generator and a series compensated transmission system.

Induction Generator Effect (IGE)

An electrical phenomena in which a resonance involving a Generation Resource and a series compensated transmission system results in electrical self-excitation of the Generation Resource at a subsynchronous frequency.

Torque Amplification

An interaction between Generation Resources and a series compensated transmission system in which the response results in higher transient torque during or after disturbances than would otherwise occur.

Subsynchronous Control Interaction (SSCI)

The interaction between a series capacitor compensated transmission system and the control system of Generation Resources.

Subsynchronous Resonance (SSR) Countermeasures

Any equipment or any procedure to mitigate the SSR vulnerability, including but not limited to the following types of countermeasures:

Subsynchronous Resonance (SSR) Protection

A countermeasure that includes, but is not limited to, disconnecting the affected Generation Resource.

Subsynchronous Resonance (SSR) Mitigation

A countermeasure that includes, but is not limited to, equipment installation, controller adjustment, or a procedure to mitigate the SSR vulnerability without disconnecting the affected Generation Resources.

Sustained Response Period

The period of time beginning ten minutes after ERCOT's issuance of a VDI deploying ERS-10 or 30 minutes after ERCOT's issuance of a VDI deploying ERS-30 and ending with ERCOT's issuance of a VDI releasing ERS Resources from the deployment.

Switch Request

A request submitted by a CR on behalf of a Customer to switch service from the Customer's current CR to the requesting CR.

Switchable Generation Resource (SWGR) (*see* Resource Attribute)

System Lambda

The cost of providing one MWh of energy at the reference Electrical Bus, i.e. the Shadow Price for the power balance constraint, which is equal to the change in the objective function obtained by relaxing the power balance constraint by one MW. The System Lambda is the energy component of LMP at each Settlement Point in ERCOT.

System Operator

An Entity that supervises the collective Transmission Facilities of a power region. This Entity is charged with coordination of market transactions, system-wide transmission planning, and network reliability.

System-Wide Offer Cap (SWCAP)

The SWCAP shall be determined in accordance with Public Utility Commission of Texas (PUCT) Substantive Rules.

[NPRR1013: Delete the above definition "System-Wide Offer Cap (SWCAP)" upon system implementation of the Real-Time Co-Optimization (RTC) project.]

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TSP and DSP Metered Entity

An Entity that meets the requirements of Section 10.2.2, TSP and DSP Metered Entities.

Tangible Net Worth

Total shareholder's equity less goodwill and other intangible assets.

Temporary Outage Action Plan (TOAP) (*see* Constraint Management Plan)

Texas Nodal Market Implementation Date

The date on which ERCOT starts operation of the Texas Nodal Market in compliance with the rules and orders of the Public Utility Commission of Texas (PUCT). Once this date is determined, ERCOT shall post it on the ERCOT website and maintain it on the ERCOT website.

Texas Standard Electronic Transaction (TX SET)

(1) Texas Standard Electronic Transactions (TX SETs) are the electronic data transactions, implementation guides, and applicable external standards that enable and facilitate the retail business processes in the deregulated Texas electric market.

(2) The procedures used to transmit information pertaining to the Customer Registration Database are set forth in Section 19, Texas Standard Electronic Transaction.

Three-Part Supply Offer

An offer made by a QSE for a Generation Resource that it represents containing three components: a Startup Offer, a Minimum-Energy Offer, and an Energy Offer Curve.

Time Of Use (TOU) Meter

A programmable electronic device capable of measuring and recording electric energy in pre-specified time periods. For Load Profiling purposes TOU Metering does not include IDRs.

Time Of Use Schedule (TOUS)

A schedule identifying the Time Of Use period associated with each Settlement Interval. These schedules may include on-peak, off-peak, and shoulder periods.

Transmission Access Service

The use of a TSP's Transmission Facilities for which the TSP is allowed to charge through tariff rates approved by the PUCT.

Transmission and/or Distribution Service Provider (TDSP)

An Entity that is a TSP, a DSP or both, or an Entity that has been selected to own and operate Transmission Facilities and has a PUCT approved code of conduct in accordance with P.U.C. SUBST. R. 25.272, Code of Conduct for Electric Utilities and Their Affiliates.

Transmission Generation Resource (*see* Resource)

Transmission Element

A physical Transmission Facility that is either an Electrical Bus, line, transformer, generator, Load, breaker, switch, capacitor, reactor, phase shifter, or other similar device that is part of the ERCOT Transmission Grid and defined in the ERCOT Network Operations Model.

High Impact Transmission Element (HITE)

A Transmission Element that may, in certain conditions, result in high congestion risk when taken out-of-service and that is identified as further described in Section 3.1.8, High Impact Transmission Element (HITE) Identification.

Transmission Facilities

(1) Power lines, substations, and associated facilities, operated at 60 kV or above, including radial lines operated at or above 60 kV;

(2) Substation facilities on the high voltage side of the transformer, in a substation where power is transformed from a voltage higher than 60 kV to a voltage lower than 60 kV or is transformed from a voltage lower than 60 kV to a voltage higher than 60 kV; and

(3) The direct current interconnections between ERCOT and the Southwest Power Pool or Comision Federal de Electricidad (CFE).

[NPRR857: Replace paragraph (3) above with the following upon system implementation and satisfying the following conditions: (1) Southern Cross provides ERCOT with funds to cover the entire estimated cost of the project; and (2) Southern Cross has signed an interconnection agreement with a TSP and the TSP gives ERCOT written notice that Southern Cross has provided it with: (a) Notice to proceed with the construction of the interconnection; and (b) The financial security required to fund the interconnection facilities:]

(3) The direct current interconnections between ERCOT and non-ERCOT Control Areas.

Transmission Loss Factor (TLF)

The fraction of ERCOT Load (forecast or actual) that is considered to constitute the ERCOT Transmission Grid losses in a Settlement Interval, based on a linear interpolation (or extrapolation) of the calculated losses in the off-peak and on-peak seasonal ERCOT base cases.

Transmission Losses

The difference between energy put into the ERCOT Transmission Grid and energy taken out of the ERCOT Transmission Grid.

Transmission Operator (TO)

A Transmission and/or Distribution Service Provider (TDSP) designated by itself or another TDSP for purposes of communicating with ERCOT and taking action to preserve reliability of a

particular portion of the ERCOT System, as provided in the ERCOT Protocols or Other Binding Documents.

[NPRR1045: Replace the above definition "Transmission Operator (TO)" with the following upon system implementation of NPRR857:]

Transmission Operator (TO)

A Transmission and/or Distribution Service Provider (TDSP) designated by itself, a Direct Current Tie Operator (DCTO), or another TDSP for purposes of communicating with ERCOT and taking action to preserve reliability of a particular portion of the ERCOT System, as provided in the ERCOT Protocols or Other Binding Documents.

