**Governing Document for Fast-Responding Regulation 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 a Fast-Responding Regulation Service (“FRRS”). FRRS will be tested as a separate Ancillary Service and will require full or calculated partial deployment of a Resource’s obligated capacity within 60 cycles of a substantial deviation in system frequency or receipt of an ERCOT deployment signal. Among other things, this pilot seeks to verify whether qualified Resources can reliably deploy as required and to determine the operational value of such a service. ERCOT believes that this faster-responding regulation service has the potential to increase the reliability of the ERCOT system at a lower total cost to Load as compared with solely relying on conventional Regulation Service. If the pilot proves successful, ERCOT will propose an NPRR to implement FRRS.

1. **PURPOSE**

The purpose of this pilot project is to:

* Determine whether FRRS can improve ERCOT’s ability to arrest frequency decay during unit trips;
* Determine the optimal means of deploying FRRS by testing various deployment methodologies;
* Determine whether FRRS can reduce the need for Regulation Service and thereby reduce total Ancillary Service costs;
* Assess the operational benefits and challenges of deploying FRRS;
* Provide data for ERCOT to determine the appropriate settlement treatment for Resources providing FRRS, including possible “pay-for-performance” methods such as those being developed in response to FERC Order 755.

1. **PROJECT TIMELINE**

Subject to any ERCOT decision to delay project implementation, the FRRS Pilot Project will proceed according to the following timeline:

September 18, 2012: Board approval; qualification opens

October 24, 2012: Pilot participants provide first weekly notification of available Resource capacity

October 25, 2012: ERCOT provides QSEs first notification of hourly commitments for the upcoming Saturday through Sunday period

November 1, 2012: First weekly obligation period begins

February 15, 2013: ERCOT issues preliminary report on FRRS pilot project

April 30, 2013 (or other date determined by Board): Pilot project ends

Notwithstanding the specification of the above dates, ERCOT may choose to delay the implementation of the pilot for up to six months if, in its sole discretion, it determines that a later start date would provide greater value to the pilot.

1. **ELIGIBILITY**

Any ERCOT-registered Generation Resource or Controllable Load Resource that has been qualified to provide FRRS in accordance with paragraph 5 below is eligible to participate in the FRRS pilot. Neither participation in FRRS nor an offer to participate in FRRS will preclude a Resource from offering to provide any other ERCOT product or service, provided that an FRRS-qualified Resource cannot offer capacity for the purposes of FRRS if that same capacity has already been offered or committed to provide another ERCOT product or service for the same time period, or any portion thereof, for which the FRRS obligation would apply.

QSEs may submit offers to provide FRRS on behalf of qualified Resources (hereinafter sometimes referred to as “FRRS Resources”). QSEs representing FRRS Resources must submit a fully executed FRRS Supplement to Market Participant Agreement (which is attached hereto as Attachment A and incorporated herein for purposes of Board approval) prior to submitting any offer.

1. **QUALIFICATION**

A Resource must be qualified to provide FRRS in accordance with this paragraph as a condition for participation in this pilot. To participate in FRRS, a QSE must have the capability to receive a Dispatch Instruction through a separate ICCP signal. A Resource must have the capability to independently detect and record system frequency with an accuracy of at least one mHz and a resolution of no less than 32 samples per second. The Resource must also be able to measure and record MW output with a resolution of no less than 32 samples per second.

Resources must be separately qualified to provide FRRS-Up (increase in output or reduction in consumption provided during certain defined low frequency conditions) and/or FRRS-Down (reduction in output or increase in consumption provided during certain high frequency conditions), but are not required to seek qualification for both services.

A Resource must initiate the qualification process by submitting an FRRS Qualification Form at least 14 Business Days before the date on which the Resource wishes to notify ERCOT of its available capacity. ERCOT will post the Qualification Form template to the Pilot Projects page on the ERCOT website upon approval of this pilot. A Resource must designate on the Qualification Form the quantity of capacity the Resource wishes to qualify for participation in FRRS. A Resource is not required to seek qualification of 100% of its available capacity. However, the maximum capacity a Resource will be permitted to qualify will be 65 MW of capacity for FRRS-Up and 35 MW for FRRS-Down.

Within ten days of receiving the submission form, ERCOT will schedule a test of the Resource. During the test, the Resource will be required to demonstrate that it can deploy within 60 cycles of either (1) receipt of a deployment signal from ERCOT or (2) a deviation of frequency in excess of +/-.09Hz (or other automatic deployment threshold established by ERCOT) from 60 Hz. The Resource will be required to sustain the deployment for a minimum of 8 minutes at a minimum level of 95% and a maximum level of 110% of the proposed maximum capacity obligation. ERCOT will use high-resolution recorded frequency and MW output data to determine whether the Resource met its performance obligations during the test.

