



Item 8: Pilot Project: Emergency Response Service for Weather-Sensitive Loads (Weather-Sensitive ERS)

John Dumas, ERCOT Director of Wholesale Market Operations

Board of Directors

ERCOT Public

March 19, 2013

Purpose of Weather-Sensitive ERS Pilot

- **Evaluate the ability of Weather-Sensitive Loads to provide dispatchable demand response during summer system conditions;**
- **Evaluate the accuracy of Qualified Scheduling Entity (QSE) projections of demand response capabilities and Load growth;**
- **Evaluate deployment impacts on end-use customers;**
- **Identify any unforeseen challenges in procuring, deploying and evaluating the performance of Weather-Sensitive Loads.**

Pilot Cost

- **Estimated cost of Pilot - \$34,160 to \$86,660**
- **No additional ERCOT personnel impacts for Pilot**
- **Procurement cost will be managed under the \$50 million annual cap for ERS**

Key Aspects for Pilot Project

- **Pilot Timeline:**
 - June through September 2013 ERS Contract Period
- **BH2, BH3, and Weekend/Holiday Peak Time Periods only**
 - BH2 - 1 p.m. to 4 p.m. on weekdays, except holidays
 - BH3 - 4 p.m. to 8 p.m. on weekdays, except holidays
 - Weekend/Holiday Peak Time Period - 1 p.m. to 8 p.m. on Saturdays, Sundays, and Holidays
- **Minimum Offer size – 100 KW**
- **Maximum pilot size of 30 MWs**
- **QSE can increase size of each aggregation during pilot; offer is based on expected maximum size and capacity**
- **30-Minute Ramp period applies**
- **QSE participating in pilot must agree to participate in a post pilot survey**

ERCOT Recommendation

ERCOT staff respectfully recommends that the Board of Directors approve the Weather-Sensitive ERS Pilot Project, as described in the Governing Document, to be effective immediately.



Date: March 12, 2013
To: Board of Directors
From: Chad V. Seely, ERCOT Assistant General Counsel
Subject: Pilot Project: Emergency Response Service for Weather-Sensitive Loads

Issue for the ERCOT Board of Directors

ERCOT Board of Directors Meeting Date: March 19, 2013

Item No.: 8

Issue:

Whether the ERCOT Board of Directors (Board) should approve a pilot project to test an Emergency Response Service product for Weather-Sensitive Loads.

Background/History:

ERCOT staff proposes that the Board approve a pilot project to evaluate the costs and benefits of a weather-sensitive Emergency Response Service (ERS) product (Weather-Sensitive ERS). Pilot projects are specifically authorized by P.U.C. Substantive Rule 25.361(k) in order to provide ERCOT “a temporary platform to evaluate resources, technologies, services, and processes that demonstrate the potential to advance the operational and market functions of the ERCOT system.” P.U.C. SUBST. R. 25.361(k)(1). This pilot project would evaluate demand response capabilities of residential Loads and other consumers whose usage patterns are largely determined by higher temperatures and other similar weather patterns.

ERCOT expects this pilot project to provide valuable operational information. To date, ERCOT has seen virtually no participation in its demand response services from residential consumers, even though residential demand makes up approximately 50% of the summer peak load, amounting to nearly 35,000 MW at historical system peak. Demand response providers have attributed this lack of participation to the structure of the current ERS program, which is based on a fixed obligation over a four-month period. ERS performance requirements and settlement formulas effectively require Qualified Scheduling Entities (QSEs) to offer only the minimum capacity that they can be sure will be available each day during the four-month ERS Standard Contract Term. For residential loads, available capacity is largely determined by the weather. Given the unpredictability of weather over a future four-month period, the minimum capacity QSEs can offer under conventional ERS programs is relatively small, reducing the profitability of residential ERS participation under current rules.

To help address the absence of residential participation in ERCOT demand response services, ERCOT worked with stakeholders to develop NPRR 505, ERS Weather Sensitive Loads. Under that proposal, ERCOT would have evaluated weather-sensitive Loads’ capabilities under baselines designed to capture the distinct demand response benefits provided by these loads. Unlike standard ERS, no availability standard would apply, but a QSE would be subject to payment reductions for overstating its Loads’ ability to provide the service as evaluated through testing or event deployment during the relevant contract term.

When ERCOT submitted NPRR 505 in November 2012, it requested urgent status in an effort to achieve some portion of this demand response potential by summer 2013. The NPRR was



endorsed by both the Wholesale Market Subcommittee (WMS) and the Reliability and Operations Subcommittee (ROS), but was ultimately tabled by the Protocol Revision Subcommittee (PRS). After ERCOT appealed the PRS decision to table, the members of the Technical Advisory Committee (TAC) granted ERCOT's appeal for PRS to weigh-in on the merits of NPRR 505 but requested that ERCOT consider proposing a pilot project as an alternative to moving forward with the NPRR.¹ ERCOT is submitting this proposal based upon its determination that it can accommodate a pilot project for Weather-Sensitive ERS.

Project Description

The terms of this pilot project closely follow the proposal in NPRR 505 and are detailed in the attached Exhibit A, Governing Document for Weather-Sensitive Emergency Response Service Pilot Project ("Governing Document"). As explained in the Governing Document, the purpose of the pilot is to:

- Evaluate the ability of weather-sensitive Loads to provide dispatchable demand response during summer system conditions;
- Evaluate the accuracy of QSE projections of demand response capabilities and Load growth;
- Evaluate deployment impacts on end-use customers; and
- Identify any unforeseen challenges in procuring, deploying and evaluating the performance of weather-sensitive Loads.

