



AMIT Settlements Project ERCOT Questions & Discussion Points

AMIT

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Discussion Points

- **AMIT Solution 6 & Distributed Generation**
- **IDR vs Advanced Meter connotation**
- **Business Validations for interval data loading process**
- **Requirements for SAS70 verifications**
- **Protocol section changes?**

Distributed Generation & AMIT Solution 6

Background:

- PRR 756 supports monthly NIDR Distributed Renewable Generation (DRG) and 15 minute interval data from an AMS – both for < 50 kW. *Passed at BOD 05/20/08.*
- Protocol Section 11.2 has ERCOT receiving and validating data from the TDSPs regarding usage for Generation Resources and Load from TDSPs, as well as the TDSPs providing data conforming to data formats specified in Section 19, Texas Standard Electronic Transaction (TX SET).
- RMGRR drafted by TX Set only covers DRG being submitted to ERCOT via NIDR 867_03. There are no references in the RMGRR or RMG of how DRG would be submitted for 15 minute interval data.
- AMIT has stated that 867_03 EDI transactions (currently supported market data transport) will not be submitted to ERCOT for 15 minute interval data for ESIIDs with an Advanced Meter.

Summary:

- Based on the current market documentation and AMIT solution 6 intentions, it appears there would be no support of the market providing DRG < 50kW interval data between 1/1/2009 and the implementation of the AMIT interim solution.

Gap:

- DRG market documentation does not address IDR non-AMS 15 minute interval data submission or use in settlement.

Conflict:

In the ERCOT DRG project (PR#80028), ERCOT is planning to code for the 15 minute interval data to be received via 'Subtractive' 867_03 IDR transactions based on PRR 756, current protocols on data submission and DGTF discussions.

- PRR 756 addresses DRG for NIDR and AMS interval data. No protocol to support non-AMS interval data for DRG for the market.
- PRR 756 addresses DRG for NIDR and AMS interval data. AMIT does not support 867_03 IDR transactions for AMS.

Questions

Questions:

- **Are there any strategies for the market to supply 15 minute interval data for ESIIDs with <50kW DRG where a non-AMS IDR is installed?**
 - PRR to support non-AMS IDR data in the market for DRG reviewed at PWG 5/28/08. This is to account for an IDR customer with no AMS installed that has DRG. PWG is looking to TX Set to address the use of the 867_03 for ESIID IDR channel transaction submission, as well as continued use of the RID functionality.
 - ERCOT intended on coding to process ESIID 867_03 IDR transaction submitting ‘Subtractive’ 15 minute interval data in the DRG implementation of PR80028.
 - PWG has escalated to COPS leadership who is looking for TAC leadership on direction and policy decisions.
- **Are there any strategies for the market to supply 15 minute interval data for ESIIDs with <50kW DRG where an AMS is installed?**
 - ERCOT intended on coding to process ESIID 867_03 IDR transaction submitting ‘Subtractive’ 15 minute interval data in the DRG implementation of PR80028.
 - Grey box language from PRR 756 until system solution is implemented for AMIT interim solution 6?
- **In PRR 756, the following language is included...” The PV reduction adjustment for ESI IDs, which have PV generation of less than 50 kW behind the meter and that have an Advanced Metering System (AMS) integrated meter that measures the excess energy flow into the ERCOT System in 15-minute intervals, shall be determined using the actual 15-minute interval data, if available. “**
 - What does ‘if available’ mean?
 - Does this mean that NIDR data would be submitted from an AMS meter read?

IDR vs. Advanced Meter connotation

PRR 756 Definitions from ERCOT Protocols Section 2:

Advanced Meter

Any new or appropriately retrofitted meter that functions as part of an Advanced Metering System and deployed pursuant to PUC SUBST. R. 25.130, Advanced Metering.

Interval Data Recorder (IDR)

Metering Device that is capable of recording Load usage in each Settlement Interval in accordance with Section 9, Settlement and Section 10, Metering.

Note: Interval data received by ERCOT from an IDR meter read and AMS meter read will be handled the same way in the ERCOT data aggregation process.