Within two Business Days of receiving the test performance data from the Resource, ERCOT will notify the Resource’s QSE whether the Resource passed the test. If the Resource passes, it will be deemed qualified to provide FRRS.

1. **WEEKLY COMMITMENT PROCESS**

ERCOT will conduct a weekly commitment of FRRS capacity. ERCOT will separately commit a maximum of 65 MW for FRRS-Up capacity, and a maximum of 35 MW for FRRS-Down capacity for each hour in the upcoming week.

By 5 p.m. on Tuesday each week, each QSE representing an FRRS Resource must submit to frrs\_commitment@ercot.com a list of Resources the QSE wishes to make available to FRRS, along with the available quantity of qualified capacity from each Resource. QSEs may offer all or any portion of the Resource’s qualified capacity to provide FRRS. The offer must specify each Resource’s available qualified capacity for each hour in the upcoming week.

For FRRS-Up, ERCOT will calculate each Resource’s obligation according to the following two-step methodology:

**Step 1**: If 13 or fewer Resources are participating, ERCOT will first allocate to each Resource a minimum of 5 MW or the offered capacity of the Resource, whichever is smaller. If more than 13 Resources are participating, ERCOT will determine the minimum capacity obligation for each Resource by dividing 65 by the number of participating Resources. ERCOT will allocate to each Resource this minimum capacity obligation or the offered capacity of the Resource, whichever is smaller.

**Step 2**: ERCOT will allocate any remainder of the 65 MW maximum among those Resources whose maximum capacity offered is greater than the amount allocated under this first step in proportion to the amount of capacity offered.

For FRRS-Down, ERCOT will calculate each Resource’s obligation according to the following two-step methodology:

**Step 1**: If 7 or fewer Resources are participating, ERCOT will first allocate to each Resource a minimum of 5 MW or the offered capacity of the Resource, whichever is smaller. If more than 7 Resources are participating, ERCOT will determine the minimum capacity obligation for each Resource by dividing 35 by the number of participating Resources. ERCOT will allocate to each Resource this minimum capacity obligation or the offered capacity of the Resource, whichever is smaller.

**Step 2**: ERCOT will allocate any remainder of the 35 MW maximum among those Resources whose maximum capacity offered is greater than the amount allocated under this first step in proportion to the amount of capacity offered.

By 5 p.m. on Thursday each week, ERCOT will notify each QSE via MIS of its Resources’ obligations for the coming Saturday through Sunday period. Each Resource’s Current Operating Plan (COP) should be promptly updated to reflect a status of “ONREG” for each committed hour. However, a Resource shall not telemeter a status of “ONREG” for any FRRS obligation.

ERCOT’s procurement of FRRS is not subject to the procurement methodologies established in the ERCOT Protocols or the *ERCOT Methodologies for Determining Ancillary Services Requirements* except as otherwise stated herein.

1. **PERFORMANCE OBLIGATIONS**

During any hour in which a Resource is obligated to provide FRRS, the Resource is subject to deployment by either an ERCOT Dispatch Instruction or by automatic response to a trigger frequency independent of an ERCOT Dispatch Instruction. ERCOT will establish the frequencies at which a Resource will be obligated to deploy due to receipt of a Dispatch Instruction or due to automatic response. At the beginning of the pilot, ERCOT will use the initial deployment logic explained in Section 8, below. Irrespective of the means of deployment, ERCOT will release Resources from deployment through issuance of a Dispatch Instruction.

When required to deploy, a Resource must meet two performance criteria. First, a Resource must deploy within 60 cycles of the Dispatch Instruction or triggering frequency. Second, a Resource must provide 95% to 110% of the obligated capacity during the entire duration of the deployment. Failure of either performance criterion during any deployment for 30% or more of the deployments during any hour shall be deemed failure of the Resource’s obligation for that deployment.

If a QSE believes its Resource received a Base Point Deviation charge as a direct result of an FRRS deployment, it should submit a settlement dispute in accordance with section 9.14, Settlement and Billing Dispute Process. Upon the filing of this dispute, ERCOT will add the FRRS deployment obligation to the amount of the Time-Weighted Average Regulation for each Settlement Interval, as described in Section 6.6.5, Generation Resource Base Point Deviation Charge, and manually recalculate the Base Point Deviation Charge. If the recalculation results in a reduction to the charge, ERCOT will grant the dispute and adjust the charge accordingly.