Transmission Service

The commercial use of Transmission Facilities.

Transmission Service Provider (TSP)

An Entity under the jurisdiction of the PUCT that owns or operates Transmission Facilities used for the transmission of electricity and provides Transmission Service in the ERCOT Transmission Grid.

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Unaccounted for Energy (UFE)

The difference between total Load for each Settlement Interval, adjusted for applicable Distribution Losses and Transmission Losses, and total ERCOT generation.

Unit Reactive Limit (URL)

The maximum quantity of Reactive Power that a Generation Resource is capable of providing at a 0.95 power factor at its maximum real power capability.

Updated Desired Base Point

A calculated MW value representing the expected MW output of a Generation Resource ramping to a Base Point.

[NPRR1013: Replace the definition "Updated Desired Base Point" above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

Updated Desired Set Point (UDSP)

A calculated MW value representing the expected MW output of a Resource, as described in Section 6.5.7.4.1, Updated Desired Set Points.

Updated Network Model

A computerized representation of the ERCOT physical network topology, including some Resource Parameters, all of which replicates the forecasted or current network topology of the ERCOT System needed by ERCOT to perform its functions.

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Verbal Dispatch Instruction (VDI)

A Dispatch Instruction issued orally.

Voltage Profile

The set of normally desired Voltage Set Points for those Generation Resources specified in paragraph (2) of Section 3.15, Voltage Support, in the ERCOT System.

[NPRR989: Replace the above definition "Voltage Profile" with the following upon system implementation:]

Voltage Profile

The set of normally desired Voltage Set Points for those Generation Resources or Energy Storage Resources (ESRs) specified in paragraph (2) of Section 3.15, Voltage Support, in the ERCOT System.

Voltage Set Point

The voltage that a Generation Resource is required to maintain at its Point of Interconnection Bus (POIB) and that is initially communicated via the Voltage Profile but may be modified by a Real-Time instruction from ERCOT, the interconnecting Transmission Service Provider (TSP), or that TSP's agent.

[NPRR989: Replace the above definition "Voltage Set Point" with the following upon system implementation:]

Voltage Set Point

The voltage that a Generation Resource or Energy Storage Resource (ESR) is required to maintain at its Point of Interconnection Bus (POIB) and that is initially communicated via the Voltage Profile but may be modified by a Real-Time instruction from ERCOT, the interconnecting Transmission Service Provider (TSP), or that TSP's agent.

Voltage Support Service (VSS)

An Ancillary Service that is required to maintain transmission and distribution voltages on the ERCOT Transmission Grid within acceptable limits.

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Watch

The third of three levels of communication issued by ERCOT in anticipation of a possible Emergency Condition.

Weather Zone

A geographic region designated by ERCOT in which climatological characteristics are similar for all areas within such region.

Weekly Reliability Unit Commitment (WRUC)

An instruction issued by ERCOT prior to 1330 in the Day-Ahead for an Operating Day that reserves a Generation Resource that requires a longer lead time for startup than possible from the DRUC.

Wholesale Customer

A NOIE receiving service at wholesale points of delivery from an LSE other than itself.

Wholesale Storage Load (WSL) (*see* Load)

Wind-powered Generation Resource (WGR) (*see* Resource Category)

Wind-powered Generation Resource Production Potential (WGRPP)

The generation in MWh per hour from a WGR that could be generated from all available units of that Resource allocated from the 80% probability of exceedance of the Total ERCOT Wind Power Forecast (TEWPF).

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2.2 ACRONYMS AND ABBREVIATIONS

4-CP	4-Coincident Peak
AAA	American Arbitration Association
AAN	Advance Action Notice
AASP	Average Aggregated Set Point
ACE	Area Control Error
ACH	Automated Clearing House
ACL	Available Credit Limit
ADR	Alternative Dispute Resolution
AEIC	Association of Edison Illuminating Companies
AGC	Automatic Generation Control
AGR	Aggregate Generation Resource
AIL	Aggregate Incremental Liability
ALA	Applicable Legal Authority
ALR	Aggregate Load Resource
AML	Adjusted Metered Load
AMP	Automatic Mitigation Plan
AMS	Advanced Metering System

ANSI ASC X12	American National Standards Institute Accredited Standards Committee X12
AREP	Affiliated Retail Electric Provider
ARR	Adjusted RPS Requirement
ASDC	Ancillary Service Demand Curve
AVR	Automatic Voltage Regulator
BLT	Block Load Transfer
BSS	Black Start Service
CAO	Control Area Operator
CARD	CRR Auction Revenue Distribution
CCD+	Cash Concentration and Disbursement Plus
CCF	Capacity Conversion Factor
CCN	Certificate of Convenience and Necessity
CCT	Constraint Competitiveness Test
CEO	Chief Executive Officer
CFC	Constant Frequency Control
CFE	Comision Federal de Electricidad
CFTC	Commodity Futures Trading Commission
CIM	Common Information Model
CMLTD	Current Maturities of Long-Term Debt
CMP	Constraint Management Plan
CMZ	Congestion Management Zone
COP	Current Operating Plan
CPS	Control Performance Standard
CPT	Central Prevailing Time
CR	Competitive Retailer
CRR	Congestion Revenue Right
CRRBA	Congestion Revenue Right Balancing Account
CSA	Continuous Service Agreement
CSV	Comma Separated Value
CTX	Corporate Trade Exchange
DAM	Day-Ahead Market
DAS	Data Aggregation System
DASPP	Day-Ahead Settlement Point Price
DASWCAP	Day-Ahead System-Wide Offer Cap
DC	Direct Current
DC Tie	Direct Current Tie
DCAA	Digital Certificate Audit Attestation
DCTO	Direct Current Tie Operator
DESR	Distribution Energy Storage Resource
DG	Distributed Generation
DGR	Distribution Generation Resource
DLC	Direct Load Control

DLF	Distribution Loss Factor
DME	Decision Making Entity
DRG	Distributed Renewable Generation
DRUC	Day-Ahead Reliability Unit Commitment
DSC	Debt Service Coverage
DSP	Distribution Service Provider
DSR	Dynamically Scheduled Resource

[NPRR1000: Delete the acronym "DSR" above upon system implementation.]

