

APPLICATION OF
CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
TO AMEND A CERTIFICATE OF CONVENIENCE AND NECESSITY
FOR A PROPOSED 345 KV TRANSMISSION LINE
WITHIN GRIMES, HARRIS, AND WALLER COUNTIES, TEXAS

DOCKET NO. 44547

Submit seven (7) copies of the application and all attachments supporting the application. If the application is being filed pursuant to P.U.C. SUBST. R. 25.101(b)(3)(D) or P.U.C. Subst. R. 25.174, include in the application all direct testimony. The application and other necessary documents shall be submitted to:

Public Utility Commission of Texas
Attn: Filing Clerk
1701 N. Congress Ave.
Austin, Texas 78711-3326

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Prepared March, 2015

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Attachments:

1. Environmental Assessment and Alternative Route Analysis for the Brazos Valley Connection in Grimes, Harris, and Waller Counties, Texas
2. ERCOT Independent Review of Houston Import RPG Project
3. Compressed Construction Site (“CCS”) Locations and Descriptions
4. Texas Municipal Power Agency Letter of Consent
5. Franchise Agreement between CenterPoint Energy Houston Electric, LLC and the Town of Pine Island
6. Franchise Agreement between CenterPoint Energy Houston Electric, LLC and the City of Prairie View
7. Franchise Agreement between CenterPoint Energy Houston Electric, LLC and the City of Waller
8. Estimated Costs for Alternative Routes
9. CenterPoint Energy Houston Region Import Capacity Project
10. Schematic of CenterPoint Energy’s Existing Transmission System
11. Directly Affected Landowner List Including Habitable Structures
12. Written Direct Notice to Landowners
13. Written Direct Notice to Utilities
14. Written Direct Notice to Pipeline Companies
15. Written Direct Notice to County and Municipal Authorities and List of Officials Notified
16. Written Direct Notice to the Office of Public Utility Counsel
17. Newspaper Notice
18. Transmittal Letter to Texas Parks and Wildlife Department
19. Affidavit of Michael J. Pakeltis

Confidential Attachment

1. Correspondence Between CenterPoint Energy and ERCOT regarding Critical Energy Infrastructure Information (CEII)

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Note: As used herein, the term “joint application” refers to an application for proposed transmission facilities for which ownership will be divided. All applications for such facilities should be filed jointly by the proposed owners of the facilities.

1. **Applicant (Utility) Name: For joint applications, provide all information for each applicant.**

Name: CenterPoint Energy Houston Electric, LLC (“CenterPoint Energy”)

Certificate Number: 30086

Street Address: 1111 Louisiana Street, Houston, Texas 77002

Mailing Address: P.O. Box 1700, Houston, Texas 77251-1700

2. **Please identify all entities that will hold an ownership interest or an investment interest in the proposed project but which are not subject to the Commission’s jurisdiction.**

CenterPoint Energy will hold the sole ownership interest in the proposed project and is subject to the jurisdiction of the Public Utility Commission of Texas (“PUC” or the “Commission”). No entity that is not subject to the Commission’s jurisdiction will hold an ownership or investment interest in the proposed project.

3. **Person to Contact: For joint applications, provide all information for each applicant.**

Name: Andrew P. Machtemes

Title/Position: Manager of Rates

Phone Number: 713-207-5372

Mailing Address: P.O. Box 1700, Houston, Texas 77251-1700

Email Address: andrew.machtemes@centerpointenergy.com

Alternate Contact: Michael J. Pakeltis

Title/Position: Director, Transmission Operations

Phone Number: 713-207-6714

Mailing Address: P.O. Box 1700, Houston, TX 77251-1700

Email Address: michael.pakeltis@centerpointenergy.com

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Legal Counsel: Mickey Moon
Phone Number: 713-207-7231
Fax Number: 713-454-7197
Mailing Address: P.O. Box 1700, Houston, TX 77251-1700
Email Address: mickey.moon@centerpointenergy.com

4. Project Description:

Name or Designation of Project: Brazos Valley Connection

Provide a general description of the project, including the design voltage rating (kV), the operating voltage (kV), the CREZ Zone(s) (if any) where the project is located (all or in part), any substations and/or substation reactive compensation constructed as part of the project, and any series elements such as sectionalizing switching devices, series line compensation, etc. For HVDC transmission lines, the converter stations should be considered to be project components and should be addressed in the project description.

Response: CenterPoint Energy proposes to construct a new 345 kV double-circuit transmission line (the “Brazos Valley Connection” or “Project”) extending from the existing 345 kV Zenith Substation to the existing 345 kV Gibbons Creek Substation. There are thirty-two (32) proposed alternative routes for the Project. The proposed alternative routes are presented on **Figure 5-1 (Sheets 1-5** in the Map Pockets) in the “Environmental Assessment and Alternative Route Analysis for the 345 kV double-circuit Brazos Valley Connection Project in Grimes, Harris, and Waller Counties, Texas” (the “EA”), which is **Attachment 1**. The Brazos Valley Connection transmission line design voltage rating and the operating voltage rating are both 345 kV. The line is not located in a CREZ Zone. No new substations and no substation reactive compensation are proposed as part of the Project. The only series elements associated with the Project are sectionalizing switching devices and other typical in-line series substation

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elements located at the Gibbons Creek and Zenith 345 kV switchyards. The Brazos Valley Connection does not include any HVDC transmission lines.

If the project will be owned by more than one party, briefly explain the ownership arrangements between the parties and provide a description of the portion(s) that will be owned by each party. Provide a description of the responsibilities of each party for implementing the project (design, Right-Of-Way acquisition, material procurement, construction, etc.).

Response: CenterPoint Energy will hold the sole ownership interest in the Project and will own, operate, and maintain all transmission line facilities, including conductors, wires, structures, hardware, and rights-of-way (“ROWS”). CenterPoint Energy will also own, operate, and maintain the Zenith Substation facilities to which the Project will connect in Harris County. However, Texas Municipal Power Agency (“TMPA”) owns, operates, and maintains the Gibbons Creek Substation facilities to which the Project will connect in Grimes County. CenterPoint Energy will implement all aspects of the Project, including design, ROW acquisition, material procurement, and construction, with the exception of the new 345 kV interconnection facilities at the Gibbons Creek 345 kV Substation.

If applicable, identify and explain any deviation in transmission project components from the original transmission specifications as previously approved by the Commission or recommended by a PURA §39.151 organization.

Response: On February 20, 2014 the Electric Reliability Council of Texas (“ERCOT”), a PURA § 39.151 organization, issued the “ERCOT Independent Review of Houston Import RPG Project” (the “ERCOT Independent Review”), which is included as **Attachment 2**. After evaluating twenty-one options, the ERCOT Independent Review found that Option 4 is “the best alternative for meeting the near-term and future transmission reliability needs in the Houston

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area” The proposed Project components are consistent with the Gibbons Creek to Zenith portion of Option 4.

5. Conductor and Structures:

Conductor Size and Type: 959.6 kcmil ACSS/TW Suwannee (Aluminum Conductor, Steel Supported Trapezoidal Wire)

Number of conductors per phase: Three

Continuous Summer Static Current Rating (A): 5265

Continuous Summer Static Line Capacity at Operating Voltage (MVA): 3147

Continuous Summer Static Line Capacity at Design Voltage (MVA): 3147

Type and composition of Structures:

Response: The typical structures for all route segments except N3 will be double-circuit steel lattice towers with a vertical phase configuration in a 100-foot wide ROW. Double-circuit steel poles with a vertical phase configuration in a 90-foot wide ROW will be utilized for route segment N3 and at select compressed construction sites (“CCS”) where aerial and/or ground ROW limitations exist, making the use of lattice towers impractical. A listing of the CCS locations by route segment with a description of the necessary ROW and/or structure modifications is included as **Attachment 3**. The CCS locations on the proposed alternative routes for the Project are shown on **Figure 5-1 (Sheets 1-5** in the Map Pockets) of the EA (**Attachment 1**).

Height of Typical Structures:

Response: The typical structure height of a lattice tower will be approximately 151 to 171 feet. The typical height of a steel pole will be approximately 149 to

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169 feet. The height of the structures will be based upon the span length with an associated minimum required conductor clearance from the ground, and the necessary phase spacing required for reliable 345 kV operations and live-line maintenance requirements.