The pilot project has been designed to achieve these purposes. Under this proposal, ERCOT will commit up to 30 MW of Weather-Sensitive ERS for a single contract period coinciding with the June through September 2013 ERS Standard Contract Term. ERS Loads (including aggregations of individual sites) must be at least 100 kW and must qualify as "weather-sensitive" under certain established baselines in order to participate. Pilot procurement will be limited to the two existing ERS Time Periods covering the afternoon peak, but will also include a new, additional Time Period covering the afternoon peak hours on weekends and holidays.²

Consistent with the design of NPRR 505, participating QSEs will submit offers based on the expected maximum size of the Load, reflecting the highest expected demand on summer peak as well as expected growth due to increased participation during the contract term. To ensure containment of costs, population growth cannot exceed certain established maximums.

For the purpose of the pilot project, ERCOT will procure Weather-Sensitive ERS as a separate product and will pay each Resource the applicable clearing price in each of the three pilot project Time Periods. In evaluating offers, ERCOT will use the same criteria specified in the

¹ At ERCOT's request, the Protocol Revision Subcommittee tabled NPRR 505 indefinitely in favor of evaluating the requirements in that proposal through this pilot project.

² Weekend peak hours currently fall within the Non-Business Hours ERS Time Period, which includes all weekday hours from 8 p.m. to 8 a.m., as well as all weekend and holiday hours.



“Process for Determining Cost Limits and Reasonableness of Offers” currently used in procurement for standard ERS and the 30-Minute ERS pilot project. These criteria allow ERCOT to reject bids that exceed ERCOT’s reasonable expectation of the value of the product, while taking into consideration the relative prices of other products and services.

Unlike the current ERS program, Loads participating in this pilot will not be required to meet any particular availability requirement. Rather, compensation will be based entirely on performance during tests or deployment events. ERCOT must test each Load at least once but no more than twice each month unless ERCOT deploys Weather-Sensitive ERS during an Energy Emergency Alert (EEA), in which case ERCOT may reduce the number of tests. For Loads greater than 300 kW in size, ERCOT will test only a selection of sites within the Load.

As with ERS Loads participating in the 30-Minute ERS pilot project, Weather-Sensitive ERS Loads are subject to deployment during a Level 1 (or higher) EEA. This differs from conventional 10-minute ERS, which requires a declaration of at least a Level 2 EEA before dispatch. Each participating Load may be deployed up to eight times during the pilot project term, with each deployment lasting up to three hours. Once dispatched, Weather-Sensitive ERS Loads are obligated to deploy within 30 minutes of the instruction.

ERCOT will settle Weather-Sensitive ERS in the same manner as 10-minute ERS, except that ERCOT will reduce a QSE’s payment if the maximum population of each ERS Load is less than 90% of the maximum number of sites projected at the time of offer submission, or the average demand reduction value per site is less than 90% of the average demand reduction value per site based on the QSE’s offer (unless the Load’s obligation is exhausted by deployment during the pilot project term). The payment reduction will exponentially increase if both of these conditions apply. However, neither of these reductions will apply if the total demand response value for the entire ERS Load is equal to or greater than 90% of the offered capacity.

Because of the limited duration of this pilot project, and because the concept of a Weather-Sensitive ERS product is premised upon accelerated payment reduction as a disincentive to non-performance, QSEs and Loads participating in this pilot are not subject to suspension.³

After the pilot project term concludes at the end of September, ERCOT will conduct a survey of end-use customers to gather opinions about participation in the demand response program. QSEs must assist ERCOT in providing the survey to customers, and ERCOT staff will collaborate with stakeholders in designing the survey questions.

Prior to the Board’s December 2013 meeting, ERCOT will provide a final report analyzing each of the stated purposes of the pilot project in light of the data obtained. If ERCOT determines that the product should be permanently introduced into the Protocols, the report may include such a recommendation.

³ This limited moratorium on suspension does not exempt QSEs and Loads from suspension to the extent they may also offer to participate in 10-minute or 30-minute ERS during other Time Periods.



Stakeholder Review Process

P.U.C. Substantive Rule 25.361(k)(2) requires ERCOT to consult with Market Participants and with Commission staff before proposing a pilot project to the Board. Before releasing the Governing Document, ERCOT discussed the pilot concept with Commission staff, who had no significant concerns with this proposal.

Although NPRR 505 received substantial stakeholder review and discussion in the months before it was tabled, ERCOT's opportunities to discuss the pilot proposal with stakeholders have been limited because the decision to propose a pilot project in lieu of proceeding with NPRR 505 was made only within the last few weeks. Still, ERCOT received substantial input on the Governing Document at a special workshop to discuss the pilot project held on March 1, 2013, and also at the TAC meeting on March 7, 2013. ERCOT also issued a Market Notice soliciting formal written comments on the Governing Document, and received six such submissions. As a result of these discussions and comments, ERCOT made a number of changes to the Governing Document.