DUNS	Data Universal Numbering System
DUNS #	DUNS Number
e-Tag	Electronic Tag
EAF	Equivalent Availability Factor
EAL	Estimated Aggregate Liability
EC	Electric Cooperative
ECEII	ERCOT Critical Energy Infrastructure Information
ECI	Element Competitiveness Index
ECRS	ERCOT Contingency Reserve Service
EDI	Electronic Data Interchange
EEA	Energy Emergency Alert
EFT	Electronic Funds Transfer
ELSE	External Load Serving Entity
EMMS	Energy and Market Management System
EMS	Energy Management System
EPRI	Electric Power Research Institute
EPS	ERCOT-Polled Settlement
ERCOT	Electric Reliability Council of Texas, Inc.
ERCOT Board	The Board of Directors of the Electric Reliability Council of Texas, Inc.
ERS	Emergency Response Service
ESI ID	Electric Service Identifier
ESR	Energy Storage Resource
ESREDP	Energy Storage Resource Energy Deployment Performance
ESS	Energy Storage System
F&A	Finance and Audit
FASD	First Available Switch Date
FCE	Future Credit Exposure
Fed	Federal
FERC	Federal Energy Regulatory Commission
FFR	Fast Frequency Response
FFSS	Firm Fuel Supply Service
FFSSR	Firm Fuel Supply Service Resource
FGR	Flowgate Right

FIP	Fuel Index Price
FIS	Full Interconnection Study
FME	Frequency Measurable Event
FOP	Fuel Oil Price
FPA	Federal Power Act
FRC	Frequency Responsive Capacity
FRR	Final RPS Requirement
FRRS	Fast Responding Regulation Service
FRRS-Down	Fast Responding Regulation Down Service
FRRS-Up	Fast Responding Regulation Up Service

[NPRR1013: Delete the acronyms "FRRS"," FRRS-Down", and "FRRS-Up" above upon system implementation of the Real-Time Co-Optimization (RTC) project.]

GADS	Generation Availability Data System
GREDP	Generation Resource Energy Deployment Performance
GSU	Generator Step-Up
GTBD	Generation To Be Dispatched
GTC	Generic Transmission Constraint
GTL	Generic Transmission Limit
HASL	High Ancillary Service Limit

[NPRR1013: Delete the acronym "HASL" above upon system implementation of the Real-Time Co-Optimization (RTC) project.]

HCAP	High System-Wide Offer Cap
HDL	High Dispatch Limit
HE	Hour Ending
HEL	High Emergency Limit
HIO	High Impact Outage
HITE	High Impact Transmission Element
HRL	High Reasonability Limit
HRUC	Hourly Reliability Unit Commitment
HSL	High Sustained Limit
HWR	High Winter Ratio
Hz	Hertz
IBR	Inverter-Based Resource
ICCP	Inter-Control Center Communications Protocol
IDR	Interval Data Recorder
IE	Interconnecting Entity

IEL	Initial Estimated Liability
IGE	Induction Generator Effects
IHLF	Intra-Hour Load Forecast
IHPPF	Intra-Hour PhotoVoltaic Power Forecast
IHWPF	Intra-Hour Wind Power Forecast
IMM	Independent Market Monitor
IMRE	Independent Market Information System Registered Entity
IOU	Investor Owned Utility
IPM	Independent Power Marketer
IROL	Interconnection Reliability Operating Limit
IRR	Intermittent Renewable Resources
kV	Kilovolt
kVA	Kilovolt-Ampere
kVAr	Kilovolt-Ampere reactive
kVArh	Kilovolt-Ampere reactive hour
kW	Kilowatt
kWh	Kilowatt-Hour
LASL	Low Ancillary Service Limit

[NPRR1013: Delete the acronym "LASL" above upon system implementation of the Real-Time Co-Optimization (RTC) project.]

LCAP	Low System-Wide Offer Cap
LDL	Low Dispatch Limit
LEL	Low Emergency Limit
LFC	Load Frequency Control
LMP	Locational Marginal Price
LPC	Low Power Consumption
LRL	Low Reasonability Limit
LRS	Load Ratio Share
LSE	Load Serving Entity
LSL	Low Sustained Limit
MCPC	Market Clearing Price for Capacity
MDAS	Meter Data Acquisition System
MIS	Market Information System
MMBtu	Million British Thermal Units
MOC	Mitigated Offer Cap
MOU	Municipally Owned Utility
MPC	Maximum Power Consumption
MPT	Main Power Transformer
MRA	Must-Run Alternative
MRE	Meter Reading Entity

MTLF	Mid-Term Load Forecast
MVA	Megavolt Ampere
MVAr	Mega Volt-Amperes reactive
MW	Megawatt
MWh	Megawatt Hour
NCBI	Notice of Change of Banking Information
NCI	Notice of Change of Information
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NFRC	Non-Frequency Responsive Capacity

[NPRR1013: Delete the acronym "NFRC" above upon system implementation of the Real-Time Co-Optimization (RTC) project.]

NIST	National Institute of Standards and Technology
NOIE	Non-Opt-In Entity
NOMCR	Network Operations Model Change Request
Non-Spin	Non-Spinning Reserve
NSA	Network Security Analysis
NSO	Notification of Suspension of Operations
NWSIDR	Non-Weather Sensitive IDR
O&M	Operations and Maintenance
OAE	Outage Adjustment Evaluation
OCN	Operating Condition Notice
ORDC	Operating Reserve Demand Curve

[NPRR1013: Delete the acronym "ORDC" above upon system implementation of the Real-Time Co-Optimization (RTC) project.]

OSA	Outage Schedule Adjustment
PCAP	Pre-Contingency Action Plan
PCRR	Pre-Assigned Congestion Revenue Right
PMI	Private Microgrid Island
PNM	Peaker Net Margin
POLR	Provider of Last Resort
POC	Peaking Operating Cost
POCC	Point of Common Coupling
POI	Point of Interconnection
POIB	Point of Interconnection Bus
POS	Power Operating System

PRC	Physical Responsive Capability
PRM	Planning Reserve Margin
PRR	Protocol Revision Request
PRS	Protocol Revision Subcommittee
PSS	Power System Stabilizer
PTB	Price-to-Beat
PTP	Point-to-Point
PUCT	Public Utility Commission of Texas
PURA	Public Utility Regulatory Act, Title II, Texas Utility Code
PURPA	Public Utility Regulatory Policy Act
PV	PhotoVoltaic
PVGR	PhotoVoltaic Generation Resource
PVGRPP	PhotoVoltaic Generation Resource Production Potential
PWG	Profiling Working Group
QF	Qualifying Facility
QSE	Qualified Scheduling Entity
QSGR	Quick Start Generation Resource
RAP	Remedial Action Plan
RAS	Remedial Action Scheme
RDF	Reserve Discount Factor
REC	Renewable Energy Credit
Reg-Down	Regulation Down
Reg-Up	Regulation Up
REP	Retail Electric Provider
RID	Resource ID
RIDR	Representative IDR
RMR	Reliability Must-Run
RMS	Retail Market Subcommittee
ROS	Reliability and Operations Subcommittee
RPG	Regional Planning Group
RPP	Renewable Production Potential
RPS	Renewable Portfolio Standard
RRS	Responsive Reserve
RSASM	Reconfiguration Supplemental Ancillary Services Market

[NPRR1013: Delete the acronym "RSASM" above upon system implementation of the Real-Time Co-Optimization (RTC) project.]

