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August 8, 2022

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 Brotman Generating, LLC

To whom it may concern:

Enclosed for filing in Project No. 35077 is the August 1, 2022 Amendment Two to the ERCOT Standard Generation Interconnection Agreement (SGIA) dated October 1, 2021 between CenterPoint Energy Houston Electric, LLC and Brotman Generating, LLC. 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', written over a horizontal line.

Mickey Moon
Assistant General Counsel
CenterPoint Energy Houston Electric, LLC

Enclosures: (1) Executed SGIA Amendment Two

**AMENDMENT TWO TO
ERCOT STANDARD GENERATION INTERCONNECTION AGREEMENT**

This Amendment Two (“Amendment”) to the Brotman Power Plant Project Electric Reliability Council of Texas Standard Generation Interconnection Agreement, (the “SGIA”) dated October 1, 2021, is made between Brotman Generating, LLC (“Brotman Generating”) and CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC (“CenterPoint Energy”), (collectively, “the Parties”) effective on the 1st day of August, 2022. In consideration of the mutual promises and undertakings herein set forth, Brotman Generating and CenterPoint Energy agree to amend the SGIA as follows:

Exhibit “C” dated October 1, 2021 is replaced with the Exhibit “C” dated August 1, 2022, which is attached to this Amendment Two.


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

Brotman Generating and CenterPoint Energy 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

BROTMAN GENERATING, LLC

By: 
A2859C8857384EF...

By: 
EC14F1F81C9E4D8...

Name: Kevin Sarvis

Name: Cliff oliver

Title: Manager, Transmission Accounts and Support

Title: VP, Business Development

Date: August 1, 2022

Date: July 28, 2022

Exhibit “C”
Interconnection Details

- 1) Plant Name: Brotman Generating, LLC (“Plant”)
- 2) Point of Interconnection Location
 - A) TSP system side of Plant’s terminating structure(s)/transmission voltage circuit breaker(s)/disconnect switch(es) inside Generator’s GIFSUB, located at County Road 48 and County Road 52 in Brazoria County, Texas.
- 3) Delivery Voltage: 138 kV
- 4) Number and Size of Generating Unit(s) or Energy Storage Systems
 - A) Plant will be comprised of eight (8) generators with a total net rating of 408 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) Eight (8) GE LM6000 natural gas fired combustion turbine generators rated at approximately 51.0 MW each. Each electric generating unit has its own 138 kV step-up (main power) transformer, with the 13.8 kV winding connected to plant auxiliary transformers as well as the unit’s generator through one common generator breaker.

Natural gas combustion turbines				
Description	Manufacturer	Rating (@97°F)	GSU Transformer Voltages	
LM6000	GE	51.0 MW	13.8kV – 138 kV	Natural Gas
LM6000	GE	51.0 MW	13.8kV – 138 kV	Natural Gas
LM6000	GE	51.0 MW	13.8kV – 138 kV	Natural Gas
LM6000	GE	51.0 MW	13.8kV – 138 kV	Natural Gas
LM6000	GE	51.0 MW	13.8kV – 138 kV	Natural Gas
LM6000	GE	51.0 MW	13.8kV – 138 kV	Natural Gas
LM6000	GE	51.0 MW	13.8kV – 138 kV	Natural Gas
LM6000	GE	51.0 MW	13.8kV – 138 kV	Natural Gas
Total nominal gross MW:		408 MW		

