



Control Number: 35077



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Filing Clerk  
Public Utility Commission of Texas  
1701 N. Congress Avenue  
P.O. Box 13326  
Austin, TX 78711-3326

**RE: Project No. 35077, ERCOT Standard Generation Interconnection Agreement between CenterPoint Energy Houston Electric, LLC and Colorado Bend II Power, LLC**

To whom it may concern:

Enclosed for filing in Project No. 35077 is an amendment to a ERCOT Standard Generation Interconnection Agreement (SGIA) dated August 29, 2019 between CenterPoint Energy Houston Electric, LLC and Colorado Bend II Power, LLC. Also enclosed are the SGIA Amendment Provisions agreed to by the parties. This filing is made pursuant to 16 Tex. Admin. Code § 25.195(e).

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Mickey Moon".

Mickey Moon  
Assistant General Counsel  
CenterPoint Energy Houston Electric, LLC

Enclosures: (1) Executed SGIA Amendment Provisions

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## AMENDMENT TO EXHIBIT "C" ERCOT STANDARD GENERATION INTERCONNECTION AGREEMENT

This Amendment ("Amendment") to the Colorado Bend Energy Center Electric Reliability Council of Texas Standard Generation Interconnection Agreement dated December 17, 2015 (the "SGIA"), is between **CenterPoint Energy Houston Electric, LLC** ("Transmission Service Provider"), a Texas limited liability company, and **Colorado Bend II Power, LLC** ("Generator"), a Delaware limited liability corporation, (collectively, "the Parties") and made effective on the 29 day of August 2019. In consideration of the mutual promises and undertakings herein set forth, Generator and CenterPoint Energy agree to amend the SGIA as follows:

Exhibit "C" to the SGIA is replaced with the Exhibit "C" attached to this Amendment.

Except as otherwise expressly provided for herein, the SGIA will continue in full force and effect in accordance with its terms.

**CenterPoint Energy Houston Electric, LLC** and **Colorado Bend II Power, LLC** have caused this Amendment to be executed in several counterparts, each of which shall be deemed to be an original but all shall constitute one and the same instrument.

**CENTERPOINT ENERGY HOUSTON  
ELECTRIC, LLC**

By: *Lesli Cummings*  
Name: Lesli Cummings  
Title: Manager, Transmission Accounts

**COLORADO BEND II POWER, LLC**

By: *Gerome Randle*  
Name: GEROME RANDLE  
Title: VICE PRESIDENT

**Exhibit “C”**  
**Interconnection Details**  
**Amended and Restated as of August 13, 2019**

- 1) Name: Colorado Bend II Generation Project (“Plant”).
- 2) Point of Interconnection Location
  - A) TSP system side of Generator’s 1 transmission deadend structure # 58 to be located adjacently due north of TSP’s BAILEY Substation, located at 1268 County Road 112, Wharton County, Texas.
- 3) Delivery Voltage: 345 kV
- 4) Number and Size of Generating Units
  - A) Plant will be comprised of (3) generators with a total net spring rating of approximately 1,300 MW (“Planned Capacity”), which is projected to be the Plant’s Net Dependable Capability, as defined by ERCOT Requirements.
- 5) Type of Generating Unit
  - A) Description
    - 1) Two (2) GE 7HA.02 natural gas fired combustion turbine generators rated at approximately 388.MW each and one (1) steam turbine generator rated at approximately 524 MW. Each electric generating unit has its own 25-345 kV step-up (main power) transformer, with the 25 kV winding connected to plant auxiliary transformers as well as the units generator through a generator breaker.

<b>Natural gas combustion turbine generators</b>				
Description	Manufacturer	Rating	GSU Transformer Voltages	Type
CTG 7	GE/H65	388 MW @40°F	25-350 kV	Natural Gas
CTG 8	GE/H65	388 MW @40°F	25-350 kV	Natural Gas
<b>Steam turbine</b>				
STG 9	GE/H84	532 MW @ 40°F	23.5-350 kV	Steam
Total net MW: Approximately 1300 MW				

2) Each step-up, standby and auxiliary transformer that is directly connected at 345 kV will have a circuit breaker for isolation from the TIF.