Explain why these structures were selected; include such factors as landowner preference, engineering considerations, and costs comparisons to alternate structures that were considered. Provide dimensional drawings of the typical structures to be used in the project.

Response: The structures considered included double-circuit lattice steel towers with a delta phase configuration in a 150 foot-wide ROW, double-circuit lattice steel towers with a vertical phase configuration in a 100 foot-wide ROW, and double-circuit tubular steel poles with a vertical phase configuration in a 90 foot-wide ROW.

Landowner Preference

CenterPoint Energy collected 338 responses to a landowner questionnaire regarding the Project. The questionnaire asked whether respondents had a preference for the type of transmission line structure to be proposed for the Project. Of the 338 respondents, 170 (50%) answered yes, 59 (17%) indicated that they did not have a preference, and the remaining 109 (32%) left the answer blank. Of the 170 respondents indicating yes, 15 (9%) stated a preference for double-circuit steel poles, 29 (17%) stated a preference for whatever structure would have the least impact (without stating what structure they believed that would be), 34 (20%) stated that they would like the line to be buried underground, and 43 (25%) simply stated that they would prefer no line to be built. The remaining respondents submitted a miscellaneous comment without stating a preferred structure type. (The total percentage does not add up to 100% due to respondents submitting miscellaneous comments.) Based on the low number (44 or less than 12%) of respondents specifying a specific structure type, no strong indication for a particular transmission line structure type was indicated.

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Engineering Considerations

For each alternative structure, the factors considered included the following:

- soil conditions throughout the study area;
- span length;
- conductor capacity;
- nominal ROW requirements;
- construction and maintenance issues;
- live-line maintenance issues;
- potential land-use issues; and
- costs.

Cost Comparisons

Cost estimates were developed for a hypothetical transmission line of comparable distance (60 miles) to the proposed project using the three different structure types. A comparison of the costs showed that the lowest cost solution utilized double-circuit vertical lattice steel towers. This was the structure type used for the base line of the screening estimates for the review of the primary transmission line routes. CenterPoint Energy also took a sampling of the primary transmission line routes and developed estimated costs using steel poles and delta towers. These screening estimates validated that routes using double-circuit vertical lattice steel towers were the least cost option. The primary transmission line routes estimated with tubular steel poles for the entirety were the most expensive at approximately 20% higher cost, while routes comprised of double-circuit delta lattice towers were approximately 12% higher. This cost differential changed depending on the number of angles in the route, but the trend was the same.

Dimensional Drawings

The dimensional drawings of the typical structures to be used are shown in **Figures 1-2 and 1-3** of the EA (**Attachment 1**).

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For joint applications, provide and separately identify the above-required information regarding structures for the portion(s) of the project owned by each applicant.

Response: Not applicable. This is not a joint application.

6. Right-of-way:

Miles of Right-of-Way: Approximately 59.5 to 77.7 miles

Miles of Circuit: Approximately 119.0 to 155.4 miles

Width of Right-of-Way: 90 to 100 feet (new)
30 to 500 feet (existing)

Percent of Right-of-Way Acquired: 0.41% - 13.95%

The following table (**Table 1**) contains the miles of ROW required, miles of circuit required, width of ROW required, and percent of ROW acquired for the thirty-two alternative routes.

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TABLE 1

RIGHT-OF-WAY

	Alternative Route 1	Alternative Route 2	Alternative Route 3	Alternative Route 4	Alternative Route 5	Alternative Route 6	Alternative Route 7	Alternative Route 8	Alternative Route 9	Alternative Route 10	Alternative Route 11	Alternative Route 12	Alternative Route 13	Alternative Route 14	Alternative Route 15
ROW	B-F-LA-LB-LC-LD-N1A-N1B-N1C-H2-V2A-L3-A3-C3-D3A-M3-O3-P3-Q3-R3	B-F-LA-LD-N1A-K3-N1C-H2-V2A-L3-A3-C3-D3A-D3B-E3-R3	B-F-LA-LB-F3-M1B-N1A-N1B-N1C-H2-V2A-L3-A3-C3-D3A-D3B-E3-R3	B-F-LA-LB-LC-LD-N1A-N1B-N1C-H2-V2A-L3-B3-Q3-R3	B-F-LA-LB-F3-M1B-N1A-N1B-N1C-H2-V2A-L3-B3-Q3-R3	B-F-LA-LD-N1A-K3-N1C-H2-V2A-L3-B3-Q3-R3	B-F-LA-LB-LC-LD-N1A-N1B-N1C-F2-E2-G2-O2-U2-Z2-A3-C3-D3A-D3B-E3-R3	B-F-LA-LD-N1A-K3-N1C-F2-E2-G2-M2-O2-U2-Z2-A3-C3-D3A-M3-O3-P3-Q3-R3	B-F-LA-LD-N1A-N1B-N1C-K3-N1C-F2-E2-G2-M2-O2-U2-Z2-A3-C3-D3A-Q3-R3	B-F-LA-LD-N1A-N1B-N1C-H2-P2-O2-U2-Z2-A3-C3-D3A-M3-N3-P3-Q3-R3	B-F-LA-LD-N1A-K3-N1C-H2-V2A-V2B-Z2-B3-Q3-R3	A-D-H-NA-NB-S-V-X-Z-G1-J1-O1-P1-V1-Z1-D2-G2-L2-N2-S2-Y2-C3-D3A-M3-N3-P3-Q3-R3	B-E-J-O-V-X-Z-G1-K1-O1-P1-V1-Z1-D2-G2-L2-N2-S2-Y2-C3-D3A-M3-N3-P3-Q3-R3	B-F-K-P-A1-L1-A2-E2-G2-M2-O2-U2-Z2-A3-C3-D3A-M3-N3-P3-Q3-R3	B-F-K-P-A1-L1-A2-E2-G2-M2-O2-U2-Z2-B3-Q3-R3
Required (miles)	61.3	59.5	63.8	66.1	68.6	64.3	65.4	62.8	68.4	60.9	64.3	75.8	71.3	73.5	67.7
Circuit (miles)	122.6	119	127.6	132.2	137.2	128.6	130.8	125.6	136.8	121.8	128.6	151.6	142.6	147	135.4
Width (feet)	100	100	100	100	100	100	100	100	100	90-100	100	100	90-100	100	90-100
	Substation Property	Substation Property	Substation Property	Substation Property	Substation Property	Substation Property	Substation Property	Substation Property	Substation Property	Substation Property	Substation Property	260-500	Substation Property	Substation Property	Substation Property
Acquired (%)	0.41	0.43	0.40	0.38	0.37	0.39	0.39	0.40	0.37	0.42	0.39	12.57	0.36	0.34	0.37
ROW	B-F-K-P-A1-L1-A2-E2-G2-L2-N2-S2-Y2-C3-D3A-D3B-E3-R3	B-E-J-P-A1-L1-A2-E2-G2-M2-O2-T2-Y2-C3-D3A-M3-N3-P3-Q3-R3	B-F-LA-LB-F3-M1A-L1-A2-E2-G2-L2-N2-S2-Y2-C3-D3A-D3B-E3-R3	B-F-K-P-A1-L1-Q1-P1-V1-Y1-B2-J2-K2-N2-S2-Y2-C3-D3A-M3-N3-P3-Q3-R3	B-F-K-P-A1-L1-A2-E2-G2-L2-N2-R2-H3-Q2-W2-X2-D3A-M3-N3-P3-Q3-R3	A-D-G-Q-W-B1-H1-X1-B2-I2-W2-X2-D3A-M3-N3-P3-Q3-R3	A-C-G-Q-W-B1-H1-X1-B2-I2-W2-X2-D3A-M3-N3-P3-Q3-R3	A-D-G-Q-W-C1-D1-H1-X1-B2-I2-W2-X2-D3A-M3-N3-P3-Q3-R3	A-D-H-M-Q-W-B1-H1-X1-B2-I2-W2-X2-D3A-D3B-E3-R3	A-C-H-NA-NB-R-T-W-C1-D1-H1-X1-B2-I2-W2-X2-D3A-M3-N3-P3-Q3-R3	B-E-I-NB-S-V-X-Z-F1-E1-D1-H1-X1-B2-I2-W2-X2-D3A-M3-O3-P3-Q3-R3	B-E-I-NB-S-V-X-Z-F1-E1-D1-H1-X1-B2-I2-W2-X2-D3A-M3-O3-P3-Q3-R3	B-E-I-NB-R-U-X-Z-F1-I1-S1-X1-B2-I2-W2-X2-D3A-D3B-E3-R3	B-F-LA-I3-LD-M1B-M1A-L1-Q1-P1-T1-S1-X1-B2-I2-W2-X2-D3A-D3B-E3-R3	B-F-K-P-Y-Z-F1-I1-S1-X1-B2-I2-W2-X2-D3A-D3B-E3-R3
Required (miles)	66.9	68.7	65.6	68.4	69.5	74.7	75.5	73.7	76.2	77.7	69.5	71.7	72.5	68.4	70.2
Circuit (miles)	133.8	137.4	131.2	136.8	139	149.4	150	147.4	152.4	155.4	139	143.4	145	136.8	140.4
Width (feet)	100	90-100	100	90-100	90-100	100	90-100	90-100	100	90-100	100	100	100	100	100
	Substation Property	Substation Property	Substation Property	Substation Property	Substation Property	30-500	30-500	30-500	134-500	360-500	Substation Property	Substation Property	Substation Property	Substation Property	Substation Property
Acquired (%)	0.38	0.37	0.38	0.37	0.36	13.76	5.76	13.95	12.51	4.63	0.36	0.36	0.35	0.37	0.36