- 6) Metering Equipment
 - A) TSP shall provide and install ERCOT Polled Settlement (EPS) primary and check meters, 138 kV instrument transformers and associated wiring required for measuring the output of the Plant’s generation and auxiliary electrical load at TSP’s TIFSUB Substation. The 138 kV metering instrument transformers for the EPS metering 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 Substantive Rules.
- 7) Generator Interconnection Facilities (GIF)
 - A) Generator shall furnish, operate, and maintain a complete generation facility capable of generating the Planned Capacity, 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.
- B) The generation unit(s) shall meet all voltage and reactive requirements as outlined in the ERCOT Protocol, ERCOT Operating Guides and other binding documents.
- C) Generator shall furnish, own and maintain the connection from Plant's equipment to Plant's terminating structure at the Point of Interconnection, including phase conductors, static conductors, structure(s), tower fittings, suspension insulators, terminating clamps and line conductor terminal fittings.
- D) TSP shall provide to Generator the TSP's alpha/numeric identifiers for incoming 138 kV transmission lines, the TSP's alpha/numeric identifiers for high voltage circuit breakers, switches, power transformers, generators and certain low side equipment, and the TSP's assigned 6-character substation identification for the GIF ("GIFSUB"). The GIF high voltage circuit breakers, switches, transformers, generators and certain low side equipment shall be identified with TSP's identifiers. TSP will develop a substation basic one-line diagram that includes these identifiers. The Generator shall mark these identifiers on the substation equipment. TSP may stencil identification numbers on substation equipment and mount signs, labels, drawings, telephone numbers, and instructions on the GIF. The Generator shall use TSP's assigned substation name, or Substation ID, and equipment identifiers in discussions with TSP, in GIFSUB Substation drawings and in RARF submittals.
- E) Generator shall provide the foundations for Plant's terminating structures and disconnecting devices. Generator shall design and install the Plant's terminating structure(s), and disconnecting devices in accordance with TSP's conductor loading requirements.
- F) Generator shall connect its generating plant ground mat, directly or indirectly to TSP's TIFSUB Substation ground mat. The grounding method shall be designated by the TSP and descriptions for each method are as follows:
- 1) Direct method - direct method should be utilized when Generator's plant's proximity makes directly bonding feasible. To obtain reasonable separation, direct bonding method shall consist of a minimum of two subgrade grounding connections originating from (and ending to) different corners of the two grids, in order to eliminate common mode failure. In this scenario, the two grounding systems are directly bonded via dedicated grounding conductors of adequate ampacity to establish electrical bond(s).
 - 2) Indirect method - electrical bonding(s) between the generating plant ground mat and the TSP's ground mat established via overhead shield or static wires. The overhead grounding connections shall consist of static wire(s), of adequate ampacity, and be continuous throughout all transmission towers, if any, between the TIFSUB and GIFSUB Substations. The static wires shall be terminated or bonded at both ground mats via grounding leads (of adequate ampacity), which connect the ground grid to the static wire(s).
- G) Electrical characteristics of the GIF 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 138 kV substation design attached hereto as Exhibit “I”, and TSP’s most recent version of minimum acceptable electrical, mechanical, and structural design characteristics for 138kV interconnection substation construction attached hereto as Exhibit “J”.

- H) Generator shall provide the 13.8-138 kV step-up transformer(s) with a 138 kV circuit breaker and disconnect switch for isolation from the TIFSUB Substation.
 - I) Generator shall provide NEMA four-hole pads on Plant’s disconnect switch for connection to NEMA four-hole pads on TSP’s connecting conductors.
 - J) Generator shall own all protective relays, instrument transformers, instrumentation, and control equipment physically located on Plant side of the Point(s) of Interconnection.
- 8) TSP Interconnection Facilities (TIF)
- A) TSP shall complete its entire scope of work on the TIFSUB Substation (except for Punch List Items) 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 TIFSUB Substation from being used for its intended purposes as described in this Agreement or in accordance with applicable laws; (ii) prevents the TIFSUB 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 TIFSUB 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 Plant’s terminating structure(s) at the Point of Interconnection, including phase conductors, static conductors, structures, tower fittings, suspension insulators, terminating clamps and line conductor terminal fittings with NEMA standard four-hole flat pads for attachment to the NEMA four-hole pads on Plant’s disconnecting device.
 - C) TSP shall furnish, own, and maintain the connection from TIFSUB Substation to TSP’s transmission system.
 - D) TSP shall develop and install transmission improvements that it determines, in its sole discretion, are reasonably necessary to safely, reliably, and economically integrate the Plant into the TSP System. TSP MAKES NO PROMISE, REPRESENTATION, OR WARRANTY AS TO WHETHER THE TSP 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 TIFSUB Substation as shown on the drawing entitled “CenterPoint Energy 138 kV Development Plan for Brotman Gas/Storage Generation Project Facility Study – Final Proposed Offer,” dated 04-15-21 (“TIFSUB Substation Development Plan”) and any subsequent modifications to such drawing(s) made by TSP and delivered to Generator.

