**Checklist PART 1: Request to Commission Point of Interconnection**

**[RESOURCE ENTITY submits checklist to commission Point of Interconnection]**

|  |  |  |
| --- | --- | --- |
| **RE** Name: |  | |
| Agent (optional): |  | |
| Date form completed: |  | |
| **Proposed Station Energization Date\*:** | |  |

\* Actual date contingent on completion of requirements and approval from ERCOT.

Primary contact for Station Commissioning (Contacts may be RE’s Agent):

|  |  |
| --- | --- |
| Primary Contact Name: |  |
| Primary Contact Telephone Number: |  |
| Primary Contact E-mail Address: |  |

|  |  |
| --- | --- |
| Gen Site Name: | TDSP: |
| Load Zone: | Transmission Voltage: |

Special Protection Scheme (SPS) Yes No

Can the Generation Resource synchronously connect to another grid? Yes  No

Identify the QSE/TDSP responsible for sending ERCOT station telemetry:

|  |  |
| --- | --- |
| QSE: | TDSP: |

QSE primary contact (may be QSE’s Agent): TDSP primary telemetry contact:

|  |  |  |  |
| --- | --- | --- | --- |
| Name: |  | Name: |  |
| Telephone Number: |  | Telephone Number: |  |
| E-mail Address: |  | E-mail Address: |  |

The QSE and Resource Entity are required to comply with the ERCOT Protocols and Operating Guides from the moment the interconnection becomes operational. The Resource Entity confirms that the following requirements have been met: [**Submit PART 1 with copy of current Commissioning Plan**]

The Generation Resource is in the ERCOT Control Area.

Station telemetry to QSE and TDSP from the facility’s Point of Interconnection is in place and operational as of       (date), as required under ERCOT Operating Guide Section. 7.3 Telemetry, the ERCOT Nodal ICCP Communication Handbook, and any other telemetry required by the ERCOT Protocols, Operating Guides, or other binding documents. Enter specific comments about status of station telemetry in comment box on telemetry checklist below.

The RE is capable of communicating the Resource’s Point of Interconnection information to ERCOT in the manner specified in Operating Guides Section 7.3, Telemetry, and Protocols Section 6.5.5.2, Operational Data Requirements, and any other information required by Section 3.10.7.5, Telemetry Criteria. Instructions for ERCOT to escalate telemetry quality issues with QSE/RE during commissioning shall be included in the following comment section. **Comments**:

The RE confirms that the station RTU has been verified as operational and is sending data from the field to ERCOT via the QSE. Furthermore, in accordance with Protocols Section 6.5.5.2, the RE confirms that any telemetered values sent to ERCOT originate from the station RTU and the quality codes are accurate and appropriate. Any exceptions shall be identified in the comments section below.

**Comments:**

If ERCOT has previously determined that the proposed Generation Resource may violate operational standards pursuant to Protocols Section 16.5(4), the Resource Entity has received confirmation from ERCOT that all concerns have been fully addressed.

**Comments:**

For Intermittent Renewable Resources, the Resource Entity confirms capability of Voltage Ride-Through in accordance with Operating Guides Section 2.9.1. **Comments**:

If the Generation Resource is in the Network Operations Model at the time of commissioning the POI, the Outage Scheduler reflects the outage status of the Generation Resource.

The QSE has reliable voice communications with the new Generating Facility, ERCOT, and TDSP as required by ERCOT Operating Guides Section 3.2, Qualified Scheduling Entities.

The Resource Entity has provided ERCOT the technical equipment data to be used in modeling studies per ERCOT Operating Guides Section 3.3, Resource Entities. **Comments:**

| **Station Telemetry** | | | | |
| --- | --- | --- | --- | --- |
|  | **Data** | **Frequency** | **Mode** | **Reference/Comments** |
|  | Station Switching Device status | 10 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements. (High side Typical TSP telemetry point; Low side typical QSE telemetry point)  **RE Comment:** |
|  | Station Breaker status | 10 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements. (Typical QSE telemetry point)  **RE Comment:** |
|  | Generation Resource High Side bus voltage | 10 sec | ICCP | Protocol Section 3.15, Voltage Support. May be supplied by the TDSP (Typical TDSP telemetry point) or Low Side voltage with appropriate transformer model may be substituted (Typical QSE telemetry point).  **RE Comment:** |
|  | Station Static and/or Dynamic Reactive Device(s) status for each device | 10 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements.(Typical QSE telemetry point)  **RE Comment:** |
|  | Station Static and/or Dynamic Reactive Device(s) MVAR output for each device | 10 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements.(Typical QSE telemetry point)  **RE Comment:** |
|  | Generator Step-Up (GSU) Transformer High-Side MW and MVAR for each modeled GSU | 10 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements.(Typical QSE telemetry point)  **RE Comment:** |
|  | Generation Resource auxiliary load and/or station service MW and MVAR for each modeled load | 10 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements.(Typical QSE telemetry point)  **RE Comment:** |
|  | Transmission Line Flow | 10 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements. (RE has confirmed that TSP is providing required points; Transmission Line Flow has telemetry for both the sending and receiving end of the interconnecting line if the Generation Resource is registered at a different station in the Network Operations Model).  **RE Comment:** |

