



Control Number: 35077



Item Number: 837

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**Project No. 35077**

2018 JUN 13 PM 4:06

**Amendment No. 2**

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**Generation Interconnection Agreement**

**Between**

**LCRA Transmission Services Corporation**

**and**

**FPL Energy Upton Wind IV, LLC**

**Dated**

**May 18, 2018**

**837**



**AMENDMENT NO. 2**  
**TO GENERATION INTERCONNECTION AGREEMENT**

**THIS AMENDMENT NO. 2** ("Amendment") is made and entered into this 18<sup>th</sup> day of May, 2018, by and among the LCRA Transmission Services Corporation ("Transmission Service Provider" or "TSP") and FPL Energy Upton Wind IV, LLC ("Generator").

**WHEREAS**, this amendment to the Interconnection Agreement is necessary because the TSP will install 138-kV circuit breakers to increase transmission service reliability at the Robbins Switchyard and the description of the LCRA TSC Transmission Interconnection Facilities (TIF) requires updating; and

**WHEREAS**, the ERCOT Polled Settlement metering will be relocated from the plant to the TSP's new switchyard at Robbins Switchyard Substation.

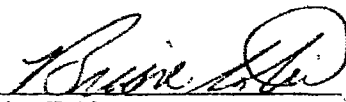
**NOW, THEREFORE**, in consideration of the mutual covenants and agreement herein contained, Generator and the Transmission Service Provider agree to amend the Agreement as follows:

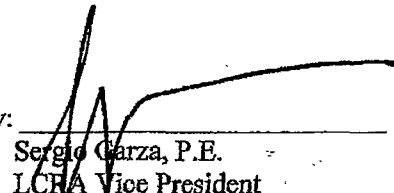
1. Exhibit "C" Interconnection Details (including the diagrams Exhibit "C-1" and "C-2" attached thereto), attached to the agreement, is deleted in its entirety and Exhibit "C" Interconnection Details (including the diagrams attached thereto), attached to this Second Amendment, is hereby added to the Agreement in lieu thereof.
2. Exhibit "C" Interconnection (including the diagrams Exhibit "C-1" and "C-2" attached thereto), attached to this Second Amendment, will become effective upon execution of this Second Amendment by the Parties
3. Exhibit "C-9" Communications Requirements is deleted in its entirety and Exhibit "C-9" Communications Requirements, attached to this Second Amendment, is hereby added to the Agreement in lieu thereof.
4. Exhibit "C-9" Communications Requirements, attached to this Second Amendment, will become effective upon execution of this Second Amendment by the Parties.
5. Exhibit "D" Notice and EFT Information of the ERCOT Standard Generation Interconnection Agreement, attached to the agreement, is deleted in its entirety and Exhibit "D" Notice and EFT Information of the ERCOT Standard Generation Interconnection Agreement, attached to this Second Amendment, is hereby added to the Agreement in lieu thereof.
6. Exhibit "D" Notice and EFT Information of the ERCOT Standard Generation Interconnection Agreement, will become effective upon execution of this second Amendment by the Parties.

IN WITNESS WHEREOF, the parties have caused this Amendment to be signed by their respective duly authorized representatives in two counterparts, each of which shall be deemed an original but all shall constitute one and the same document.

FPL Energy Upton Wind IV, LLC  
By: FPL Energy Upton Wind IV, GP, LLC,  
its General Partner

LCRA Transmission Services Corporation

By:   
Brian Tobin  
Vice President

By:   
Sergio Garza, P.E.  
LCRA Vice President  
Transmission Design and Protection