One of the changes ERCOT has made concerns an issue that received significant attention at TAC—namely, the authority of competitive QSEs (or demand response providers) to contract with potential participants located in Non-Opt-In Entity (NOIE) territories. Two municipally owned utilities (Kerrville Public Utility Board and Denton Municipal Electric (Denton)) submitted written comments proposing specific language in the QSE Agreement attached to the Governing Document that would require NOIE consent to recruitment of NOIE loads by competitive QSEs. During the TAC meeting, a representative for the South Texas Electric Cooperative stated his agreement with this proposal and moved to endorse the Governing Document with the amended language. During discussion on the motion, ERCOT disagreed that the document should be changed, opining that the relevant statutes and rules were not clear as to whether NOIEs may lawfully exclude competitive demand response providers from offering services in NOIE territories, and in the absence of any determination on this issue in the Protocols governing the existing ERS program, ERCOT should refrain from adopting a position in the Governing Document that would purport to decide this issue. ERCOT suggested that stakeholders should clarify the Protocols governing ERS before creating a special exception relevant only to this pilot project.

The seated representative for Austin Energy agreed with ERCOT that the statutes were unclear and further suggested that no change to the Governing Document was necessary because the *ERS Technical Requirements and Scope of Work* document (an Other Binding Document) already requires competitive QSEs to coordinate with NOIE QSEs to ensure that the curtailment of a NOIE Load pursuant to an ERS Dispatch Instruction will not result in a reduction of available generation due to dynamic scheduling. After further comments from various NOIE and non-NOIE stakeholders, TAC ultimately voted to endorse the Governing Document as amended by the Denton comments.

Although TAC endorsed language that provides a categorical prohibition against QSE participation in NOIE areas without NOIE approval, ERCOT believes it preferable to recognize the more limited restriction in the *Technical Requirements* until a more formal decision has been made on the issue by stakeholders (or by the PUC or the courts). The attached version of



the Governing Document therefore reflects this additional language. See Governing Document Section 5.B.

Project Costs

P.U.C. Substantive Rule 25.236(k)(2)(D) requires ERCOT to include an estimate of costs in any pilot project proposal. ERCOT staff estimates that the pilot project costs will likely fall within a range of \$34,160 to \$86,660. This range assumes 2.5 MW of participation (which is ERCOT's best estimate based on current knowledge) and a clearing price ranging from \$16 to \$40.59, which were the average clearing prices of the 30-Minute ERS pilot project and Response Reserve Service, respectively, for the same hours (1 p.m. to 8 p.m.) for all relevant Operating Days in summer 2012.⁴ This estimate also assumes that no payment reductions would apply. If ERCOT were to procure 30 MW of Weather-Sensitive ERS for each Time Period in the pilot project, the cost estimate using the same clearing prices would be a minimum of \$409,920 and a maximum of \$1,039,916. While ERCOT would welcome a fully subscribed pilot project, that level of participation is not expected.

Actual costs could be somewhat higher or lower than these estimates, depending on the clearing price, the quantities awarded, and the actual performance of participating Loads. As with 10-minute ERS, these costs will be allocated among Qualified Scheduling Entities (QSEs) on a Load-Ratio Share basis. ERCOT staff does not anticipate any personnel impact due to the pilot project, and all administrative costs can be absorbed within ERCOT's current O&M budget.

Key Factors Influencing Issue:

The key factors influencing the issue are:

- (1) The benefit of conducting the pilot, which is the ability to evaluate the performance characteristics of residential aggregations (and possibly other weather-sensitive consumers) under a proposed set of performance characteristics without having to effectuate Protocol changes providing for a new form of ERS; and
- (2) The costs of conducting the pilot, as described above.

Conclusion/Recommendation:

ERCOT staff believes that the benefit of conducting a four-month pilot to test ERCOT's proposed method of procuring, dispatching, and settling weather-sensitive demand response easily exceeds the expected cost of the project. If the pilot demonstrates that participating Loads can provide meaningful demand response during peak summer conditions at a reasonable price, the potential long-term reliability benefits could be substantial, given the vast demand response potential associated with residential Loads at summer peak.

In addition to the knowledge obtained, ERCOT should also receive a reasonable operational benefit for every dollar spent during the pilot. Since actual availability is not a factor in QSE compensation

⁴ The first Contract Period for the 30-Minute ERS pilot project began on July 15, 2012, and ended on September 30, 2012.



under the pilot design (and under NPRR 505), ERCOT will only pay QSEs to the extent their Loads can curtail as promised when deployed. If for some reason Loads cannot provide the expected demand response, payments will be reduced accordingly, and the costs of the pilot will therefore be lower.

For these reasons, ERCOT staff respectfully recommends that the Board approve the Weather-Sensitive ERS pilot project, as described in Governing Document, attached hereto as Exhibit A, to be effective immediately.



ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.
BOARD OF DIRECTORS RESOLUTION

WHEREAS, pursuant to P.U.C. Substantive Rule 25.361(k), the Public Utility Commission of Texas (PUC) has authorized the Board of Directors (Board) of Electric Reliability Council of Texas, Inc. (ERCOT) to approve pilot projects for the purposes of testing new resources, technologies, services and processes;

WHEREAS, the Board finds that a pilot project to determine the operational value of a weather-sensitive Emergency Response Service is a worthwhile endeavor;

WHEREAS, the Board finds that ERCOT staff has developed a proposal for the administration of the pilot project in Exhibit A, Governing Document for Weather-Sensitive Emergency Response Service Pilot Project (Governing Document), and such proposal meets the requirements in P.U.C. Substantive Rule 25.361(k)(2); and

WHEREAS, the Board finds that ERCOT staff provided an opportunity for adequate stakeholder review and comment on the proposal and such review meets the requirements in P.U.C. Substantive Rule 25.361(k)(2);

THEREFORE, BE IT RESOLVED, that the proposed Weather-Sensitive Emergency Response Service pilot project, as described in the Governing Document attached as Exhibit A, is hereby authorized and approved by the Board to be effective immediately.