**B) Generator Unit Data**

1) Electrical characteristics of Plant’s generating units shall be in accordance with the most recent version of data that Generator has provided to TSP.

## 6) Metering and Telemetry Equipment

- A) TSP shall provide and install ERCOT Polled Settlement (“EPS”) primary and check meters, current transformers and associated wiring required for measuring the output of the Plant generation and for measuring the Plant electrical load at TSP’s BAILEY Substation. The 345 kV metering current transformers and metering potential transformers for the EPS metering of Plant electrical load shall be procured by TSP and owned, maintained, and replaced by TSP. TSP shall install and maintain the metering system’s components in a manner consistent with ERCOT Requirements and the PUCT Rules. TSP shall install RS485 communication circuits between the EPS metering, to measure Plant electrical load, and the TSP Supervisory Control & Data Acquisition (“SCADA”) Remote Terminal Unit (“RTU”). These communication circuits will transfer primary and backup meter data to the TSP RTU and EPS metering data will be available to the Generator through TSP’s RTU in accordance with 6C. TSP will provide a port in TSP’s RTU for Generator. Generator will provide a port for TSP at Generator’s RTU.
- B) TSP shall install the substation SCADA RTU at the BAILEY Substation. The RTU will be multi-port equipped and operate with protocols compatible with TSP. The RTU will be equipped to monitor BAILEY Substation as outlined in Paragraph 11 and control circuit breakers in the BAILEY Substation. Selected real-time data of the BAILEY Substation will be available at TSP’s RTU for Generator’s use. TSP’s RTU will be equipped with a MODBUS or DNP-3 “Slave” communications port for this purpose. Generator shall furnish the fiber optic cable, as referenced in Paragraphs 9H and 11, between the BAILEY Substation and the Plant RTU or DCS “Master” communications port for this purpose.
- C) Generator shall furnish Plant data to TSP’s RTU communication port at the BAILEY Substation. Generator shall furnish the fiber optic cable, as referenced in Paragraphs 9H and 11, between the BAILEY Substation and the Plant RTU or DCS. Generator’s RTU or DCS shall be equipped with a MODBUS or DNP-3, respectively, for “Slave” communications port for this purpose.

## 7) Generator Interconnection Facilities

- A) Generator shall construct, operate, and maintain a complete generation facility, including, but not limited to, all generators, power system stabilizers, generator step-up transformers, protective devices, and other transformers and associated foundations, the terminating structures, all relays necessary for the protection, synchronization and coordination of the generators, generator auxiliary equipment and the disconnect switches and foundations at the Point of Interconnection. Generator shall use commercially reasonable efforts to cause the generation facility to be capable of generating the Planned Capacity.
- B) The Generation unit(s) shall meet all voltage and reactive requirements as outlined in the ERCOT Protocols and ERCOT Operating Guides.
- C) Electrical characteristics of Plant’s Generator Interconnection Facilities shall be in accordance with the most recent version of TSP’s “Specification for Customer 138 kV Substation Design”, and in particular, the section pertaining to “Generation,” but only to the extent the “Specification for Customer 138 kV Substation Design” is applicable to a 345 kV substation design, and TSP’s most recent version of minimum acceptable

electrical, mechanical, and structural design characteristics for 345 kV substation construction attached as Exhibit "I".

- D) Generator shall provide a double deadend structure ("Deadend Structure #58"), located outside and north of TSP's Bailey Substation, for connection to TSP's System herein the Point of Interconnection.
- E) Generator shall provide NEMA four-hole pads, or similar hardware, on Generator's side of Deadend Structure #58 for connection to NEMA four-hole pads on the connecting conductors of TSP's side of Deadend Structure #58. TSP shall jumper the respective NEMA four-hole pads.
- F) Generator has conveyed, at no cost to TSP, fee title to the land area which encompasses the BAILEY Substation and ground and aerial easements from the BAILEY Substation to the centerline of Generator's lead at terminating Deadend Structure #58 pursuant to separate instruments.
- G) Generator shall own all protective relays, instrument transformers, instrumentation, and control equipment physically located on Plant side of the Point of Interconnection.