Date: 05/18/2018

Date: 05/18/2018



**Exhibit "C"**  
**Interconnection Details**

1. **Name:** King Mountain Southeast Point of Interconnection (Robbins Switchyard)
2. **Point of Interconnection location:** The Point of Interconnection is located at the TSP's dead end structure located one span outside the Robbins Switchyard (the "TSP Switchyard"). Specifically the Point of Interconnection is where the TSP's jumpers attach to the Generators transmission line.
3. **Delivery Voltage:** 138-kV
4. **Number and size of Generating Units:** Nominal 43.3 MW total plant; 31 turbines; 1.3 MW each 1 turbine: 3.0 MW
5. **Type of Generating Unit:** Wind turbines
6. **Metering and Telemetry Equipment:**

A). TSP's ERCOT polled settlement ("EPS") metering will be located at the TSP Switchyard as part of the TIF. Three 138-kV extended range, metering current transformers will be used to accurately read the generation energy and power delivered to the grid and the auxiliary energy and power consumed through the Point of Interconnection. Three 138-kV metering accuracy voltage transformers will also be installed by the TSP for the ERCOT settlement metering. The ERCOT settlement metering panel furnished by the TSP will be located in the TSP Switchyard.

B). TSP will provide one ERCOT Polled Settlement (EPS) metering point at the TSP Switchyard to accommodate both Generator and FPL Energy Upton Wind III, LLC through a single Point of Interconnection. The single EPS meter located at the Point of Interconnection will measure all energy flows for the Plants. The allocation of the EPS meter data to each generating entity is the responsibility of the Generator and FPL Energy Upton Wind III, LP and will be in accordance with Section 10.3.2.1 of the ERCOT Nodal Protocols, or its successor.

C). A remote terminal unit ("RTU") will be furnished by the TSP at the TSP Switchyard as part of the TIF and will have a dedicated communication port available to provide applicable breaker status and other telemetry data to ERCOT as required by the ERCOT Nodal Operating Guides.

D). Multi-ported RTU(s) are currently furnished by the Generator at the Generator's interconnection substation(s) as part of the GIF and will have dedicated communication port(s) available to provide breaker status and other telemetered data to TSP and ERCOT as required by the ERCOT Nodal Operating Guides. The Generator is responsible for determining and providing all their RTU communications needs.

**7. Generator Interconnection Facilities:**

- (a) GIF located at the Point of Interconnection include the following:
  - (i) 138-kV line dead end insulator strings connected to the TSP's dead end structure
  - (ii) 138-kV line dead end shoes
- (b) GIF located between the Point of Interconnection and Plant include the following:
  - (i) 138-kV transmission line from Point of Interconnection to the King Mountain SE 34.5/138-kV substation
  - (ii) King Mountain SE 34.5/138-kV substation
- (c) Communication equipment described in item 9 below.
- (d) System protection equipment described in item 10 below.

**8. Transmission Service Provider Interconnection Facilities:**

The TSP owns the Robbins Switchyard including, but not limited to, the following:

- (a) One (1) full tension, dead-end, 138-kV line structure (TSP's interconnect structure) located near the TSP Switchyard
- (b) One (1) 138-kV span of conductors and OPGW/shield from the TSP's interconnecting dead-end structure to the TSP Substation A-frame structure along with the jumpers between the TSP conductors and the Generator's line conductors at the TSP's interconnecting dead-end structure
- (c) Three (3) 145-kV, 3000A circuit breakers in a ring-bus configuration
- (d) Six (6) 138-kV, 3000A VAB switches
- (e) Nine (9) 138-kV coupling capacitor voltage transformers "CCVTs"
- (f) Ten (10) 138-kV surge arresters
- (g) One (1) 138-kV power voltage transformer "PVT"
- (h) One (1) control house (24' x 42') with foundation, batteries, battery charger, AC/DC panel boards and appurtenances
- (i) Three (3) 138-kV universal line panels
- (j) Six (6) 138-kV metering potential transformers "PTs"
- (k) Six (6) 138-kV metering current transformers "CTs"
- (l) One (1) ERCOT settlement metering panel with primary and backup EPS meters
- (m) One (1) annunciator panel
- (n) One (1) RTU
- (o) One (1) supervisory interface panel "SIP"/annunciator panel
- (p) Switchyard property (~5 acres), ground grid, gravel, fencing and other appurtenances
- (q)
- (r) Multiplex equipment described in item 9 below.

