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Addendum StartPage: 0

PROJECT NO. 35077

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INFORMATIONAL FILING OF § PUBLIC UTILITY COMMISSION  
ERCOT INTERCONNECTION §  
AGREEMENTS PURSUANT TO § OF TEXAS  
SUBST. R. §25.195(e) §

**FIRST AMENDMENT TO THE**  
**INTERCONNECTION AGREEMENT**  
**BETWEEN**  
**CROSS TEXAS TRANSMISSION, LLC**  
**AND**  
**PATTERN PANHANDLE WIND 3 LLC**

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Cross Texas Transmission, LLC  
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June 27, 2017

736

**FIRST AMENDMENT TO THE  
ERCOT STANDARD GENERATION INTERCONNECTION AGREEMENT**

THIS FIRST AMENDMENT TO THE ERCOT STANDARD GENERATION INTERCONNECTION AGREEMENT (this "**First Amendment**") is made and entered into by and between CROSS TEXAS TRANSMISSION, LLC, a limited liability company organized under the laws of Delaware ("**TSP**") and PATTERN PANHANDLE WIND 3, LLC, a Delaware limited liability company ("**Generator**") on this 09 day of June 2017. Generator and TSP are sometimes referred to herein collectively as the "**Parties**" and individually as a "**Party**".

WITNESSETH:

WHEREAS, TSP and Generator are parties to that certain ERCOT Standard Generation Interconnection Agreement, dated as of August 25, 2014 (the "**Original Agreement**"); and

WHEREAS, TSP and Generator intend to amend the Agreement in accordance with the terms and conditions hereof.

NOW, THEREFORE, for and in consideration of the foregoing and other good and valuable consideration, the receipt of which is hereby acknowledged, the Parties, intending to be legally bound, agree as follows:

AGREEMENT

1. Exhibit "B" of the Agreement is hereby replaced in its entirety with the terms and conditions set forth in Exhibit "B" of this First Amendment.
2. Exhibit "C" of the Agreement is hereby replaced in its entirety with the terms and conditions set forth in Exhibit "C" of this First Amendment.
3. Exhibit "C-1" of the Agreement is hereby replaced in its entirety with the Exhibit "C-1" attached to this First Amendment.
4. Exhibit "D" of the Agreement is hereby replaced in its entirety with the Exhibit "D" attached to this First Amendment.
5. The Parties agree that unless expressly referenced and modified herein, all of the remaining terms, provisions and conditions of the Agreement, including the remaining Exhibits, shall remain unchanged, in full force and effect and fully binding on the Parties.
6. This First Amendment shall in all respects be governed by and construed in accordance with the laws of the State of Texas, without giving effect to any choice of law principles thereof which may direct the application of the laws of another jurisdiction.

7. This First Amendment may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed counterpart of a signature page of this First Amendment by facsimile or other electronic means will for all purposes be treated as the equivalent of delivery of a manually executed and delivered counterpart of this First Amendment.

*[signature pages follow]*

IN WITNESS WHEREOF, the Parties have caused their authorized representatives to execute this First Amendment on the date first written above.

"TSP"

CROSS TEXAS TRANSMISSION, LLC

By: B. Cameron Fredkin

Name: B. Cameron Fredkin

Title: Vice President

"Generator"

PATTERN PANHANDLE WIND 3 LLC

By: 

Name: **Amy Smolen**  
**Authorized Signatory**

Title: \_\_\_\_\_

**EXHIBIT "B"**  
**TIME SCHEDULE**

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.

Generator has requested that the Plant and GIF utilize the same Point of Interconnection as the "Point of Interconnection" defined in that certain ERCOT Standard Interconnection Agreement between TSP and Pattern Panhandle Wind 2 LLC ("PPW2") (an affiliate of Generator), dated as of October 2, 2013 (as amended, supplemented or otherwise modified as of the date hereof, the "PPW2 IA"). Given that interconnection of the Plant and GIF is not expected to require the construction of new facilities by the TSP and is expected to be connected at the same Point of Interconnection as PPW2, only twenty two thousand dollars (\$22,000) is expected to be necessary to accommodate the In-Service Date of the Generator.