#### 8) TSP Interconnection Facilities

- A) TSP shall complete its entire scope of work on the BAILEY Substation (except that Punch List Items may be completed within a reasonable time following the In-Service Date) including, but not limited to, bus works, supports, structures, circuit breakers, disconnect switches, relays, and other equipment necessary for protection and coordination, controls, and wiring all as necessary to provide an interconnection between Plant's generation facilities and TSP's System; energize the same, and interconnect with Plant, all as provided herein.
  - 1) Punch List Items are defined as those non-material items of work that remain to be performed in order to ensure full compliance with this Agreement. Punch List Items do not include any items of work, alone or in the aggregate, non-completion of which (i) prevents the BAILEY Substation from being used for its intended purposes as described in this Agreement or in accordance with applicable laws; (ii) prevents the BAILEY Substation from being legally, safely, and reliably placed in commercial operation; or (iii) in the exercise of reasonable engineering judgment could have an adverse effect on the operation, efficiency, or reliability of the BAILEY Substation, or its ability to transmit the Plant's power to the ERCOT grid.
- B) TSP shall furnish, own, and maintain the connection from TSP's equipment to Generator's terminating structure, including phase conductors, static conductors, structures, tower fittings, suspension insulators, dead-end clamps and line conductor terminal fittings with NEMA standard four-hole flat pads for attachment to the NEMA four-hole pads on TSP's side of Deadend Structure #58.
- C) TSP shall furnish, own, and maintain the connection from BAILEY Substation to TSP's transmission system.
- D) TSP shall develop and install transmission improvements that it determines, in its sole discretion, are foreseeable and reasonably necessary to safely, reliably, and economically integrate Plant's generation into TSP's transmission system. TSP MAKES NO PROMISE, REPRESENTATION, OR WARRANTY AS TO WHETHER TSP'S TRANSMISSION SYSTEM WILL BE FREE OF CONSTRAINTS AT ANY TIME, INCLUDING BUT NOT LIMITED TO TIMES WHEN THE TRANSMISSION

IMPROVEMENTS UNDER THIS AGREEMENT ARE BEING MADE OR AFTER THEIR COMPLETION.

- E) TSP shall construct the BAILEY Substation as shown on the drawing entitled “**CenterPoint Energy 345 kV, BAILEY Substation, Substation Development Plan**” dated 09-29-2015 (“BAILEY Substation Development Plan”) for the Colorado Bend III 17INR0007 Project Interconnection Agreement.
  - F) Generator shall convey, at no cost to TSP, ground and aerial sub-easements, in a form reasonably acceptable to TSP and Generator, from the Generator’s Point of Interconnection at Generator’s terminating Deadend Structure #58 to the high-side of TSP’s disconnecting devices of the BAILEY Substation, for the BAILEY Substation, and from the BAILEY Substation to the centerline of Generator’s lead at terminating Deadend Structure #58.
  - G) TSP shall only be responsible for pulling fiber optic communication cables from Generator’s terminating Deadend Structure #58 located at the Point of Interconnection to the BAILEY Substation relay panel, reference Paragraph 9H.
- 9) Communications Facilities
- A) All facilities provided under TSP’s obligations in this Section 9 shall be considered part of the TIF. All facilities provided under Generator’s obligations in this Section 9 shall be considered part of the GIF.
  - B) TSP shall order, maintain, and provide at TSP’s expense a communication circuit for real-time data transmittal via SCADA equipment from the BAILEY Substation to TSP’s Energy Management System.
  - C) TSP shall order, maintain, and provide at TSP’s expense a communication circuit for the EPS meters at the BAILEY Substation.
  - D) TSP shall provide a voice telephone extension at the BAILEY Substation.
  - E) Generator shall provide and terminate a fiber optic communication interface device on its end of the fiber and TSP will provide and terminate a fiber optic communication interface device on its end of the fiber associated with the RTU inputs between Plant and the BAILEY Substation.
  - F) Generator shall furnish RTU inputs identified in Exhibit “C”, Paragraph 11)A) from the Plant to the BAILEY Substation’s communication interface point.
  - G) Generator shall provide a voice telephone extension outlet in Generator’s collector yard that is located within the Plant. Such telephone extension outlet shall be connected to the local exchange carrier’s telephone system; however, the telephone extension outlet may be connected to Plant’s internal telephone system, provided Plant’s internal telephone system is equipped with an uninterruptible power supply system.
  - H) Generator shall provide fiber optic communication cables of sufficient length to connect from Plant to the BAILEY Substation relay panel. Generator shall provide 11 miles of two single mode fiber optic cables, typically 72 fibers per cable (“optical grounded wire” or “OPGW”) between Generator’s Plant and TSP’s BAILEY Substation. Generator will stop at Generator’s last terminating or Deadend Structure #58 and provide enough OPGW cable slack between terminating Deadend Structure #58 and TSP’s BAILEY Substation relay panel. TSP shall take the OPGW into the BAILEY Substation as referenced on Paragraph 8G.