IDR vs. Advanced Meter connotation

- **IDR Protocol Compliance Verification (Protocol 9.2.6)**

“...True-Up Statements will be issued six (6) months following the Operating Day providing at least that ERCOT has received and validated at least ninety-nine percent (99%) of the total IDR data and that ERCOT has received and validated at least ninety percent (90%) of the IDR data from each Meter Reading Entity (MRE) representing at least twenty (20) IDR ESI IDs...”

- Should this section be changed to an interval data compliance verification for true-ups since the AMS interval data is being used for settlement?

- **Missing Consumption (Protocol 10.3.3.3.1)**

“...ERCOT shall provide a report to the appropriate TDSP for any ESI ID or RID for which consumption data has not been received in the past thirty-eight (38) days. Upon receipt of the missing consumption data report, the TDSP shall have two (2) Business Days to submit the missing consumption data...”, “(3) Provide a report to the TDSP listing each ESI ID for which ERCOT has not received consumption data for thirty-eight (38) days;...”

- Should this section be inclusive of AMS interval data since the AMS interval data is being used for settlement?

- **IDR Removal (Protocol 18.6.7 & LPG)**

- Should this section of changes be discussed in the stakeholder process at PWG?

- **Weather Responsiveness Determination (Protocol 11.4.3.1)**

- Default assignment is Non-Weather Sensitive. ERCOT performs analysis for 6/1 – 9/30 in November each year to determine Weather Sensitive profile code changes.
- Should this section of changes be discussed in the stakeholder process at PWG?

Business Validations for Interval Data Loading Process

- **Data loaded successfully**
- **ESIID does not exist**
- **Sender is not the owner of the ESIID**
- **Transaction starttime occurs after or is equal to transaction stoptime**
- **Incorrect interval status/Missing interval status**
- **Transaction must be for one complete day containing 96 intervals and 92 or 100 for DST days**
- **Data does not contain a whole day starting at 00:00:00 and ending at 23:59:59**
- **Negative usage**
- **ERCOT is the MRE**
- **ESIID not setup to receive interval data <TDSP must submit an IDR metertype profile code change prior to sending interval data>**
- **What about duplicate transactions in the same load? Which one wins?**

Requirements for SAS70 verifications

- **Acknowledgement to the TDSP recognizing ERCOT has received the data**
- **Exception process on file format. How to reject that back to the TDSP?**
- **Business validations checks on previous slide**
- **ERCOT reporting of failed and successful data loads**
- **Missing Consumption Report**
- **IDR Protocol Compliance Verification**

Protocol Section Changes?

- **Section 9**
 - IDR Protocol Compliance Verification (Protocol 9.2.6)
- **Section 10**
 - Missing Consumption (Protocol 10.3.3.3.1)
- **Section 11**
 - Weather Responsiveness Determination (Protocol 11.4.3.1)
- **Section 18**
 - IDR Removal (Protocol 18.6.7)
- **Section 19**
 - Add language to support LSE file format submitted through NAESB by TDSPs to ERCOT

- **Draft PRR reviewed at PWG on 5/28/08**



DRAFT PRR DRG
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- **Be aware of subsequent Guide changes, as well.**

Reference Documentation

ERCOT Protocols Section 10.2.2

10.2.2 TDSP Metered Entities

TDSPs are responsible for supplying ERCOT with meter data associated with:

- (1) All Loads using the ERCOT System;
- (2) Any Generation Resource that delivers less than ten (10) MW to the ERCOT System and that is connected directly to the distribution system; a TDSP may make some or all such meters ERCOT-Polled Settlement (EPS) compliant and may request that ERCOT poll the meters. Notwithstanding the foregoing sentence, meter data is not required from:
 - (a) generation owned by a NOIE and used for NOIE's self-use (not serving Customer Load); and
 - (b) renewable generation with a design capacity less than fifty (50) kW interconnected to a TDSP and not registered as a Generation Resource; and
- (3) NOIE points of delivery where metering points are radial Loads and are unidirectionally metered. The TDSPs have the option of making some or all such meters EPS compliant and to request that ERCOT poll the meters.

