

ISA FORM TEMPLATE
(From Attachment O of the PJM Tariff)

Original Service Agreement No. []
Effective Date: []

(PJM Queue # [])

INTERCONNECTION SERVICE AGREEMENT

Among

PJM INTERCONNECTION, L.L.C.

And

[]

And

[]

11.2 List and Ownership of Interconnection Facilities. The Interconnection Facilities to be constructed and ownership of the components thereof are identified in Section 3.0 of the Specifications attached to this ISA.

11.2A List and Ownership of Merchant Network Upgrades. If applicable, Merchant Network Upgrades to be constructed and ownership of the components thereof are identified in Section 3.0 of the Specifications attached to this ISA.

11.3 Ownership and Location of Metering Equipment. The Metering Equipment to be constructed, the capability of the Metering Equipment to be constructed, and the ownership thereof, are identified on the attached Schedule C to this ISA.

11.4 Applicable Technical Standards. The Applicable Technical Requirements and Standards that apply to the Customer Facility and the Interconnection Facilities are identified in Schedule D to this ISA.

12.0 Power Factor Requirement.

Consistent with Section 4.7 of Appendix 2 to this ISA, the power factor requirement is as follows:

[For Generation Interconnection Customers]

{The following language should be included for new large and small synchronous generation facilities that will have the Tariff specified power factor. This section does not apply if the Interconnection Request is for an incremental increase in generating capability.}

The Interconnection Customer shall design its Customer Facility with the ability to maintain a power factor of at least 0.95 leading to 0.90 lagging measured at the [generator's terminals] [Point of Interconnection].

~~{For all wind or non-synchronous generation facilities which have entered the New Services Queue prior to May 1, 2015, include the appropriate alternative from the language below for new wind or non-synchronous generation facilities. This section does not apply if the Interconnection Request is for an incremental increase in generating capability.}~~

~~{For new wind or non-synchronous generation facilities which have entered the New Services Queue prior to May 1, 2015, follow the following requirements associated with new wind and non-synchronous generation facilities.}~~

The result of the System Impact Study indicated that, for the safety and reliability of the Transmission System, no power factor requirement is required for the [wind-powered] [non-synchronous] Customer Facility.

{or}

The results of the System Impact Study require that, for the safety or reliability of the Transmission System, the Generation Interconnection Customer shall design its [wind-powered] [non-synchronous] Customer Facility with the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the Point of Interconnection.

{include the following language if the Interconnection Request is for an incremental increase in capacity or energy output to a synchronized generation facility}

The existing [] MW portion of the Customer Facility shall retain its existing ability to maintain a power factor of at least 0.95 leading to 0.90 lagging measured at the [generator's terminals] [Point of Interconnection].

The increase of [] MW to the Customer Facility associated with this ISA shall be designed with the ability to maintain a power factor of at least 1.0 (unity) to 0.90 lagging measured at the [generator's terminals] [Point of Interconnection].

{For new wind or non-synchronous generation facilities which have entered the New Services Queue after to May 1, 2015, the following applies:}

The Generation Interconnection Customer shall design its [wind-powered] [non-synchronous] Customer Facility with the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the generator's terminals.

{For all wind or non-synchronous generation facilities that have entered the New Service Queue prior to May 1, 2015, include the appropriate alternative from the language below for Interconnection Requests for an incremental increase in capacity or energy output to all wind or non-synchronized generation facility.}

The results of the System Impact Study indicate that, for the safety or reliability of the Transmission System, no power factor requirement is necessary for the [existing [] MW or the increase of [] MW associated with this ISA] [increase of [] MW associated with this ISA, but that the existing [] MW of the Customer Facility must retain its ability to retain a power factor of at least 0.95 leading to 0.95 lagging measured at the Point of Interconnection] [existing [] MW of the Customer Facility but that the increase of [] MW associated with this ISA must be designed with the ability to maintain a power factor requirement of 1.0 (unity) to 0.90 lagging measured at the Point of Interconnection.

{or}

The results of the System Impact Study indicate that, for the safety or reliability of the Transmission System, (i) the existing [redacted] MW portion of the Customer Facility shall retain its existing ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the Point of Interconnection and (ii) the increase of [redacted] MW to the Customer Facility associated with this ISA shall be designed with the ability to maintain a power factor of at least 1.0 (unity) to 0.95 lagging measured at the Point of Interconnection.