## 10) System Protection Equipment

- A) Generator shall provide two sets of protective relaying accuracy (C800) current transformers on Generator's 345 kV circuit breakers associated with the protective relaying between Plant and the BAILEY Substation. Each set of current transformers will provide signals to independent sets of primary and backup protective relays for the interconnecting lead between the GIF and the BAILEY Substation. The current transformer ratio will be 4000 to 5.
- B) Generator will provide trip-interposing devices at the Plant associated with the protective relaying between each disconnecting devices and BAILEY Substation.
- C) TSP will provide trip-interposing devices at BAILEY Substation associated with the protective relaying between each disconnecting devices and the Plant.

## 11) Inputs to Telemetry Equipment

- A) Generator shall provide to TSP at TSP's BAILEY Substation the following signals originating at Generator's Plant:
  - 1) Analog Signals From Plant
    - (i) Kilovolts for each generator bus (one phase only).
    - (ii) Frequency of each generating unit, if available.
    - (iii) Net megawatts for each generating unit.
    - (iv) Net megavars for each generating unit.
  - 2) Status Signals From Plant
    - (i) Status of selected transmission voltage circuit breakers, generator breakers, and two switches that may impact power flows on TSP's System.
    - (ii) Status of generator automatic voltage regulator (automatic and manual) for each generating unit.
- B) TSP shall provide to Generator the following signals originating at TSP's BAILEY Substation:
  - 1) Analog Signals From TSP Substation Transducers
    - (i) Kilovolts for the Point of Interconnection (one phase).
    - (ii) Megawatts, megavars, and megawatt-hour data from TSP revenue meter.
  - 2) Status Signals From TSP Substation Transducers
    - (i) For instance, status of transmission voltage circuit breakers.
    - (ii) Alarm (PIL) for failure of Pilot Wire or fiber optic relaying, if applicable.

## 12) Supplemental Terms and Conditions

- A) The following drawings are attached and made a part of this agreement as Exhibit "H" – Attached Drawings.
  - 1) Basic Design- "CenterPoint Energy 345 kV Development Plan for Colorado Bend III Generation Project Facility Study," dated 05-14-15.
  - 2) Enhancement Design- "CenterPoint Energy BAILEY SUBSTATION Substation Development Plan," dated 09-29-15.
  - 3) Basic Design – "CenterPoint Energy 345 kV One-Line Relaying & Metering Diagram for Colorado Bend III Generation Project Facility Study," dated 03-12-15.



- 4) Enhancement Design – “CenterPoint Energy 345 kV One-Line Relaying and Metering Diagram for Colorado Bend III Generation Project Standard Generator Interconnection Agreement,” dated 08-11-15.

B) Cost Responsibility:

- 1) Notwithstanding the provisions of Exhibit “A”, Section 8.1, the amount of the contribution in aid of construction that Generator has paid is specified in Exhibit “E”, Security Arrangement Details.
- 2) The TIF described herein is designed based on the generating capacity provided by the Generator. It is assumed that the generating facility will be capable of generating the Planned Capacity by the Scheduled Commercial Operation Date specified in Exhibit “B”. Within the first 12 months following Commercial Operation, if the highest level of Actual Capacity is materially less than the Planned Capacity, the Generator shall be responsible for TIF costs, if any, that are determined, solely by the TSP, to have been incurred to accommodate Generator’s Planned Capacity, but are then determined to not be necessary to accommodate Generator’s Actual Capacity. As used here, “Actual Capacity” shall mean the Plant’s total Net Dependable Capability, as determined or accepted by ERCOT, in accordance with ERCOT Requirements. Generator shall pay such costs determined herein within thirty (30) days following the receipt of TSP’s invoice.