Each TDSP is responsible for the following:

- (1) Compliance with the procedures and standards in this Section, the Settlement Metering Operating Guides (SMOG) and the Operating Guides;
- (2) Installation, control, and maintenance of the settlement Metering Facilities, as more fully described in this Section and the SMOG, which includes meters, recorders, instrument transformers, wiring, and miscellaneous equipment required to measure electrical energy;
- (3) Costs incurred in the installation and maintenance of these Metering Facilities and communications except for incremental costs incurred for functions not required for the settlement of the Load or Resource. These incremental costs shall be borne by the Entities requesting the service pursuant to the TDSP's tariffs; and
- (4) Installation, maintenance, data collection, and related communications, telemetry for the Metering Facilities, and related services necessary to meet the mandatory IDR requirements detailed in this Section, Section 18 Load Profiling, and the SMOG.

ERCOT Protocols Section 10.3.3.1

10.3.3 TDSP Metered Entities

10.3.3.1 Data Responsibilities

TDSPs shall be responsible for the following:

- (1) Providing consumption data for each ESI ID and RID on a monthly basis according to the data timeliness and accuracy standards defined in this Section and in the SMOG;**
- (2) Providing start date, stop date, ESI ID or RID, and consumption data in kWh as well as an identifier for “estimated” reads as applicable;**
- (3) Submitting a single demand value for each non-IDR ESI ID that has a demand register to ERCOT if, and only if, a demand value is required for TDSP tariffs or for CR customer billing. If the CR and TDSP do not require a demand value, then the TDSP shall not submit a demand value to ERCOT even if the meter has a demand register;**
- (4) Validating, Editing, and Estimating (VEE) meter data according to the standards in this Section before submitting data to the settlement process;**
- (5) Calculating consumption for any unmetered services by ESI ID and submitting such data monthly to ERCOT, subject to ERCOT audit. These calculations must be made pursuant to TDSP approved tariffs; and**
- (6) Metering all Loads, unless the Load meets the following criteria:**
 - (a) Energy consumption by substation Facilities and equipment for the purpose of transporting electricity (e.g., substation transformers, fans, etc.).**
 - (b) Unmetered energy consumption represented by an ERCOT-approved Load Profile.**

ERCOT Protocols Section 11.2

11.2 Data Acquisition From TDSPs

11.2.1 Overview

This section addresses the manner in which ERCOT will receive and validate data from the TDSPs regarding usage for Generation Resources and Load from TDSPs metered Entities as defined in Section 10, Metering, of these Protocols.

11.2.2 Data provision and verification of Non EPS Metered Points

The TDSP will provide data for TDSP Metered Entities as defined in Section 10, Metering, of these Protocols. The TDSP will provide data in accordance with the TDSP meter data responsibilities detailed in Section 10, Metering, and will conform to data formats specified in Section 19, Texas Standard Electronic Transaction (TX SET).

ERCOT will:

- (1) Provide the TDSP a notification of successful/unsuccessful data transfer for the 867 meter data transactions submitted. At the ESI ID level, the TDSP will be notified of successful and unsuccessful validations;
- (2) Validate that the correct TDSP is submitting meter consumption data on an individual ESI ID basis. Any rejections from this validation will be returned to the TDSP in the format specified in Section 19, Texas SET;
- (3) Provide a report to the TDSP listing each ESI ID for which ERCOT has not received consumption data for thirty-eight (38) days; and
- (4) Synchronize the MDAS data with the Customer registration system on a daily basis to ensure the appropriate relationship between the ESI ID, LSE and/or Power Generation Entity, and the meter. MDAS will provide versioning to ensure ESI ID characteristic changes are time stamped.

PRR 756 – Distributed Renewable Generation Modifications – *passed BOD 5/20/08*

11.4.4.2 Load Reduction for Excess PhotoVoltaic Renewable Generation

Adjusted Metered Load for ESI IDs with PhotoVoltaic (PV) generation shall be adjusted as follows:

- (1) Prior to the application of item (2) of this Section, Adjusted Metered Load shall be reduced for excess generation from ESI IDs with PhotoVoltaic (PV) generation of less than 50 kW behind the meter where there is a meter that measures excess energy flow into the ERCOT System in a separate register. Only ESI IDs that have been assigned a PV profile segment as specified in Load Profiling Guide Appendix D, Profile Decision Tree, shall be eligible for this reduction.