{For all wind or non-synchronous generation facilities requesting an incremental increase in capacity or energy output which have entered the New Services Queue after May 1, 2015, include the following requirements:}

The existing [wind-powered] [non-synchronous] [redacted] MW portion of the Customer Facility shall retain the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the generator's terminals.

The increase of [redacted] MW to the [wind-powered] [non-synchronous] Customer Facility associated with this ISA shall be designed with the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the generator's terminals.

[For Transmission Interconnection Customers]

{The following language should be included only for new Merchant Transmission Facilities}

Transmission Interconnection Customer shall design its Merchant D.C. Transmission Facilities and/ or Controllable A.C. Merchant Transmission Facilities, to maintain a power factor at the Point of Interconnection of at least 0.95 leading and 0.95 lagging, when such Customer Facility is operating at any level within its approved operating range.

[Include section 12A.0 only when applicable, i.e., only for a facility for which Transmission Provider and Interconnected Transmission Owner deem an RTU (or equivalent) to be unnecessary]

12A.0 RTU. In accordance with Section 8.5.2 of Appendix 2 to this ISA, that provision's requirement for installation of a remote terminal unit or equivalent data collection and transfer equipment is hereby waived for purposes of this ISA.

13.0 Charges. In accordance with Sections 10 and 11 of Appendix 2 to this ISA, the Interconnection Customer shall pay to the Transmission Provider the charges applicable after Initial Operation, as set forth in Schedule E to this ISA. Promptly after receipt of such payments, the Transmission Provider shall forward such payments to the appropriate Interconnected Transmission Owner.

- 14.0 Third Party Beneficiaries. No third party beneficiary rights are created under this ISA, except, however, that, subject to modification of the payment terms stated in Section 10 of this ISA pursuant to the Negotiated Contract Option, payment obligations imposed on Interconnection Customer under this ISA are agreed and acknowledged to be for the benefit of the Interconnected Transmission Owner(s). Interconnection Customer expressly agrees that the Interconnected Transmission Owner(s) shall be entitled to take such legal recourse as it deems appropriate against Interconnection Customer for the payment of any Costs or charges authorized under this ISA or the Tariff with respect to Interconnection Service for which Interconnection Customer fails, in whole or in part, to pay as provided in this ISA, the Tariff and/or the Operating Agreement.
- 15.0 Waiver. No waiver by either party of one or more defaults by the other in performance of any of the provisions of this ISA shall operate or be construed as a waiver of any other or further default or defaults, whether of a like or different character.
- 16.0 Amendment. This ISA or any part thereof, may not be amended, modified, or waived other than by a written document signed by all parties hereto.
- 17.0 Construction With Other Parts Of The Tariff. This ISA shall not be construed as an application for service under Part II or Part III of the Tariff.
- 18.0 Notices. Any notice or request made by either party regarding this ISA shall be made, in accordance with the terms of Appendix 2 to this ISA, to the representatives of the other party and as applicable, to the Interconnected Transmission Owner(s), as indicated below:

Transmission Provider:

PJM Interconnection, L.L.C.
2750 Monroe Blvd.
Audubon, PA 19403

Interconnection Customer:

[Redacted]

Interconnected Transmission Owner:

[Redacted]

- 19.0 Incorporation Of Other Documents. All portions of the Tariff and the Operating Agreement pertinent to the subject matter of this ISA and not otherwise made a part hereof are hereby incorporated herein and made a part hereof.

