

TIGRs RegistrySM

REQUIREMENTS FOR QUALIFIED REPORTING ENTITIES

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This document identifies the requirements that must be met in order to be considered a Qualified Reporting Entity (or "QRE") in the TIGRs RegistrySM (the "Registry"), operated and administered by APX, Inc. ("APX"). It also contains the protocol for participating QREs to collect and transfer generation data to the Registry for purposes of creating TIGRsSM – Tradable Instruments for Global Renewables. Capitalized terms not defined herein shall have the meaning set forth in the TIGRs Standard and Procedures, which, together with the other Registry operating documents, can be found at <http://tigrs.apx.com/> (the "Registry Site").

1. QUALIFIED REPORTING ENTITY GUIDELINES.

To qualify as a Qualified Reporting Entity, a party must adhere to the following guidelines:

- A. A QRE must register for a Qualified Reporting Entity account in the Registry. The Administrator will review and validate all information submitted along with the party's application.
- B. Reported data should be at a sufficiently detailed level as to identify the amount of renewable energy generated by Asset.
- C. Reported data should be inherently reliable and fully auditable.
- D. Reported data must follow the requirements set forth in Sections 3 and 4 below.
- E. Reported generation data should be financial settlement quality data from revenue quality meters, which would include ANSI-C12 or other equivalent standard such as IEC Standards.
- F. A Qualified Reporting Entity should submit data to the Registry on the basis agreed upon between the QRE and the Account Holder that has designated it as the Qualified Reporting Entity for its Asset(s).
- G. If serving as the QRE for an Aggregated Asset, the party must be able to report the generation activity of Generating Units having the same Essential Generating Characteristics as described in Section 6.3 and Appendix C of the TIGRs Standard and Procedures.
- H. A Qualified Reporting Entity must be independent, with no ownership, control or other affiliation with the Assets for which it is reporting.
 - (i) If an entity seeking designation as a Qualified Reporting Entity also functions as its own balancing authority and owns Assets, or is subject to a renewable portfolio

standard and is Retiring TIGRs, it should be able to demonstrate that the entity or group within the proposed QRE or its affiliates that is responsible for reporting is independent from the entity or group within the proposed QRE or its affiliates engaged in marketing functions or TIGR Retirement. The standards set forth under the FERC's Independent Functioning and No Conduit Rules are representative of the manner in which a QRE can demonstrate the necessary independence.¹ If no equivalent rules are available in the QRE's jurisdiction, the Administrator shall establish what standards should be used in evaluating the proposed QRE's registration. This separation should be specific to making the reporting entity or group independent from the marketing/Retiring entity or group.

- I. Qualified Reporting Entities will upon request provide the Administrator with regular internal and external audit and verification reports that may include but are not limited to the use of:
 - (i) Parallel meters;
 - (ii) Internal meter data validation
 - (iii) Regular meter calibration (based on the size of the Generating Unit);
 - (iv) Meter calibration tools calibrated against national or international standards;
 - (v) Integrity validation of meter data systems, which includes an analyst validation check and historical comparison;
 - (vi) Internal audit processes;
 - (vii) Third party consultants on energy procurement activities; and
 - (viii) Balancing authority annual audits.

2. QUALIFIED REPORTING ENTITY CANDIDATES

Qualified Reporting Entities for the Registry may include but are not limited to:

- A. Balancing authorities and Grid Operators;
- B. Electric service providers;
- C. Asset aggregators;
- D. Meter readers; and
- E. Other independent third parties.

¹ See Standards of Conduct for Transmission Providers, Docket No. RM07-1-000, Order No. 717, 125 FERC 61,064, 18 CFR §§ 358.5-.6 (Issued October 16, 2008).

3. FILE FORMAT FOR QRE DATA SUBMISSION

The "Generation Extract File" is a data file created and submitted to the Registry by a QRE that provides total generation by an Asset for a given month. The file must be in ASCII text form with data fields delimited by commas (i.e., Comma-Separated Value (CSV) format). The Generation Extract File has the following general structure:

<p><column1Name>,<column2Name>,...</p>	<p><columnXName> is a human-readable Field Name for the X'th column of CSV data.</p>
<p><column1Value>,<column2Value>,...</p>	<p><columnXValue> is a value for the X'th column of CSV data, which corresponds to the Field Name in <columnXName>. The value must be of the Data Type associated with the Field Name. There can be any number of data rows in a file. The values entered, whether character or otherwise, should contain quotation marks, and no value can be left blank (or null).</p>

<u>Field Name</u>	<u>Data Type</u>	<u>Description</u>
ASSETID	Integer	Unique identifier for an Asset which is assigned by the Registry upon Asset registration approval.
UNITID	Integer	Unique identifier for the unit assigned by its Control Area or Qualified Reporting Entity.
VINTAGE	Character (7)	Month and year of generation, formatted as MM/YYYY for a given month in the current Reporting Period.
BEGINDATE	Character (10)	Beginning month-day-year of Reporting Period formatted at MM/DD/YYYY
ENDDATE	Character (10)	Ending month-day-year of Reporting Period formatted at MM/DD/YYYY
TOTALMWH	Float	Total MWhs for the Vintage (reporting month) within the Reporting Period

If the Field Names and Data Type(s) do not conform with the above specifications, the Registry will indicate a fatal error and the Generation Extract File will not be loaded.

The following is an example of a conforming Generation Extract File.

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ASSETID,UNITID,VINTAGE,FROM,TO,TOTALMWH
1,2,01/2001,01/01/2001,01/31/2001,100
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4. FILE LOADING

Only QREs (or optionally the Administrator) have the ability to load a Generation Extract File. This is done by logging into the QRE’s account and uploading through the Meter Data Loading module.