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For joint applications, provide and separately identify the above-required information for each route for the portion(s) of the project owned by each applicant.

Response: Not applicable. This is not a joint project.

Provide a brief description of the area traversed by the transmission line. Include a description of the general land uses in the area and the type of terrain crossed by the line.

Response: The proposed project will traverse Grimes, Harris, and Waller Counties. The land uses in this area are diverse, ranging from agricultural and ranching to residential, commercial, and light industrial. As the project extends north from Harris County into Waller and Grimes Counties the terrain changes from coastal plains to rolling hills. **Section 2** and **Section 5** of the EA (**Attachment 1**) describe the potential areas to be traversed by the transmission line in greater detail.

7. Substations or Switching Stations:

List the name of all existing HVDC converter stations, substations or switching stations that will be associated with the new transmission line. Provide documentation showing that the owner(s) of the existing HVDC converter stations, substations and/or switching stations have agreed to the installation of the required project facilities.

Response: There are no existing switching stations or HVDC converter stations that will be associated with the new transmission line. The existing substations associated with the proposed new transmission line are the CenterPoint Energy-owned Zenith Substation and the TMPA-owned Gibbons Creek Substation. A letter of consent received from TMPA indicating agreement to install facilities necessary for the two new 345kV circuit terminations is included as **Attachment 4**.

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List the name of all new HVDC converter stations, substations or switching stations that will be associated with the new transmission line. Provide documentation showing that the owner(s) of the new HVDC converter stations, substations and/or switching stations have agreed to the installation of the required project facilities.

Response: There are no new HVDC converter stations, substations, or switching stations that will be associated with the new transmission line.

8. Estimated Schedule:

<u>Estimated Dates of:</u>	<u>Start</u>	<u>Completion</u>
Right-of-way and Land Acquisition	10/26/2015	09/30/2016
Engineering and Design	10/26/2015	03/31/2016
Material and Equipment Procurement	01/04/2016	05/31/2017
Construction of Facilities	06/01/2016	01/30/2018
Energize Facilities	01/17/2018	02/01/2018

9. Counties:

For each route, list all counties in which the route is to be constructed.

Response: Each of the thirty-two alternative routes is located in Grimes, Harris, and Waller Counties, Texas.

10. Municipalities:

For each route, list all municipalities in which the route is to be constructed.

Response: See **Table 2. Figures 3-3, 3-4 (Sheets 1-5 in the Map Pockets), and 5-1 (Sheets 1-5 in the Map Pockets)** in the EA (**Attachment 1**) which show the respective locations of the alternative routes in relation to municipalities.

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**Table 2
Municipalities**

ROUTE	Alternative Route 1	Alternative Route 1A	Alternative Route 2	Alternative Route 3	Alternative Route 4	Alternative Route 5	Alternative Route 6	Alternative Route 7	Alternative Route 8	Alternative Route 9	Alternative Route 10	Alternative Route 11	Alternative Route 12	Alternative Route 13	Alternative Route 14	Alternative Route 15
	B-F-LA-LB-LC-LD-N1A-N1B-N1C-H2-V2A-L3-A3-C3-D3A-D3B-E3-R3	B-F-LA-LB-LC-LD-N1A-N1B-N1C-H2-V2A-L3-A3-C3-D3A-M3-O3-P3-Q3-R3	B-F-LA-I3-LD-N1A-K3-N1C-H2-V2A-L3-A3-C3-D3A-D3B-E3-R3	B-F-LA-LB-F3-M1B-N1A-N1B-N1C-H2-V2A-L3-A3-C3-D3A-D3B-E3-R3	B-F-LA-LB-LC-LD-N1A-N1B-N1C-H2-V2A-L3-A3-C3-D3A-D3B-E3-R3	B-F-LA-LB-F3-M1B-N1A-N1B-N1C-H2-V2A-L3-A3-C3-D3A-D3B-E3-R3	B-F-LA-I3-LD-N1A-K3-N1C-H2-V2A-L3-B3-Q3-R3	B-F-LA-LB-LC-LD-N1A-N1B-N1C-F2-E2-G2-O2-U2-Z2-A3-C3-D3A-D3B-E3-R3	B-F-LA-I3-LD-N1A-K3-N1C-F2-E2-G2-M2-O2-U2-Z2-A3-C3-D3A-M3-O3-P3-Q3-R3	B-F-LA-I3-LD-N1A-K3-N1C-F2-E2-G2-M2-O2-U2-Z2-B3-Q3-R3	B-F-LA-I3-LD-N1A-N1B-N1C-H2-P2-O2-U2-Z2-A3-C3-D3A-M3-N3-P3-Q3-R3	B-F-LA-I3-LD-N1A-K3-N1C-H2-V2A-V2B-Z2-B3-Q3-R3	A-D-H-NA-NB-S-V-X-Z-G1-J1-O1-P1-V1-Z1-D2-Z1-C2-K2-N2-S2-Y2-C3-D3A-M3-O3-P3-Q3-R3	B-E-J-O-V-X-Z-G1-K1-O1-P1-V1-Z1-D2-G2-L2-N2-S2-Y2-C3-D3A-M3-N3-P3-Q3-R3	B-F-K-P-A1-L1-A2-E2-G2-M2-O2-U2-Z2-A3-C3-D3A-M3-N3-P3-Q3-R3	B-F-K-P-A1-L1-A2-E2-G2-M2-O2-U2-Z2-A3-C3-D3A-M3-N3-P3-Q3-R3
MUNICIPALITIES																
HOUSTON	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
PINE ISLAND																
PRAIRIE VIEW													XX	XX		
WALLER															XX	XX
ROUTE	Alternative Route 16	Alternative Route 17	Alternative Route 18	Alternative Route 19	Alternative Route 20	Alternative Route 21	Alternative Route 22	Alternative Route 23	Alternative Route 24	Alternative Route 25	Alternative Route 26	Alternative Route 27	Alternative Route 28	Alternative Route 29	Alternative Route 30	Alternative Route 31
	B-F-K-P-A1-L1-A2-E2-G2-L2-N2-S2-Y2-C3-D3A-D3B-E3-R3	B-E-J-P-A1-L1-A2-E2-G2-M2-O2-T2-Y2-C3-D3A-M3-N3-P3-Q3-R3	B-F-LA-LB-F3-M1A-L1-A2-E2-M2-O2-U2-Z2-A3-C3-D3A-M3-N3-P3-Q3-R3	B-F-LA-LB-F3-M1A-L1-A2-E2-L2-N2-S2-Y2-C3-D3A-D3B-E3-R3	B-F-K-P-A1-L1-Q1-P1-V1-Y1-B2-J2-K2-N2-S2-Y2-C3-D3A-M3-N3-P3-Q3-R3	B-F-K-P-A1-L1-A2-E2-G2-L2-N2-R2-H3-Q2-W2-X2-D3A-M3-N3-P3-Q3-R3	A-D-G-Q-W-B1-H1-X1-B2-I2-W2-X2-D3A-D3B-E3-R3	A-C-G-Q-W-B1-H1-X1-B2-I2-W2-X2-D3A-M3-N3-P3-Q3-R3	A-D-G-Q-W-C1-D1-H1-X1-B2-I2-W2-X2-D3A-M3-N3-P3-Q3-R3	A-D-H-M-Q-W-B1-H1-X1-B2-I2-W2-X2-D3A-D3B-E3-R3	A-C-H-NA-NB-R-T-W-C1-D1-H1-X1-B2-I2-W2-X2-D3A-M3-N3-P3-Q3-R3	B-E-I-NB-S-V-X-Z-F1-I1-S1-X1-B2-I2-W2-X2-D3A-M3-O3-P3-Q3-R3	B-E-I-NB-S-V-X-Z-F1-E1-D1-H1-X1-B2-I2-W2-X2-D3A-M3-O3-P3-Q3-R3	B-E-I-NB-R-U-X-Z-F1-I1-S1-X1-B2-I2-W2-X2-D3A-D3B-E3-R3	B-F-LA-I3-LD-M1B-M1A-L1-Q1-P1-T1-S1-X1-B2-I2-W2-X2-D3A-D3B-E3-R3	B-F-K-P-Y-Z-F1-I1-S1-X1-B2-I2-W2-X2-D3A-D3B-E3-R3
MUNICIPALITIES																
HOUSTON	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
PINE ISLAND																
PRAIRIE VIEW																XX
WALLER	XX	XX														