9) Communications Facilities

- A) TSP shall provide and maintain, at TSP's expense, a communication circuit for real-time data transmittal via SCADA equipment from the TIFSUB Substation to TSP's Energy Management System.
- B) Generator shall provide a fiber optic communication interface device on its end of the fiber optic cable(s) and TSP will provide a fiber optic communication interface device on its end of the fiber optic cable(s) associated with the RTU inputs between Plant and the TIFSUB Substation.
- C) Generator shall furnish RTU inputs identified in Exhibit "C", Paragraph 11)D) from the Plant to the TIFSUB Substation's communication interface point.
- D) TSP shall furnish RTU inputs identified in Exhibit "C", Paragraph 11)E) from TIFSUB Substation to Plant's communication interface termination point.
- E) TSP shall provide, install and own fiber optic communication cables between TIFSUB Substation and GIFSUB Substation. The fiber optic communication cables will have strands of single mode fiber optics to be utilized at 1300nm wavelength for communication of protection data and telemetry. TSP-provided fiber optic cable(s) will terminate at Generator's terminating structure(s) located at the Point of Interconnection and provide sufficient cable to connect to a Generator-provided, installed, and owned fiber optic splice box(es). Generator shall provide, install and own the fiber optic communication cable(s) from the Generator's fiber optic splice box(es) located at the terminating structure(s), at the Point of Interconnection, to inside the GIFSUB Substation control house. Generator fiber optic cables shall terminate at the fiber optic termination panel in the GIFSUB Substation.

10) System Protection Equipment

- A) Generator shall provide two sets of protective relaying accuracy (C800) current transformers on Generator's 138 kV circuit breakers associated with the protective relaying between Plant and the TIFSUB 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 TIFSUB Substation. The current transformer ratio will be approved by the TSP relay protection engineer and reflected on the Generator's drawings.

11) Telemetry Requirements

- A) TSP shall furnish a substation SCADA RTU at the TIFSUB Substation. The RTU will be multi-port equipped and operate with protocols compatible with TSP. The RTU will be equipped to monitor the TIFSUB Substation as outlined in Paragraph 11 and control circuit breakers in the TIFSUB Substation. TSP shall also furnish the RTU inputs, such as contacts and transducers, in the TIFSUB Substation. Selected real-time data of the TIFSUB Substation will be available at TSP's RTU for Generator's use. TSP's RTU will be equipped with a DNP-3 "Slave" serial communication port for this purpose. The fiber optic cable(s) between the TIFSUB Substation and the RTU or DCS "Master" serial communication port shall be used for this purpose.
- B) Generator shall furnish Plant data to TSP's RTU communication port at the TIFSUB Substation as referenced below. The Generator's RTU/DCS shall be equipped with a

DNP-3 “Slave” serial communication port for this purpose. The fiber optic cable between the Plant and the TIFSUB Substation RTU “Master” serial communication port shall be used for this purpose.

- C) Generator shall provide Plant data to ERCOT according to ERCOT requirements. TSP is not responsible for providing Plant data to ERCOT.
- D) Generator shall provide to TSP at TSP’s TIFSUB Substation the following signals originating at Generator’s Plant:
 - 1) Analog Data from Plant
 - (i) Kilovolts for each generator bus or collector bus (A phase scaled as line-to-line).
 - (ii) Net megawatts for each generator feeder (three phase).
 - (iii) Net megavars for each generator feeder (three phase).
 - (iv) Net megavars for the reactive support equipment (three phase).
 - (v) Kilovolts for 138 kV transmission voltage (A phase scaled as line-to-line).
 - (vi) Net megawatts and megavars for the 138 kV transmission line (three phase).
 - (vii) Frequency at the collector bus or at each generating unit
 - (viii) Megawatts and megavars for each 138 kV transformer (three phase).
 - (ix) Megawatts and megavars for each 13.8 kV transformer (three phase).
 - 2) Status Data from Plant
 - (i) Status of the 138 kV transmission voltage circuit breakers.
 - (ii) Status of all 13.8 kV circuit breakers for feeders and reactive support equipment.
 - (iii) Status of generator automatic voltage regulator (automatic and manual).
- E) TSP will provide to Generator at Generator’s TIFSUB Substation the following signals originating at TSP’s TIFSUB Substation:
 - 1) Analog Data from TSP Substation Devices
 - (i) Kilovolts for the Point of Interconnection (A phase scaled as line-to-line).
 - 2) Data from TSP Substation Devices
 - (i) Status of transmission voltage circuit breakers associated with the generator lead(s).
 - (ii) Alarm for failure of Pilot Wire/fiber optic relaying communication channels, 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. *(Note: The drawings contain a line of demarcation between TSP provided facilities and Generator provided facilities).*
 - 1) Basic Offer - CenterPoint Energy 138 kV Development Plan for Brotman Gas/Storage Generation Project Facility Study – Final Proposed Offer,” dated 05-3-21 (“TIFSUB Substation Development Plan”)
 - 2) Basic Offer – CenterPoint Energy 138 kV One-Line Relaying and Metering Diagram for Brotman Gas/Storage Generation Interconnection Agreement dated 05-3-21, drawing number 1, sheets 1 through 1 of 1.
- B) Contribution in Aid of Construction:
 - 1) The Generator does not desire any enhancements to TSP’s basic offer interconnection facilities and therefore no contribution in aid of construction (“CIAC”) of the Transmission Interconnection Facilities is required.
- C) Generator acknowledges and agrees that the TIF is designed based on the Plant operating at the Planned Capacity by the scheduled Commercial Operation Date specified in

Exhibit “B”. Within the first 12 months following the scheduled Commercial Operation, if the highest level of Actual Capacity is 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.

