

Control Number: 49737



Item Number: 199

Addendum StartPage: 0

SOAH DOCKET NO. 473-19-6862 PUC DOCKET NO. 49737

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APPLICATION OF SOUTHWESTERN	§	BEFORE THE STATE OFFICE
ELECTRIC POWER COMPANY FOR	§	
CERTIFICATE OF CONVENIENCE	§	OF
AND NECESSITY AUTHORIZATION	§	Or
AND RELATED RELIEF FOR THE	§	
ACQUISITION OF WIND	§	ADMINISTRATIVE HEARINGS
GENERATION FACILITIES	§	

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

DECEMBER 16, 2019

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ETEC-NTEC-002-52_Attachment_1.xlsx

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-1:

Please provide, in machine readable, executable format, all power flow models, associated input files and output files related to the interconnection analysis of all RFP respondents, including the Selected Wind Facilities, performed by the Company or any consultants retained by the Company.

Response No. 2-1:

The Company did not perform load flow studies or interconnection analysis of the RFP respondents for reliability impacts since new generator projects seeking interconnection to the Southwest Power Pool's (SPP's) transmission system are required to go through SPP's Generator Interconnection (GI) Study Process which is designed to perform such analyses. The GI process identifies the network upgrades necessary for reliable interconnection to the transmission system. For reference, links to the SPP DISIS study reports for all bidders is provided in response to ETEC/NTEC 2-20.

Prepared By: Anita A. Sharma Title: Engineer Staff

Sponsored By: Kamran Ali Title: Mng Dir Trans Planning

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-2:

Please provide, in machine readable, executable format, all power flow models, associated input files and output files related to the interconnection analysis of all RFP respondents, including the Selected Wind Facilities, performed by Southwest Power Pool or consultants retained by Southwest Power Pool.

Response No. 2-2:

See the company's response to ETEC/NTEC 2-20.

Prepared By: Anita A. Sharma Title: Engineer Staff

Sponsored By: Kamran Ali Title: Mng Dir Trans Planning

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-3:

Please provide all work papers associated with any transmission analysis, including, but not limited to, transfer capability studies, deliverability studies, site selection studies, transmission planning analysis, that were included in the SWEPCO Integrated Resource Plan filed with the Louisiana Public Service Commission.

Response No. 2-3:

As noted on Page 1 of the referenced SWEPCO Louisiana Integrated Resource Plan, the goal of the IRP process is to identify the size, type and timing of future resources. As such, transmission analyses linked to future resources for specific sites are not part of the IRP and thus do not exist. Transmission capability will be analyzed during the process of selecting specific sites for the future resource additions when the Company makes the decision to add a specific new resource.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

Sponsored By: John F. Torpey Title: Mng Dir Res Plnning&Op Anlysis

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-4:

Please provide all work papers associated with any transmission analysis, including, but not limited to, transfer capability studies, deliverability studies, site selection studies, transmission planning analysis, that were included in the SWEPCO Integrated Resource Plan filed with the Arkansas Public Service Commission.

Response No. 2-4:

See the Company's response to ETEC 2-3. That response also applies to the Arkansas IRP.

Prepared By: Jon R. Maclean

Title: Resource Planning Mgr

Prepared By: James F. Martin

Title: Regulatory Case Mgr

Sponsored By: John F. Torpey

Title: Mng Dir Res Plnning&Op Anlysis

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-5:

Please provide all work papers associated with any transmission analysis, including, but not limited to, transfer capability studies, deliverability studies, site selection studies, transmission planning analysis, that were included in the PSO Integrated Resource Plan filed with the Oklahoma Corporation Commission.

Response No. 2-5:

See the Company's response to ETEC 2-3. That response also applies to the PSO IRP.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

Sponsored By: John F. Torpey Title: Mng Dir Res Plnning&Op Anlysis

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-6:

With reference to SWEPCO's response to TIEC RFI 2-4 (confidential), please provide all documents—including without limitation communications, work papers, studies, and analyses—concerning the net benefits guarantee. Please describe this guarantee in greater detail. Please state whether and how this guarantee would apply to FERC wholesale customers.