RTEP	Real-Time Energy Price
RTM	Real-Time Market
RTSWCAP	Real-Time System-Wide Offer Cap
RUC	Reliability Unit Commitment
RUCAC	Reliability Unit Commitment for Additional Capacity

SASM	Supplemental Ancillary Services Market

[NPRR1013: Delete the acronym "SASM" above upon system implementation of the Real-Time Co-Optimization (RTC) project.]

SCADA	Supervisory Control and Data Acquisition
SCED	Security-Constrained Economic Dispatch
SCUC	Security-Constrained Unit Commitment
SDRAMP	SCED Down Ramp Rate
SFT	Simultaneous Feasibility Test
SGIA	Standard Generation Interconnection Agreement
SMOG	Settlement Metering Operating Guide
SODESS	Settlement Only Distribution Energy Storage System
SODG	Settlement Only Distribution Generator
SOESS	Settlement Only Energy Storage System
SOG	Settlement Only Generator
SOTESS	Settlement Only Transmission Energy Storage System
SOTG	Settlement Only Transmission Generator
SOTSG	Settlement Only Transmission Self-Generator
SRR	Statewide RPS Requirement
SSCI	Subsynchronous Control Interaction
SSO	Subsynchronous Oscillation
SSR	Subsynchronous Resonance
STEC	South Texas Electric Cooperative
STLF	Short-Term Load Forecast
STPPF	Short-Term PhotoVoltaic Power Forecast
STWPF	Short-Term Wind Power Forecast
SURAMP	SCED Up Ramp Rate
SWCAP	System-Wide Offer Cap

[NPRR1013: Delete the acronym "SWCAP" above upon system implementation of the Real-Time Co-Optimization (RTC) project.]

SWGR	Switchable Generation Resource
T&D	Transmission and Distribution
TAC	Technical Advisory Committee
TDSP	Transmission and/or Distribution Service Provider
TDTWG	Texas Data Transport Working Group
TEPPF	Total ERCOT PhotoVoltaic Power Forecast
TEWPF	Total ERCOT Wind Power Forecast
TIER	Times/Interest Earning Ratio

TGR	Transmission Generation Resource
TLF	Transmission Loss Factor
TMTP	Texas Market Test Plan
TO	Transmission Operator
TOAP	Temporary Outage Action Plan
TOU	Time Of Use
TOUS	Time Of Use Schedule
TPE	Total Potential Exposure
TSP	Transmission Service Provider
TTPT	Texas Test Plan Team
TUO	Total Usable Offset
TWC	Texas Water Code
TX SET	Texas Standard Electronic Transaction
UDSP	Updated Desired Set Point
UFE	Unaccounted For Energy
UFLS	Under-Frequency Load Shed
URL	Unit Reactive Limit
USA	User Security Administrator
USD	United States Dollar or U.S. Dollar
UVLS	Under-Voltage Load Shed
VAr	Volt-Ampere reactive
VDI	Verbal Dispatch Instruction
VEE	Validation, Editing and Estimating
VSS	Voltage Support Service
WAN	Wide Area Network
WGR	Wind-powered Generation Resource
WGRPP	Wind-powered Generation Resource Production Potential
WMS	Wholesale Market Subcommittee
WRUC	Weekly Reliability Unit Commitment
WSIDR	Weather Sensitive IDR
WSL	Wholesale Storage Load
XML	Extensible Markup Language

ATTACHMENT E

ERCOT Nodal Protocols

Section 4: Day-Ahead Operations

April 1, 2023

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4 DAY-AHEAD OPERATIONS

4.1 Introduction

(1) The Day-Ahead Market (DAM) is a daily, co-optimized market in the Day-Ahead for Ancillary Service capacity and forward financial energy and congestion transactions.

[NPRR1008: Replace paragraph (1) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

(1) The Day-Ahead Market (DAM) is a daily, co-optimized market in the Day-Ahead for forward financial energy, Ancillary Services, and congestion transactions.

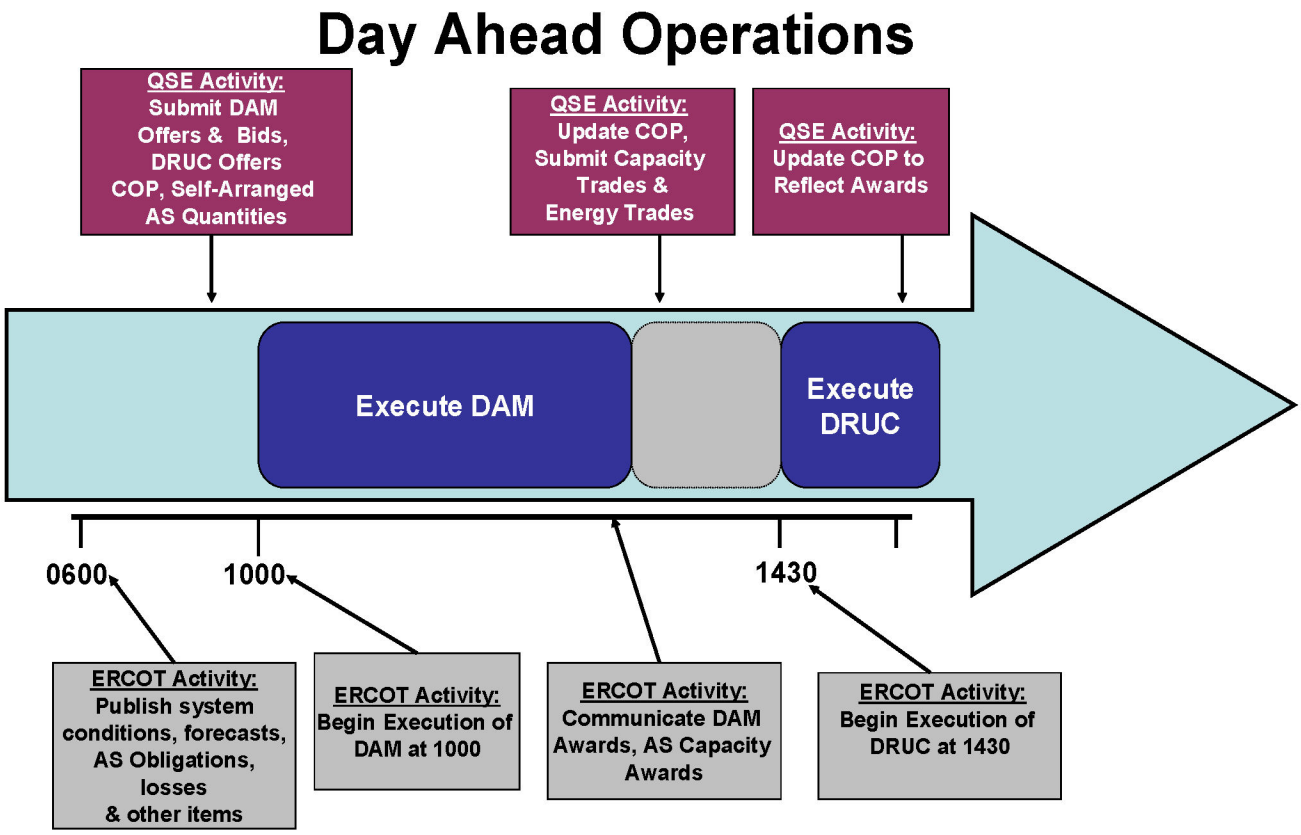
(2) Participation in the DAM is voluntary.

