|  |  |  |  |
| --- | --- | --- | --- |
| **NPRR Number** | [**1265**](https://www.ercot.com/mktrules/issues/NPRR1265) | **NPRR Title** | **Unregistered Distributed Generator** |
| **Date Posted** | | December 26, 2024 | |
|  | |  | |
| **Requested Resolution** | | Normal | |
| **Nodal Protocol Sections Requiring Revision** | | 2.1, Definitions  2.2, Acronyms and Abbreviations  3.2.5.1, Unregistered Distributed Generation Reporting Requirements for Non Opt-In Entities  3.2.5.2, Unregistered Distributed Generation Reporting Requirements for Competitive Areas (delete)  3.2.5.3, Unregistered Distributed Generation Reporting Requirements for ERCOT  10.2.2, TSP and DSP Metered Entities  11.4.4.2, Load Reduction for Excess PhotoVoltaic and Wind Distributed Renewable  11.4.4.3, Load Reduction for Excess from Other Distributed Generation  16.5, Registration of a Resource Entity  18.2, Methodology  18.2.2.1, Load Profiles for Non-Interval Metered Loads Without Distributed Generation  18.2.2.2, Load Profiles for Non-Interval Metered Loads With Distributed Generation | |
| **Related Documents Requiring Revision/Related Revision Requests** | | None | |
| **Revision Description** | | This Nodal Protocol Provision (NPRR) implements procedures for Distributed Generation (DG) reporting provided in House Bill 3390 (HB 3390). Specifically, this NPRR clarifies the definition of “Distributed Generation (DG)” and defines a new term, “Unregistered Distributed Generators (UDG).” Additionally, this NPRR establishes procedures for UDG reporting to ERCOT and UDG reporting requirements from ERCOT. Lastly, this NPRR reconciles references to DG to UDG where the term UDG is now appropriate. | |
| **Reason for Revision** | | [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 1 – Be an industry leader for grid reliability and resilience  [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 2 - Enhance the ERCOT region’s economic competitiveness with respect to trends in wholesale power rates and retail electricity prices to consumers  [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 3 - Advance ERCOT, Inc. as an independent leading industry expert and an employer of choice by fostering innovation, investing in our people, and emphasizing the importance of our mission  General system and/or process improvement(s)  Regulatory requirements  ERCOT Board/PUCT Directive  *(please select ONLY ONE – if more than one apply, please select the ONE that is most relevant)* | |
| **Justification of Reason for Revision and Market Impacts** | | The Texas Legislature passed House Bill 3390 in the 88th Legislative Session. HB 3390 authorizes ERCOT to require owners or operators of Distributed Generation to provide information to their respective TDSPs that ERCOT determines necessary for maintaining system reliability. Additionally, HB 3390 authorizes ERCOT to require TDSPs to report to ERCOT, in aggregate by delivery port, the reported information regarding Distributed Generation.  The existing phrase “unregistered Distributed Generation” is not defined in the Protocols and the existing use of the term “Distributed Generation” is too broad and varies throughout the Protocols. To give meaning to these terms and clearly implement HB 3390, this NPRR defines “Unregistered Distributed Generators” and clarifies the definition of “Distributed Generation.” Additionally, this NPRR establishes procedures for UDG reporting as authorized by HB 3390. | |

|  |  |
| --- | --- |
| **Sponsor** | |
| **Name** | Bill Blevins / Douglas Fohn |
| **E-mail Address** | [Bill.Blevins@ercot.com](mailto:Thinesh.Devadhas.Mohanadhas@ercot.com) / Douglas.Fohn@ercot.com |
| **Company** | ERCOT |
| **Phone Number** | 512-248-6922 |
| **Cell Number** | 571-239-8606 |
| **Market Segment** | Not applicable |

|  |  |
| --- | --- |
| **Market Rules Staff Contact** | |
| **Name** | Cory Phillips |
| **E-Mail Address** | [Cory.phillips@ercot.com](mailto:Cory.phillips@ercot.com) |
| **Phone Number** | 512-248-6464 |

|  |
| --- |
| **Market Rules Notes** |

Please note that the following NPRR(s) also propose revisions to the following section(s):

* NPRR1234, Interconnection Requirements for Large Loads and Modeling Standards for Loads 25 MW or Greater
  + Section 16.5
* NPRR1246, Energy Storage Resource Terminology Alignment for the Single-Model Era
  + Section 10.2.2
  + Section 16.5

|  |
| --- |
| **Proposed Protocol Language Revision** |

## 2.1 DEFINITIONS

Distributed Generator (DG)

An electrical generator, including an Energy Storage System (ESS), that is connected, either (i) directly or (ii) indirectly through a Customer-owned network, to the ERCOT System at a voltage less than or equal to 60 kilovolts (kV), and that may be connected in parallel operation to the ERCOT System. DG includes the following:

***Unregistered Distribution Generator (UDG)***

A generator with a nameplate capacity of one MW or less that is connected to the Distribution System, and which is not registered with ERCOT for the purpose of Settlement.