XX – Denotes municipalities in which the route is to be constructed.

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For each applicant, attach a copy of the franchise, permit or other evidence of the city's consent held by the utility, if necessary or applicable. If franchise, permit, or other evidence of the city's consent has been previously filed, provide only the docket number of the application in which the consent was filed. Each applicant should provide this information only for the portion(s) of the project which will be owned by the applicant.

Response: A copy of the franchise agreements between CenterPoint Energy and the Town of Pine Island, the City of Prairie View and the City of Waller are provided in **Attachments 5, 6, and 7**, respectively. The franchise agreement between CenterPoint Energy and the City of Houston was previously filed under Docket No. 40049.

11. Affected Utilities:

Identify any other electric utility served by or connected to facilities in this application.

Response: The utilities that will be served by or connected to the facilities in this application are TMPA, Cross Texas Transmission, LLC (“Cross Texas”), and Garland Power & Light (“Garland”). The Brazos Valley Connection will connect to the existing Gibbons Creek Substation owned by TMPA. In addition, the Brazos Valley Connection, in conjunction with the 345 kV double-circuit transmission line between the Gibbons Creek and Limestone substations, will constitute the Houston Import Project, which was endorsed and deemed critical to reliability by ERCOT (**Attachment 2**). As an owner of one of the endpoints of the Houston Import Project, ERCOT designated TMPA as the transmission provider for the Gibbons Creek-Limestone transmission line. TMPA delegated its responsibility for that part of the Houston Import Project to Cross Texas and Garland.

Describe how any other electric utility will be affected and the extent of the other utilities' involvement in the construction of this project. Include any other electric

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utilities whose existing facilities will be utilized for the project (vacant circuit positions, ROW, substation sites and/or equipment, etc.) and provide documentation showing that the owner(s) of the existing facilities have agreed to the installation of the required project facilities.

Response: The Brazos Valley Connection will connect two new 345 kV transmission circuits to the TMPA-owned Gibbons Creek Substation. Cross Texas will install the substation equipment needed to connect the two new circuits. The letter of consent received from TMPA indicating agreement to install facilities necessary for the two new 345kV circuit terminations is included as **Attachment 4**. Additionally, some of the proposed alternative routes would cross or parallel other utilities' transmission facilities. CenterPoint Energy will work with those utilities as necessary to ensure the safe construction of the Project. Except as described above, no other electric utilities will be affected by or involved in the construction of the Project.

12. Financing:

Describe the method of financing this project. For each applicant that is to be reimbursed for all or a portion of this project, identify the source and amount of the reimbursement (actual amount if known, estimated amount otherwise) and the portion(s) of the project for which the reimbursement will be made.

Response: CenterPoint Energy will finance this project from its general corporate funds.

13. Estimated Costs:

Provide cost estimates for each route of the proposed project using the following table. Provide a breakdown of "Other" costs by major cost category and amount. Provide the information for each route in an attachment to this application.

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Response: See **Attachment 8** for the cost estimates for each alternative route proposed for the Project including a breakdown of “Other” costs by major cost category and amount.

For joint applications, provide and separately identify the above-required information for the portion(s) of the project owned by each applicant.

Response: Not applicable. This is not a joint application.

14. Need for the Proposed Project:

For a standard application, describe the need for the construction and state how the proposed project will address the need. Describe the existing transmission system and conditions addressed by this application. For projects that are planned to accommodate load growth, provide historical load data and load projections for at least five years. For projects to accommodate load growth or to address reliability issues, provide a description of the steady state load flow analysis that justifies the project. For interconnection projects, provide any documentation from a transmission service customer, generator, transmission service provider, or other entity to establish that the proposed facilities are needed. For projects related to a Competitive Renewable Energy Zone, the foregoing requirements are not necessary; the applicant need only provide a specific reference to the pertinent portion(s) of an appropriate commission order specifying that the facilities are needed. For all projects, provide any documentation of the review and recommendation of a PURA §39.151 organization.

Response: The load in the Houston metropolitan area is currently served by the generation in the area and the power imported through four 345 kV lines from the north and five 345 kV lines from the south. The four lines connecting the Houston area to ERCOT from the north are:

Singleton to Zenith 345 kV circuit 98

Singleton to Zenith 345 kV circuit 99

Singleton to Tomball 345 kV circuit 74

Roans Prairie to King 345 kV circuit 75

The five lines connecting the Houston area to ERCOT from the south are:

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South Texas Project to Dow 345 kV circuit 18

South Texas Project to Dow 345 kV circuit 27

South Texas Project to W.A. Parish 345 kV circuit 39

W.A. Parish to Hillje 345 kV circuit 72

W.A. Parish to Hillje 345 kV circuit 64

Over the past ten years, a significant amount of generation has been retired in the Houston area, while the load in the region continues to grow. The continuous load growth and lack of new generation additions in the load center has resulted in the Houston system relying more on power imported through the existing 345 kV lines into the area.

Based on the results of the ERCOT Independent Review (**Attachment 2**), ERCOT concluded that additional transmission capacity is needed to meet the reliability criteria under the 2018 summer peak condition.

The following documents supporting the need for the Project and additional description of the existing transmission system along with descriptions of the steady state load flow analyses performed to justify the Project are attached:

- **Attachment 9:** July 25, 2013 CenterPoint Energy Houston Region Import Capacity Project.
- **Attachment 2:** February 20, 2014 ERCOT Independent Review of Houston Import RPG Project.

The CenterPoint Energy Houston Region Import Capacity Project report identifies several common mode contingency events that result in transmission elements and import paths loading above emergency ratings in 2018. CenterPoint Energy evaluated 25 alternatives to eliminate the loading problems, one of which was

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constructing a new 345 kV double-circuit line from the Limestone Substation to the Gibbons Creek Substation to the Zenith Substation.

ERCOT performed an independent review of the Houston Import Project as described in **Attachment 2**. ERCOT concluded that additional transmission capacity is needed to meet the reliability criteria under the 2018 summer peak condition. Furthermore, the ERCOT Independent Review identifies the 345 kV Limestone-Gibbons Creek- Zenith double-circuit line as the best solution for the area and states that the project will address the reliability need, improve the import capability into Houston and provide additional benefits to the system in both the near-term and long-term transmission planning horizons. ERCOT designated CenterPoint Energy as the transmission provider for the new 345 kV double-circuit line between Gibbons Creek and Zenith Substations. CenterPoint Energy has named the 345 kV transmission line project between Gibbons Creek and Zenith the “Brazos Valley Connection” project.