By signing below I attest that information provided on this form (**PART 1**) is true, correct and complete, and that any substantial changes in such information will promptly be provided to the Electric Reliability Council of Texas (ERCOT).

|  |  |
| --- | --- |
| Signature: |  |

(RE Authorized Representative)

|  |  |
| --- | --- |
| Printed Name: |  |

(RE Authorized Representative)

|  |  |
| --- | --- |
| Date Signed: |  |

**Checklist PART 2: Request for Initial Synchronization**

**[QSE submits checklist to request initial start-up]**

|  |  |
| --- | --- |
| **QSE** Name: |  |
| Agent (optional): |  |
| Date form completed: |  |
| Date of Notice: |  |
| Gen Site Name: |  |
| Gen Unit Code(s): |  |
| \* Proposed Initial Synchronization Date : |  |

\* Actual date contingent on completion of requirements and approval from ERCOT.

Primary and back-up contact personnel for Initial Synchronization (may be QSE’s Agent):

|  |  |
| --- | --- |
| Primary for Initial Synchronization Contact Name: |  |
| Primary Contact Telephone Number: |  |
| Primary Contact E-mail Address: |  |
| Back-Up Contact Name: |  |
| Back-Up Contact Telephone Number: |  |
| Back-Up Contact E-mail Address: |  |

\*If the Generation Resource is Split Metered:

|  |  |  |  |
| --- | --- | --- | --- |
| Identify the QSE responsible for coordinating the start-up testing: | | |  |
| Identify all of the QSE’s that are sharing this Generation Resource: |  | | |
| Projected Resource Commissioning Date (Generation Resource approved for participation in ERCOT market operations): | |  | |

The QSE and Resource Entity are required to comply with the ERCOT Protocols and Operating Guides from the moment the interconnection becomes operational. The QSE will comply with procedures for new Generation Resource start-up testing, with initial synchronization schedule communicated to ERCOT Shift Supervisor. The QSE confirms that the following requirements have been met:

Telemetry from the facility (station and generation) is in place and operational as of       (date) to QSE and TDSP (Optional). Enter specific comments about status of telemetry in QSE comment box on telemetry checklist on next page.

The QSE is capable of communicating the Resource’s Point of Interconnection information to ERCOT in the manner specified in Operating Guides Section 7.3, Telemetry, and Protocols Section 6.5.5.2, Operational Data Requirements, and any other information required by Section 3.10.7.5, Telemetry Criteria. Instructions for ERCOT to escalate telemetry quality issues with the QSE during commissioning shall be included in the following comment section. **Comments**:

The QSE confirms that the station RTU has been verified as operational and is sending data from the field to ERCOT. Furthermore, in accordance with Protocols Section 6.5.5.2, the QSE confirms that any telemetered values sent to ERCOT originate from the station RTU and the quality codes are accurate and appropriate. Any exceptions shall be identified in the comments section below.

**Comments:**

QSE confirms voice and data communications with the Generation Resource, ERCOT, and TDSP (Optional) ERCOT Operating Guide No. 3.2, 7.1.2. **Comments:**

Automatic Voltage Regulator (AVR) operating in Voltage Control Mode will be in service as of       (date). AVR performance tests described in ERCOT Operating Guide Section 2.2.5 will be reported to ERCOT prior to the Resource Commissioning Date, unless it is documented to the satisfaction of ERCOT that the local topology and resources do not permit successful demonstration of full capability. **Comments:**

Synchronous Generation Resources will have Power System Stabilizers (PSS) in service as of       (date). Per ERCOT Operating Guide Section 2.2.6, Power System Stabilizers, PSS will be installed and in-service prior to the Resource Commissioning Date. PSS performance tests will be reported to ERCOT within 30-days after PSS in-service date. If circumstances beyond the control of the RE prevent this testing from taking place, the RE shall document the circumstances and request and obtain an extension from ERCOT. Inverter based Generation Resources does not have to meet the PSS requirements. **Comments:**

Generation Resource will have a Governor in service as of       (date). Turbine Speed Governors, or equivalent governor response and governor droop settings and dead-band are registered and comply with ERCOT Operating Guide Section 2.2.7. Governor performance tests will be reported to ERCOT prior to the Resource Commissioning Date. If circumstances beyond the control of the RE prevent this testing from taking place, the RE shall document the circumstances and request and obtain an extension from ERCOT. **Comments:**

Prior to initial synchronization of Wind Generation Resource the QSE confirms availability of required meteorological data per Section 3.13.

