

## CHAPTER 25. SUBSTANTIVE RULES APPLICABLE TO ELECTRIC SERVICE PROVIDERS.

### Subchapter S. WHOLESALE MARKETS.

#### §25.505. Resource Adequacy in the Electric Reliability Council of Texas Power Region.

- (a) **General.** The purpose of this section is to prescribe mechanisms that the Electric Reliability Council of Texas (ERCOT) shall establish to provide for resource adequacy in the energy-only market design that applies to the ERCOT power region. The mechanisms are intended to encourage market participants to build and maintain a mix of resources that sustain adequate supply of electric service in the ERCOT power region, and to encourage market participants to take advantage of practices such as hedging, long-term contracting between market participants that supply power and market participants that serve load, and price responsiveness by end-use customers.
- (b) **Definitions.** The following terms, when used in this section, shall have the following meanings, unless the context indicates otherwise:
- (1) **Generation entity** -- an entity that owns or controls a generation resource.
  - (2) **Event trigger** -- a calculated value for each interval that is equal to 50 times the Houston Ship Channel natural gas price index for each operating day, expressed in dollars per megawatt-hour (MWh) or dollars per megawatt per hour (MW/h). The event trigger shall be applied solely for the purpose of establishing the timing of the publication of certain market data and shall not be construed to establish the legitimacy of any offer, whether such offer is less than, equal to, or higher than the event trigger.
  - (3) **Load entity** -- an entity that owns or controls a load resource, including, but not limited to, a load acting as a resource (LaaR) or a balancing up load (BUL), as those terms are defined in the ERCOT Protocols.
  - (4) **Resource entity** -- an entity that is a generation entity or a load entity.
- (c) **Statement of opportunities (SOO).** ERCOT shall publish a SOO that provides market participants with a projection of the capability of existing and planned electric generation resources, load resources, and transmission facilities to reliably meet ERCOT's projected needs. A SOO published in even-numbered years shall use a ten-year study horizon and be published by December 31 of those years. A SOO published in odd-numbered years shall use a five-year study horizon and be published on or around October 1 of those years. ERCOT shall prescribe reporting requirements for generation entities and transmission service providers (TSPs) to report to ERCOT their plans for adding new facilities, upgrading existing facilities, and mothballing or retiring existing facilities. ERCOT also shall prescribe reporting requirements for load entities to report to ERCOT their plans for adding new load resources or retiring existing load resources.
- (d) **Projected assessment of system adequacy (PASA).** Beginning no later than October 1, 2006, unless otherwise specified below, ERCOT shall provide market participants with information to assess the adequacy of resources and transmission facilities to meet projected demand in the following two reports:
- (1) Each month, ERCOT shall publish a Medium-Term PASA for each week of the subsequent three years beginning with the week after the Medium-Term PASA is published. At a minimum, each Medium-Term PASA shall include the following information:
    - (A) Load forecast by ERCOT zone or area;
    - (B) Ancillary service requirements;
    - (C) Transmission constraints; and
    - (D) Aggregated information on the availability of resources, by ERCOT zone or area, including load resources.
  - (2) Each day, ERCOT shall publish a Short-Term PASA for each hour for the seven days beginning with the day the Short-Term PASA is published.
    - (A) At a minimum, each Short-Term PASA shall include the following information:
      - (i) Load forecast by ERCOT zone or area;

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- (ii) Ancillary service requirements;
    - (iii) Transmission constraints; and
    - (iv) Aggregated information on the availability of resources, by ERCOT zone or area, including load resources.
  - (B) By October 1, 2006, ERCOT shall file at the commission a plan to incorporate the impact of transmission constraints into its Short-Term PASA at a later date.
- (e) **Filing of resource and transmission information with ERCOT.** ERCOT shall prescribe reporting requirements for resource entities and TSPs for the preparation of PASAs. At a minimum, the following information shall be reported to ERCOT:
  - (1) TSPs shall provide ERCOT with information on planned and existing transmission outages.
  - (2) Generation entities shall provide ERCOT with information on planned and existing generation outages.
  - (3) Load entities shall provide ERCOT with information on planned and existing availability of LaaRs, specified by type of ancillary service, and BULs.
  - (4) Generation entities shall provide ERCOT with a complete list of generation resource availability and performance capabilities, including, but not limited to:
    - (A) the net dependable capability of generation resources;
    - (B) projected output of non-dispatchable resources such as wind turbines, run-of-the-river hydro, and solar power; and
    - (C) output limitations on generation resources that result from fuel or environmental restrictions.
  - (5) Load serving entities (LSEs) shall provide ERCOT with complete information on load response capabilities that are self-arranged or pursuant to bilateral agreements between LSEs and their customers.
- (f) **Publication of resource and load information in ERCOT markets.** To increase the transparency of the ERCOT-administered markets, ERCOT shall post at a publicly accessible location on its website, beginning no later than October 1, 2006, the information required pursuant to this subsection, unless a different date is specified by a paragraph of this subsection.
  - (1) The following information in aggregated form, for each settlement interval and for each area where available, shall be posted two calendar days after the day for which the information is accumulated.
    - (A) Quantities and prices of offers for energy and each type of ancillary capacity service, in the form of supply curves.
    - (B) Self-arranged energy and ancillary capacity services, for each type of service.
    - (C) Actual resource output.
    - (D) Load and resource output for all entities that dynamically schedule their resources.
    - (E) During the operation of the market under a zonal market design, scheduled load and actual load. During the operation of the market under a nodal market design, firm scheduled load, scheduled load with “up to” limits on congestion charges, and actual load.
  - (2) During the operation of the market under a nodal market design, the following day-ahead market information in aggregate form shall be posted two calendar days after the day for which the information is accumulated: load bids, including virtual loads, in the form of day-ahead bid curves, and cleared load.
  - (3) The following information in entity-specific form, for each settlement interval, shall be posted as specified in subparagraphs (A) - (E) of this paragraph.
    - (A) During the operation of the market under a zonal market design:
      - (i) Portfolio offer curves for balancing energy and for each type of ancillary service, for each area where available, shall be posted 60 days after the day