Date by which Generator must provide to TSP (1) security in the amount of twenty two thousand dollars (\$22,000) for the SCADA additions and any other interconnection-related cost so that TSP may maintain schedule to meet the In-Service Date, and (2) notice to proceed with design, procurement and construction, as contemplated in Sections 4.2 and 4.3: **the date that is three (3) months prior to the In-Service Date.**

In - Service Date(s): **November 15, 2018**

(Notes: (1) In the event that it is not necessary for all facilities associated with the TIF to be completed on the same date, this entry may consist of multiple dates to reflect the staged completion of the TIF to meet those needs. (2) In-Service Date(s) can be expressed as either a specific date or expressed as a defined number of months after all conditions under Sections 4.2 and 4.3 have been satisfied.)

Scheduled Trial Operation Date: **November 16, 2018**

Scheduled Commercial Operation Date: **December 30, 2018**

Due to the nature of the subject of this Agreement, the Parties may mutually agree to change the dates and times of this Exhibit "B". The Parties acknowledge and agree that (1) the Generator's failure to fulfill in a timely fashion the conditions under Section 4.2 and Section 4.3 and fulfill the security posting requirements in accordance with the dates set forth in this Exhibit "B" or (2) a cancellation or delay in the completion of the "TIF" as defined in the PPW2 IA for any reason, including but not limited to a termination of the PPW2 IA, in each case, (i) may cause the need for additional or revised studies to be performed or other reasonably related conditions or

obligations to be fulfilled, and (ii) may result in adjustments to the security required hereunder, the Scheduled Trial Operation Date, Scheduled Commercial Operation Date, and In-Service Date, which adjustments shall be determined by the TSP in its reasonable discretion. Additionally the Parties acknowledge that studies may become stale and irrelevant and if this is determined by either the TSP or ERCOT additional or revised studies shall be performed.

**EXHIBIT "C"**  
**INTERCONNECTION DETAILS**

- 1) Name: Pattern Panhandle Wind 3 LLC (Pattern Panhandle Wind 3)
- 2) Point of Interconnection location: The Point of Interconnection is located in Carson County near White Deer, Texas within Cross Texas Transmission's Railhead Substation ("TSP Substation"). The Point of Interconnection shall be defined as the point where the Generator's 345 kV transmission line, originating from the Generator's substation, terminates the phase conductors and associated equipment on the TSP's dead-end structure located at the TSP Substation. Exhibit "C-1" shows the location of the Point of Interconnection on the one-line. **Note that the Point of Interconnection is the same as under PPW2 IA.**

- 3) Delivery Voltage: 345 kV

- 4) Number and size of Generating Units: 248.4 MW  
The 248.4 MW represents 108 wind turbine generators with a nameplate capacity of 2.3 MW per unit.

Generator may change, prior to Commercial Operation, the type and MW size of each of the units for the Plant, or the aggregate nameplate generating capacity of the Plant, provided that (a) the aggregate nameplate generating capacity for the Plant may not exceed 295 MW, (b) the TSP approves such change, such approval not to be unreasonably withheld, delayed or conditioned, and (c) any required re-studies of ERCOT mandated interconnection studies are completed. The Parties agree to amend this Agreement as necessary to reflect the changes to the Plant made under this paragraph.

- 5) Type of Generating Unit: Siemens SWT-108/2.3MW  
Subject to Generator's right to change the type of generating unit as described in paragraph 4 of this Exhibit "C" the Plant shall consist of 108 Siemens SWT-108/2.3MW wind turbine generators.

- 6) Metering and Telemetry Equipment:

ERCOT Polled Settlement ("EPS") metering is already installed at the TSP Substation. No changes to the existing metering system are expected to be necessary to accommodate Pattern Panhandle Wind 3.

- 7) Generator Interconnection Facilities:

The following lists are not intended to be complete lists of all facilities that are part of the GIF.



- a) Generator to design and construct a new 345 kV transmission line from the Generator's substation site approximately fifteen (15) miles in length to the Pattern Panhandle Wind 2 substation; David Swinford, and the associated new 345 kV line terminal at the David Swinford substation.
- b) Generator's substation including 345 kV step-up transformer(s), transformer protection package(s), 345 kV circuit breaker(s), 345 kV disconnect switch(es) and protective relaying panels for the Generator's 345 kV line.
- c) Multi-ported RTU(s) to provide breaker status, telemetry and energy data from the Generator's substation to the Plant controller, the TSP and ERCOT.
- d) Associated structures, buswork, conductor, connectors, grounding, conduit, control cable, foundation work, perimeter fencing, grading/dirt work and any other related materials necessary for construction and operation of the GIF.
- e) The communication equipment is described in Section 9 below.