(3) DAM energy settlements use DAM Settlement Point Prices that are calculated for Resource Nodes, Load Zones, and Hubs for a one-hour Settlement Interval using the Locational Marginal Prices (LMPs) from DAM. In contrast, the Real-Time energy settlements use Real-Time Settlement Point Prices that are calculated for Resource Nodes, Load Zones, and Hubs for a 15-minute Settlement Interval.

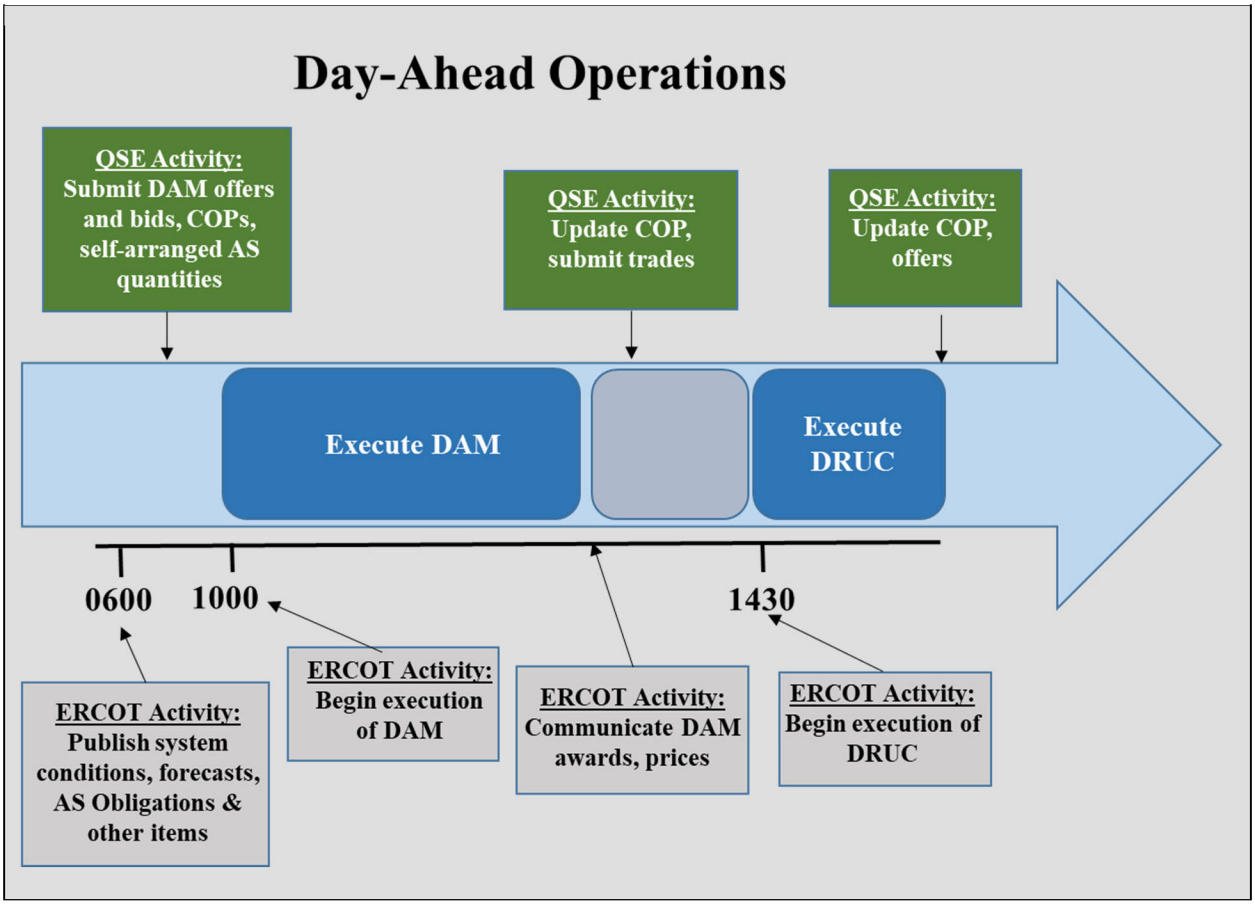
(4) To the extent that the ERCOT CEO or designee determines that Market Participant activities have produced an outcome inconsistent with the efficient operation of the ERCOT administered markets as defined in subsection (c)(2) of P.U.C. SUBST. R. 25.503, Oversight of Wholesale Market Participants, ERCOT may prohibit the activity by Notice for a period beginning on the date of the Notice and ending no later than 45 days after the date of the Notice. ERCOT may issue subsequent Notices on the same activity. The ERCOT CEO may deem any Nodal Protocol Revision Request (NPRR) designed to correct the activity or issues affecting the activity as Urgent pursuant to Section 21.5, Urgent and Board Priority Nodal Protocol Revision Requests and System Change Requests.

4.1.1 Day-Ahead Timeline Summary

(1) The figure below shows the major activities that occur in the Day-Ahead:



[NPRR1008: Replace the figure above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]



4.1.2 Day-Ahead Process and Timing Deviations

(1) ERCOT may temporarily revise the DAM transaction deadline or the time for communicating DAM results when necessary to ensure, to the greatest extent practicable, that the DAM clearing process completes. In such an event, ERCOT shall immediately issue an Advisory and notify all Qualified Scheduling Entities (QSEs) of the following:

(a) Details of the affected timing and procedures;

(b) Details of interim requirements, if any exist;

(c) An estimate of the period for which the interim requirements apply; and

(d) Reasons for the temporary variation.