**2.2 ACRONYMS AND ABBREVIATIONS**

**UDG** Unregistered Distribution Generator

**3.2.5.1 Unregistered Distributed Generator Reporting Requirements**

(1) As a condition for approval of the interconnection of an Unregistered Distributed Generator (UDG) to a distribution system, the Entity that owns the UDG shall provide the following information to the interconnecting Distribution Service Provider (DSP):

(a) Fuel Type (Solar, Wind, Natural Gas, Diesel, Energy Storage, etc);

(b) Aggregate Nameplate capacity in MW (by fuel type);

(c) Energy storage capacity in MWh (energy storage only);

(d) Aggregate Reactive power capability;

(e) Status of compliance with any PUC voltage ride-though requirements; and

(f) Status of compliance with any PUC frequency ride-through requirements.

(2) By January 15 of each year, ERCOT will generate and post to MIS Certified Area a single file containing pre-populated fields for each TSP reflecting TSP-specific associated Loads, by substation, contained in the Network Operations Model. The file will include the aggregate amount of UDG, if any, that the Network Operations Model reflects being impacted by UFLS or UVLS.

(3) By February 1 of each year, a DSP that is not also a TSP shall report the data described in paragraph (1)(a)-(f) above, for all UDGs interconnected in the DSP’s service area as of December 31 of the previous year, aggregated by Common Information Model (CIM) load at the Substation, to the TSP whose equipment serves the facility where the UDG interconnects. The report shall include the aggregate amount of UDG that is impacted by UFLS or UVLS.

(a) For UDGs interconnected prior to September 1, 2023, if the DSP does not have the information described in paragraph (1)(a)-(f) above for a UDG in its service area, then the DSP shall request the information from an Entity that owns the UDG. In the absence of any timely response by the Entity that owns the UDG to the DSP’s request for information or if the information reasonably appears to be incorrect, the DSP shall report to its TSP a good-faith estimate of the information based on field observation or other data using reasonable engineering judgment. A DSP, in fulfilling this reporting obligation, may rely on any existing record regarding the information required in paragraph (1)(a)-(f) above, if the DSP reasonably believes the information is accurate.

(3) By March 1 of each year, a TSP shall update the Network Operations Model file described in paragraph (2) above based on the UDG information described in paragraph (1)(a)-(f) above that the TSP has received as of February 1 of that year.

**3.2.5.2 Unregistered Distributed Generator Reporting Requirements for ERCOT**

(1) ERCOT will generate and post to the ERCOT website a complete annual report of each year summarizing the cumulative growth of all UDG as reported by TSPs in accordance with Section 3.2.5.1, Unregistered Distributed Generator Reporting Requirements.

**10.2.2 TSP and DSP Metered Entities**

(1) Each Transmission Service Provider (TSP) and Distribution Service Provider (DSP) is responsible for supplying ERCOT with meter data associated with:

(a) All Loads using the ERCOT System;

(b) Any Settlement Only Distribution Generator (SODG); a DSP 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:

(i) Generation owned by a Non-Opt-In Entity (NOIE) and used for the NOIE’s self-use (not serving Customer Load);

(ii) Distributed Renewable Generation (DRG) with a design capacity less than 50 kW interconnected to a DSP where the owner chooses not to have the out-flow measured in accordance with P.U.C. Subst. R. 25.213, Metering for Distributed Renewable Generation; and

(iii) Unregistered Distributed Generator (UDG) interconnected to a DSP behind a registered NOIE boundary metering point.

(c) NOIE or External Load Serving Entity (ELSE) points of delivery where metering points are radial Loads and are uni-directionally metered and NOIE points of delivery that have bi-directional flows that are solely the result of generation interconnected to a Transmission and/or Distribution Service Provider (TDSP) owned Distribution System behind a NOIE point of delivery metering point. A TSP or DSP has the option of making some or all such meters EPS compliant and to request that ERCOT poll the meters; and

(d) Generation participating in a current Emergency Response Service (ERS) Contract Period, where such generation only exports energy to the ERCOT System during an ERS deployment or ERS test.