Intervals beginning 11:00 A.M. and ending 3:00 P.M. CPT (spanning 16 15-minute intervals) shall be reduced by the following amount:-

$$PV_adjust_i = kWh_Gen / (read_days * 16)$$

Where:

PV_adjust _i	Reduction for PV excess generation for interval i
kWh_Gen	Actual (measured) kWh flowing into the Distribution System (outflow from the Premise)
Read_days	Number of days in meter read period

- (2) The PV reduction adjustment for ESI IDs, which have PV generation of less than 50 kW behind the meter and that have an Advanced Metering System (AMS) integrated meter that measures the excess energy flow into the ERCOT System in 15-minute intervals, shall be determined using the actual 15-minute interval data, if available.

11.4.4.3 Load Reduction for Excess Non-PhotoVoltaic Renewable Generation

Adjusted Metered Load for ESI IDs with non-PhotoVoltaic (PV) renewable generation shall be adjusted as follows:

- (1) Prior to the application of item (2) of this Section, Adjusted Metered Load shall be reduced for excess generation from ESI IDs with non-PV renewable generation of less than 50 kW behind the meter where there is a meter that measures excess energy flow into the ERCOT System in a separate register. Only ESI IDs that have been assigned a non-PV renewable distributed generation profile segment as specified in Load Profiling Guide Appendix D, Profile Decision Tree, shall be eligible for this reduction.

All intervals in the meter read period shall be reduced by the following amount.

$$REn_adjust_i = kWh_gen / read_ints$$

Where:

REn_adjust _i	Reduction for non-PV excess renewable generation for interval i
kWh_gen	Actual (measured) kWh flowing into the Distribution System (outflow from the Premise)
read_ints	Number of 15-minute intervals in the meter read period

- (2) The renewable energy reduction adjustment for ESI IDs, which have renewable generation of less than 50 kW behind the meter and have an Advanced Metering System (AMS) integrated meter that measures the excess energy flow into the ERCOT System in 15-minute intervals, shall be determined using the actual 15-minute interval data, if available.

AMIT Solution 6 Overview

- **TDSP Push of LodeStar Enhanced file format**
- **Settlement on actual 15 minute data**
 - File would be transferred through NAESB (North American Energy Standards Board)
 - Baby step to common central repository, therefore not all throw away
- **Still have the existing 867_03 with monthly scalar value process in place – not individual 867_03 15 minute records**
 - Will keep sending the Non-IDR 867_03 to complete all switching activity
 - The usage period for the non-interval 867_03 will coincide with the 15 minute interval data usage period data push
 - The 15 minute interval data will be submitted in full complete days, no partial days (i.e. follows current process for providing interval data)
- **The monthly VEE data will be pushed to ERCOT**
- **ERCOT will not forward the 15 minute interval data that is pushed to them by the TDSP**
- **REPs and TDSPs will have access to the 15 minute data settlement data via the ESIID web services provided by ERCOT (i.e. SCR 740).**
- **REPs will have access to daily raw data however the TDSP can provide it (e.g., FTP, etc.)**
- **ERCOT will not settle duplicate data.**
- **TDSPs would need to change profile codes to be the appropriate IDR meter type**
- **Possible settlement protocol changes may be needed using 15 minute data if the customers are really different versus existing IDR customers**
 - Protocol compliance verification example:
 - currently we require a 99% availability of data to do a “True Up”
 - Weather sensitivity might need changes to set different defaults for residential
 - Annual validation
 - etc
- **Note:**
 - If the TDSP estimates data, it would be a linear split by 15 minute period and would include an “estimated” status code
 - The 15 minute data will have status codes: actual read, estimated read, revised
 - In months where there are estimated intervals, but the beginning and ending reads are actual, the monthly 867 usage will be actual