CORPORATE SECRETARY'S CERTIFICATE

I, Vickie G. Leady, Assistant Corporate Secretary of ERCOT, do hereby certify that, at its March 19, 2013, meeting, the ERCOT Board passed a motion approving the above Resolution by _____.

IN WITNESS WHEREOF, I have hereunto set my hand this ____ day of _____, 2013.

Vickie G. Leady
Assistant Corporate Secretary

Exhibit A



Governing Document for Weather-Sensitive Emergency Response Service Pilot Project

1. INTRODUCTION AND SUMMARY

As authorized by P.U.C. Substantive Rule 25.361(k), the ERCOT Board of Directors ("Board") hereby establishes a pilot project to test an Emergency Response Service for Weather-Sensitive Loads ("Weather-Sensitive ERS"). This pilot project will allow consumers that have a demonstrated pattern of increased energy usage during peak weather conditions associated with higher system demand to offer their demand response capability during peak hours in the summer months in exchange for a capacity payment from ERCOT. ERCOT expects that this project will provide a better understanding of the capabilities of residential and other weather-sensitive consumers, which should further enable ERCOT staff and stakeholders to evaluate the feasibility and necessary details of a weather-sensitive ERS product.

2. PURPOSE

The purpose of this pilot project is to:

- Evaluate the ability of weather-sensitive Loads to provide dispatchable demand response during summer system conditions;¹
- Evaluate the accuracy of Qualified Scheduling Entity (QSE) projections of demand response capabilities and Load growth;
- Evaluate deployment impacts on end-use customers;
- Identify any unforeseen challenges in procuring, deploying and evaluating the performance of weather-sensitive Loads.

3. GENERAL PROVISIONS

Except where another rule or procedure is provided in this document, this pilot project will adhere to the rules and procedures governing ERS, including, without limitation, the ERCOT Protocols and the *Emergency Response Service Technical Requirements & Scope of Work*,² an ERCOT Other Binding Document.

¹ The Load performance requirements for this pilot project are intended to be similar to those proposed in Nodal Protocol Revision Request (NPRR) 505, ERS Weather-Sensitive Loads.

² This document is available at http://www.ercot.com/content/services/programs/load/eils/contracts/2013/02-05/Technical_Requirements_&_Scope_of_Work-FebMay13_Final.doc.

This Governing Document will be liberally construed to achieve the purposes of this pilot. Capitalized terms will be given the meaning assigned by the ERCOT Protocols to the extent they are consistent with this Governing Document. In the event of any conflict between this Governing Document and the ERCOT Protocols, Market Guides, or any other ERCOT standard, the Governing Document will govern, but only to the extent the conflict relates to the administration of this pilot project.

4. PROJECT TIMELINE

ERCOT will conduct this pilot project over a period coinciding with the June through September 2013 ERS Standard Contract Term (June 1, 2013, to September 30, 2013). ERCOT's procurement of Weather-Sensitive ERS will follow the timeline to be published by ERCOT in its Request for Proposals for the June through September 2013 ERS Standard Contract Term. Charges and payments will be settled according to the timelines for settlement of standard ERS obligations for the June through September 2013 ERS Standard Contract Term, as described in Protocols Section 9.14.5, Settlement of Emergency Response Service.

5. ELIGIBILITY AND QUALIFICATION

A. Participant Requirements

Participation in this pilot project is limited to Loads qualified to provide ERS that can be categorized as "weather-sensitive" by meeting either of the following criteria:

- (a) The Load must consist exclusively of residential sites and must qualify for performance evaluation under either the regression baseline methodology or the control group baseline methodology; or
- (b) The Load must consist exclusively of non-residential sites and must qualify as weather-sensitive under the regression baseline evaluation methodology.

The control group and regression methodologies are described in the document entitled "Emergency Response Service Default Baseline Methodologies" posted to the ERCOT website.³ All sites in an ERS Load must have at least nine months of interval meter data to qualify as weather-sensitive under the regression baseline evaluation methodology. ERCOT will post on the pilot projects webpage minimum accuracy standards for qualification under the regression baseline evaluation methodology. All sites in an ERS Load assigned to the control group baseline must have fully functional interval metering, but are not required to have historical meter data. ERCOT's determination that an ERS Load is eligible to participate in the pilot is independent of ERCOT's determination of which baseline methodologies may be appropriate for purposes of evaluating the ERS Load's performance.

³ This document is available at:

http://www.ercot.com/content/services/programs/load/eils/ERS_k/Default_Baseline_Methodologies.doc

B. QSE Requirements

Any offer to provide Weather-Sensitive ERS on behalf of eligible ERS Loads must be submitted by a Qualified Scheduling Entity (QSE). As a condition for participation in this pilot, a QSE must have demonstrated the capability to receive both Extensible Markup Language (XML) messaging and Verbal Dispatch Instructions (VDIs) on behalf of each ERS Load it represents (as required of ERS QSEs by Section 3.14.3.1 of the ERCOT Protocols) and must demonstrate the capacity to curtail, or require curtailment, of the consumption of energy for each ERS Load it represents. Prior to submitting any offer, a QSE must submit a fully executed Weather-Sensitive ERS Pilot Project Supplement to Market Participant Agreement (which is attached hereto as Attachment A).