Response No. 2-6:

The documents contained in the response to TIEC 2-4 were prepared long before this application was filed and contain limited reference to a net benefits guarantee. As indicated in the Company's application, such a guarantee is not being proposed in this proceeding. The Company continues to support the capital cost, PTC eligibility, and minimum production guarantees described in the errata direct testimony of Company witnesses Brice and the direct testimony of Company witnesses Smoak, because these are reasonable guarantees to provide in the context of this case.

Prepared By: Christopher N. Martel Title: Regulatory Consultant Sr Prepared By: Jonathan M. Griffin Title: Regulatory Consultant Staff

Prepared By: Lynn M. Ferry-Nelson Title: Dir Regulatory Svcs

Sponsored By: Thomas P. Brice Title: VP Regulatory & Finance

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-7:

For each of the Selected Wind Facilities, please provide the following information:

- a. The cost of interconnecting each Selected Wind Facility to the SPP transmission system, in total dollars and in \$/kW, and
- b. The cost of assigned network upgrade costs assigned to each Selected Wind Facility, in total dollars and in \$/kW.

Response No. 2-7:

a-b) Please see ETEC NTEC 2-7 Attachment 1 for SPP's estimates of the cost of the interconnection and transmission upgrades for the Selected Wind Facilities. The interconnection and transmission upgrade costs are embedded in the purchase price of the Selected Wind Facilities. The Company has not calculated the costs on a \$/kW basis.

Prepared By: Joseph A. Karrasch

Prepared By: Edward J. Locigno

Title: Dir Renewable Energy Devlpmnt

Title: Regulatory Analysis & Case Mgr

Sponsored By: Jay F. Godfrey Title: VP Energy Mktng & Renewables

Group

Sundance (GEN-2015-048)

Study	Facility	Upgrade	Upgrade Cost
DISIS-2015-002- 3	Cleo Corner - Cleo Plant Tap 138kV CKT 1	Replace terminal equipment to at least 1200 amps	\$61,890
DISIS-2015-002- 3	GEN-2015-048 Interconnection Costs	Interconnection Costs	\$2,968,000

Maverick (GEN-2016-118)

Study	Facility	Upgrade	Upgrade Cost
DISIS-2016-002	Maryville - Nodaway 161 kV	Rebuild the 5.36-mile-long Maryville to Nodaway 161 kV line from 556 ASCR to 954 ASCR	\$106,840
DISIS-2016-002	Hamburg - Northboro 69 kV	Uprate the 18-mile-long Hamburg to Northboro 69 kV line to 100 °C	\$63,009
DISIS-2016-002	Phelps - Rockport 69 kV	Uprate the 4.4-mile-long Phelps to Rockport 69 kV line to 100 °C	\$15,497
DISIS-2016-002	Bevier - Macon Lake 69 kV	Rebuild the 4.136-mile-long Bevier to Macon Lake 69 kV line for 161 kV with 795 ASCR, operate at 69 kV	\$105,852
DISIS-2016-002	Macon Lake - Axtell to Macon Tap 69 kV	Rebuild the 2.2-mile-long Macon Lake to Axtell to Macon Tap 69 kV	\$56,250
DISIS-2016-002	Neosho - Sweetwater 69 kV	Upgrade 9.3-mile section of Neosho to Sweetwater 69 kV line to 336 ASCR and operate at 100 °C	\$225,785
DISIS-2016-002	Dixie - Silver City 69 kV	Upgrade 0.45-mile section of Dixie to Silver City 69 kV line to 336 ASCR	\$7,130
DISIS-2016-002	Dover - Henessey 138kV CKT 1	Upgrade terminal Equipment OKGE to Upgrade 800A CT to 1200A CT	\$142,965
DISIS-2016-002	GEN-2016-118 Interconnection Costs	Interconnection Costs	\$6,500,000
DISIS-2016-002	Relays at OGE Hennsey Substation	Relay Upgrades	\$10,000

Traverse (GEN-2016-045 and GEN-2016-057)

Study	Facility	Upgrade	Upgrade Cost
DISIS-2016-001-1	GEN-2016-045 345kV Reactor	Pending EMTP Study	TBD
DISIS-2016-001-1	GEN-2016-045 Interconnection Costs	Interconnection Costs	\$15,103,955
DISIS-2016-001-1	GEN-2016-057 345kV Reactor	Pending EMTP Study	ТВО
DISIS-2016-001-1	GEN-2016-057 Interconnection Costs	Interconnection Costs	\$15,103,955

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-8:

Please provide the following information related to the information presented in Table 2 of Witness Brice's direct testimony.