Historical load and estimated future load assumptions used by ERCOT in evaluating this project are provided in **Figure 7.1** on page 23 of the ERCOT Independent Review (**Attachment 2**).

The Project is not needed to provide service to a new transmission service customer; therefore, there is no documentation showing the proposed facilities are needed to provide service to a new transmission service customer.

In addition to the transmission line and substation terminations proposed in this Application, the ERCOT-endorsed project also requires the thermal upgrade of the existing T. H. Wharton to Addicks 345 kV circuit. CenterPoint Energy completed the uprating of these transmission line conductors in January 2015 to the necessary emergency rating within the need for transmission line improvements by removing

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vertical clearance obstacles. The corresponding T.H. Wharton and Addicks substation terminals will be upgraded prior to the energization of this project.

15. Alternatives to Project:

For a standard application, describe alternatives to the construction of this project (not routing options). Include an analysis of distribution alternatives, upgrading voltage or bundling of conductors of existing facilities, adding transformers, and for utilities that have not unbundled, distributed generation as alternatives to the project. Explain how the project overcomes the insufficiencies of the other options that were considered.

Response:

Distribution Alternatives

Distribution alternatives cannot resolve the transmission system loading and reliability issues identified in both the “CenterPoint Energy Houston Region Import Capacity Project” study (the “CenterPoint Energy Study”) (**Attachment 9**) and the ERCOT Independent Review (**Attachment 2**).

Upgrading Voltage, Bundling Conductors, or Adding Transformers

Upgrading of conductors was discussed by ERCOT in the ERCOT Independent Review (**Attachment 2**). Based on the reliability analysis, ERCOT identified that multiple existing 345 kV lines would overload under either a single transmission contingency (N-1) or single generation contingency plus single transmission contingency (G-1 + N-1) event. ERCOT concluded that upgrading the existing 345 kV import lines is not a viable option due to both reliability and economic concerns, because to upgrade the existing lines would require them to be out during construction. CenterPoint Energy agrees with this conclusion.

Distributed Generation

CenterPoint Energy is an unbundled utility; therefore, it did not consider distributed generation as an alternative to the proposed project.

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Transmission Alternatives

In the CenterPoint Energy Study (**Attachment 9**), CenterPoint Energy considered 25 different options to solve the reliability issues associated with the import capability of the Houston Region. Generally, the options included: construction of new 345 kV circuits from the Houston area to North Texas; upgrade of existing 345 kV circuits from the Houston area to North Texas; construction of new 345 kV circuits from the West side of Houston to Central Texas; construction of new 345 kV circuits from the Houston area to South Texas, as well as various options of higher voltage levels, and bundling conductors. CenterPoint Energy identified several options in the CenterPoint Energy Study that provided different levels of transfers into the area and submitted its analysis and proposal to ERCOT and the ERCOT Regional Planning Group (“RPG”). After the RPG comment period ended, ERCOT performed an independent review in which they included several additional options as described in the ERCOT Independent Review (**Attachment 2**). ERCOT concluded that the Brazos Valley Connection together with the Cross Texas Project (which together constitutes Option 4 as described in the ERCOT Independent Review) will provide the best combination of long-term performance, reliability and cost-effectiveness of the options considered in the ERCOT Independent Review.

16. Schematic or Diagram:

For a standard application, provide a schematic or diagram of the applicant's transmission system in the proximate area of the project. Show the location and voltage of existing transmission lines and substations, and the location of the construction. Locate any taps, ties, meter points, or other facilities involving other utilities on the system schematic.

Response: A schematic of CenterPoint Energy’s existing transmission system in the proximate area of the project in Grimes, Harris, and Waller Counties is included as **Attachment 10**.

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17. Routing Study:

Provide a brief summary of the routing study that includes a description of the process of selecting the study area, identifying routing constraints, selecting potential line segments, and the selection of the routes. Provide a copy of the complete routing study conducted by the utility or consultant. State which route the applicant believes best addresses the requirements of PURA and P.U.C. Substantive Rules.

Response: CenterPoint Energy engaged POWER Engineers, Inc. (“POWER”) to conduct an environmental assessment and alternative route analysis for the Project. The methodologies and assumptions that were used to conduct the environmental assessment and alternative route analysis that is the subject of the EA (**Attachment 1**) are consistent with Section 37.056(c)(4)(A) through (D) of the Texas Utilities Code (“PURA”), PUC Proc. R. 22.52(a)(4), PUC Subst. R. 25.101(b)(3)(B), and the Commission’s policy of prudent avoidance. The methodology used to complete the routing study described in the EA is summarized below.

POWER developed an initial base map to delineate the study area boundaries and initiate data collection activities. POWER, with input from CenterPoint Energy, identified the initial study area boundaries. Based on the location of the Zenith Substation and the Gibbons Creek Substation sites for the Brazos Valley Connection tie points, the study area was refined. The northern study area boundary is defined by the location of the Gibbons Creek Substation and the existing 138 kV and 345 kV transmission lines that extend in an east-west direction. The southern study area boundary is defined by the location of the Zenith Substation and parallels the south side of Longenbaugh and Morrison Roads. The northern extent of the western study area boundary generally follows the eastern side of the Navasota River. After the western study area boundary bypasses the City of Navasota, it then parallels the western side of State Highway (“SH”) 6 and an existing railroad before going around the eastern side of the City

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of Hempstead. After bypassing the City of Hempstead, the western study area boundary follows the western side of Farm-to-Market Road (“FM”) 359, staying to the east of the Brazos River. Based on the location of the Project endpoints, CenterPoint Energy and POWER determined that extending the western study area boundary to or beyond the Navasota and Brazos Rivers would unduly add additional length to the Project, increase the amount of land use and environmental impacts, and increase the overall cost of the Project. The eastern study area boundary parallels the west side of the Grimes and Waller County line until it crosses into Harris County where it then parallels the north side of U.S. Highway (“U.S. Hwy”) 290 for a short distance before turning to the south. The eastern study area boundary then parallels the east side of SH 99. The eastern study area boundary is located to include a potential paralleling opportunity with an existing north-south 345 kV transmission line corridor that transverses the study area.

Initial reconnaissance surveys were conducted and 54 evaluation criteria were developed. Data were collected pertaining to land use, recreational and park areas, historical and aesthetic values, and environmental integrity. Project scoping letters were sent to federal, state, and local agencies and officials to solicit additional information. Available 2014 aerial photography and geographic information system (“GIS”) coverage with associated metadata were reviewed, and relevant resource data were selected and mapped. POWER conducted a resource analysis for development of an environmental and land use composite constraints map.

POWER initially identified 80 feasible and geographically diverse preliminary transmission line segments. CenterPoint Energy and POWER determined that it was not feasible to have any of the proposed alternative routes cross over the existing Zenith to Singleton transmission line for two reasons: 1) constructing a 345 kV double-circuit transmission line to cross back and forth over an existing similar transmission line is unduly complex from an engineering, construction, and operational perspective and would create additional reliability concerns; 2) the

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extensive residential and commercial development on the east side of the Zenith to Singleton line, particularly in the southern portion of the study area, would make routing very difficult.

Four public meetings were conducted in accordance with PUC Proc. R. 22.52 (a)(4). Modifications to the preliminary transmission line segments were completed based on the results of the public meetings, additional agency input, and an additional reconnaissance survey, which resulted in a final expanded set of 100 segments that were combined into the primary alternative transmission line routes presented in this Application. Data were then tabulated for the evaluation criteria for each resulting primary transmission line route and a comparative potential impact assessment was completed. The 32 primary transmission line routes were divided into three geographic families, and 30 key evaluation criteria were derived from the 54 evaluation criteria to facilitate the comparison and selection of the recommended proposed alternative routes within each primary transmission line route family. CenterPoint Energy analyzed the engineering feasibility and provided an estimated cost analysis for each of the primary transmission line routes. POWER incorporated these factors into the analysis and consensus process for the recommendation of the alternative routes. CenterPoint Energy reviewed POWER's recommendations and concurred that each of the 32 alternative routes is feasible from an engineering, constructability, and cost perspective. An additional comparison between the alternative routes from each line route family was completed to select the route that best addresses the requirements of PURA and PUC Substantive Rules.