(2) Subject to the principles set forth in paragraph (3) below, ERCOT may omit any procedure or take any manual action necessary to ensure, to the greatest extent practicable, that the DAM clearing process completes by 1900 in the Day-Ahead. Should ERCOT omit any such procedure or take any such manual action, ERCOT will issue a Market Notice no later than 1700 Central Prevailing Time (CPT) on the next Business Day that details the omitted procedures or manual actions taken by ERCOT and

ERCOT's explanation as to why they were necessary. If the manual action taken by ERCOT requires ERCOT to omit bids or offers submitted by a particular QSE, ERCOT will provide notification to that QSE prior to taking the manual action, so long as providing such notice will not delay completion of the DAM beyond 1900 in the Day-Ahead.

(3) When omitting a procedure or taking a manual action under paragraph (2) above, ERCOT will act in accordance with the following principles:

(a) ERCOT will only act in cases in which it reasonably believes that intervention is necessary in order to complete DAM by 1900;

(b) ERCOT will seek to minimize impacts to Market Participants and will only remove transactions from the DAM as a last resort; when ERCOT believes a QSE's transactions need to be removed, either in whole or in part, in order to complete the DAM clearing process, ERCOT will prioritize the removal in reverse order based on submittal time, where the QSE's most recently submitted transactions are prioritized before the removal of the earliest submitted transactions; however, the number of transactions removed will be at ERCOT's discretion, subject to the principles set forth in this paragraph;

(c) Approval to act will be obtained from the applicable ERCOT executive or designee; and

(d) ERCOT will not publish a DAM in which no transmission constraints are evaluated.

(4) Should ERCOT omit a procedure or take manual action pursuant to paragraph (2) above, and a Market Participant is directly impacted by such ERCOT action or omission, the Market Participant may seek relief as specifically provided for under Section 9.14.10, Settlement for Market Participants Impacted by Omitted Procedures or Manual Actions to Resolve the DAM. A Market Participant will only be entitled relief upon ERCOT's determination that ERCOT's action or omission pursuant to paragraph (2) above was the sole cause of the Market Participant's injury, and the monetary value of the direct impact can be accurately determined by ERCOT. Such relief is not available in the case that ERCOT aborts all or part of the Day-Ahead process. A Market Participant may only seek relief due to ERCOT's omission of a procedure or manual action under paragraph (2) above in the following circumstances:

(a) ERCOT removed the Market Participant's bid(s) or offer(s);

(b) ERCOT failed to award the Market Participant's bid(s) or offer(s); or

(c) ERCOT de-energized the Market Participant's Resource(s) in the base case.

(5) If ERCOT is unable to execute the Day-Ahead process prior to 1900 in the Day-Ahead, ERCOT may abort all or part of the Day-Ahead process and require all schedules and

trades to be submitted in the Adjustment Period. In that event, ERCOT shall issue a Watch and notify all QSEs of the following:

(a) Details of the affected timing and procedures;

(b) Details of any interim requirements, including the requirements described in Section 5.2.2.2, RUC Process Timeline After an Aborted Day-Ahead Market;

(c) An estimate of the period for which the interim requirements apply; and

[NPRR1008: Delete items (b) and (c) above upon system implementation of the Real-Time Co-Optimization (RTC) project and renumber accordingly.]

(d) Reasons for the temporary variation.

(6) If ERCOT is unable to operate the Adjustment Period process, then ERCOT may abort the Adjustment Period process and operate under its Operating Period procedures.

4.2 ERCOT Activities in the Day-Ahead

4.2.1 Ancillary Service Plan and Ancillary Service Obligation

4.2.1.1 Ancillary Service Plan

(1) ERCOT shall analyze the expected Load conditions for the Operating Day and develop an Ancillary Service Plan that identifies the Ancillary Service MW necessary for each hour of the Operating Day. The MW of each Ancillary Service required may vary from hour to hour depending on ERCOT System conditions. ERCOT must post the Ancillary Service Plan to the ERCOT website by 0600 of the Day-Ahead.

(2) If ERCOT determines that an Emergency Condition may exist that would adversely affect ERCOT System reliability, it may change the percentage of Load Resources that are allowed to provide Responsive Reserve (RRS) from the monthly amounts determined previously, as described in Section 3.16, Standards for Determining Ancillary Service Quantities, and must post any change in the percentage to the ERCOT website by 0600 of the Day-Ahead.

[NPRR863: Replace paragraph (2) above with the following upon system implementation:]

(2) If ERCOT determines that an Emergency Condition may exist that would adversely affect ERCOT System reliability, it may change the percentage of Load Resources that are allowed to provide ERCOT Contingency Reserve Service (ECRS) and Responsive Reserve (RRS) from the monthly amounts determined previously, as described in

Section 3.16, Standards for Determining Ancillary Service Quantities, and must post any change in the percentage to the ERCOT website by 0600 of the Day-Ahead.

(3) ERCOT shall determine the total required amount of each Ancillary Service under Section 3.16, or use its operational judgment and experience to change the daily quantity of each required Ancillary Service.

(4) ERCOT shall include in the Ancillary Service Plan enough capacity to automatically control frequency with the intent to meet North American Electric Reliability Corporation (NERC) Reliability Standards.

(5) Once specified by ERCOT for an hour and published on the ERCOT website, Ancillary Service quantity requirements for an Operating Day may not be decreased.

[NPRR1008: Insert paragraph (6) below upon system implementation of the Real-Time Co-Optimization (RTC) project:]

(6) ERCOT shall create an Ancillary Service Demand Curve (ASDC) for each Ancillary Service as described in Section 4.4.12, Determination of Ancillary Service Demand Curves. ERCOT must post the ASDCs to the ERCOT website by 0600 of the Day-Ahead. If ERCOT changes the Ancillary Service Plan per Section 6.4.9.1.2, Changes to Operating Day Ancillary Service Plan, the ASDCs reflecting the change to the Ancillary Service Plan will be posted to the ERCOT website.