(2) Each TSP and DSP is responsible for the following:

(a) Compliance with the procedures and standards in this Section, the Settlement Metering Operating Guide (SMOG) and the Operating Guides;

(b) 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;

(c) 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 Generation Resource, Settlement Only Generator (SOG), or Load Resource. These incremental costs shall be borne by the Entities requesting the service pursuant to the TSP or DSP tariffs; and

(d) Installation, maintenance, data collection, and related communications, telemetry for the Metering Facilities, and related services necessary to meet the mandatory Interval Data Recorder (IDR) requirements detailed in this Section, Section 18, Load Profiling, and the SMOG.

**11.4.4.2 Load Reduction for Excess PhotoVoltaic and Wind Distributed Renewable Generation**

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

For ESI IDs with non-IDRs installed, AML shall be reduced for excess generation from ESI IDs with Unregistered Distributed Generators (UDGs) made up of PV generation 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 1100 and ending 1500 Central Prevailing Time (CPT) (spanning (16) 15-minute intervals) shall be reduced by the following amount:

**PV\_adjust *i* = kWh\_gen / (read\_days \* 16)**

The above variables are defined as follows:

|  |  |  |
| --- | --- | --- |
| **Variable** | **Unit** | **Description** |
| PV\_adjust i | kWh | Reduction for PV excess generation for interval *i*. |
| kWh\_gen | kWh | Actual (measured) kWh flowing into the Distribution System (out-flow from the Premise). |
| read\_days | days | Number of days in meter read period. |

(2) AML for ESI IDs with wind generation shall be adjusted as follows:

For ESI IDs with non-IDRs installed, AML shall be reduced for excess generation from ESI IDs with UDG made up of wind generation 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 wind profile segment as specified in the Load Profiling Guide Appendix D, shall be eligible for this reduction.

Intervals beginning 0800 and ending 2000 CPT (spanning (48) 15-minute intervals) shall be reduced by the following amount:

Wind\_adjust = kWh\_gen \* .65 / (read\_days \* 48)

All other intervals in the day (the remaining 48 intervals) shall be reduced by the following amount:

Wind\_adjust = kWh\_gen \* .35 / ((read\_days \* 48) + DST adjust)

Where:

|  |  |  |
| --- | --- | --- |
| **Variable** | **Unit** | **Description** |
| wind\_adjusti | kWh | Reduction for wind excess generation for interval *i.* |
| kWh\_gen | kWh | Actual (measured) kWh flowing into the Distribution System (out-flow from the Premise). |
| read\_days | days | Number of days in meter read period. |
| DST adjust | N/A | Daylight Savings Time Adjustment: Spring DST = -4; Fall DST = 4. |

(3) The excess generation adjustments for ESI IDs, which have UDG made up of PV or wind generation behind the meter and that have an Advanced Metering System (AMS) integrated meter or Municipally Owned Utility (MOU) / Electric Cooperative (EC) Non-BUSIDRRQ IDR 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 from Other Distributed Generators**

(1) AML for ESI IDs with DG that is neither PV nor wind shall be adjusted as follows:

For ESI IDs with non-IDRs installed, AML shall be reduced for excess generation from ESI IDs with UDGs 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 DG 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:

**DG \_adjust *i* = kWh\_gen / read\_ints**

The above variables are defined as follows:

|  |  |  |
| --- | --- | --- |
| **Variable** | **Unit** | **Description** |
| DG\_adjust i | kWh | Reduction for excess DG for interval *i*. |
| kWh\_gen | kWh | Actual (measured) kWh flowing into the Distribution System (out-flow from the Premise). |
| read\_ints | Intervals | Number of 15-minute intervals in the meter read period. |

(2) The energy reduction adjustment for ESI IDs, which have UDGs behind the meter and have an 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.

**16.5 Registration of a Resource Entity**

(1) A Resource Entity owns or controls a Generation Resource, Energy Storage Resource (ESR), Settlement Only Generator (SOG), or Load Resource connected to the ERCOT System. Each Resource Entity operating in the ERCOT Region must register with ERCOT. To become registered as a Resource Entity, an Entity must execute a Standard Form Market Participant Agreement (using the form in Section 22, Attachment A, Standard Form Market Participant Agreement), designate Resource Entity Authorized Representatives, contacts, and a User Security Administrator (USA) (per the Application for Registration as a Resource Entity), and demonstrate to ERCOT’s reasonable satisfaction that it is capable of performing the functions of a Resource Entity under these Protocols. The Resource Entity shall provide Resource Registration data pursuant to Planning Guide Section 6.8.2, Resource Registration Process, for each Resource or SOG through ERCOT registration, except for an Unregistered Distribution Generator (UDG). A Resource Entity may submit a proposal to register the aggregation of generators, with the exception of Intermittent Renewable Resources (IRRs) pursuant to paragraph (13) of Section 3.10.7.2, Modeling of Resources and Transmission Loads, as an Aggregate Generation Resource (AGR) which ERCOT may grant at its sole discretion. A Resource Entity may submit a proposal to register a SOG consisting of an Energy Storage System (ESS) or a combination of ESS and non-ESS generation. The Resource Entity must identify all components of the SOG as part of the Resource Registration process.