- a. The total congestion cost component of each scenario,
- b. The congestion cost of each scenario by the individual Selected Wind Facility,
- c. The total losses cost component of each scenario, and
- d. The total losses cost of each scenario by the Selected Wind Facility.

Response No. 2-8:

See ETEC 2-8 Attachment 1 for the requested information.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

Sponsored By: John F. Torpey Title: Mng Dir Res Plnning&Op Anlysis

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-9:

From page 14, lines 7-8 of Witness Brice's direct testimony, please explain how adding the Selected Wind Facilities will allow the Company to better manage congestion risk if the congestion costs associated with each scenario only decrease the customer benefits of the Selected Wind Facilities?

Response No. 2-9:

Ownership enables the Company to directly respond to changing market conditions. It also would enable the Company to consider a gen-tie as a mitigation option against future congestion and curtailment risk, if necessary, although the Company has not proposed a gen-tie in this proceeding. Please see the errata direct testimony of Company witness Brice, page 15, lines 7-13. Also, refer to the direct testimony of Company witness Ali, page 10, lines 13-16.

Prepared By: Christopher N. Martel Title: Regulatory Consultant Sr Prepared By: Jonathan M. Griffin Title: Regulatory Consultant Staff

Prepared By: Lynn M. Ferry-Nelson Title: Dir Regulatory Svcs

Sponsored By: Thomas P. Brice Title: VP Regulatory & Finance

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-10:

From page 14, lines 18-23 of Witness Brice's direct testimony, if the addition of the proposed generation tie-line is the solution to relieve congestion in the future, please provide any studies or work papers that show analysis of other transmission alternatives that could provide congestion relief without the generation tie-line.

Response No. 2-10:

For purposes of the relative valuation of the wind bids in the RFP, other than a gen-tie that directly connects the wind RFP generators to the AEP West Load Zone in Tulsa, the Company has not performed an analysis of other transmission alternatives that could provide congestion relief in the future. However, as stated on p. 13, line 18 - p.14, line 2 in the direct testimony of Company Witness Kamran Ali, "any future construction of a gen-tie or other transmission upgrade(s) to mitigate congestion and curtailment risk would need to be supported by the economics at that time with the current state of the SPP transmission system". For the Selected Wind Facilities, the Company will continually monitor the cost of actual and forecasted congestion in the future to evaluate whether this congestion cost is more than the cost of constructing a generation-tie line or other transmission upgrade.

Prepared By: Adam J. Hickman Title: Dir Trans Bus Development

Prepared By: Anita A. Sharma Title: Engineer Staff

Sponsored By: Kamran Ali Title: Mng Dir Trans Planning

Sponsored by: Johannes P. Pfeifenberger Title: Principal, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-11:

Please provide all studies or work papers that evaluate the benefit-to-cost ratio of the addition of the generation tie-line versus the increased congestion associated with the Selected Wind Facilities.

Response No. 2-11:

Company witness Torpey prepared three cases in which a tie line was placed in service at the end of 2026 in order to mitigate congestion. See pages 10-12 of witness Torpey's Errata Exhibit JFT-3. These show the costs of congestion through 2026 and then the cost of the tie line thereafter. Workpapers for these cases were provided in the file "Torpey Errata benefits Model Final" provided in TIEC_1_19_Supplemental-Attachment_1_Torpey_Errata_Workpapers in the Company's supplemental response to TIEC 1-19. Row 828 of the Inputs worksheet of that file shows that had the tie-line not been placed in service congestion in the Company's P50 capacity factor base with carbon fundamentals case in 2027 would have been \$37M, or \$1M higher than the cost of the tie line. Congestion would then have grown to \$43.5M per year by 2029 and stayed at that level through 2051. The annual tie-line cost of service is forecasted to decline in all cases as it depreciates from \$36M per year to \$24M by 2051. Over that 2027-2051 period the tie line would be a total of \$360 million less costly than bearing the forecasted cost of congestion. This represents the tie-line savings associated with the case on page 10 of Errata Exhibit JFT-3.