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

The following lists are not intended to be complete lists of all facilities that are part of the TIF.

- a) No new facilities are anticipated to be designed or constructed to interconnect Pattern Panhandle Wind 3.
- b) TSP to work with Generator to add new SCADA points for monitoring.

**9) Communications Facilities:**

No new communication facilities are anticipated to accommodate Pattern Panhandle Wind 3 by either the TSP or the Generator.

**10) System Protection Equipment:**

- a) Generator will be responsible for the proper synchronization of its facilities with the CTT transmission system, in accordance with ERCOT guidelines.
- b) 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.

- c) 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.
- d) The Generator's protective relay design shall incorporate the necessary test switches to enable complete functional testing. The required test switches will be placed such that they allow operation of lockout relays while preventing breaker failure schemes from operating and causing unnecessary breaker operations and tripping generator units.
- 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 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. The TSP shall coordinate the relay system protection between Generator and the ERCOT system.
- h) Additionally, 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 calculated and in no case later than 60 days prior to the initial actual in-service date. Generator data submitted in accordance with Section 7.3 of Exhibit "A" shall include if applicable, 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 turbines to be served by each collector bus, (4) size, make and model of individual 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.

- i) All other TSP System Protection Equipment requirements shall be finalized at a later date, upon completing design requirements and coordination efforts with Generator.

11) Inputs to Telemetry Equipment:

- a) A generation-specific RTU is required at the Plant or GIF for TSP's generation-specific SCADA. A specific RTU points list will be developed by the TSP as a part of each generation project's electrical configuration. For such purpose, Generator shall be responsible for providing TSP with metering and relaying one-line diagrams of the generation and the Generator's substation facilities. Generator shall provide TSP with a station communication drawings which is to include RTU point sources (IEDs and contacts supplying required data), interface devices, and connections to the RTU.
- b) All other Inputs to Telemetry Equipment requirements shall be finalized at a later date, upon completing design requirements and coordination efforts with Generator.

12) Supplemental Terms and Conditions:

- a) Device Numbers, Switching and Clearance:
  - i) Generator shall obtain prior approval of the TSP before operating any transmission voltage 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, conditioned or delayed.
  - ii) The TSP shall coordinate switching at the Point of Interconnection. Each Party shall be responsible for operations of their facilities.
  - iii) Generator and TSP will collaborate and reach mutual agreement on the establishment of: i) unique name(s) for the Generator's substation, unit main transformers and switching station(s) connected at transmission voltage; ii) device numbers for all transmission voltage switches and breakers which will be owned by Generator; and iii) unique names for Generator's generating units, in accordance with ERCOT Requirements. Generator will submit to TSP, within thirty (30) days after execution of this Agreement, its proposed name(s), as referenced in this paragraph. Generator will register the name(s) of the facilities specified in this paragraph and Generator-owned device numbers at ERCOT, in accordance with ERCOT Requirements, and such names and device numbers will be consistent with the names and numbers mutually agreed upon pursuant to this paragraph. Generator will not change any of the names or device numbers, established pursuant to this paragraph, without