|  |
| --- |
| ***[NPRR995: Replace paragraph (1) above with the following upon system implementation:]***  (1) A Resource Entity owns or controls a Generation Resource, Energy Storage Resource (ESR), Settlement Only Generator (SOG), Settlement Only Energy Storage System (SOESS), or Load Resource connected to the ERCOT System. Each Resource Entity operating in the ERCOT Region must register with ERCOT. To become registered as a Resource Entity, an Entity must execute a Standard Form Market Participant Agreement (using the form in Section 22, Attachment A, Standard Form Market Participant Agreement), designate Resource Entity Authorized Representatives, contacts, and a User Security Administrator (USA) (per the Application for Registration as a Resource Entity), and demonstrate to ERCOT’s reasonable satisfaction that it is capable of performing the functions of a Resource Entity under these Protocols. The Resource Entity shall provide Resource Registration data pursuant to Planning Guide Section 6.8.2, Resource Registration Process, for each Resource, SOG, or SOESS through ERCOT registration, except for an Unregistered Distribution Generator (UDG). A Resource Entity may submit a proposal to register the aggregation of generators, with the exception of Intermittent Renewable Resources (IRRs) pursuant to paragraph (13) of Section 3.10.7.2, Modeling of Resources and Transmission Loads, as an Aggregate Generation Resource (AGR) which ERCOT may grant at its sole discretion. If a Resource Entity intends to register one or more Energy Storage Systems (ESSs) and one or more non-ESS generators as SOGs at the same site, the Resource Entity must provide an affidavit attesting to the amount of ESS and non-ESS capacity at the site as a condition for registration. |

(2) Prior to commissioning, Resources Entities will regularly update the data necessary for modeling. These updates will reflect the best available information at the time submitted.

(3) Once ERCOT has received a new or amended Standard Generation Interconnection Agreement (SGIA) or a letter from a duly authorized official from the Municipally Owned Utility (MOU) or Electric Cooperative (EC) and has determined that the proposed Generation Resource, ESR, or SOG meets the requirements of Planning Guide Section 6.9, Addition of Proposed Generation to the Planning Models, ERCOT shall review the description of the proposed Generation Resource, ESR, or SOG in Exhibit “C” (or similar exhibit) to the SGIA and the data submitted pursuant to Planning Guide Section 6.8.2 to assess whether the Generation Resource, ESR, or SOG, as proposed, would violate any operational standards established in the Protocols, Planning Guide, Nodal Operating Guides, and Other Binding Documents. ERCOT must provide its determination to the Transmission Service Provider (TSP) and the owner of the proposed Generation Resource, ESR, or SOG within 90 days of the date the Generation Resource, ESR, or SOG meets the conditions for review. Notwithstanding the foregoing, this determination shall not preclude ERCOT from subsequently determining that the Generation Resource, ESR, or SOG violates any operational standards established in the Protocols, Planning Guide, Nodal Operating Guides, and Other Binding Documents or from taking any appropriate action based on that determination.

|  |
| --- |
| ***[NPRR995: Replace paragraph (3) above with the following upon system implementation:]***  (3) Once ERCOT has received a new or amended Standard Generation Interconnection Agreement (SGIA) or a letter from a duly authorized official from the Municipally Owned Utility (MOU) or Electric Cooperative (EC) and has determined that the proposed Generation Resource, ESR, SOG, or SOESS meets the requirements of Planning Guide Section 6.9, Addition of Proposed Generation to the Planning Models, ERCOT shall review the description of the proposed Generation Resource, ESR, SOG, or SOESS in Exhibit “C” (or similar exhibit) to the SGIA and the data submitted pursuant to Planning Guide Section 6.8.2, to assess whether the Generation Resource, ESR, SOG, or SOESS, as proposed, would violate any operational standards established in the Protocols, Planning Guide, Nodal Operating Guides, and Other Binding Documents. ERCOT must provide its determination to the Transmission Service Provider (TSP) and the owner of the proposed Generation Resource, ESR, SOG, or SOESS within 90 days of the date the Generation Resource, ESR, SOG, or SOESS meets the conditions for review. Notwithstanding the foregoing, this determination shall not preclude ERCOT from subsequently determining that the Generation Resource, ESR, SOG, or SOESS violates any operational standards established in the Protocols, Planning Guide, Nodal Operating Guides, and Other Binding Documents or from taking any appropriate action based on that determination. |