Alternative Route 1A was recommended by POWER as the route that best addresses the requirements of PURA and PUC Substantive Rules based on the following rationale:

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- Approximately 51.5 miles of this route as proposed parallels an existing transmission line.
- It avoids and minimizes potential impacts to community values while environmental integrity is maximized.
- It has 262 habitable structures located within 500 feet of its centerline; and 228 of these are already located within 500 feet of an existing transmission line, meaning that only 34 existing habitable structures would be newly affected by the presence of the proposed transmission line.
- Approximately 93% of its length parallels existing features.
- It has an equivalent distance with the other proposed alternative routes across park and recreational areas at 0.13 miles and an equivalent distance within the foreground visual zone of any parks or recreational areas at 4.0 miles.
- It crosses the least amount of upland woodlands at 18.6 miles and crosses less than five miles of bottomland/riparian woodlands.
- It has the second lowest number of stream crossings at 99 and open water crossings, such as lakes or ponds, at 0.4 miles; and these potential impacts are further minimized by spanning wetland and open water areas.
- It does not have any known recorded historical or archeological sites or National Register of Historic Places (“NRHP”)-listed or determined-eligible properties within its expected ROW.

CenterPoint Energy concurred with the selection of Alternative Route 1A as the route that best addresses the requirements of PURA and PUC Substantive Rules.

A more detailed description of the alternative route analysis conducted by POWER with CenterPoint Energy’s engagement is provided in the EA (**Attachment 1**).

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As part of the route analysis, CenterPoint Energy considered reliability issues raised by ERCOT in the confidential Section 9.1 of the ERCOT Independent Review. These issues are addressed in **Confidential Attachment 1**, which contains letters exchanged between CenterPoint Energy and ERCOT. These letters are filed confidentially, because they contain Critical Energy Infrastructure Information (“CEII”).

18. Public Meeting or Public Open House:

Provide the date and location for each public meeting or public open house that was held in accordance with P.U.C. PROC. R. 22.52. Provide a summary of each public meeting or public open house including the approximate number of attendants, and a copy of any survey provided to attendants and a summary of the responses received. For each public meeting or public open house provide a description of the method of notice, a copy of any notices, and the number of notices that were mailed and/or published.

Response: CenterPoint Energy hosted three initial public meetings followed by one additional meeting, for a total of four public meetings. The public meetings were held on the following dates at the following locations:

- October 21, 2014 from 6:30 to 9:30 p.m., Waller High School, 20950 Field Store Road, Waller, Texas 77484
- October 23, 2014 from 5:00 to 8:00 p.m., Berry Center, 8877 Barker Cypress Road, Cypress, TX 77433
- November 6, 2014 from 5:00 to 8:00 p.m., Grimes County Expo Center, 5220 FM 3455, Navasota, TX 77868
- December 18, 2014 from 4:30 to 7:30 p.m., Grimes County Expo Center, 5220 FM 3455, Navasota, TX 77868

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A total of 528 people signed in at the four public meetings that registered a total of 754 people in attendance. A breakdown of the attendance at each meeting is shown in Table 3

.Table 3 - Public Meeting Attendance

Meeting Date and Location	Number Signed In	Number in Attendance
October 21, 2014 Waller High School	118	176
October 23, 2014 Berry Center	21	26
November 6, 2014 Grimes County Expo Center	262	365
December 18, 2014 Grimes County Expo Center	127	187
Total	528	754

CenterPoint Energy personnel registered visitors and handed out a questionnaire and information packet. The questionnaire solicited comments on citizen concerns as well as an evaluation of the information presented in the public meetings. A copy of the questionnaire can be found in **Appendix B** of the EA (**Attachment 1**). **Section 3.6.2** of the EA includes a detailed description of the public meetings and the responses received to the questionnaires.

CenterPoint Energy provided four manned GIS computer stations at each meeting. Landowners were provided the opportunity to view their properties or areas of interest in more detail at the GIS stations. POWER staff recorded their comments in digital format and in most instances provided an annotated 8.5" X 11" color snapshot of their area of interest for the attendee to take home.

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A video presentation was also provided during the public open house meetings to further explain the Project and the process. That video presentation is available online at www.brazosvalleyconnection.com.

Copies of the direct letter notice and the published newspaper notice can be found in **Appendix B** of the EA. Individual notification letters announcing the public meetings were mailed by CenterPoint Energy directly to 2,696 landowners whose property is located within 520 feet of any of the preliminary transmission line segments. Instead of 500 feet, 520 feet was used to account for the ± 20 feet horizontal accuracy of the aerial photography used. A breakdown of the number of landowner notices that were mailed for each meeting notice is shown in **Table 4**.

Table 4 – Landowner Notices

LANDOWNER MEETING NOTICES MAILED		
Meeting Notice No.	Meeting Date and Location	Number of Notice Letters Mailed
1	October 21, 2014 Waller High School	2,356
	October 23, 2014 Berry Center	
	November 6, 2014 Grimes County Expo Center	
2	December 18, 2014 Grimes County Expo Center	340

In addition, CenterPoint Energy publicized the public meetings through a public notice published in the following local newspapers:

- Katy Times: October 2, 2014 and October 9, 2014

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- Houston Chronicle: September 26, 2014, October 14, 2014, and December 4, 2014
- Navasota Examiner: October 1, 2014, October 29, 2014, and December 10, 2014
- Waller Times: October 1, 2014, October 9, 2014, and December 10, 2014

19. Routing Maps:

Base maps should be a full scale (one inch = not more than one mile) highway map of the county or counties involved, or other maps of comparable scale denoting sufficient cultural and natural features to permit location of all routes in the field. Provide a map (or maps) showing the study area, routing constraints, and all routes or line segments that were considered prior to the selection of the routes. Identify the routes and any existing facilities to be interconnected or coordinated with the project. Identify any taps, ties, meter points, or other facilities involving other utilities on the routing map. Show all existing transmission facilities located in the study area. Include the locations of radio transmitters and other electronic installations, airstrips, irrigated pasture or cropland, parks and recreational areas, historical and archeological sites (subject to the instructions in Question 27), and any environmentally sensitive areas (subject to the instructions in Question 29).

Response: The following maps showing the study area, routing constraints, and routing segments are provided in the EA (**Attachment 1**):

- **Figure 3-1.** Preliminary Transmission Line Segments
- **Figure 3-2.** Revised Preliminary Transmission Line Segments
- **Figure 3-3.** Primary Transmission Line Segments
- **Figure 3-4.** Primary Transmission Line Segments with Environmental and Land Use Constraints (Topographic Base Map with Constraints) (**Sheets 1-5** in the Map Pockets)

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- **Figure 5-1.** Habitable Structures and Other Land Use Features in the Vicinity of the Proposed Alternative Routes (Aerial Photograph Base Map with CCN Inventory Items) (**Sheets 1-5** in the Map Pockets)

Provide aerial photographs of the study area displaying the date that the photographs were taken or maps that show (1) the location of each route with each route segment identified, (2) the locations of all major public roads including, as a minimum, all federal and state roadways, (3) the locations of all known habitable structures or groups of habitable structures (see Question 19 below) on properties directly affected by any route, and (4) the boundaries (approximate or estimated according to best available information if required) of all properties directly affected by any route .

Response: The aerial photographs of the study area are located on **Figure 5-1, Sheets 1-5** in the Map Pockets of the EA (**Attachment 1**).

For each route, cross-reference each habitable structure (or group of habitable structures) and directly affected property identified on the maps or photographs with a list of corresponding landowner names and addresses and indicate which route segment affects each structure/group or property.

Response: A cross-reference of each habitable structure and directly affected property identified on the maps or photographs with a list of corresponding landowner names and addresses is included in **Attachment 11**.

20. Permits:

List any and all permits and/or approvals required by other governmental agencies for the construction of the proposed project. Indicate whether each permit has been obtained.