If a Resource fails its Generation Resource Energy Deployment Performance (GREDP) metrics due to its participation in FRRS, ERCOT will review the calculation of the Resource’s GREDP score to determine the degree to which FRRS contributed to that failure. ERCOT will communicate any such conclusions to the Texas Reliability Entity or Public Utility Commission, as appropriate.

Participation in FRRS does not preclude a Resource from consuming or injecting energy, as applicable, outside of an FRRS deployment. Such consumption or injection will be settled in accordance with the Protocols as for any other Resource.

Within 24 hours following the end of each seven-day obligation period, each QSE must submit all frequency deployment data for each FRRS Resource in the QSE’s portfolio for the preceding obligation period. ERCOT will review performance data to ensure compliance with the applicable performance criteria for deployments due to frequency deviations in excess of +/- .09 Hz (or other Trigger Frequency) and will conduct reviews of data to ensure compliance with the applicable performance criteria for deployments due to frequency deviations in excess of +/- .03 Hz (or other frequency requiring a Dispatch Instruction).

1. **DEPLOYMENT LOGIC**

ERCOT will deploy FRRS Resources according to the following deployment logic:

**Deployment by Dispatch Instruction**: Each Resource must provide 100% of its deployed capacity within 60 cycles of receiving a Dispatch Instruction from ERCOT. ERCOT may deploy FRRS resources for up to two minutes when frequency reaches a deviation of more than +/- .03 Hz from the 60 Hz nominal system frequency. If the frequency deviation increases to more than +/- .05 Hz within the same frequency excursion (for purposes of this pilot, a single excursion is deemed to end when frequency deviation from 60 Hz decreases to +/- .01 Hz or less at any point and does not increase beyond .01Hz in the same direction of deviation within 12 seconds of reaching +/- .01 Hz, or when frequency deviation exceeds +/- 0.1 Hz in the direction opposite the excursion for which FRRS had been deployed), then ERCOT may require deployment for an additional two minutes. If frequency deviation further increases to more than +/- .09 Hz within the same frequency excursion, ERCOT may require deployment for an additional two minutes. If the deployment obligation is extended due to a frequency excursion reaching a greater frequency deviation threshold, any deployment time remaining under the previous threshold will not be added to the deployment. For purposes of FRRS deployed by Dispatch Instruction, ERCOT will not require additional deployment if frequency deviation decreases to a lower threshold before returning to a threshold already reached during the same deployment.

**Deployment by Trigger Frequency**: Each Resource must deploy 100% of its obligated capacity within 60 cycles of a frequency deviation of more than +/- .09 Hz from the 60 Hz nominal system frequency. ERCOT will issue a Dispatch Instruction, but this will be used only for the purpose of determining when to terminate the deployment. Each Resource shall remain deployed until recalled by ERCOT.

**Termination of Deployment:** ERCOT shall initiate termination of any deployment whenever frequency deviation is equal to or less than +/- .01 Hz for more than 12 continuous seconds, whenever frequency deviation exceeds +/- .01 Hz in the direction opposite the excursion for which FRRS was previously deployed, or until the maximum deployment time (as described above) has been reached. In all cases, ERCOT will release Resources from deployment through a Dispatch Instruction in 3 steps. In each step, ERCOT will release an additional 1/3 of the originally obligated capacity for each Resource by sending a deployment instruction reflecting the reduced obligation. Each step will follow the previous step by no fewer than 12 seconds.

**Subsequent Deployment:** ERCOT may initiate a new deployment at any time following the complete recall of FRRS, except that ERCOT will not initiate a new deployment during any single frequency excursion for which FRRS has previously been deployed. However, FRRS Resources must automatically re-deploy during a single excursion if frequency deviation begins to exceed +/- .09 Hz after recall of a preceding deployment.

Notwithstanding the foregoing, during the pilot, ERCOT may test a variety of deployment approaches to better understand the capabilities or applications of FRRS Resources or to optimize deployment of FRRS. ERCOT may elect to change any program parameter, including the following parameters:

* Frequency deviation threshold (including minimum threshold of up to +/- 0.015 Hz)
* Percentage of Resource capacity required to deploy
* Stepwise or proportional deployment
* Maximum duration of the deployment
* Number and duration of steps during recall

ERCOT will provide notification of any parameter changes to all participating QSEs as early as possible, but in any event, no later than the day before the deadline for each QSE to provide notification of available Resource capacity for the following week.

1. **SETTLEMENT**

QSEs representing FRRS Resources will be paid the clearing price for Regulation Service applicable to each Operating Hour for which the FRRS Resource is awarded, multiplied by the amount of the Resource’s capacity award during that Operating Hour. For purposes of this pilot, ERCOT will perform the settlement of FRRS using the mechanism currently used for Ancillary Service Capacity Sold in a Supplemental Ancillary Service Market, as described in Section 6.7.1, Payments for Ancillary Service Capacity Sold in a Supplemental Ancillary Service Market. On Final Settlement, ERCOT will recover 100% of any amounts paid to a QSE for any Resource for any hour in which that Resource failed to comply with its FRRS performance obligations, as described in Section 7, by removing the Resource’s capacity award for the hour in which it failed to comply.