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for which the information is accumulated beginning September 1, 2007, except that, for the highest-priced offer selected or dispatched by ERCOT for each interval after January 12, 2007, ERCOT shall post the offer price and the name of the entity submitting the offer 48 hours after the day for which the information is accumulated. In the event of interzonal congestion, ERCOT shall post, separately for each zone, the offer price and the name of the entity submitting the highest-priced offer selected or dispatched.

- (ii) If the market clearing price for energy (MCPE) or the market clearing price for capacity (MCPC) exceeds the event trigger during any interval, the portion of every market participant's price-quantity offer pair for balancing energy service and each other ancillary service that is at or above the event trigger for that service and that interval shall be posted seven (7) days after the day for which the offer is submitted. ERCOT shall implement the requirements of this clause by September 1, 2007.
  - (iii) Other offer-specific information for each type of service and for each area where available shall be posted 90 days after the day for which the information is accumulated beginning March 1, 2007. Effective March 1, 2008, this information shall be posted 60 days after the day the information was accumulated. The information subject to this disclosure requirement is as follows:
    - (I) final energy schedules for each QSE;
    - (II) final ancillary services schedules for each QSE;
    - (III) resource plans for each QSE representing a resource;
    - (IV) actual output from each resource; and
    - (V) all dispatch instructions from ERCOT for balancing energy and ancillary services.
  - (iv) The information posted shall include the names of the resources in the portfolio that were committed, the name of the entity submitting the information, the name of the entity controlling each resource in the portfolio.
- (B) Two months after the start of operation of the market under a nodal market design:
- (i) Offer curves (prices and quantities) for each type of ancillary service and for energy at each settlement point in the real time market, shall be posted 60 days after the day for which the information is accumulated except that, for the highest-priced offer selected or dispatched for each interval on an ERCOT-wide basis, ERCOT shall post the offer price and the name of the entity submitting the offer 48 hours after the day for which the information is accumulated.
  - (ii) If the MCPE or the MCPC exceeds the event trigger during any interval, the portion of every market participant's price-quantity offer pairs for balancing energy service and each other ancillary service that is at or above the event trigger for that service and that interval shall be posted seven (7) days after the day for which the offer is submitted.
  - (iii) Other resource-specific information, as well as self-arranged energy and ancillary capacity services, and actual resource output, for each type of service and for each resource at each settlement point shall be posted 60 days after the day for which the information is accumulated.
  - (iv) The posted information shall be linked to the name of the resource (or identified as a virtual offer), the name of the entity submitting the information, and the name of the entity controlling the resource. If there