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Response: Specific information concerning possible permits or approvals required by other governmental agencies for the construction of the Project is discussed in greater detail in **Section 1.2** of the EA (**Attachment 1**).

- United States Army Corps of Engineers (“USACE”): The Project could require USACE’s Nationwide Permit (“NWP”) 12, a Section 404 permit for work in wetland areas, or some combination of these permits. If the proposed impacts of the Project exceed the criteria established under regional conditions listed under the NWP, then an Individual Permit would be required. No permit or authorization from the USACE has been obtained at this time.

- United States Fish and Wildlife Service (“USFWS”): The USFWS is charged with the responsibility for enforcement of federal wildlife laws and providing comments on proposed construction projects with a federal nexus under the National Environmental Protection Act (“NEPA”), and within the framework of several federal laws including the Endangered Species Act (“ESA”), Migratory Bird Treaty Act (“MBTA”), and Bald and Golden Eagle Protection Act. POWER reviewed the USFWS listed species for Brazoria County, Texas and solicited Texas Natural Diversity Database records from Texas Parks and Wildlife Department (“TPWD”). Upon PUC approval of a route, coordination with the USFWS – Clear Lake Ecological Services Field Office may be required to determine the need for any required species specific surveys or additional permitting under Section 7 of the ESA and the MBTA. No permit or authorization from the USFWS has been obtained at this time.

Federal Aviation Administration (“FAA”): Based on the FAA notification criteria and the route selected by the PUC, the Project may require a Notice of Proposed Construction or Alteration, FAA Form 7460- 1, to be completed and submitted to the FAA Southwest Regional Office in Fort Worth, Texas. No permit or authorization from the FAA has been obtained at this time

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- Floodplain Management: Coordination with floodplain administrators for the counties within the Project study area may be required after PUC route approval to determine if any permits or mitigation is necessary. No permits or authorizations from such administrators have been obtained at this time.

- Texas Commission on Environmental Quality (“TCEQ”): The Project may require a Texas Pollution Discharge Elimination System General Permit and the development of a Stormwater Pollution Prevention Plan (“SWPPP”), which is a TCEQ storm discharge-related requirement. A determination of the need for SWPPP will be made after PUC approval of the route for the line. A Section 401 Water Quality Certificate from the TCEQ may also be required if the Project requires an USACE Individual Permit for proposed impacts to surface waters and/or wetlands as previously discussed. No permit or authorization from the TCEQ has been obtained at this time.

- Texas Historical Commission (“THC”): If necessary, CenterPoint Energy will conduct an on-the-ground cultural resources survey of the approved transmission line route and obtain clearance from the THC. No permit or authorization from THC has been obtained at this time.

- Texas Department of Transportation (“TxDOT”): If the PUC-approved transmission line is located within the ROW of, or crosses, any state-maintained road or highway, CenterPoint Energy will be required to obtain a road crossing permit. No permit or authorization from TxDOT has been obtained at this time.

- Texas General Land Office (“GLO”): The GLO requires a miscellaneous easement for ROW within any coastal submerged lands (tidally influenced) or state owned riverbeds, and navigable streams (non-tidal). A miscellaneous easement may be required if the ROW for the approved transmission line

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crosses areas meeting these criteria. No permit or authorization from the GLO has been obtained at this time.

21. Habitable structures:

For each route list all single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline if the proposed project will be constructed for operation at 230kV or less, or within 500 feet of the centerline if the proposed project will be constructed for operation at greater than 230kV. Provide a general description of each habitable structure and its distance from the centerline of the route. In cities, towns or rural subdivisions, houses can be identified in groups. Provide the number of habitable structures in each group and list the distance from the centerline of the route to the closest and the farthest habitable structure in the group. Locate all listed habitable structures or groups of structures on the routing map.

Response: The number of habitable structures within 500 feet of the alternative route centerlines range from 97 on Alternative Route 17, to 356 on Alternative Route 30. The tables in **Appendix D** of the EA (**Attachment 1**), **Tables 5-7** through **5-38**, list the habitable structure map identification number, general description, and approximate distance from the centerline of all habitable structures located within 500 feet of the alternative routes. The locations of these structures are shown on **Figure 5-1 (Sheets 1-5** in the Map Pockets) in the EA.

The horizontal accuracy of the aerial photograph used to identify habitable structures was calculated at ± 20 feet. To account for this margin of error and to ensure that all habitable structures were properly identified, POWER included habitable structures within 520 feet of the centerline of each alternative route.

22. Electronic Installations:

For each route, list all commercial AM radio transmitters located within 10,000 feet of the center line of the route, and all FM radio transmitters, microwave relay

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stations, or other similar electronic installations located within 2,000 of the center line of the route. Provide a general description of each installation and its distance from the center line of the route. Locate all listed installations on a routing map.

Response: There is one known commercial AM radio transmitter located within 10,000 feet of the centerline of an alternative route. There are 37 known communication towers (FM radio transmitters, microwave relay stations, or other similar electronic installations) that are located within 2,000 feet of an alternative route. The number of FM radio transmitters, microwave towers, and other electronic installations located within 2,000 feet of an alternative route centerline ranges from seven electronic installations on Alternative Routes 27, and 29, to 23 such installations on Alternative Routes 22 and 25. A listing, general description, and approximate distance from the centerline for electronic installations along each of the alternative routes are presented in **Section 4.1.7** of the EA (**Attachment 1**), **Table 4-4**, and in **Appendix D** to the EA, **Tables 5-7** through **5-38**, and the locations of these electronic installations are shown on **Figure 5-1** (**Sheets 1-5** in the map pockets), in the EA.

23. Airstrips:

For each route, list all known private airstrips within 10,000 feet of the center line of the project. List all airports registered with the Federal Aviation Administration (FAA) with at least one runway more than 3,200 feet in length that are located within 20,000 feet of the center line of any route. For each such airport, indicate whether any transmission structures will exceed a 100:1 horizontal slope (one foot in height for each 100 feet in distance) from the closest point of the closest runway. List all listed airports registered with the FAA having no runway more than 3,200 feet in length that are located within 10,000 feet of the center line of any route. For each such airport, indicate whether any transmission structures will exceed a 50:1 horizontal slope from the closest point of the closest runway. List all heliports located within 5,000 feet of the center line of any route. For each such heliport, indicate whether any transmission structures will exceed a 25:1 horizontal slope from the closest point of the closest landing and takeoff area of the heliport. Provide a general description of each listed private airstrip, registered airport,

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and heliport; and state the distance of each from the center line of each route. Locate and identify all listed airstrips, airports, and heliports on a routing map.

Response: There are 24 private airstrips within 10,000 feet of the alternative route centerlines. The number of private airstrips located within 10,000 feet of an alternative route centerline ranges from four private airstrips (with respect to nine of the alternative routes) to 14 (with respect to Alternative Route 12).

There is one FAA-registered airport (Sack-O-Grande Acroport) with a runway longer than 3,200 feet within 20,000 feet of the proposed centerline of all of the alternative routes. Based on the FAA slope criteria, while taking into consideration the topographical elevations of each location, FAA notification may be required for all of the alternative routes, because the transmission line structures may exceed the height and slope notification criteria for the airport.

There are no FAA-registered airports with a runway less than 3,200 feet within 10,000 feet of the proposed centerline of any of the alternative routes.

There is one heliport (Roans Prairie Heliport) within 5,000 feet of eight of the alternative route centerlines. Based on the FAA slope criteria, while taking into consideration the topographical elevations of each location, FAA notification does not appear to be required for these alternative routes, because the transmission line structures do not at this time appear to exceed the height and slope notification criteria for the heliport.

Each airport/airstrip/heliport is listed and described with the approximate distance from the ROW centerline for each of the alternative routes in **Section 4.1.6.2** of the EA (**Attachment 1**), **Table 4-3**, and **Appendix D** of the EA, **Tables 5-7** through **5-38**. These facilities are shown on **Figure 5-1 (Sheets 1-5** in the Map Pockets) of the EA.

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24. Irrigation Systems:

For each route identify any pasture or cropland irrigated by traveling irrigation systems (rolling or pivot type) that will be traversed by the route. Provide a description of the irrigated land and state how it will be affected by each route (number and type of structures etc.). Locate any such irrigated pasture or cropland on a routing map.