A QSE offering an ERS Load's capacity in either conventional 10-Minute ERS or in the 30-Minute ERS pilot project for the June through September 2013 Standard Contract Term or 30-Minute ERS Pilot Contract Period may also offer that capacity for the Weather-Sensitive ERS pilot project. However, ERCOT will commit ERS Loads to participate in this pilot project before considering offers for other ERS services. An ERS Load whose capacity is offered and committed in this pilot project may not participate in either 10-Minute ERS or the 30-Minute ERS pilot project for any Time Period for which the Resource is committed under this pilot. A committed ERS Load may participate in ERS in other Time Periods, provided that the population of that Load does not change during the pilot, as otherwise permitted by Section 7, below. An ERS Load may not participate in this pilot if, at the time of its offer, all or any part of the Load's capacity is already committed under a non-ERS demand response program for all or any part of any Time Period for which the Resource has submitted an offer in this pilot.

As required by Section K of the *Emergency Response Service Technical Requirements & Scope of Work* document, before submitting an offer on behalf of an ERS Load located in a NOIE service territory, a QSE must arrange with the NOIE to provide ERCOT with documentation that any Load being followed by a Dynamically Scheduled Resource will not interfere with the effective delivery of ERS in a deployment event. Such assurance must be documented in writing and provided to ERCOT via email to ERS@ercot.com.

6. PROCUREMENT

ERCOT will procure Weather-Sensitive ERS for a pilot project contract term beginning on June 1, 2013 and ending on September 30, 2013, coincident with the planned June through September 2013 ERS Standard Contract Term (hereinafter "pilot project term"). ERCOT will procure a maximum of 30 MW of Weather-Sensitive ERS. If more than 30 MW is offered, ERCOT will proportionally reduce the commitments of all participating ERS Loads, taking into account each Load's minimum participation value indicated in the 'MW Tied Offers' field on the ERS Submission Form.

For the June through September 2013 pilot project term, ERCOT will procure Weather-Sensitive ERS for the Business Hours 2, Business Hours 3 ERS Time Periods and a Weekend/Holiday Peak Time Period (1 p.m. to 8 p.m. on Saturdays, Sundays, and Holidays) that will be available only to Weather-Sensitive ERS Loads.

A QSE must offer at least 100 kW for each Weather-Sensitive ERS Load. If the actual capacity of a Load is greater than 100 kW but less than 300 kW, ERCOT will deploy all sites in the Load during each test or event deployment, as provided by Section 9.B., below. For the purposes of this pilot project, actual capacity shall be calculated by multiplying the actual number of sites by the offered output and dividing by the offered number of sites.

QSEs representing Weather-Sensitive ERS Loads will be paid the clearing price for each Time Period in the pilot project.

Each offer submitted by a QSE on behalf of an aggregated Weather-Sensitive ERS Load must include the QSE's projection of the maximum number of sites in the aggregation during the ERS Standard Contract Term. ERCOT shall review this projection and shall reject any offer that assumes population growth that would violate the limits on site participation growth described in section 7, below.

Weather-Sensitive ERS Loads are not eligible for renewal opt-in, as described in Protocols Section 3.14.3.1, Emergency Response Service Procurement.

For the purpose of the pilot, QSEs may not self-provide Weather-Sensitive ERS, as otherwise permitted by Protocols Section 3.14.3.2, Emergency Response Service Self-Provision.

7. MODIFICATION OF LOAD POPULATION

A QSE may modify the population of an aggregated Weather-Sensitive ERS Load once per month during the pilot project by resubmitting the offer form to reflect the site modifications. Other fields on the offer form may not be modified. These adjustments will be effective on the first day of the month following the month in which the change was submitted. A QSE may increase the number of sites in an aggregated ERS Load that is participating only in designated weather-sensitive ERS Time Period(s) by no more than the greater of the following:

- (a) 100% of the Load's initial size; or
- (b) Two MW times the QSE's projection of the maximum number of sites in the aggregation during the pilot project term, divided by the MW capacity offered for the aggregation.

Any sites added to an ERS Load during the pilot project must qualify for the baseline applicable to the ERS Load, as described in Section 9.A., below.

8. DEPLOYMENT REQUIREMENTS

ERCOT may dispatch Weather-Sensitive ERS Loads for purposes of testing or to provide capacity during an ERCOT-declared Energy Emergency Alert (EEA). ERCOT will deploy Weather-Sensitive ERS Loads obligated in Business Hours 2 and 3 Time Periods via an XML and Verbal Dispatch Instruction (VDI). ERCOT will deploy Weather-Sensitive ERS Loads obligated in the Weekend/Holiday Peak Time Period via a VDI only. An instruction shall not be considered a deployment of Weather-Sensitive ERS Loads unless the instruction explicitly applies to Weather-Sensitive ERS. Upon receiving an instruction requiring

deployment of Weather-Sensitive ERS, each affected QSE must ensure curtailment of its Weather-Sensitive ERS Loads consistent with its respective obligations within 30 minutes of the QSE receiving the instruction and shall ensure those Loads remain curtailed until recalled by ERCOT. ERCOT shall not require deployment of any single Load for longer than three hours during any single deployment.