C) Authorization to Proceed:

- 1) Generator hereby provides the full notice to proceed authorizing TSP to proceed with the design, procurement and construction of the TIF, including, without limitation, work on any required transmission system additions, modifications, and any upgrades required to build the BAILEY Substation.

D) Clarifications to Exhibit “A”

- 1) The Parties agree that at the time of executing this Agreement the references to the PUCT Rules contained within certain definitions set forth in Exhibit “A”, “Article 1. Definitions” have the meanings ascribed to such terms as established in the current PUCT Rules. The Parties recognize that the PUCT Rules are amended from time to time by the PUCT. The parties also acknowledge that ERCOT issues ERCOT Requirements in which terms are redefined from time to time. When the PUCT Rules or ERCOT Requirements are amended and terms defined in Exhibit “A”, “Article 1. Definitions” are affected by such amendments, the Parties agree that such terms shall have the meanings as amended by the PUCT or ERCOT. The term “System Security Study” shall have the same definition as “Security Screening Study” in the ERCOT Requirements.

E) Miscellaneous

- 1) Each Party shall be solely responsible for keeping itself informed of, and understanding its respective responsibilities under, all applicable North American Electric Reliability Corporation (“NERC”) Standards and ERCOT Requirements and all valid, applicable laws, rules, regulations and orders of, and tariffs approved by, duly constituted Governmental Authorities.

- 2) If required by any Governmental Authority, Generator shall provide, maintain, or upgrade, any existing county road or access roads to the TIF in such a manner and condition to allow passage of heavy utility vehicles.
  - 3) Each Party's personnel, contractors, subcontractors, and agents shall abide by and comply with the other Party's reasonable safety requirements and procedures while in areas designated as under that other Party's control.
  - 4) In the event that Generator's personnel, contractors, subcontractors, or agents cause delays in the work schedule of TSP, Generator shall reimburse to TSP the additional costs associated with such delays within 30 days of receipt of an invoice for such costs.
  - 5) Generator agrees that identification of any stability or oscillation condition that may affect Generator's Plant, and implementation of any associated protective measures, are the sole responsibility of Generator.
  - 6) ERCOT Requirements.
    - (i) Unless expressly stated herein, where the ERCOT Requirements are in conflict with TSP's specifications or procedures, the ERCOT Requirements shall prevail.
    - (ii) ERCOT requirements currently require installation of power system stabilizers on generators.
    - (iii) Prior to commercial operation, ERCOT may verify that the Generator is meeting ERCOT Requirements, including complying with reactive standards, the provision of accurate stability models, and the installation of power system stabilizers, if required. Failure to meet these ERCOT Requirements may result in delays to commercial operation. Additionally, ERCOT recommends that wind farms fulfill the NERC/FERC under-voltage ride through capability requirements.
  - 7) All generator data, including data for stability studies (transient and voltage) and subsynchronous resonance data, as required by the ERCOT Requirements, shall be provided to ERCOT and the TSP before commercial operation. This data shall be updated when the Plant begins commercial operation. Any updates to this information will be provided within 60 days to ERCOT and the TSP as changes or upgrades are made during the life of the Plant. This requirement applies to all future owners of the Plant. The Generator and any future owners of the Plant shall comply with these data requirements along with all applicable NERC Standards. Such Standards are subject to change from time to time, and such changes shall automatically become applicable based upon the effective date of the approved change.
- 13) Special Operating Conditions, if any, attached: None.
- 14) Cost Estimate Differences, if applicable:  
 The difference between the estimated cost of the TIF under 4.1.A (\$\_\_N/A\_\_) and the estimated cost of the TIF under 4.1.B (\$\_\_N/A\_\_) is: \_\_N/A\_\_, if applicable.