1. **PROGRAM COSTS**

ERCOT estimates that the pilot project will cost $3.4 million. This figures assumes that the pilot will run from November 1, 2012, through April 30, 2013, and is based on an approximated historical average price of $9/MW for Regulation Up, and $6/MW for Regulation Down, and assumes that ERCOT will procure 65 MW of FRRS-Up and 35 MW of FRRS-Down for each hour during the pilot. It is possible that these costs could be somewhat higher or lower, depending on actual Regulation prices, the quantities awarded, and the performance of the pilot resources. These costs will be allocated among QSEs on a Load-Ratio Share basis, as with other Ancillary Services.

ERCOT anticipates an impact on the ERCOT Operations Analysis group equivalent to 1 Full-Time Employee for the duration of the pilot project.

1. **EVALUATION AND TERMINATION OF PILOT PROJECT**

Within two weeks following the first three months of the pilot project, ERCOT will publish a preliminary assessment of the pilot. If ERCOT determines that FRRS provides substantial operational benefits, ERCOT may recommend that the Board of Directors request revisions to the Protocols to allow formal integration of FRRS as an Ancillary Service. ERCOT may also request that the Board extend the duration of the pilot to allow for additional analysis or may request that the Board terminate the pilot.

At any time, ERCOT may suspend deployment of FRRS if, in its sole judgment, it determines that FRRS could jeopardize the efficient or reliable operation of the ERCOT System. ERCOT may also prohibit the continued participation of any Resource that, in ERCOT’s sole judgment, poses a threat to the reliability of the ERCOT system.

If the Board chooses to extend the duration of the pilot project for any reason, the program will terminate at the end of the Operating Day prior to the implementation of the NPRR, except as otherwise directed by the Board.

Following the termination of the pilot project, ERCOT will present a final assessment of the pilot project to the Board. This assessment will summarize the costs and benefits of the FRRS pilot over the entire period of the project. If ERCOT has previously recommended formal integration of FRRS into the Protocols, ERCOT may update its determination as to the operational value of FRRS Resources relative to conventional Regulation Resources.

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.

1. **CONSTRUCTION**

While ERCOT generally considers FRRS to be an Ancillary Service, for the purposes of this pilot, ERCOT will not require FRRS participants or QSEs representing such participants to comply with any requirement relative to Ancillary Services (including Regulation Service) in the Protocols, Operating Guides, or any other ERCOT standard except as expressly stated herein. Participation in FRRS does not exempt any Resource or QSE from its obligations relative to other Energy or Ancillary Services it may be obligated to provide.

This Governing Document will be liberally construed to achieve the purposes of the 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, Operating 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.

**Fast-Responding Regulation 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”).[[1]](#footnote-2)

Recitals

WHEREAS:

1. The Public Utility Commission of Texas (“PUCT”) has authorized ERCOT to conduct pilot projects in P.U.C. Substantive Rule 25.361(k);
2. The ERCOT Board has approved a pilot project for a Fast-Responding Regulation Service (“FRRS”), as described in the Governing Document for Fast-Responding Regulation Service (“Governing Document”);
3. Participant is a QSE in the ERCOT Region and has executed a Standard Form Market Participant Agreement (“Market Participant Agreement”) with ERCOT;
4. Participant is a QSE representing a Resource that will be obligated to provide FRRS;
5. Participant and ERCOT wish to supplement the Market Participant Agreement between Participant and ERCOT to provide for Participant to represent FRRS Resources; and
6. 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 FRRS pilot project.

Agreements

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

1. All terms and conditions of the Market Participant Agreement between Participant and ERCOT remain in full force and effect.
2. In addition to its obligations under the Market Participant Agreement with ERCOT, Participant will submit FRRS offers on behalf of Resources as described in the Governing Document.
3. Participant and ERCOT will abide by and comply with the rules of the FRRS pilot project set out in the Governing Document.
4. Each award of FRRS will be confirmed by ERCOT in an award notification to Participant.
5. 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.
6. Otherwise, this Supplement will terminate upon the completion of all obligations incurred under the terms of the Governing Document and this Supplement.
7. 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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Participant:

By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Unless otherwise indicated, capitalized terms in this Supplement have the meanings ascribed to them in the ERCOT Protocols. [↑](#footnote-ref-2)