A. Test Deployment

ERCOT shall conduct unannounced testing of each participating ERS Load at least once but no more than twice per month during the pilot project, unless testing has been superseded by deployment events as described below in this Section. For no more than two of the tests of an ERS Load in the pilot project term, the Sustained Response Period of the test will have a duration of at least one hour. The remaining tests will be conducted according to normal ERS testing procedures. At the time of Dispatch during a test, ERCOT will not advise the QSE of the test duration. ERCOT may conduct a test during any of an ERS Load's obligated hours. However, tests will generally be targeted toward periods of peak weather conditions.

For an ERS Load assigned to an ERS default baseline that has an actual capacity of at least 300 kW at the time of the test, tests will be conducted by group. If an ERS Load assigned to an ERS default baseline has an actual capacity lower than 300 kW at the time of the test, all sites in the resource will be assigned to the same group and tests will be conducted for the entire Load. The Dispatch Instruction shall identify the group being tested.

For an ERS Load assigned to the control group baseline, tests will target one or more of the designated groups. The Dispatch Instruction shall identify the group(s) being tested. Non-tested groups will serve as the control group. Selection of groups to be tested will be random and will cycle through the groups within the Load.

The QSE is responsible for managing group assignments and for deploying only the group(s) dispatched by ERCOT during a test.

ERCOT may reduce the number of tests administered by the number of EEA deployment events during the ERS Standard Contract Term. However, a test shall not reduce a participating ERS Load's EEA deployment obligation, as described in this Section below.

B. EEA Deployment

Except for the purposes of testing, ERCOT may dispatch Weather-Sensitive ERS Loads only if ERCOT has first declared a Level 1 (or higher) Energy Emergency Alert. A deployment of 30-minute ERS or 10-minute ERS during an EEA shall not be considered a deployment of Weather-Sensitive ERS unless the VDI expressly includes Weather-Sensitive ERS.

Each Weather-Sensitive ERS Load shall be subject to a maximum number of EEA deployment events equal to two times the number of months of obligation in the pilot project term (i.e., 8 deployments).

9. PERFORMANCE EVALUATION

Weather-Sensitive ERS Loads are subject to event performance, test performance, and availability requirements as described in this Section. Unless specifically addressed in this Section, Weather-Sensitive ERS Loads are subject to the same performance criteria that apply to other ERS Resources.

A. Baseline Assignments

For purposes of performance evaluation, each Weather-Sensitive ERS Load must be assigned to an appropriate baseline before the beginning of the pilot project term. An ERS Load consisting of residential sites must be assigned to either the regression baseline evaluation methodology or the control group baseline evaluation methodology.⁴ If ERCOT determines that the residential ERS Load may be assigned to either baseline, the QSE may select the baseline. For each ERS Load consisting of non-residential sites, the QSE must select any one of the ERS default baseline methodologies for which the Load qualifies.

B. Group Assignments for Certain ERS Loads

For each Weather-Sensitive ERS Load assigned to a default baseline that has an actual capacity of at least 300 kW, ERCOT will assign each site in the Load to one of two numbered groups for purposes of testing and deployment event Dispatch. Upon the request of a QSE, or upon a determination by ERCOT that assignment to two groups would result in test results that would inaccurately represent performance for the entire Load, ERCOT shall assign all sites within the Load to a single group. ERCOT will assign all sites within an ERS Load whose actual capacity is less than 300 kW to a single group. Group designations are subject to change if the QSE adjusts the population of the ERS Load during the pilot project, as described in Section 7, above.

For a Weather-Sensitive ERS Load assigned to the control group baseline, ERCOT will divide the aggregation into multiple randomly assigned numbered groups for purposes of testing and deployment event Dispatch, and one or more of these groups will be designated as the control group(s) at time of Dispatch. ERCOT will strive to minimize control group size while preserving the ability to achieve accurate demand response measurement and verification. The number of groups, group size and group designations are subject to change if the QSE adjusts the population of the ERS Load during the pilot project, as described in Section 7, above.

⁴ The requirements for these baselines are described in the “Emergency Response Service Default Baseline Methodologies” document, available at http://www.ercot.com/content/services/programs/load/eils/ERS_k/Default_Baseline_Methodologies.doc.

C. Test Performance Factor Calculation

ERCOT shall calculate a test performance factor for each test of a participating ERS Load using the event performance methodology described below in this Section, except that the capacity obligations shall be prorated based on the number of sites dispatched during the test.

D. EEA Deployment Event Performance Factor Calculation

For an EEA deployment event in which pilot participants are deployed, ERCOT shall calculate Load and QSE portfolio-level ERS Event Performance Factors as follows:

- i. For each interval of a deployment ERCOT shall compute an event interval performance factor (EIPF) for each Weather-Sensitive ERS Load as specified in Protocols Section 8.1.3.1.4(2)(b)(i) except that the interval performance factor shall not be capped at one. In addition, ERCOT shall compute a demand reduction value for that interval as the greater of zero or the baseline estimate for that interval less the actual load for that interval. The demand reduction value shall be adjusted to reflect normalized peak weather conditions and any baseline modifications required in Section 11.B., below. Regardless of the number of enrolled sites in the Weather-Sensitive ERS Load at the time of an event, the contracted capacity value (OFFERMW) used will be the value submitted by the QSE in its offer. ERCOT shall compute each ERS Load's interval fraction value (IntFrac) as provided in Section 8.1.3.1.4(2)(b)(i).
- ii. For an EEA deployment event with two or more full intervals in the Sustained Response Period, if an ERS Load's EIPF for the first full interval of the Sustained Response Period is less than 75% of the average EIPF for the remaining full intervals of the Sustained Response Period, the baseline used to evaluate the ERS Load shall be reduced to the level at which the ERSEPF for that event or test is equal to 0.75 times the ERSEPF determined by using the initial baseline. For the purposes of this calculation, each EIPF is capped at 1.0.
- iii. ERCOT shall compute a QSE portfolio-level MW obligation and portfolio-level demand reduction value for each interval of a deployment as the sum of the MW obligations and the demand reduction values calculated in paragraph i., above, respectively. ERCOT shall compute the QSE's portfolio-level interval fraction value (IntFrac) for each interval of a deployment as the average of the interval fractions for each of the Loads within its portfolio weighted by the demand reduction value for the Load in that interval.
- iv. For each test and EEA deployment event, ERCOT shall compute each Weather-Sensitive ERS Load's event performance factor (ERSEPF) as the average of the event interval performance factors calculated in paragraph i., above, weighted by the interval demand reduction values and interval fractions (IntFrac) computed in paragraph i., above.

- v. ERCOT shall compute the QSE's portfolio-level event interval performance factor for each interval of a deployment as specified in Protocols Section 8.1.3.1.4(2)(b) using the values computed in paragraphs i. and ii., above.
- vi. ERCOT shall compute the QSE's portfolio-level Weather-Sensitive ERS Load event performance factor (ERSEPF) for each test and event as the average of the event interval performance factors calculated in paragraph iii., above, weighted by the interval demand reduction values and interval fractions (IntFrac) computed in paragraph ii., above.
- vii. ERCOT shall compute the QSE's portfolio-level Weather-Sensitive ERS Load event performance factor for the Contract Period as the average of the event interval performance factors for all tests and events during the Contract Period calculated in paragraph iii., above weighted by the interval demand reduction values and interval fractions computed in paragraph ii., above.

E. Availability Factor Calculation

The availability factor methodologies described in Section 8.1.3.1.3, Availability Criteria for Emergency Response Service Resources, shall not apply to ERS Loads. A participating ERS Load's availability factor for the duration of the pilot shall be set to 1.0.

10. LIMITED MORATORIUM ON SUSPENSION

Participating ERS Loads and QSEs representing such Loads are not subject to suspension for failure to comply with any standard required in this pilot. This moratorium on suspension applies only to Weather-Sensitive ERS for the duration of the pilot.

11. SETTLEMENT

ERCOT will settle Weather-Sensitive ERS in the same manner that ERS is settled under Section 6.6.11, Emergency Response Service Capacity, except that the QSE Portfolio-Level ERSEPF used will be calculated as provided in Section 9.D., above, and except as otherwise provided in this Section. ERCOT will itemize payments and charges associated with the Weather-Sensitive ERS pilot project separate from other ERS charges on Settlement extracts

A. Payment Calculation

The offer price used in the calculation (OFFERPRICE) shall be the clearing price for Weather-Sensitive ERS for each Time Period.

B. Payment Reduction

Notwithstanding the foregoing, ERCOT shall reduce a QSE's payment for a Weather-Sensitive ERS Load as follows:

- i. If the maximum number of sites in the Weather-Sensitive ERS Load during the pilot project term is less than 90% of the maximum number of sites projected by the QSE at the time of offer submission, as described in Section 6, above, the baseline used to evaluate the Weather-Sensitive ERS Load shall be reduced to the level at which the pilot project ERSEPF is equal to the square of the ERSEPF determined by using the initial baseline.
- ii. If the average Demand reduction value per site within the Weather-Sensitive ERS Load for all tests and deployment events during the pilot project term is less than 90% of the average Demand reduction value per site as calculated based on the QSE's offer, the baseline used to evaluate Weather-Sensitive ERS Load shall be reduced to the level at which the Load's pilot project ERSEPF is equal to the square of the ERSEPF determined by using the initial baseline. ERCOT shall adjust the results of each test and deployment event to normalized peak weather conditions before making this calculation.
- iii. If ERCOT determines that the total demand response value provided by the Weather-Sensitive ERS Load, as adjusted for normalized peak weather conditions, is equal to or greater than 90% of its contracted capacity value (OFFERMW), the squaring provisions described in paragraphs i. and ii. In this Section shall be waived.
- iv. If the provisions of both paragraphs i. and ii. in this Section require the ERSEPF to be squared and paragraph iii. Of this section does not apply, the baseline used to evaluate the Weather-Sensitive ERS Load shall be reduced to the level at which the pilot project ERSEPF for the Weather-Sensitive ERS Load is equal to the cube of the ERSEPF determined by using the initial baseline.
- v. If a Weather-Sensitive ERS Load's obligation is exhausted during the pilot project term, the provisions of paragraphs i., ii., and iv., above shall not be applied.

12. PROGRAM COSTS

ERCOT estimates that the pilot project will cost between \$34,160 and \$86,660. The lower figure is based on the average clearing prices for the 30-Minute ERS pilot project for the Business Hours 2 and 3 Time Periods in the July 15, 2012, through September 30, 2012, pilot Contract Period (\$16/MW/hr) and assumes estimated participation of 2.5 MW for the three eligible Time Periods and that no reductions to payment will apply. The higher figure is based on the same assumptions, except it uses the average hourly clearing price for Responsive Reserve Service for the same hours in the June through September 2012 period (\$40.59/MW/hr). If ERCOT were to procure 30 MW of Weather-Sensitive ERS in this pilot project (a prospect that ERCOT currently views as unlikely), the estimated cost range using the same clearing price assumptions would be \$409,920 to \$1,039,916. Actual costs may differ from these projections depending on actual participation, performance, and offer prices.