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- are multiple offers for the resource, ERCOT shall post the specified information for each offer for the resource, including the name of the entity submitting the offer and the name of the entity controlling the resource.
- (C) The load and generation resource output for each zone, for each entity that dynamically schedules its resources, shall be posted 90 days after the day for which the information is accumulated beginning March 1, 2007. Effective March 1, 2008, the information required by this subparagraph shall be posted 60 days after the day for which the information is accumulated.
  - (D) ERCOT shall use §25.502(d) of this title (relating to Pricing Safeguards in Markets Operated by the Electric Reliability Council of Texas) as a basis for determining the control of a resource and shall include this information in its market operations data system.
  - (E) After the start of operation of the market under a nodal market design, ERCOT shall begin posting transmission flows, voltages, transformer flows, voltages and tap positions (i.e., State Estimator data) 60 days after the day for which the data were accumulated or other time interval as established in clause (ii) of this subparagraph. The data released shall be made available simultaneously to all market participants.
    - (i) Notwithstanding the provisions of this subparagraph and the provisions of subparagraph (B) of this paragraph, ERCOT, in its sole discretion, shall release relevant State Estimator data earlier than 60 days after the day for which the information is accumulated if it determines the release is necessary to provide a complete and timely explanation and analysis of unexpected market operations and results or system events, including but not limited to pricing anomalies, recurring transmission congestion, and system disturbances. ERCOT's release of data under this clause shall be limited to intervals associated with the unexpected market or system event as determined by ERCOT. The data released shall be made available simultaneously to all market participants.
    - (ii) Notwithstanding the provisions of this subparagraph and the other provisions of subparagraph (B) of this paragraph, ERCOT shall, by the start of the nodal market, develop and post a redacted version of State Estimator data, as soon as reasonably practicable after collection of the data, so long as a redacted version excludes information (including but not limited to, voltages, transmission flows and transformer flows) from which resource-specific output levels or offer curves could continually and systematically be derived. Concurrently, in conjunction with the Independent Market Monitor and the commission Staff, ERCOT, through its stakeholder process, shall develop protocols that detail, at a minimum, the methodology, duration, and posting requirement of a redacted version of the State Estimator data. The redacted report methodology developed through the stakeholder process shall be completed within 90 days of the start of the nodal market. If ERCOT is unable to develop a cost effective protocol for the redaction process of the State Estimator data within 90 days of the start of the nodal market, then the following information shall be released as soon as reasonably practicable:
      - (I) Current commercially significant constraints (CSCs) and closely related elements (CREs) line flows that are embodied in the competitive constraint list from the Competitive Constraint Test;
      - (II) For phase shifting transformers, tap positions and line flows;
      - (III) Voltages at all buses;

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- (IV) Line flows on lines that make up interfaces (import, export, flow gate, or stability); and
    - (V) Line flows on DC ties.
  - (iii) In no event shall ERCOT disclose competitively sensitive consumption data.
  
- (g) **Scarcity pricing mechanism (SPM).** ERCOT shall administer the SPM. The SPM shall operate as follows:
  - (1) The SPM shall operate on an annual resource adequacy cycle, starting on January 1 and ending on December 31 of each year.
  - (2) For each day of the annual resource adequacy cycle, the peaking operating cost (POC) shall be 10 times the daily Houston Ship Channel gas price index for the previous business day. The POC is calculated in dollars per megawatt-hour (MWh).
  - (3) For the purpose of this section, the real-time energy price (RTEP) shall be measured as the price at an ERCOT-calculated ERCOT-wide hub.
  - (4) In the annual resource adequacy cycle, the peaker net margin (PNM) shall be calculated as:  $\sum((RTEP - POC) * (\text{number of minutes in a settlement interval} / 60 \text{ minutes per hour}))$  for each settlement interval when  $RTEP - POC > 0$ .
  - (5) Each day ERCOT shall post at a publicly accessible location on its website the updated value of the PNM, in dollars per megawatt (MW).
  - (6) The system-wide offer caps shall be as follows:
    - (A) The low system-wide offer cap (LCAP) shall be set on a daily basis at the higher of:
      - (i) \$2,000 per MWh and \$2,000 per MW per hour; or
      - (ii) 50 times the daily Houston Ship Channel gas price index of the previous business day, expressed in dollars per MWh and dollars per MW per hour.
    - (B) The high system-wide offer cap (HCAP) shall be set:
      - (i) Beginning on June 1, 2013 at \$5,000 per MWh and \$5,000 per MW per hour.
      - (ii) Beginning on June 1, 2014 at \$7,000 per MWh and \$7,000 per MW per hour.
      - (iii) Beginning on June 1, 2015 at \$9,000 per MWh and \$9,000 per MW per hour.
    - (C) At the beginning of the annual resource adequacy cycle, the system-wide offer cap shall be set equal to the HCAP and, except for increases authorized in this section, maintained at this level as long as the PNM during an annual resource adequacy cycle is less than or equal to a threshold of \$300,000 per MW in 2012 and 2013, or the threshold set by ERCOT for a subsequent year. For 2014 and each subsequent year, ERCOT shall set the PNM threshold at three times the cost of new entry of new generation plants. During an annual resource adequacy cycle, the system-wide offer cap shall be increased in accordance with the schedule authorized in this section unless the PNM threshold has been exceeded by that date. If the PNM threshold has been exceeded during an annual resource adequacy schedule, the system-wide offer cap shall be reset at the LCAP for the remainder of that annual resource adequacy cycle.
    - (D) The Independent Market Monitor, as part of its responsibilities pursuant to Public Utility Regulatory Act §39.1515(h), may conduct an annual review of the effectiveness of the SPM.

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- (h) **Development and implementation.** ERCOT shall use a stakeholder process to develop protocols that comply with this section. Nothing in this section prevents the commission from taking actions necessary to protect the public interest, including actions that are otherwise inconsistent with the other provisions in this section.