The tie-line savings vs congestion associated with the P50 base no carbon fundamentals case (page 11 on Errata Exhibit JFT-3), which has a lower level of congestion cost, is projected to be \$130 million over the 2027-2051 time period. In the third case, which is at the P95 capacity factor and the base no carbon fundamentals (page 12 of Errata Exhibit JFT-3), the tie-line savings vs congestion over the 2027-2051 period is expected to be \$23 million.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

Sponsored By: John F. Torpey Title: Mng Dir Res Plnning&Op Anlysis

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-12:

From page 15, lines 3-10 of Witness Brice's direct testimony, please describe what changes the Company is expecting related to frequency regulation, ancillary services and congestion charges where the direct operational control would benefit the Company.

Response No. 2-12:

There are no specific changes the company is expecting at this time. However, SPP's market rules have and will continue to evolve over time. Such changes are difficult to anticipate and even more difficult to capture within the terms of a contractual agreement like a PPA. Ownership puts the company in a position where its response to such changes is only limited by the physical capability of the facilities rather than limited by the contractual terms and conditions of a PPA.

Prepared By: Charles R. Ross Title: Mng Dir RTO Policy & FERC Rec

Prepared By: Christopher N. Martel Title: Regulatory Consultant Sr Prepared By: Jonathan M. Griffin Title: Regulatory Consultant Staff

Prepared By: Lynn M. Ferry-Nelson Title: Dir Regulatory Svcs

Sponsored By: Thomas P. Brice Title: VP Regulatory & Finance

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-13:

From page 15, lines 3-10 of Witness Brice's direct testimony, please describe any positions the Company has taken in any SPP stakeholder meeting related to frequency regulation, ancillary services and congestion charges where the proposed position would improve the benefit the direct operational control of the Selected Wind Facilities would provide.

Response No. 2-13:

See the Company's response to ETEC Question 2-12.

Prepared By: Charles R. Ross Title: Mng Dir RTO Policy & FERC Rec

Prepared By: Christopher N. Martel Title: Regulatory Consultant Sr Prepared By: Jonathan M. Griffin Title: Regulatory Consultant Staff

Prepared By: Lynn M. Ferry-Nelson Title: Dir Regulatory Svcs

Sponsored By: Thomas P. Brice Title: VP Regulatory & Finance

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-14:

From pages 16 and 17 of Witness Brice's direct testimony, please describe who will bear the risk of the following guarantees and will keep the ratepayers whole:

- 1. Capital Cost Cap Guarantee
- 2. Production Tax Credit Eligibility Guarantee
- 3. Minimum Production Guarantee

Response No. 2-14:

The Company will bear the risk of both the Capital Cost Guarantee and Production Tax Credit Eligibility Guarantee pursuant to the language included in the Purchase and Sale Agreement, see Highly Sensitive Exhibit JFG-3. Although the Company does not anticipate the realization of the risks associated with the Minimum Production Guarantee, the Company and its shareholders will bear those risks. The Company has mitigated this risk through the commercial terms of the agreements with the developer. See also the Company's response to ETEC/NTEC 2-15.

Prepared By: Christopher N. Martel Title: Regulatory Consultant Sr Prepared By: Jonathan M. Griffin Title: Regulatory Consultant Staff

Prepared By: Lynn M. Ferry-Nelson Title: Dir Regulatory Svcs

Sponsored By: Thomas P. Brice Title: VP Regulatory & Finance

Sponsored By: Jay F. Godfrey Title: VP Energy Mktng & Renewables

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-15:

Please provide any and all contractual language or other means by which SWEPCO seeks to hedge the exposure to each of the following guarantees:

- 1. Capital Cost Cap Guarantee
- 2. Production Tax Credit Eligibility Guarantee
- 3. Minimum Production Guarantee

Response No. 2-15:

- 1. The Base Purchase Price (defined in Section 1.1 of each PSA provided in Substituted Highly Sensitive Exhibit JFG-3), subject to the Closing Date Prorations set forth in Section 2.6(e) of the PSA, cannot be increased without Buyer's consent. The PSAs have a fixed-price turnkey structure in which the purchase price is paid to the developer at completion of the project. This structure eliminates both cost overrun and completion risk.
- 2. If a Selected Wind Facility 1) does not reach substantial project completion by the Guaranteed Substantial Completion Date of December 15, 2020 for Sundance or December 15, 2021 for Traverse and Maverick and 2) is determined ineligible for the PTC, then the Company would be contractually entitled to terminate the Purchase and Sale Agreements (PSA), with no termination payment owed. See Article XII of the PSA provided in Substituted Highly Sensitive Exhibit JFG-3), and the testimonies of Company witnesses Multer and Godfrey.
- 3. Production risk is mitigated via several mechanisms including:
 - Wind energy resource analysis (Exhibit JFG-6), including forecast, from well-respected
 meteorologist (Simon Wind). Note that the results of Simon Wind's analysis was lower than
 developer's forecasted production.
 - A strong turbine parts warranty and power curve warranty from GE as set forth in Exhibit P-2 in Substituted Highly Sensitive Exhibit JFG-3. The Power Curve Guarantee and recourse is outlined in Article 9 of Exhibit P-2.
 - Operational success that is encouraged via the structure of the O&M Agreement in Exhibit L
 of each of the Purchase and Sale Agreements in Substituted Highly Sensitive Exhibit JFG-3.
 Exhibit L contains performance incentives and the ability to terminate the O&M Agreement
 in event of poor operational performance

Prepared By: Edward J. Locigno Title: Regulatory Analysis & Case Mgr

Prepared By: Christopher N. Martel Title: Regulatory Consultant Sr Prepared By: Jonathan M. Griffin Title: Regulatory Consultant Staff

Prepared By: Lynn M. Ferry-Nelson Title: Dir Regulatory Svcs

Sponsored By: Thomas P. Brice Title: VP Regulatory & Finance

Sponsored By: Jay F. Godfrey Title: VP Energy Mktng & Renewables

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-16:

From page 17, lines 8-9 of Witness Brice's direct testimony, please provide any analyses, work papers, documents or correspondence related to the Company's assessment of the curtailment risk in SPP as part of the development of the Minimum Production Guarantee.

Response No. 2-16:

There are no documents responsive to this request.

As stated in the direct testimony of Company witness Ali, the Company's deliverability analysis provided an assessment of relative risk and sensitivity to transmission congestion and curtailment under future system conditions for the wind generators that responded to the RFP. In that regard, the Company believed that it was not necessary to model curtailments, as in the event that increased congestion costs or curtailments become an issue, the Company could, if analysis at that time indicates that it would be economic, mitigate curtailment risks with a gen-tie or other transmission upgrades if approved by SPP.

Prepared By: Anita A. Sharma Title: Engineer Staff

Prepared By: Christopher N. Martel Title: Regulatory Consultant Sr Prepared By: Jonathan M. Griffin Title: Regulatory Consultant Staff

Prepared By: Lynn M. Ferry-Nelson Title: Dir Regulatory Svcs

Sponsored By: Thomas P. Brice Title: VP Regulatory & Finance
Sponsored By: Kamran Ali Title: Mng Dir Trans Planning

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-17:

From page 18, line 23 of Witness Brice's direct testimony, please provide the following related to the assessment of long-term deliverability:

- a. Power flow models, input files, and outputs in machine-readable, executable format for each Respondent.
- b. Correspondence related to the development of the assumptions and methodology used to conduct the long-term deliverability assessment.

Response No. 2-17:

- a. Please refer to ETEC 2-23 Highly Sensitive Attachment 2 provided in response to ETEC/NTEC 2-23.
- b. See ETEC 2-33 Attachment 2.

Prepared By: Matthew D. Vermilion Title: Dir Utilities
Prepared By: Anita A. Sharma Title: Engineer Staff

Sponsored By: Kamran Ali Title: Mng Dir Trans Planning

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-18:

From page 28 lines 5-8 of Witness Brice's direct testimony, please provide the terms and language from the respective purchase agreements that provide "performance assurance and risk mitigation to protect SWEPCO customers". Please also provide a cost estimate and expected benefit value for each of the referenced terms providing performance assurance and risk mitigation.