**9. Communications Facilities:**

The communications facilities described below will be paid for, owned, and installed by Generator in accordance with attached Exhibit "C-9". Additionally, the Generator will provide fiber optic communication between the Plant and the Point of Interconnection, as necessary and agreed to by the Parties. The TSP will provide the multiplex equipment and fiber splice box on the TSP's interconnect structure at the TSP's Switchyard as necessary.

- (a) One (1) dedicated voice dispatch circuit from Generator's control center to TSP's

- designated dispatch center
- (b) One (1) telecommunication dial-up line, including associated interface equipment at the King Mountain SE 34.5/138-kV substation
- (c) One (1) telephone interface box at the King Mountain SE 34.5/138-kV substation

**10. System Protection Equipment:** See attached Exhibit "C-12" for additional requirements.

A). Generator will provide a line protection panel for Generator's 138-kV line at the Generator's facilities, which will coordinate with the LCRA TSC line panel(s) at the TSP Switchyard.

B). Generator will be responsible for the proper synchronization of its facilities with the LCRA TSC transmission system, in accordance with ERCOT guidelines.

C). The Plant and the Generator Interconnection Facilities shall be designed to isolate any fault, or to disconnect from or isolate any abnormality that would negatively affect the ERCOT system. The Generator shall be responsible for protection of its facilities. In particular, Generator shall provide relays, circuit breakers, and all other devices necessary to promptly remove any fault contribution of the generation equipment to any short circuit occurring on the TSP system. Such protective equipment shall include, without limitation, a disconnect device or switch with the appropriate interrupting capability to be located within the Generator Interconnection Facilities. In addition to faults within the Plant and the Generator Interconnection Facilities, Generator shall be responsible for protection of such facilities from such conditions as negative sequence currents, over or under frequency, sudden load rejection, over or under voltage, generator loss of field, inadvertent energization (reverse power) and uncleared transmission system faults.

D). The Plant and the Generator Interconnection Facilities shall have protective relaying that is consistent with the protective relaying criteria described in the ERCOT Requirements and NERC standards. If reasonably requested by the TSP, Generator shall, at its expense, provide corrections or additions to existing control and protective equipment required to protect the ERCOT system or to comply with government, industry regulations, or standard changes.

E). Generator shall install sufficient disturbance and fault monitoring equipment to thoroughly analyze all system disturbances of the generation system. This equipment shall monitor the voltages at major nodes of the system, current at major branches, breaker and switch positions, and enough of the dc logic in the relay control scheme to analyze a system disturbance. The TSP shall provide for disturbance and fault monitoring equipment in its TSP Substation. The disturbance and fault monitoring for both Generator and TSP shall be consistent with the disturbance monitoring requirements described in the ERCOT Requirements and NERC standard.

F). Prior to modifying any relay protection system design or relay setting involving the connecting facilities between the two Parties, Generator shall submit the proposed



changes to the TSP for review and approval. TSP's review and approval shall be for the limited purpose of determining whether such proposed changes are compatible with the ERCOT transmission system.

G). In accordance with Good Utility Practice and ERCOT and NERC standards, the TSP shall determine requirements for protection of the Point of Interconnection and the zone of protection around the Point of Interconnection and shall specify and implement protection and control schemes as necessary to meet such requirements. Generator shall have the right to review and comment on the necessary protection requirements, and such comments shall not be unreasonably refused by the TSP when determining such requirements. The TSP shall coordinate the relay system protection between Generator and the ERCOT system.