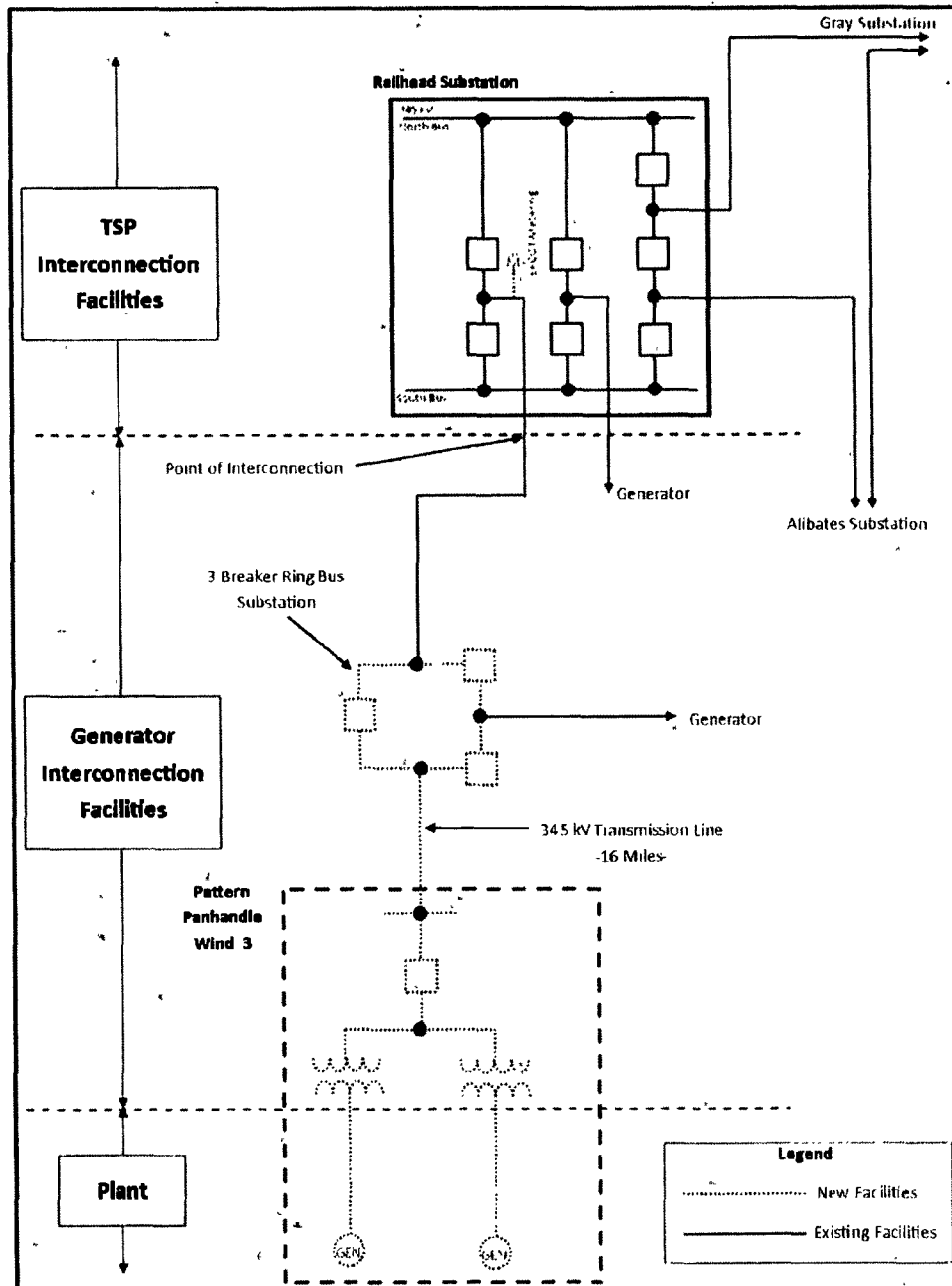
- written approval of TSP. Generator will label the devices, referenced in item (ii) above, with the numbers assigned to such devices.
- iv) Each Party will keep records of maintenance and switching operations of control and protective equipment associated with this interconnection and will allow the other Party reasonable access to inspect such records.
- b) No Retail Sale of Electricity to Generator by TSP: TSP considers the energy and power that the Plant and Generator Interconnection Facilities may from time to time consume from the 345 kV ERCOT 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 345 kV ERCOT grid through the Point of Interconnection.
- c) Notification:
- i) Upon written request from TSP, Generator shall notify the TSP in writing as to which ERCOT Qualified Scheduling Entity the Plant will be scheduling through.
- ii) Upon written request from TSP, Generator shall supply notification to the TSP identifying their retail service provider 120 days prior to the In-Service Date and Generator shall supply notification to the TSP 60 days prior to any changes in retail service provider, thereafter.
- d) Sub-Synchronous Resonance ("SSR") and Sub-Synchronous Interaction ("SSI"): Induction generation placed near series capacitor banks on the TSP system may be susceptible to SSR. Wind turbine control systems may be a source of synchronous oscillations near series capacitor banks resulting in SSI. Generator will provide studies to ERCOT and TSP that document that SSR or SSI issues have been addressed prior to commercial operation. TSP will work with Generator and their selected turbine manufacturer on any system data required for such studies.
- e) All other Supplemental Terms and Conditions shall be finalized at a later date, upon completing design requirements and coordination efforts with Generator.