Response No. 2-18:

Please see ETEC NTEC 2-15. The Company has not completed such an analysis.

Prepared By: Joseph A. Karrasch

Title: Dir Renewable Energy Devlpmnt

Prepared By: Edward J. Locigno

Title: Regulatory Analysis & Case Mgr

Sponsored By: Jay F. Godfrey Title: VP Energy Mktng & Renewables

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-19:

Please provide all correspondence between SWEPCO or AEPSC staff and the consultant for the Louisiana Public Service Commission related to changes to the draft RFP.

Response No. 2-19:

Please see ETEC NTEC 2-19 Attachments 1 and 2. The LPSC Staff verbally discussed comments concerning the draft RFP, however, there were no formal written comments filed by the LPSC Staff in regards to the draft RFP.

Prepared By: Joseph A. Karrasch

Title: Dir Renewable Energy Devlpmnt

Prepared By: Edward J. Locigno

Title: Regulatory Analysis & Case Mgr

Sponsored By: Jay F. Godfrey Title: VP Energy Mktng & Renewables

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WILKINSON, CARMODY & GILLIAM

ATTORNEYS AND COUNSELORS AT LAW

ESTABLISHED 1895

400 TRAVIS STREET, SUITE 1700

SHREVEPORT, LOUISIANA 71101

TELEPHONE (318) 221-4196
TELECOPIER (318) 221-3705

JOHN D. WILKINSON (1867-1929) W SCOTT WILKINSON (1895-1985)

> ARTHUR R CARMODY, JR OF COUNSEL

October 30, 2018

Mr. Brandon Frey
Executive Secretary
Louisiana Public Service Commission
Galvez Building, 12th Floor
602 North Fifth Street
Baton Rouge, LA 70821-9145

Re:

SWEPCO – Request for Proposals ("RFP") for Wind Energy Resources in accordance with General Order R-26172, Subdocket C, the Market Based Mechanism ("MBM") Order

Dear Mr. Frey:

BOBBY'S GILLIAM

JONATHAN P. McCARTNEY

THOMAS A. PRESSLY IV

PATRICK T. WIGGINS

MARK E. GILLIAM

In our earlier correspondence of October 24, 2018, Southwestern Electric Power Company ("SWEPCO") filed its initial Notice of intent to conduct a Request for Proposals ("RFP") for the purchase of wind energy resources pursuant to General Order R-26172, Subdocket C, the Market Based Mechanism ("MBM") Order dated October 29, 2008. In that Notice, we advised that we were preparing a detailed Informational Filing, providing the required information in the form of a draft RFP with supporting documents.

We understand that SWEPCO's request for the waiver of the 30 day notice period will be addressed at the next Commission meeting, and that the Informational Filing will then be docketed appropriately. The attached draft RFP solicitation document with appendixes is being submitted to provide Staff with the required information, including: a summary of the type of wind resources needed, a draft term sheet, a proposed schedule, a draft confidentiality agreement, a description of the methods and criteria for evaluation, description of preferences regarding transmission arrangements and deliverability, and other supporting documentation, all of which are enclosed in accordance with the MBM Order.

SWEPCO plans to issue an RFP to seek wind energy resources in an amount to be determined in accordance with SWEPCO's pending Integrated Resource Plan ("IRP"). There is

SOAH Docket No. 473-19-6862 PUC Docket No. 49737 ETEC/NTEC's 2nd, Q. # 2-19 Attachment 1 Page 2 of 47

WILKINSON, CARMODY & GILLIAM

a limited period of time to evaluate and acquire certain new wind resources so as to secure available Production Tax Credits ("PTCs") for the benefit of Louisiana ratepayers. The value of the PTC is 80% for wind projects that have met the IRS safe harbor requirements by the end of 2017 and are placed in service by December 31, 2021. Accordingly, SWEPCO is seeking projects which can be placed into service by the end of 2021 and qualify for at least 80% of the PTC. In order to meet these deadlines, SWEPCO plans to issue an RFP in January 2019. SWEPCO will not submit self-build bids into the RFP and no affiliates will be permitted to participate in the RFP.