H). The Generator shall provide in PSSE or Aspen One-Liner format the short circuit model for the Generator Interconnection Facilities, the generators and collector facilities prior to the protective relays settings being revised and in no case later than 60 days prior to the actual in-service date for any new Generator Interconnection Facilities. Generator data submitted in accordance with Section 7.3 of Exhibit "A" shall include, but not be limited to, (1) a detailed one-line diagram of the proposed Plant and Generator Interconnection Facilities showing the collector buses and their voltages, (2) conductor types and lengths of all lines connecting the collector buses to the TSP Substation, (3) the total number of wind turbines to be served by each collector bus, (4) size, make and model of wind turbines, (5) capacitor bank sizes, locations (electrical) and control settings, and (6) the impedance and rating data of each transmission voltage line, GSU and/or autotransformer that will be installed to get power from the Plant and onto the transmission grid.

**11. Inputs to Telemetry Equipment:** Breaker status, protection status, watts, VARs, voltage and current and other points as agreed to by the Parties.

**12. Supplemental Terms and Conditions, if any, attached:**

- (a) For the facilities that it owns, LCRA TSC will utilize its access and physical security standards.
- (b) TSP will install a temporary shoo-fly to keep wind farms interconnected to the ERCOT system during TSP Switchyard construction.
- (c) Switching and Clearance:
  - (i) Generator shall obtain prior approval of the TSP before operating any circuit switching apparatus (e.g. switches, circuit breakers, etc.) at the Generator Interconnection Facilities, whether for testing or for operations of the Plant, which approval shall not be unreasonably withheld.
  - (ii) The TSP or their designated agents shall direct all switching at the Point of Interconnection and coordinate all switching of the Generator Interconnection Facilities. The operators of the Generator

Interconnection Facilities or their designated agents shall comply with requirements of the TSP switching and clearance procedures for actions directly involving the Interconnection Point.

- (iii) Generator will keep records of maintenance and switching operations of control and protective equipment and will allow the TSP reasonable access to inspect such records.
- (d) No Retail Sale of Electricity to Plant by the TSP: The TSP considers the energy and power that the Plant and Generator Interconnect Facilities may from time to time consume from the 138-kV grid through the Point of Interconnection to be a retail transaction and as such, the TSP does not intend to be the provider of this retail service. Generator shall make necessary arrangements with the appropriate retail supplier for the energy and power that the Plant and Generator Interconnection Facilities may consume from the 138-kV grid through the Point of Interconnection.
- (e) Notification:
  - (i) Generator shall notify the TSP in writing ninety (90) days before changing the ERCOT Qualified Scheduling Entity the Plant will be scheduling through.
  - (ii) Generator shall supply notification to the TSP identifying their retail service provider 60 days prior to any changes in retail service provider hereafter