(4) An Interconnecting Entity (IE) shall not proceed to Initial Synchronization of a Generation Resource, ESR, Settlement Only Transmission Generator (SOTG), or Settlement Only Transmission Self-Generator (SOTSG) in the event of any of the following conditions:

(a) Pursuant to paragraph (3) above, ERCOT has reasonably determined that the Generation Resource, ESR, SOTG, or SOTSG may violate operational standards established in the Protocols, Planning Guide, Nodal Operating Guides, and Other Binding Documents, and the Resource Entity has not yet demonstrated to ERCOT’s satisfaction that the Generation Resource, ESR, SOTG, or SOTSG can comply with these standards;

(b) The requirements of Planning Guide Section 5.3.5, ERCOT Quarterly Stability Assessment, if applicable, have not been completed for the Generation Resource, ESR, SOTG, or SOTSG; or

(c) Any required Subsynchronous Resonance (SSR) studies, SSR Mitigation Plan, SSR Protection, and SSR monitoring if required, have not been completed and approved by ERCOT.

|  |
| --- |
| ***[NPRR995: Replace paragraph (4) above with the following upon system implementation:]***  (4) An Interconnecting Entity (IE) shall not proceed to Initial Synchronization of a Generation Resource, ESR, Settlement Only Transmission Generator (SOTG), Settlement Only Transmission Self-Generator (SOTSG), or Settlement Only Transmission Energy Storage System (SOTESS) in the event of any of the following conditions:  (a) Pursuant to paragraph (3) above, ERCOT has reasonably determined that the Generation Resource, ESR, SOTG, SOTSG, or SOTESS may violate operational standards established in the Protocols, Planning Guide, Nodal Operating Guides, and Other Binding Documents, and the Resource Entity has not yet demonstrated to ERCOT’s satisfaction that the Generation Resource, ESR, SOTG, SOTSG, or SOTESS can comply with these standards;  (b) The requirements of Planning Guide Section 5.3.5, ERCOT Quarterly Stability Assessment, if applicable, have not been completed for the Generation Resource, ESR, SOTG, SOTSG, or SOTESS; or  (c) Any required Subsynchronous Resonance (SSR) studies, SSR Mitigation Plan, SSR Protection, and SSR monitoring if required, have not been completed and approved by ERCOT. |

(5) DG with an installed capacity greater than one MW, the DG registration threshold, which exports energy into a Distribution System, must register with ERCOT.

(6) A Resource Entity representing an ESR shall register the ESR as an ESR. ERCOT systems, including the Energy and Market Management System (EMMS) and Settlement system, shall continue to treat the ESR as both a Generation Resource and a Controllable Load Resource until such time as all ERCOT systems are capable of treating an ESR as a single Resource.

18.2 Methodology

(1) A Load Profiling Methodology is the fundamental basis on which Load Profiles are created. The implementation of a Load Profiling Methodology may require statistical Sampling, engineering methods, econometric modeling, or other approaches. All Load Profiles shall conform to the ERCOT-defined Settlement Interval length.

(2) ERCOT has developed Load Profiles for:

(a) Non-interval metered Loads;

(b) Non-Metered Loads; and

(c) Interval Data Recorders (IDRs) including:

(i) Advanced Meters; and

(ii) IDR Meters.

(3) The following Load Profiling Methodologies are used:

|  |  |
| --- | --- |
| **Type of Load** | **Load Profiling Methodology** |
| Non-interval metered | Adjusted Static Models |
| Non-interval metered with Unregistered Distributed Generator (UDG) | Adjusted Static Models and engineering estimates |
| Non-metered | Engineering estimates |

**18.2.2.1 Load Profiles for Non-Interval Metered Loads Without an Unregistered Distributed Generator**

(1) Load Profiles for non-interval metered Loads are created using statistical models developed from appropriate Load research sample data. These models are referred to as adjusted static. These model equations relate daily Settlement Interval Load patterns to relevant weather descriptors such as maximum and minimum dry-bulb temperature and humidity. Other daily characteristics such as day-of-the-week and sunrise/sunset times are also employed.

**18.2.2.2 Load Profiles for Non-Interval Metered Loads With an Unregistered Distributed Generator**

(1) Load Profiles for non-interval metered Loads that utilize Unregistered Distributed Generators (UDGs) (e.g., PhotoVoltaic (PV) or wind) will be created using a hybrid approach. At least a portion of the Load Profile will be based on Adjusted Static Models, while engineering estimates and/or generation models may be integrated as well or otherwise utilized.