- D) Generator shall deliver to TSP the grant of all necessary land rights, including but not limited to, fee ownership, easements, and access agreements, in a written form acceptable to and drafted by TSP, the general form of which can be supplied upon request. Terms in the general form may only be changed or altered at the discretion of the TSP. Additionally, Generator shall secure and maintain access agreements for ingress, egress, survey, geotechnical and environmental assessments for TSP on all lands for which land rights will be acquired from the effective date of this Agreement until the TIF In-Service Date. The aforementioned grant of rights to TSP shall be provided in a manner so as to prohibit the delay of TSP’s access to the property to perform its work. Failure of Generator to provide the aforementioned grant of rights that results in a delay for TSP to perform its work as required under this Agreement, shall not be charged against the TSP. TSP shall reimburse Generator up to market value of the acquired land rights necessary for the interconnection of the TIFSUB Substation. Market value for easements and fee purchases are stipulated as 100% and 180%, respectively, of the central appraisal district (“CAD”) market value for the current tax year, unless Generator provides a certified appraisal from for the specific land rights acquired prior to TSP’s execution of any of the general forms and upon approval of the certified appraiser by TSP. The TSP reserves the right to secure an additional certified appraisal for the land rights acquired. In the event TSP’s appraisal value differs from Generator’s, the two values will be averaged to form the basis for market value.
- E) Generator shall provide on its property access roads to the TIF, and the access roads will be maintained by Generator in such a manner and condition to allow passage of heavy utility vehicles per TSP’s specifications. Otherwise, Generator shall provide, or cause to be provided, such perpetual easements as reasonably needed by TSP, in a form acceptable to TSP and at no cost to TSP, to use and construct access roads from public road to the TIF in such a manner and condition to allow passage of heavy utility vehicles.
- F) 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) CenterPoint Energy has documented data specifications that define the operational data CenterPoint Energy requires to perform real-time monitoring. These specifications are incorporated in Section 11 above, Exhibit “F” Transmission and Substation Outage and Clearance Coordination Procedures, and Exhibit “G” Telemetry Specification. Specific SCADA system requirements are found in Section

- 11 above and of Exhibit “G” Specification for Remote Telemetry of a Customer Owned Facility. CenterPoint Energy’s periodicity for scanning the data from established communication ports and SCADA RTU ports is set in accordance with the latest version of Electric Reliability Council of Texas (ERCOT) mapping for NERC Reliability Standards IRO-010 and TOP-003 requirements.
- 3) If required by TSP, and at no cost to TSP, Generator will provide potable water and sewer connections and service at TSP’s fence line for TSP’s use. The water and sewer connection locations will be designated by TSP and agreed by Generator at a later date. Alternately, Generator shall provide access to existing restroom facilities and potable water facilities located at the Plant to TSP and TSP’s personnel, contractors, subcontractors and agents, provided, that TSP shall be responsible for any damage caused to such facilities by such parties. Such access shall be limited to personnel engaged in normal operations and maintenance activities.
 - 4) If required by TSP, and at no cost to TSP, Generator will accept TSP’s storm water discharge from the TIFSUB Substation site.
 - 5) 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.
 - 6) 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.
 - 7) Generator understands and agrees that identification of any, including but not limited to stability, oscillation, harmonic, short circuit, over frequency, under frequency, over voltage, under voltage, phase imbalance, or geomagnetic disturbance conditions that may affect Generator’s Plant and implementation of any associated protective measures, are the sole responsibility of Generator.
 - 8) 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 Guide and Protocol requirements on RARF modeling, telemetry and testing, as well as complying with reactive standards, the provision of accurate stability models, and the installation of power system stabilizers, if required. It should be noted that the Generator will not be able to energize the GIF until authorized by ERCOT (typically 30 days after the TIF is modeled and energized). Failure to meet these ERCOT Requirements may result in delays to commercial operation.
 - 9) 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:

A) 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.