Response: The alternative routes do not cross any pasture or cropland using any known, traveling irrigation systems (either rolling or pivot types).

25. Notice:

Notice is to be provided in accordance with P.U.C. PROC. R. 22.52.

A. *Provide a copy of the written direct notice to owners of directly affected land. Attach a list of the names and addresses of the owners of directly affected land receiving notice.*

Response: A copy of the written direct notice to owners of directly affected land is provided in **Attachment 12**. A list of the names and addresses of the landowners receiving notice is provided in **Attachment 11**. In accordance with PUC Proc. R. 22.52(a)(4), CenterPoint Energy mailed notice directly to the owners of land, as stated on the current county tax rolls, who would be directly affected by this Application by having a habitable structure within 520 feet of the centerline or owning land that would be crossed by any of the proposed alternative routes. CenterPoint Energy used 520 feet instead of 500 feet to account for the ± 20 foot margin of error based on the horizontal accuracy of the aerial photography used to identify the habitable structures.

B. *Provide a copy of the written notice to utilities that are located within five miles of the routes.*

Response: A copy of the written notice to electric utilities located within five miles of an alternative route (including those transmission owners with facilities

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paralleled or crossed by an alternative route) is provided in **Attachment 13**. The notice was mailed to the following electric utilities located within five miles of an alternative route: Bluebonnet Electric Cooperative, Inc., Brazos Electric Power Cooperative, Inc., Brownsville Public Utilities Board, Cross Texas Transmission, LLC., Entergy Texas, Inc., Garland Power and Light, Hempstead Electric Department, LCRA Transmission Services Corporation, Mid-South Electric Cooperative Association, Oncor Electric Delivery Company, San Bernard Electric Cooperative, Inc, and Texas Municipal Power Agency.

In addition to notifying electric utilities located within five miles of an alternative route, CenterPoint Energy also mailed written notice to owners of pipelines with facilities paralleled or crossed by an alternative route. A copy of the written notice to such pipeline owners is provided as **Attachment 14**.

C. *Provide a copy of the written notice to county and municipal authorities.*

Response: A copy of the written notice to county and municipal authorities and a list of officials notified are provided as **Attachment 15**. A copy of the written notice to the Office of Public Utility Counsel is provided as **Attachment 16**.

D. *Provide a copy of the notice that is to be published in newspapers of general circulation in the counties in which the facilities are to be constructed. Attach a list of the newspapers that will publish the notice for this application. After the notice is published, provide the publisher's affidavits and tear sheets.*

Response: Copies of the notice to be published in the *Houston Chronicle*, *Katy Times*, *Waller Times*, and *Navasota Examiner*, newspapers of general circulation in Grimes, Harris, and Waller Counties, are provided as **Attachment 17**. Publisher's affidavits and tear sheets will be provided after the notice is published and the affidavits are received.

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For a CREZ application, in addition to the requirements of P.U.C. PROC. R. 22.52 the applicant shall, not less than twenty-one (21) days before the filing of the application, submit to the Commission staff a “generic” copy of each type of alternative published and written notice for review. Staff’s comments, if any, regarding the alternative notices will be provided to the applicant not later than seven days after receipt by Staff of the alternative notices, Applicant may take into consideration any comments made by Commission staff before the notices are published or sent by mail.

Response: This provision is not applicable to the Project, because it is not a CREZ project.

26. Parks and Recreation Areas:

For each route, list all parks and recreational areas owned by a governmental body or an organized group, club, or church and located within 1,000 feet of the center line of the route. Provide a general description of each area and its distance from the center line. Identify the owner of the park or recreational area (public agency, church, club, etc.). List the sources used to identify the parks and recreational areas. Locate the listed sites on a routing map.

Response: Parks and recreation areas within 1,000 feet of the centerline of any alternative route were identified through federal, state, and local agency websites, county documents, published maps, and reconnaissance surveys. The length of parks or recreational areas crossed by the alternative routes ranges from none (0.0 miles) on 11 of the alternative routes, to 0.73 miles across the Paul D. Rushing Park, on Segment A, on Alternative Routes 12, 22, 23, 24, 25, and 26. A listing, general description, ownership, and approximate distance from the centerline for each of the alternative routes are presented in **Section 4.2** of the EA (**Attachment 1**), **Table 4-5**, and **Appendix D** to the EA, **Tables 5-7** through **5-38**, and the locations of these parks and recreation areas are shown on **Figure 5-1 (Sheets 1-5** in the Map Pockets) in the EA.

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27. Historical and Archeological Sites:

For each route, list all historical and archeological sites known to be within 1,000 feet of the center line of the route. Include a description of each site and its distance from the center line. List the sources (national, state or local commission or societies) used to identify the sites. Locate all historical sites on a routing map. For the protection of the sites, archeological sites need not be shown on maps.

Response: POWER conducted a literature review and records search at THC and at the Texas Archeological Research Laboratory at the University of Texas at Austin to identify known historical and archaeological sites located within 1,000 feet of any alternative route.

Based on this review, four archeological sites are crossed by the alternative routes. There are 67 known archaeological sites located within 1,000 feet of an alternative route ROW centerline. There are three NRHP-listed properties located within 1,000 feet of alternative route ROW centerlines. There is also one Historic Texas Cemetery (Ratliff Cemetery) located within 1,000 feet of an alternative route ROW centerline. These sites are listed and described with the approximate distance from the ROW centerline for each of the alternative routes in **Section 4.3** of the EA (**Attachment 1**), **Table 4-6**, and **Appendix D** of the EA, **Tables 5-7** through **5-38**, and the locations of the NRHP-listed properties and the Ratliff Cemetery are shown on **Figure 5-1 (Sheets 1-5** in the Map Pockets) in the EA. For the protection of the archaeological sites, they are not shown on the routing maps.

28. Coastal Management Program:

For each route, indicate whether the route is located, either in whole or in part, within the coastal management program boundary as defined in 31 T.A.C. §503.1. If any route is, either in whole or in part, within the coastal management program boundary, indicate whether any part of the route is seaward of the Coastal Facilities Designation Line as defined in 31 T.A.C. §19.2(a)(21). Using the designations in 31 T.A.C. §501.3(b), identify the type(s) of Coastal Natural Resource Area(s) impacted by any part of the route and/or facilities.

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Response: The Project as proposed in this Application is not located, either in whole or in part, within the coastal management program boundary as defined in 31 T.A.C. §503.1.

29. Environmental Impact:

Provide copies of any and all environmental impact studies and/or assessments of the project. If no formal study was conducted for this project, explain how the routing and construction of this project will impact the environment. List the sources used to identify the existence or absence of sensitive environmental areas. Locate any environmentally sensitive areas on a routing map. In some instances, the location of the environmentally sensitive areas or the location of protected or endangered species should not be included on maps to ensure preservation of the areas or species. Within seven days after filing the application for the project, provide a copy of each environmental impact study and/or assessment to the Texas Parks and Wildlife Department (TPWD) for its review at the address below. Include with this application a copy of the letter of transmittal with which the studies/assessments were or will be sent to the TPWD

*Wildlife Habitat Assessment Program
Wildlife Division
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744*

The applicant shall file an affidavit confirming that the letter of transmittal and studies/assessments were sent to TPWD.

Response: CenterPoint Energy contracted with POWER to assess the environmental impact of the Project. Power's environmental assessment of the Project is contained in the EA (**Attachment 1**). The EA includes environmental sources, routing maps with environmentally-sensitive areas identified, and information on protected and endangered species within or near the Project study area.

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CenterPoint Energy will provide a copy of the EA to TPWD within seven days after the Application is filed. A copy of the letter of transmittal to TPWD is provided as **Attachment 18** to this Application. An affidavit from Michael J. Pakeltis confirming that the letter of transmittal and a copy of the EA were sent to TPWD will be sent to the PUC.

30. Affidavit

Attach a sworn affidavit from a qualified individual authorized by the applicant to verify and affirm that, to the best of their knowledge, all information provided, statements made, and matters set forth in this application and attachments are true and correct.

Response: An affidavit from Michael J. Pakeltis is provided as **Attachment 19**.

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