- 20.0 Addendum of Non-Standard Terms and Conditions for Interconnection Service. Subject to FERC approval, the parties agree that the terms and conditions set forth in Schedule F hereto are hereby incorporated herein by reference and be made a part of this ISA. In the event of any conflict between a provision of Schedule F that FERC has accepted and any provision of Appendix 2 to this ISA that relates to the same subject matter, the pertinent provision of Schedule F shall control.
- 21.0 Addendum of Interconnection Customer's Agreement to Conform with IRS Safe Harbor Provisions for Non-Taxable Status. To the extent required, in accordance with Section 24.1 of Appendix 2 to this ISA, Schedule G to this ISA shall set forth the Interconnection Customer's agreement to conform with the IRS safe harbor provisions for non-taxable status.
- 22.0 Addendum of Interconnection Requirements for all ~~w~~Wind or ~~n~~Non-synchronous ~~g~~Generation Ffacilitiesa-Wind-Generation-Facility. To the extent required, Schedule H to this ISA sets forth interconnection requirements for all wind or non-synchronous generation facilitiesa-wind-generation-facility and is hereby incorporated by reference and made a part of this ISA.
- 23.0 Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. All Transmission Providers, Interconnected Transmission Owners, market participants, and Interconnection Customers interconnected with electric systems are to comply with the recommendations offered by the President's Critical Infrastructure Protection Board and best practice recommendations from the electric reliability authority. All public utilities are expected to meet basic standards for electric system infrastructure and operational security, including physical, operational, and cyber-security practices.

4.5 Permits and Rights-of-Way:

Each Interconnected Entity at its own expense shall maintain in full force and effect all permits, licenses, rights-of-way and other authorizations as may be required to maintain the Customer Facility and the Interconnection Facilities that the entity owns, operates and maintains and, upon reasonable request of the other Interconnected Entity, shall provide copies of such permits, licenses, rights-of-way and other authorizations at its own expense to the requesting party.

4.6 No Ancillary Services:

Except as provided in Section 4.7 of this Appendix 2, nothing in this Appendix 2 is intended to obligate the Interconnection Customer to supply Ancillary Services to either Transmission Provider or the Interconnected Transmission Owner.

4.7 Reactive Power

4.7.1 Reactive Power Design Criteria

4.7.1.1 New Facilities:

For all new generating facilities to be interconnected pursuant to the Tariff, other than wind-powered and other non-synchronous generation facilities, the Generation Interconnection Customer shall design its Customer Facility to maintain a composite power delivery at continuous rated power output at a power factor of at least 0.95 leading to 0.90 lagging. For all new wind-powered and other non-synchronous generation facilities, ~~if determined in the system impact study to be required for the safety or reliability of the Transmission System,~~ the Generation Interconnection Customer shall design its Customer Facility with the ability to maintain a composite power delivery at continuous rated power output at a power factor of at least 0.95 leading to 0.95 lagging. -For all wind-powered and other non-synchronous generation facilities entering the New Service Queue after May 1, 2015, the power factor requirement shall be measured at the generator's terminals. For new generation resources of more than 20 MW, other than wind-powered and other non-synchronous generating facilities, the power factor requirement shall be measured at the generator's terminals. For new generation resources of 20 MW or less, and other than wind-powered and other non-synchronous generating facilities entering the New Service Queue prior to May 1, 2015, ~~and all wind-powered and other non-synchronous generation facilities,~~ the power factor requirement shall be measured at the Point of Interconnection. Any different reactive power design criteria that Transmission Provider determines to be appropriate for a wind-powered or other non-synchronous generation facility shall be stated in the Interconnection Service Agreement. A Transmission Interconnection Customer interconnecting Merchant D.C. Transmission Facilities and/ or Controllable A.C. Merchant Transmission Facilities shall design its Customer Facility to maintain a power factor at the Point of Interconnection of at least 0.95 leading and 0.95 lagging, when the Customer Facility is operating at any level within its approved operating range.

4.7.1.2 Increases in Generating Capacity or Energy Output:

All increases in the capacity or energy output of any generation facility interconnected with the Transmission System, other than wind-powered and other non-synchronous generating facilities, shall be designed with the ability to maintain a composite power delivery at continuous rated power output at a power factor for all incremental MW of capacity or energy output, of at least 1.0 (unity) to 0.90 lagging. Wind-powered generation facilities and other non-synchronous generation facilities ~~entering the New Service Queue after May 1, 2015, if determined in the System Impact Study to be required for the safety or reliability of the Transmission System,~~ shall be designed with the ability to maintain a composite power delivery at continuous rated power output at a power factor for all incremental MW of capacity or energy output, of at least 0.95 leading~~1.0 (unity)~~ to 0.95 lagging, while those entering the New Service Queue prior to May 1, 2015 shall be designed with the ability to maintain a composite power delivery at continuous rated power out at a power factor for all incremental MW of capacity of energy output of at least 1.0 (unity) to 0.95 lagging. The power factor requirement associated with increases in capacity or energy output of more than 20 MW to synchronous generation facilities interconnected with the Transmission System shall be measured at the generator's terminals. The power factor requirement associated with increases in capacity or energy output of 20 MW or less to synchronous generation facilities and all increases to wind-powered and non-synchronous generation facilities interconnected to the Transmission System shall be measured at the Point of Interconnection.