A current-period Generation Extract File can be loaded as many times as needed so long as the QRE follows the following rules:

<p>Rule 1: Reloading data when the existing data is already “Account Holder Accepted”</p>	<p>After an Account Holder has explicitly accepted the posted generation data, if a file of the same, or different, data is reloaded, the Registry will reject the data and notify the QRE that data for this Asset has already been accepted. The status of the existing data will not change. To override this rule, see Rule 4 below.</p>
<p>Rule 2: Reloading data when the existing data is “CER Accepted” or “Account Holder Disputed”</p>	<p>Reloading the data file will overwrite any data that was previously loaded for that Asset and set the new data status to “CER Accepted”.</p>
<p>Rule 3: Reloading data when the existing data is “CER Admin Accepted” or “CER Admin Disputed”</p>	<p>If a data file with the same, or different, data is reloaded, the Registry will reject the data and notify the QRE that it cannot be accepted due to status of the existing data. The status of the existing data will not change. To override this rule, see Rule 4 below.</p>
<p>Rule 4: File reloaded by the Administrator</p>	<p>The reloaded data will overwrite all previously loaded data for this Asset regardless of its current status.</p>

5. FILE VALIDATION

Before posting the data in the Generation Extract File to the Registry, the system validates the uploaded data. Data validation is performed for both the current Reporting Period and prior-period adjustment reporting, regardless of whether the data is loaded as a file or entered manually.

When all validations are successfully completed, the data is loaded into the database and written to the Asset’s Generation Activity Log. The system then notifies the Account Holder via email that:

- A. Generation output data has been loaded for specific Assets in Account Holder’s Account; and
- B. The data is available to be reviewed by the Account Holder for accuracy and then approved or disputed.

Data Validations

<u>Validation Type</u>	<u>Description</u>	<u>Failure Result</u>
QRE validation	Is the QRE submitting the file designated to report output data for the Asset, as identified by the Account Holder in the Asset's registration information?	System rejects data, sends QRE an error message that they are not designated to report on the Asset and creates an Exception Report for Administrator review.
Multiple Generating Units aggregated to this meter flag – Y/N	Does the Generating Unit being reported on share its meter with other Generating Units? If No, proceed with other validations. If Yes, see description to the right.	The Registry will write the data to the database for the primary Generating Unit. At TIGR SM issuance, and assuming the data is not disputed, the Registry will divide the amount of reported generation by the number of Generating Units sharing the meter (or allocated by percentage specified by the Account Holder) and then process the data individually for each Generating Unit.
Engineering Feasibility Assessment	Is the reported data feasible, given the amount of generation reported, the length of the Reporting Period and the Asset's Nameplate Capacity and maximum capacity factor/annual maximum energy output?	Soft warning to the QRE that the data has failed the Engineering Feasibility Assessment for the Asset. The QRE is allowed to continue posting the data, but it will remain in a pending state. Both the Administrator and the Account Holder will be notified of the failed assessment. The Administrator will have to review and if necessary revise the data before it can become eligible for TIGR issuance.
Begin/End Duration overlap/gap check	For the duration of generation (Begin MM/DD/YYYY and End MM/DD/YYYY), are there gaps or overlaps from the data reported for the previous reporting period?	System rejects the data and sends an error message to the QRE that the duration reported for this Asset has either gaps or overlaps from data reported for a previous reporting period.
Current Status of any previously loaded data	If data was previously loaded for the Assets in the Generation Extract File, what is that data's current status?	See Rules 1-4 above in Sec. 4 File Loading.

To perform the Engineering Feasibility Validation, the Registry uses the following required variables that were defined in the registration screen for the Asset:

- Nameplate Capacity
- Capacity Factor or Maximum Annual Capacity

The Registry calculates the Duration, the period, in hours, for which generation activity is being reported given the BEGINDATE and ENDDATE reported in the Generation Extract File or entered manually.

The Registry then uses one of the following equations to determine Engineering Feasibility:

$(\text{Nameplate Capacity}) * (\text{Capacity Factor}) * (\text{number of hours in the Duration}) * (\text{Margin of Error})$

or

$((\text{Maximum Annual Capacity}) / 8760) * (\text{number of hours in the Duration}) * (\text{Margin of Error})$

If the validation is successful, the data is loaded into the Generation Activity Log for the Asset, and becomes available to the Account Holder to review and then accept or dispute. If the data is accepted, it will be included in the TIGRSM issuance cycle for the relevant Reporting Period. For prior-period adjustments, the data will contribute to the next TIGR issuance after it was accepted (either by the Account Holder or auto-accepted by the Registry). See Section 7.1.4 of the Operating Standard for further detail on this process.

If the loaded data fails the Engineering Feasibility validation, the QRE will be prompted with a 'soft' warning as to the failed validation. The QRE has the ability to continue posting the data by selecting the "continue" button on this pop-up screen. The Registry will then send an automated email to both the Administrator and the Account Holder notifying them that the data loaded for the Asset has failed the Engineering Feasibility validation, but regardless, the QRE has decided to have the data posted to the Registry. The notification will also state that the data has a status of "CER Pending" until either corrected or approved by the Administrator. Data with this status will not contribute to TIGR issuance. The Qualified Reporting Entity can also decide to not have the data posted to the Generation Activity Log as a result of the failed validation by selecting the "cancel" button on this same pop-up screen. Selecting cancel will discontinue the data loading process for the Asset in question and no notifications will be sent.