4.2.1.2 Ancillary Service Obligation Assignment and Notice

(1) ERCOT shall assign part of the Ancillary Service Plan quantity, by service, by hour, to each Qualified Scheduling Entity (QSE) based on its Load Serving Entity (LSE) Load Ratio Shares (LRSs) (including the shares for Direct Current Tie (DC Tie) exports) aggregated by hour to the QSE level. If the resultant QSE-level share is negative, the QSE's share will be set to zero and all other QSE shares will be adjusted on a pro rata basis such that the sum of all shares is equal to one. The resulting Ancillary Service quantity for each QSE, by service, by hour, is called its Ancillary Service Obligation. ERCOT shall base the QSE Ancillary Service allocation on the QSE to LSE relationships for the operating date and on the hourly LSE LRSs from the Real-Time Market (RTM) data used for Initial Settlement for the same hour and day of the week, for the most recent day for which Initial Settlement data is available, multiplied by the quantity of that service required in the Day-Ahead Ancillary Service Plan. The Ancillary Service Obligation defined shall be adjusted based on the most current real time settlement and resettlement data for the Operating Day for which the Ancillary Service was procured.

(2) By 0600 of the Day-Ahead, ERCOT shall notify each QSE of its Ancillary Service Obligation for each service and for each hour of the Operating Day.

(3) By 0600 of the Day-Ahead, ERCOT shall post on the Market Information System (MIS) Certified Area each QSE's LRS used for the Ancillary Service Obligation calculation.

[NPRR1008: Replace Section 4.2.1.2 above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

4.2.1.2 Ancillary Service Obligation Assignment and Notice

(1) ERCOT shall assign part of the Ancillary Service Plan quantity, or total Ancillary Service procurement quantity, if different, by service, by hour, to each Qualified Scheduling Entity (QSE) based on its Load Serving Entity (LSE) Load Ratio Shares (LRSs) (including the shares for Direct Current Tie (DC Tie) exports) aggregated by hour to the QSE level. If the resultant QSE-level share is negative, the QSE's share will be set to zero and all other QSE shares will be adjusted on a pro rata basis such that the sum of all shares is equal to one. The resulting Ancillary Service quantity for each QSE, by service, by hour, is called its Ancillary Service Obligation. ERCOT shall base the QSE Ancillary Service allocation on the QSE to LSE relationships for the operating date and on the hourly LSE LRSs from the Real-Time Market (RTM) data used for Initial Settlement for the same hour and day of the week, for the most recent day for which Initial Settlement data is available, multiplied by the quantity of that service required in the Day-Ahead Ancillary Service Plan. The Ancillary Service Obligation defined shall be adjusted based on the most current real time settlement and resettlement data for the Operating Day for which the Ancillary Service was procured.

(2) By 0600 of the Day-Ahead, ERCOT shall notify each QSE of its advisory Ancillary Service Obligation for each service and for each hour of the Operating Day, based on the Ancillary Service Plan, as well as that QSE's proportional limit for any Self-Arranged Ancillary Services as set forth in Section 3.16, Standards for Determining Ancillary Service Quantities.

(3) By 0600 of the Day-Ahead, ERCOT shall post on the Market Information System (MIS) Certified Area each QSE's LRS used for both the advisory and final Ancillary Service Obligation calculations.

(4) The minimum Ancillary Service Obligation quantity will be 0.1 MW and will apply to both advisory and final values.

(5) After DAM has published, ERCOT shall notify each QSE of its final Ancillary Service Obligation based on the total DAM Ancillary Service procurement quantity, comprised of DAM Ancillary Service awards and Self-Arranged Ancillary Service Quantities for each service and for each hour of the Operating Day.

4.2.2 Wind-Powered Generation Resource Production Potential

(1) ERCOT shall produce and update hourly a Short-Term Wind Power Forecast (STWPF) that provides a rolling 168-hour hourly forecast of wind production potential for each Wind-powered Generation Resource (WGR). ERCOT shall produce and post to the ERCOT website every five minutes an Intra-Hour Wind Power Forecast (IHWPF) by wind region that provides a forecast of ERCOT-wide wind production potential for each five-minute interval over the next two hours from each forecast model. The posting shall indicate which forecast model was being used by ERCOT for Generation To Be Dispatched (GTBD) calculation purposes. ERCOT shall produce and update an hourly Total ERCOT Wind Power Forecast (TEWPF) providing a probability distribution of the hourly production potential from all wind-power in ERCOT for each of the next 168 hours. Each Generation Entity that owns a WGR shall install and telemeter to ERCOT the site-specific meteorological information that ERCOT determines is necessary to produce the STWPF and TEWPF forecasts. ERCOT shall establish procedures specifying the accuracy requirements of WGR meteorological information telemetry.

[NPRR1029: Replace paragraph (1) above with the following upon system implementation:]

(1) ERCOT shall produce and update hourly a Short-Term Wind Power Forecast (STWPF) that provides a rolling 168-hour hourly forecast of wind production potential for each Wind-powered Generation Resource (WGR) and for each wind generation component of a DC-Coupled Resource. ERCOT shall produce and post to the ERCOT website every five minutes an Intra-Hour Wind Power Forecast (IHWPF) by wind region that provides a forecast of ERCOT-wide wind production potential for each five-minute interval over the next two hours from each forecast model. The posting shall indicate which forecast model was being used by ERCOT for Generation To Be Dispatched (GTBD) calculation purposes. ERCOT shall produce and update an hourly Total ERCOT Wind Power Forecast (TEWPF) providing a probability distribution of the hourly production potential from all wind-power in ERCOT for each of the next 168 hours. A Resource Entity with a WGR or DC-Coupled Resource that has a wind generation component shall install equipment to enable telemetry of site-specific meteorological information that ERCOT determines is necessary to produce the STWPF and TEWPF forecasts, and the Resource Entity's QSE shall telemeter such information and Resource status information to ERCOT. ERCOT shall establish procedures specifying the accuracy requirements of meteorological information telemetry for WGRs and DC-Coupled Resources with a wind generation component.

(2) ERCOT shall use the probabilistic TEWPF and select the forecast that the actual total ERCOT WGR production is expected to exceed 50% of the time (50% probability of exceedance forecast). To produce the STWPF, ERCOT will allocate the TEWPF 50% probability of exceedance forecast to each WGR such that the sum of the individual STWPF forecasts equal the TEWPF forecast. The updated STWPF forecasts for each hour for each WGR are to be used as input into each Reliability Unit Commitment (RUC)

process as per Section 5, Transmission Security Analysis and Reliability Unit Commitment.

[NPRR1029: Replace paragraph (2) above with the following upon system implementation:]

(2) ERCOT shall use the probabilistic TEWPF and select the forecast that the actual total ERCOT production of WGRs and the wind generation components of all DC-Coupled Resources is expected to exceed 50% of the time (50% probability of exceedance forecast). To produce the STWPF, ERCOT will allocate the TEWPF 50% probability of exceedance forecast to each WGR and each wind generation component of a DC-Coupled Resource such that the sum of the individual STWPF forecasts equal the TEWPF forecast. The updated STWPF forecasts for each hour for each WGR and each wind generation component of a DC-Coupled Resource are to be used as input into each Reliability Unit Commitment (RUC) process as per Section 5, Transmission Security Analysis and Reliability Unit Commitment.