**13) Special Operating Conditions:**

- 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 or the TSP Switchyard equipment, 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.
    - ii) Generator shall be able to remain online during voltage disturbances up to the time periods and associated voltage levels set forth in the ERCOT requirements for Voltage Ride Through capability.
    - 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.
  - d) ERCOT Operating Arrangements. A special ERCOT-approved operating arrangement such as a Remedial Action Plan or Remedial Action Scheme may be required either prior to, or after, Commercial Operation. The terms "Remedial Action Plan" and "Remedial Action Scheme" shall have the meanings as set forth in the ERCOT Requirements. TSP and ERCOT will examine the need and feasibility of these arrangements in cooperation with the Generator. In the event that ERCOT determines that such an arrangement is required, then TSP, ERCOT, and Generator will cooperate to design and install the necessary facilities, to be operational for the duration of the period where such Remedial Action Plan or Remedial Action Scheme may be necessary.
  - e) Back-up Power during Point of Interconnection Outage. The Generator acknowledges that this Point of Interconnection may not always be available due to maintenance or other outage activities and at these times of unavailability the loss of both generator output and power delivery to the Generator will not be the responsibility of the TSP. The Generator is responsible for providing any back-up power sources that it may require due to the unavailability of this Point of Interconnection for any period of time.
  - f) All other Special Operating Conditions shall be finalized at a later date, upon completing design requirements and coordination efforts with Generator.
- 14) The difference between the estimated cost of the TIF under 4.1.A (\$ ) and the estimated cost of the TIF under 4.1.B (\$ ) is: N/A, if applicable.

# **EXHIBIT "C-1"** **CONCEPTUAL ONE-LINE OF INTERCONNECTION FACILITIES**



**EXHIBIT "D"**  
**NOTICE AND EFT INFORMATION OF THE 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:

If to Generator:

Company Name: Pattern Panhandle Wind 3 LLC  
Attn: Director, Operations  
Address: 1201 Louisiana Street, Suite 3200

City, State, Zip: Houston, TX 77002  
Operational/Confirmation Fax (713) 571-8004  
24-Hour Telephone (713) 308-4242  
Email

- (b) Notices of an administrative nature:

If to Generator:

Company Name: Pattern Panhandle Wind 3 LLC

Attn: General Counsel  
Address: Pier 1, Bay 3  
City, State, Zip: San Francisco, CA 94111  
Operational/Confirmation Fax (415) 362-7900  
24-Hour Telephone (415) 283-4000  
Email

- (c) Notice for statement and billing purposes:

If to Generator:

Company Name: Pattern Panhandle Wind 3 LLC  
Attn: Director, Fiscal and Admin Services  
Address: Pier 1, Bay 3  
City, State, Zip: San Francisco, CA 94111  
Operational/Confirmation Fax (415) 362-7900  
24-Hour Telephone (415) 283-4016  
Email

- (d) Information concerning Electronic Funds Transfers:

If to Generator:

Bank Name  
City, State  
ABA  
for credit to

Account No.

If to Cross Texas Transmission, LLC

Company Name Cross Texas Transmission, LLC  
Attn: Director, Electric Transmission  
Address: 1122 S. Capital of Texas Hwy  
Cityview Center Suite 100  
City, State, Zip: Austin, TX 78746  
Operational/Confirmation Fax (512) 982-5712  
24-Hour Telephone (512) 473-2700  
Email tcrook@crosstexas.com

If to Cross Texas Transmission, LLC

Company Name Cross Texas Transmission, LLC

Attn: Vice President  
Address: 400 Chesterfield Center, Suite 105  
City, State, Zip: Chesterfield, MO 63017  
Operational/Confirmation Fax (636) 534-3315  
24-Hour Telephone (636) 534-3310  
Email cfredkin@crosstexas.com

If to Cross Texas Transmission, LLC

Company Name Cross Texas Transmission, LLC  
Attn: Vice President  
Address: 400 Chesterfield Center, Suite 105  
City, State, Zip: Chesterfield, MO 63017  
Operational/Confirmation Fax (636) 534-3315  
24-Hour Telephone (636) 534-3310  
Email cfredkin@crosstexas.com

If to \_\_\_\_\_

Bank Name  
City, State  
ABA  
for credit to

Account No.