While this draft RFP and supporting documents are being provided more than 60 days prior to the proposed issuance of the RFP; the MBM Order recognizes the Commission's broad authority to grant modifications to the MBM process, particularly with respect to renewable resources. SWEPCO is submitting this filing while reserving rights and seeking any and all modifications as necessary to timely proceed with its RFP.

Please return a file stamped copy of this letter in the self-addressed stamped envelope enclosed.

SWEPCO appreciates the cooperation and efforts of Staff and will be pleased to discuss and answer any questions.

With best regards, I am

Yours very truly,

WILKINSON, CARMODY & GILLIAM

By:

Bobby S. Gilliam Jonathan P. McCartney

BSG/emb Enclosure(s)

CC: Kathryn Bowman



American Electric Power Service Corporation as agent for

Southwestern Electric Power Company

Request for Proposals for Wind Energy Resources

RFP Issue Date: January 7, 2019

RFP Proposals Due: March 1, 2019

RFP Web Address: www.swepco.com/rfp

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Proposal Content Check Sheet......Appendix G

DRAFT 2019 SWEPCO Wind Energy Resources RFP



1. Introduction

American Electric Power Service Corporation ("AEPSC") and Southwestern Electric Power Company ("SWEPCO" or the "Company") are subsidiaries of American Electric Power Company, Inc. ("AEP"). AEPSC is administering this Request for Proposals ("RFP") on behalf of SWEPCO who is seeking competitively priced wind energy resources solely on a turnkey basis through its acquisition of the ownership interests in one or more wind projects having a 100 MW minimum nameplate capacity that are either currently in commercial operation or that will achieve commercial operation by December 15, 2021 (each a "Project" and collectively the ("Projects"), all as further described in this RFP. Affiliates of the Company will not participate as Bidders in this RFP.

Contemporaneous with this RFP, AEPSC is administering a Request for Proposals on behalf of Public Service Company of Oklahoma ("<u>PSO</u>") (such RFP, the "<u>PSO RFP</u>") who is seeking the same wind energy resources in the same geographical area as SWEPCO in this RFP through the acquisition of one or more wind projects. SWEPCO and PSO are affiliates and anticipate that one or more of the wind projects for which they are seeking proposals through their respective RFPs may be jointly owned by them as further described in Section 2.6.

A Bidder that submits a Proposal in response to this RFP will also be required to submit an identical proposal in response to the PSO RFP.

AEP is one of the largest electric utilities in the United States, delivering electricity and custom energy solutions to nearly 5.4 million regulated retail customers in 11 states. AEP owns the nation's largest electricity transmission system, a more than 40,000-mile network that includes more 765-kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined. AEP also operates 224,000 miles of distribution lines. AEP ranks among the nation's largest generators of electricity, owning approximately 26,000 megawatts of generating capacity in the U.S. AEP also supplies approximately 4,300 megawatts of renewable energy to customers. AEP's utility units operate as AEP Ohio, AEP Texas, Appalachian Power (in Virginia and West Virginia), AEP Appalachian Power (in Tennessee), Indiana Michigan Power, Kentucky Power, PSO and SWEPCO (in Arkansas, Louisiana and east Texas). AEP's headquarters is in Columbus, Ohio. More information about AEP can be accessed by visiting www.aep.com.

SWEPCO serves 535,000 customers in northwestern and central Louisiana, western Arkansas, East Texas and the panhandle of North Texas. Its headquarters is in Shreveport, with regulatory and external affairs offices in Shreveport and Baton Rouge, Louisiana, Little Rock, Arkansas, and Austin, Texas.

SWEPCO has 5,240 MW of generating capacity and has executed long-term renewable energy purchase agreements ("<u>REPA</u>") with wind generation resources totaling 469 MW. In addition, SWEPCO has over 4,000 miles of transmission and 25,000 miles of distribution lines. Additional information regarding SWEPCo can be accessed by visiting www.SWEPCO.com.

