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November 15, 2023

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 Cottonwood Bayou Storage, LLC

To whom it may concern:

Enclosed for filing in Project No. 35077 is the November 10, 2023 Amendment One to the ERCOT Standard Generation Interconnection Agreement (SGIA) dated March 18, 2022 between CenterPoint Energy Houston Electric, LLC and Cottonwood Bayou Storage, 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', with a long horizontal flourish extending to the right.

Mickey Moon
Assistant General Counsel
CenterPoint Energy Houston Electric, LLC

Enclosures: (1) Executed SGIA Amendment One

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

This Amendment One ("Amendment") to the Cottonwood Bayou Storage Project Electric Reliability Council of Texas Standard Generation Interconnection Agreement, (the "SGIA") dated March 18, 2022, is made between **Cottonwood Bayou Storage, LLC** ("Generator") and **CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC** ("CenterPoint Energy"), (collectively, "the Parties") effective on the 10th day of November 2023. In consideration of the mutual promises and undertakings herein set forth, Generator and CenterPoint Energy agree to amend the SGIA as follows:

Exhibit "B" dated March 18, 2022 is replaced with the Exhibit "B" dated November 10, 2023, which is attached to this Amendment One.

Exhibit "C" dated March 18, 2022 is replaced with the Exhibit "C" dated November 10, 2023, which is attached to this Amendment One.

Exhibit "E" dated March 18, 2022 is replaced with the Exhibit "C" dated November 10, 2023, which is attached to this Amendment One.

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

Generator 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

DocuSigned by:
By: Kevin Sarvis
A2859C8857334EF
Name: Kevin Sarvis

Cottonwood Bayou Storage, LLC

DocuSigned by:
By: Jeffrey NEWCOMBE
88557D982247404...
Name: Jeffrey NEWCOMBE

Project No. 35077

CenterPoint Energy Contract # INT-22-040A

**Exhibit “B”
Time Schedule**

1. Interconnection Option chosen by Generator (check one):

 X Section 4.1.A. or Section 4.1.B

If Section 4.1.B is chosen by Generator, the In-Service Date(s) was determined by (check one):
 (1) N/A good faith negotiations, or (2) N/A designated by Generator upon failure to agree.
2. Generator must deliver each of the following items (collectively, the “Prerequisite Items”) to TSP by no later than December 1, 2021 (the “Scheduled Start Date”):
 - A. The Notice to Proceed defined in Section 4.3.D of Exhibit “A”;
 - B. The CIAC, if any, described in Exhibit “C”; and
 - C. The Security described in Exhibit “E.”
3. The TIF In-Service Date is the later of June 15, 2024 or 6 (six) months after TSP’s receipt of the Prerequisite Items.
4. The scheduled Commercial Operation Date is the later of October 31, 2024 or 4 (four) months after the In-Service Date.

The Parties may change the dates and times in this Exhibit B in accordance with Section 4.5 of Exhibit “A.”

Generator acknowledges that ERCOT imposes annual transmission outage restrictions on TSP. Such outage restrictions could impact the ability of TSP to meet any TIF In-Service Date that falls within the months of May, June, July, August and September (“Outage Restriction Period”). Generator further acknowledges that if the Prerequisite Items are not fulfilled by the Scheduled Start Date, which results in the TIF In-Service Date falling within the Outage Restriction Period, the TIF In-Service Date may be deferred to a date no earlier than October 1st. TSP will use reasonable efforts to meet the In-Service Date, regardless if it falls within the Outage Restriction Period.

Project No. 35077

CenterPoint Energy Contract # INT-22-040A

Exhibit "C"
Interconnection Details

- 1) Plant Name: Cottonwood Bayou Storage Project ("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 Brazoria County, Texas.
- 3) Delivery Voltage: 138 kV
- 4) Number and Size of Generating Unit(s)
 - A) Plant will be comprised of 45 generators with a total net rating of 150 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) 45 Power Electronics FP3150M2 inverters each rated at 3.35 MW. Each inverter has its own .660 Wye – 34.5 kV Delta step-up transformer.
 - B) Each step-up, standby and auxiliary transformer connected at Delivery Voltage will have a circuit breaker for isolation from the TIF.
 - C) Electrical characteristics of Plant's generating units shall be in accordance with the most recent version of data that Generator has provided to TSP and shall be consistent with data provided to ERCOT.
- 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 "T".
- H) Generator shall provide the 34.5-138 kV step-up transformer 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 build a TIFSUB Substation as shown on the drawing entitled "CenterPoint Energy 138 kV Development Plan for Cottonwood Bayou Storage Project Generation Project Facility Study – Final Proposed Offer," dated 02-25-20 ("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 {34.5 or 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 34.5 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 GFSUB Substation the following signals originating at TSP's TFSUB 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).*
 - 3) Basic Offer - CenterPoint Energy 138 kV Development Plan for Cottonwood Bayou Storage Project Generation Project Facility Study – Final Proposed Offer," dated 02-25-20 ("TFSUB Substation Development Plan")
 - 4) Basic Offer – CenterPoint Energy 138 kV One-Line Relaying and Metering Diagram for Cottonwood Bayou Storage Project Standard Generator Interconnection Agreement dated 05-24-21, drawing number 1, sheets 1 through 1 of 1.
- B) Contribution in Aid of Construction:
 - 1) The Generator desires certain enhancements to TSP's basic offer interconnection facilities and will pay TSP \$50,000, as a contribution in aid of construction ("CIAC") of the Transmission Interconnection Facilities in accordance with Exhibit A, Section 8.1.
- 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 reasonably acceptable to TSP and Generator and drafted by TSP with any fee transfer to be by special warranty deed, 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. The grant of rights shall not be subject to any encumbrance that reasonably could be expected to materially and adversely affect TSP's use of the property as a utility substation. Additionally, if needed, 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 permit 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 or the TIF shall abut and have access to a public right of way in which event Generator shall not be obligated to provide any access roads. 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 accept TSP's storm water discharge from the TIFSUB Substation site.
 - 4) 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.
 - 5) 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.
 - 6) 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.
 - 7) 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.
 - 8) 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.

Project No. 35077

CenterPoint Energy Contract # INT-22-040A

Exhibit “E”
Security Arrangement Details

- 1) TSP does not require a Security from Generator under this Agreement.