**13. Special Operating Conditions, if any, attached:**

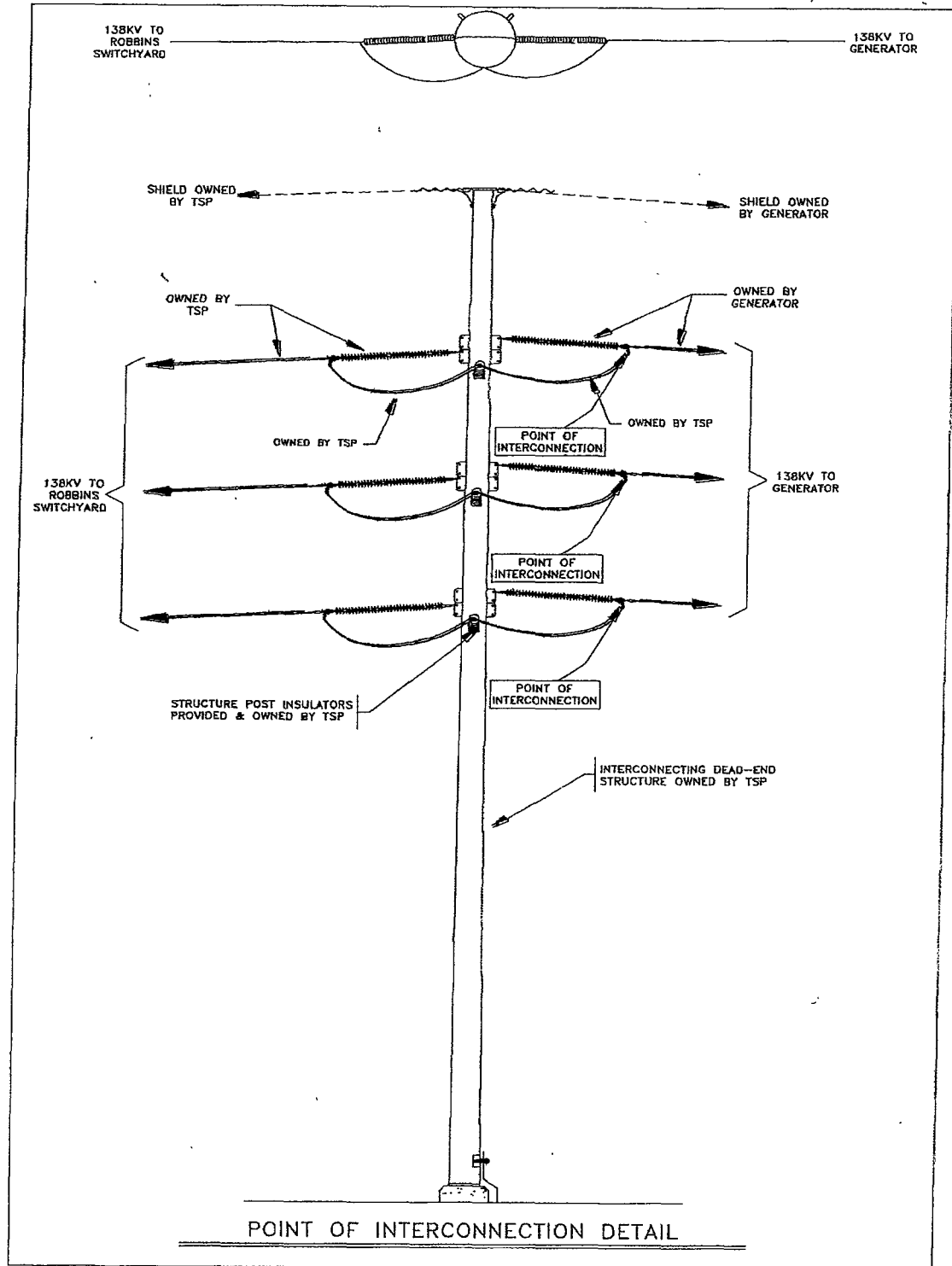
- (a) Quality of Power. Generator shall provide a quality of power into the TSP system consistent with the applicable ERCOT Requirements and NERC guidelines.
- (b) Harmonics. The Generator's alternating current generating system must have a frequency of 60 Hz, be designed for balanced three-phase operation, not cause unreasonable imbalance on the ERCOT system, and adhere to the recommendations in Institute of Electrical and Electronic Engineers Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems (IEEE 519), or its successor.
- (c) Voltage, Frequency and Reactive Support.
  - (i) Generator shall have and maintain the reactive capability as required in the ERCOT requirements, as amended from time to time by ERCOT.
  - (ii) All electric power and energy generated at the Plant and delivered through the Point of Interconnection shall have a nominal frequency of 60 Hertz ("Hz") and shall have the precise frequency, voltage and other properties and characteristics from time to time established by the TSP for operation of its system.

- (iii) The Generator shall be equipped with both frequency and voltage controls and shall be operated in synchronism with the TSP's system with such controls in service. Generator shall notify the TSP at any such time that such controls are out of service.