The reactive controls (VARs) of this Generation Resource will be in service and enabled as of       (date) to maintain transmission voltage at the Point of Interconnection, as described in ERCOT Operating Guides Sections 2.7.2, Maintaining Voltage Profile, and 3.3.2, Unit Reactive Capability Requirements. Prior to the Resource Commissioning Date, compliance with Reactive Power requirements will be demonstrated in accordance with Protocol Section 3.15 (3). **Describe plan for voltage control at POI during commissioning in the space below (may reference associated section or page(s) on commissioning plan)**:

Generation Resource Under Frequency Relays comply with trip settings specified in ERCOT Operating Guides Section 2.6.2, Generators. **Comments:**

| **New Generator Telemetry** | | | | |
| --- | --- | --- | --- | --- |
|  | **Data** | **Frequency** | **Mode** | **Reference/Comments** |
|  | Real Time data accuracy |  |  | Real Time data for reliability purposes must be accurate to within three percent (3%). This telemetry may be provided from relaying accuracy instrumentation transformers.  **QSE Comment:** |
|  | Generation Resource gross and net MW output | 2 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements. Net Generation is preferred. Otherwise, aux load should also be provided.  **QSE Comment:** |
|  | Generation Resource gross and net MVar output | 2 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements. Net Generation is preferred. Otherwise, aux load should also be provided.  **QSE Comment:** |
|  | Switching Device status other than reported in PART 1 | 2 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements.  **QSE Comment:** |
|  | Breaker status other than reported in PART 1 | 2 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements  **QSE Comment:** |
|  | Generation Resource High Sustainable Limit | 2 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements.  **QSE Comment:** |
|  | Generation Resource Low Sustainable Limit | 2 sec | ICCP | Protocol Section 6.5.5.2, Operational Data Requirements.  **QSE Comment:** |
|  | Generation Resource Automatic Voltage Regulator status | 2 sec | ICCP | Protocol Section 3.15.3, QSE Responsibilities Related to Voltage Support. Applies to Generation Resources required to provide VSS.  **QSE Comment:** |
|  | Generation Resource Power System Stabilizer status | 2 sec | ICCP | Protocol Section 3.15.3, QSE Responsibilities Related to Voltage Support. Applies to Generation Resources required to provide VSS.  **QSE Comment:** |

**Wind-Generation Resources Only**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Additional Wind Resource Data | Frequency (sec) | Protocol Reference |
|  | Wind Speed (Miles per Hour) | 10 | 6.5.7.1.13 (1) (d) 4.2.2 (1) (implied) |
|  | Wind Direction (Degrees) | 10 | 4.2.2 (1) (implied) |
|  | Temperature (Celsius) | 10 | 4.2.2 (1) (implied) |
|  | Barometric Pressure (Millibars) | 10 | 4.2.2 (1) (implied) |

**MET Tower Location [as registered]:**

**Latitude:**       **Longitude:**

**QSE Comment:**

By signing below I attest that information provided on this form (**PART 2**) is true, correct and complete, and that any substantial changes in such information will promptly be provided to the Electric Reliability Council of Texas (ERCOT).

|  |  |
| --- | --- |
| Signature: |  |

(QSE Authorized Representative)

|  |  |
| --- | --- |
| Printed Name: |  |

(QSE Authorized Representative)

|  |  |
| --- | --- |
| Date Signed: |  |

**Checklist PART 3: Request to Commission a Resource**

QSE and Resource Entity provide notice to ERCOT that the Generation Resource named below is ready to be commissioned on the date specified below.

|  |  |  |
| --- | --- | --- |
| **RE** Name: |  | |
| **QSE** Name: |  | |
| Date of Notice: |  | |
| Gen Site Name: | |
| Gen Unit Code(s): | |
| |  |  | | --- | --- | | Proposed Resource Commissioning Date\*: |  |   \* Actual date contingent on completion of requirements and approval from ERCOT. | |

**In accordance with Protocols Section 3.15(3), Voltage Support, adequate reactive capability has been demonstrated by either performance test or engineering study, as checked below. If system conditions do not allow for a test to be completed ERCOT may at its discretion grant an extension.**

Reactive performance test submitted and approved by ERCOT, or a coordinated test has been attempted and local topology or available resources prevented successful demonstration of full reactive capability. If this condition holds and all other protocol requirements are met, then ERCOT may approve the Resource for participation in ERCOT market operations without demonstration of full reactive capability. The test shall be rescheduled after the Resource Commissioning Date. **Comment:**

Engineering study submitted with this notice. **Comment:**

AVR, PSS, and PFR testing has been completed. **Comment:**

I understand that ERCOT must provide confirmation that this Resource has demonstrated adequate reactive capability before the Resource Commissioning Date.

By signing below I attest that information provided on this form (**PART 3**) is true, correct and complete, and that any substantial changes in such information will be provided to the Electric Reliability Council of Texas (ERCOT) in a timely manner.

|  |  |
| --- | --- |
| RE Signature: |  |

(RE Authorized Representative)

|  |  |
| --- | --- |
| Printed Name: |  |

(RE Authorized Representative)

|  |  |
| --- | --- |
| Date Signed: |  |