4.7.2 Obligation to Supply Reactive Power:

Interconnection Customer agrees, as and when so directed by Transmission Provider or when so directed by the Interconnected Transmission Owner acting on behalf or at the direction of Transmission Provider, to operate the Customer Facility to produce reactive power within the design limitations of the Customer Facility pursuant to voltage schedules, reactive power schedules or power factor schedules established by Transmission Provider or, as appropriate, the Interconnected Transmission Owner. Transmission Provider shall maintain oversight over such schedules to ensure that all sources of reactive power in the PJM Region, as applicable, are treated in an equitable and not unduly discriminatory manner. Interconnection Customer agrees that Transmission Provider and the Interconnected Transmission Owner, acting on behalf or at the direction of Transmission Provider, may make changes to the schedules that they respectively establish as necessary to maintain the reliability of the Transmission System.

4.7.3 Deviations from Schedules:

In the event that operation of the Customer Facility of an Interconnection Customer causes the Transmission System or the Interconnected Transmission Owner's facilities to deviate from appropriate voltage schedules and/or reactive power schedules as specified by Transmission Provider or the Interconnected Transmission Owner's operations control center (acting on behalf or at the direction of Transmission Provider), or that otherwise is inconsistent with Good Utility Practice and results in an unreasonable deterioration of the quality of electric service to other customers of Transmission Provider or the Interconnected Transmission Owner, the Interconnection Customer shall, upon discovery of the problem or upon notice from Transmission Provider or the Interconnected Transmission Owner, acting on behalf or at the direction of Transmission Provider, take whatever steps are reasonably necessary to alleviate the

{Include the following Schedule H for New Service Requests received on or after May 1, 2015}

SCHEDULE H

INTERCONNECTION REQUIREMENTS FOR ALL

WIND AND NON-SYNCHRONOUS GENERATION FACILITIES

{Include the appropriate language from the alternatives below}

{Include the following language if the Customer Facility is not a wind or non-synchronous generation facility}

Not Required

[OR]

{Include the following language when the Customer Facility is a wind or non-synchronous generation facility}

Voltage Ride Through Requirements

The Customer Facility shall be designed to remain in service (not trip) for voltages and times as specified for the Eastern Interconnection in Attachment 1 of NERC PRC-24 for both high and low voltage conditions irrespective of generator size.

Frequency Ride Through Requirements

The Customer Facility shall be designed to remain in service (not trip) for frequencies and times as specified in Attachment 2 of NERC PRC-24 for both high and low frequency conditions irrespective of generator size.

Supervisory Control and Data Acquisition (SCADA) Capability

The wind or non-synchronous generation facility shall provide SCADA capability to transmit data and receive instructions from the Transmission Provider to protect system reliability. The Transmission Provider and the wind or non-synchronous generation facility Interconnection Customer shall determine what SCADA information is essential for the proposed wind or non-synchronous generation facility, taking into account the size of the facility and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability in its area.

Meteorological Data Reporting Requirement **(Applicable to wind generation facilities only)**

The wind generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Wind speed (meters/second)
- Wind direction (degrees from True North)
- Atmospheric pressure (hectopascals)
- Forced outage data (wind turbine and MW unavailability)

The Transmission Provider and Interconnection Customer may mutually agree to any additional meteorological data that are required for the development and deployment of a power production forecast. All requirements for meteorological and forced outage data must be commensurate with the power production forecasting employed by the Transmission Provider. Such additional mutually agreed upon requirements for meteorological and forced outage data are set forth below:

[SPECIFICY AGREED UPON METEOROLOGICAL AND FORCED OUTAGE DATA REQUIREMENTS]

OR

[NOT APPLICABLE FOR THIS ISA]