ERCOT will absorb the personnel impact of this pilot project in its current Operations and Maintenance budget for 2013.

ERCOT's procurement of Weather-Sensitive ERS for this pilot is subject to the \$50 million cost cap specified in P.U.C. Substantive Rule 25.507(b)(2).

13. SURVEY OF END-USE CUSTOMERS

In order to further understand the effects of deployment obligations on weather-sensitive Loads, ERCOT will conduct a survey of pilot project participants after the completion of the pilot project term. ERCOT will discuss the content of the survey with the Demand Side Working Group before sending it to participants. Each QSE will be responsible for providing the survey via mail or email to individual end-use customers participating in Loads represented by the QSE.

14. EVALUATION AND TERMINATION OF PILOT PROJECT

In advance of the December 2013 meeting of the ERCOT Board of Directors ("Board"), ERCOT will submit a report to the Board analyzing the pilot project data in light of objectives stated in Section 2, above. The report will also include a recommendation as to whether the Protocols should be revised to allow participation in ERS by weather-sensitive Loads.

Unless extended by the Board of Directors, this pilot project will terminate at the end of the June to September 2013 ERS Standard Contract Term (i.e., on September 30, 2013). If the Board chooses to extend the duration of the pilot project for any reason, the program will terminate at the end of that extended term, or at the end of the Operating Day prior to the effective date of any NPRR enabling participation ERS by weather-sensitive Loads, whichever comes first, except as otherwise directed by the Board.

At any time, with or without prior notice, ERCOT staff may suspend the pilot (including testing or deployment obligations) if, in its sole judgment, it determines that the pilot could jeopardize the efficient or reliable operation of the ERCOT System. Additionally, ERCOT may at any time prohibit the continued participation in this pilot of any Weather-Sensitive ERS Load that, in ERCOT's sole judgment, poses a threat to the reliability of the ERCOT system.

Irrespective of the reason for termination of the pilot, ERCOT will settle all pilot project obligations in accordance with the terms of this Governing Document.

**Weather-Sensitive Emergency Response Service Pilot Project
Supplement to Market Participant Agreement
Between
(Name of QSE)
and
Electric Reliability Council of Texas, Inc.**

This Supplement to Market Participant Agreement (“Supplement”), effective as of [START DATE] (“Start Date”), is entered into by and between [PARTICIPANT’S NAME], a Qualified Scheduling Entity in the ERCOT Region (“QSE” or “Participant”) and Electric Reliability Council of Texas, Inc., a Texas non-profit corporation (“ERCOT”).⁵

Recitals

WHEREAS:

- A. The Public Utility Commission of Texas (“PUCT”) has authorized ERCOT to conduct pilot projects in P.U.C. Substantive Rule 25.361(k);
- B. The ERCOT Board has approved a pilot project to evaluate a weather-sensitive Emergency Response Service (“Weather-Sensitive ERS”), as described in the Governing Document for Weather-Sensitive Emergency Response Service Pilot Project (“Governing Document”);
- C. Participant is a QSE in the ERCOT Region and has executed a Standard Form Market Participant Agreement (“Market Participant Agreement”) with ERCOT;
- D. Participant is a QSE representing an ERS Load that will be obligated to provide Weather-Sensitive ERS in accordance with the requirements prescribed in the Governing Document;
- E. Participant and ERCOT wish to supplement the Market Participant Agreement between Participant and ERCOT to provide for Participant to represent ERS Loads participating in the Weather-Sensitive ERS; and
- F. The Parties enter into this Supplement in order to establish the terms and conditions by which ERCOT and Participant will discharge their respective duties and responsibilities with respect to the Weather-Sensitive ERS pilot project.

Agreements

NOW, THEREFORE, in consideration of the mutual covenants and promises contained herein, ERCOT and Participant (the “Parties”) hereby agree as follows:

⁵ Unless otherwise indicated, capitalized terms in this Supplement have the meanings ascribed to them in the ERCOT Protocols.

- A. All terms and conditions of the Market Participant Agreement between Participant and ERCOT remain in full force and effect.
- B. In addition to its obligations under the Market Participant Agreement with ERCOT, Participant will submit Weather-Sensitive ERS offers on behalf of ERS Loads as described in the Governing Document.
- C. Participant and ERCOT will abide by and comply with the rules of the Weather-Sensitive ERS pilot project set out in the Governing Document.
- D. Each award of Weather-Sensitive ERS will be confirmed by ERCOT in an award notification to Participant.
- E. Either Party may terminate this Supplement by providing 30 days' notice to the other Party; however, no termination of this Supplement will be effective before the end of any period for which ERCOT has already issued an award notification to Participant.
- F. Otherwise, this Supplement will terminate upon the completion of all obligations incurred under the terms of the Governing Document and this Supplement.
- G. This Supplement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

SIGNED, ACCEPTED, AND AGREED TO by each undersigned signatory who, by signature hereto, represents and warrants that he or she has full power and authority to execute this Supplement.

Electric Reliability Council of Texas, Inc.:

By: _____

Printed Name: _____

Title: _____

Date: _____

Participant:

By: _____

Printed Name: _____

Title: _____

Date: _____