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# **EXHIBIT "C-2"** **POINT OF INTERCONNECTION DIAGRAM**



**Exhibit "C-9"**  
**Communications Requirements**

Generator shall be responsible for providing communication circuits for use by TSP. Generator shall be responsible for confirming with TSP the project-specific circuit requirements and requesting specific TSP addresses and TSP contact names in preparation for issuing communication circuit orders with Generator's telecommunication service provider of choice. These communication channel(s) may be leased telephone circuit, microwave, fiber optics or other media satisfactory to TSP. For telephone company circuits leased by Generator, Generator shall provide TSP and the communication provider with the necessary advanced authorization for communication circuit maintenance, allowing TSP to monitor circuits, report trouble and take corrective action with the communication provider, at Generator's expense. Typical circuit requirements include the following:

- 1) Voice Dispatch Circuit — This is a dedicated lease circuit from the Plant operators to TSP's designated dispatch office. If the Plant operator is not located on the Plant site, then the circuit must be terminated at the actual location of the Plant operators. This circuit is to be ordered by Generator. This circuit will be a type 428 non-dialable pair, also known as an OSPA two-wire circuit. For circuit design and ordering purposes, the circuit origination is to be at TSP's designated dispatch office; the circuit termination is to be at the actual location of the Plant operators.
- 2) Dial-Up Access — This is a business telephone line (Bell type IFB) to be ordered by Generator. This circuit is required for System Protection Equipment interrogation. This telephone line is required of Generator. If the System Protection Equipment is located at multiple sites, then multiple telephone lines will be required. If these devices are located at the same site, one telephone line may suffice for dial-up access. (In this case, Generator should install a telephone switch to share the one telephone line among multiple devices).

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DATE: \_\_\_\_\_

**Exhibit "D"**

**Notice and EFT Information of the ERCOT Standard Generation Interconnection Agreement**

(a) All notices of an operational nature shall be in writing and/or may be sent between the Parties via electronic means including facsimile as follows:

To: FPL Energy Upton Wind IV, LLC  
Company Name: FPLE Operating Services, Inc  
Attn: Neil James  
P.O. Box 547  
McCamey, TX 79752  
Operational/Confirmation Fax: (432) 652-8871  
24 Hour Telephone: (432) 652-8863  
E-mail: Neil\_James@fpl.com

To: LCRA Transmission Services Corporation  
Company Name: LCRA  
Attn: System Operations Manager  
P.O. Box 220  
Austin, TX 78767  
Operational/Confirmation Fax: (512) 385-2146  
24 Hour Telephone: 1 (800) 223-7622  
E-mail: John.Warren@lcra.org

(b) Notices of an administrative nature:

To: FPL Energy Upton Wind IV, LLC  
Company Name: FPL Energy, LLC  
Attn: Brian Tobin, Vice President  
700 Universe Boulevard  
Juno Beach, FL 33408  
Fax: (561) 304-5161  
Phone: (561) 304-5104  
E-mail: Brian\_Tobin@fpl.com

To: LCRA Transmission Services Corporation  
Company Name: LCRA  
Attn: Vice President LCRA Transmission Design and Protection  
P.O. Box 220  
Austin, TX 78767  
Fax: (512) 578-4493  
Phone: (512) 578-4149  
E-mail: sergio.garza@lcra.org

(c) Notice for statement and billing purposes:

To: FPL Energy Upton Wind IV, LLC  
Company Name (Same as (b) above)  
Attn:  
Address  
City, State, Zip  
Phone:  
E-mail

To: LCRA Transmission Services Corporation  
Company Name: (Same as (b) above)  
Attn:  
Address  
City, State, Zip  
Phone:  
E-mail

(d) Information concerning Electronic Funds Transfers:

To: FPL Energy Upton Wind IV, LLC  
Bank Name: ---Later---  
City, State  
ABA No. \_\_\_\_\_  
for credit to \_\_\_\_\_  
Account No. \_\_\_\_\_

To: LCRA Transmission Services Corporation  
Bank Name: ---Later---  
ABA No. \_\_\_\_\_  
for credit to \_\_\_\_\_  
Account No. \_\_\_\_\_