(3) ERCOT shall produce the Wind-powered Generation Resource Production Potential (WGRPP) forecasts using the information provided by WGR owners including WGR availability, meteorological information, and Supervisory Control and Data Acquisition (SCADA).

[NPRR1029: Replace paragraph (3) above with the following upon system implementation:]

(3) ERCOT shall produce the Wind-powered Generation Resource Production Potential (WGRPP) forecasts using the information provided by Resource Entities and QSEs representing WGRs and DC-Coupled Resources with wind generation components, including Resource availability, meteorological information, and Supervisory Control and Data Acquisition (SCADA).

(4) Each hour, ERCOT shall provide, through the Messaging System, the STWPF and WGRPP forecasts for each WGR to the QSE that represents that WGR and shall post each STWPF and WGRPP forecast on the MIS Certified Area.

[NPRR1029: Replace paragraph (4) above with the following upon system implementation:]

(4) Each hour, ERCOT shall provide, through the Messaging System, the STWPF and WGRPP forecasts for each WGR and each wind generation component of a DC-Coupled Resource to the QSE that represents that WGR or DC-Coupled Resource and shall post each STWPF and WGRPP forecast on the MIS Certified Area.

(5) Each hour, ERCOT shall post to the ERCOT website, on a system-wide and regional basis the hourly actual wind power production, STWPF, WGRPP, and aggregate Current Operating Plan (COP) High Sustained Limits (HSLs) for On-Line WGRs for a rolling historical 48-hour period. The system-wide and regional STWPF, WGRPP, and aggregate COP HSLs for On-Line WGRs will also be posted for the rolling future 168-hour period. ERCOT shall retain the STWPF and WGRPP for each hour.

[NPRR1029: Replace paragraph (5) above with the following upon system implementation:]

(5) Each hour, ERCOT shall post to the ERCOT website, on a system-wide and regional basis the hourly actual wind power production, STWPF, WGRPP, and aggregate Current Operating Plan (COP) High Sustained Limits (HSLs) for On-Line WGRs and the wind generation components of DC-Coupled Resources for a rolling historical 48-hour period. The system-wide and regional STWPF, WGRPP, and aggregate COP HSLs for On-Line WGRs and the wind generation components of DC-Coupled Resources will also be posted for the rolling future 168-hour period. ERCOT shall retain the STWPF and WGRPP for each hour.

(6) Each hour, ERCOT shall post to the ERCOT website the hourly system-wide and regional STWPF and WGRPP values produced by each forecast model for On-Line WGRs for the rolling historical 48-hour period and the rolling future 168-hour period. ERCOT's posting shall also indicate which forecast model it is using for each region to populate COPs.

[NPRR1029: Replace paragraph (6) above with the following upon system implementation:]

(6) Each hour, ERCOT shall post to the ERCOT website the hourly system-wide and regional STWPF and WGRPP values produced by each forecast model for On-Line WGRs and the wind generation components of DC-Coupled Resources for the rolling historical 48-hour period and the rolling future 168-hour period. ERCOT's posting shall also indicate which forecast model it is using for each region to populate COPs.

(7) Every five minutes, ERCOT shall post to the ERCOT website, on a system-wide and regional basis, five-minute actual wind power production for a rolling historical 60-minute period.

4.2.3 PhotoVoltaic Generation Resource Production Potential

(1) ERCOT shall produce and update hourly a Short-Term PhotoVoltaic Power Forecast (STPPF) that provides a rolling 168-hour hourly forecast of PhotoVoltaic production potential for each PhotoVoltaic Generation Resource (PVGR). ERCOT shall produce

and post to the ERCOT website every five minutes an Intra-Hour PhotoVoltaic Power Forecast (IHPPF) by PhotoVoltaic region that provides a forecast of ERCOT-wide PhotoVoltaic production potential for each five-minute interval over the next two hours from each forecast model. The posting shall indicate which forecast model was being used by ERCOT for GTBD calculation purposes. ERCOT shall produce and update an hourly Total ERCOT PhotoVoltaic Power Forecast (TEPPF) providing a probability distribution of the hourly production potential from all PhotoVoltaic Generation Resources in ERCOT for each of the next 168 hours. Each Generation Entity that owns a PVGR shall install and telemeter to ERCOT the site-specific meteorological information that ERCOT determines is necessary to produce the STPPF and TEPPF forecasts. ERCOT shall establish procedures specifying the accuracy requirements of PVGR meteorological information telemetry.

[NPRR1029: Replace paragraph (1) above with the following upon system implementation:]

(1) ERCOT shall produce and update hourly a Short-Term PhotoVoltaic Power Forecast (STPPF) that provides a rolling 168-hour hourly forecast of PhotoVoltaic (PV) production potential for each PhotoVoltaic Generation Resource (PVGR) and for the PV component of each DC-Coupled Resource. ERCOT shall produce and post to the ERCOT website every five minutes an Intra-Hour PhotoVoltaic Power Forecast (IHPPF) by PhotoVoltaic region that provides a forecast of ERCOT-wide PhotoVoltaic production potential for each five-minute interval over the next two hours from each forecast model. The posting shall indicate which forecast model was being used by ERCOT for GTBD calculation purposes. ERCOT shall produce and update an hourly Total ERCOT PhotoVoltaic Power Forecast (TEPPF) providing a probability distribution of the hourly production potential from all PhotoVoltaic Generation Resources and the PV components of all DC-Coupled Resources in ERCOT for each of the next 168 hours. A Resource Entity with a PVGR or DC-Coupled Resource that has a PV component shall install equipment to enable telemetry of site-specific meteorological information that ERCOT determines is necessary to produce the STPPF and TEPPF forecasts, and the Resource Entity's QSE shall telemeter such information and Resource status information to ERCOT. ERCOT shall establish procedures specifying the accuracy requirements of meteorological information telemetry for PVGRs and DC-Coupled Resources with a PV component.

(2) ERCOT shall use the probabilistic TEPPF and select the forecast that the actual total ERCOT PVGR production is expected to exceed 50% of the time (50% probability of exceedance forecast). To produce the STPPF, ERCOT will allocate the TEPPF 50% probability of exceedance forecast to each PVGR such that the sum of the individual STPPF forecasts equal the TEPPF forecast. The updated STPPF forecasts for each hour for each PVGR are to be used as input into each RUC process as per Section 5, Transmission Security Analysis and Reliability Unit Commitment.