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2. RFP Overview

- 2.1. Additional Wind Resources. As identified by the results of the Company's most recent Integrated Resource Plan which was filed in December 2018 with the Arkansas Public Service Commission in Case No. 07-011-U and its draft Integrated Resource Plan filed with the Louisiana Public Service Commission in Case # I-34715, additional wind resources continue to be determined by the Company to be a selected economic resource for addition to its generation portfolio.
- 2.2. Project Acquisition and Ownership. SWEPCO is only seeking Projects on a turnkey basis in which it individually, or together with PSO, will acquire all of the equity interests in the project company whose assets are comprised solely of the Project. Proposals that do not meet this criteria, including proposals for renewable energy power purchase agreements, will not be considered by the Company.
- 2.3. Project Location. The Company is seeking Projects that are physically located in, and interconnected to, the SPP in Arkansas, Louisiana, Texas or Oklahoma and (a) that are not currently experiencing, or anticipated by the Company to experience, significant congestion or deliverability constraints which are likely to result in adverse Project economics and (b) which balance (i) Project performance and (ii) deliverability to the AEP West load zone in the Tulsa area via a potential generation-tie line that may be constructed by the Company in the future to avoid or alleviate anticipated transmission congestion, if necessary.
- 2.4. <u>PTC Value</u>. The Company is seeking Projects that are either in service or that will be placed in service by December 15, 2021 and which will qualify for at least 80% of the federal Production Tax Credit ("<u>PTC</u>").
- 2.5. Timing. The time period between the receipt of Proposals and the time required for the Company's evaluation, due diligence, negotiation and the execution of definitive agreements is anticipated to be five months (see Section 6.1). The Company anticipates filing for regulatory approval in each of its operating jurisdictions (Louisiana, Arkansas and Texas) in Q3-2019 and receiving regulatory approvals by Q3-2020. Due to these timing considerations and the deadline for PTC qualification, only Proposals conforming to the requirements of this RFP will be accepted by the Company for evaluation.
- 2.6. Co-Owned Projects. As described in the Introduction, SWEPCO and PSO are conducting contemporaneous RFPs for the same wind resources in the same geographic area. A Bidder that submits a Proposal in response to this RFP is required to submit an identical proposal in response to the PSO RFP. The PSO RFP contains a reciprocal proposal submission requirement for the SWEPCO RFP. SWEPCO and PSO anticipate selecting the same Projects through their respective

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RFP processes and jointly acquiring the selected Projects if they obtain their respective state regulatory approvals for the selected projects. However, SWEPCO reserves the right to proceed with any Project if it does not receive all of its state regulatory approvals as described in Section 2.8 or if PSO does not receive state regulatory approval.

- 2.7. Wind Turbines (New Technology). The Company anticipates that Bidders of new Projects will collaborate with the three major wind turbine suppliers (GE, Vestas and Siemens-Gamesa) to bring new wind turbine project solutions (higher output, improved technology, lower pricing and lower operating and maintenance expenses) that offer cost advantages over their wind projects and which are in commercial operation by December 15, 2021 (the "Commercial Operation Deadline").
- 2.8. Regulatory Approvals. The Company's decisions regarding the results of this RFP will be subject to its receipt of regulatory approvals from the Arkansas Public Service Commission, the Louisiana Public Service Commission and the Public Utility Commission of Texas and the Federal Energy Regulatory Commission. Definitive agreements between the Company and Bidders for selected Projects will be conditioned upon (a) the Company receiving the regulatory approvals described in the preceding sentence that are in form and substance satisfactory to the Company in its sole discretion and (b) PSO receiving its regulatory approvals for the same projects.
- 2.9. Notice to Proceed. Upon obtaining regulatory approvals for the Projects selected by the Company as described in Section 2.7, the Company would issue a notice to proceed ("NTP") for the Bidders to proceed with the construction of selected Projects that are not already in commercial operation. The PSA Term Sheet (Appendix D) contains additional information regarding the conditions and timing for NTP issuance. The Company may issue NTP for selected Projects that it prefers over other selected Projects if some, but not all, of its or PSO's regulatory approvals are received.
- 2.10. Reservation of Rights. The Company reserves the right, without qualification, to select or reject any or all Proposals and to waive any formality, technicality, requirement, or irregularity in the Proposals. In addition, the Company reserves the right to utilize a Bidder's completed Appendices and any supplemental information submitted by the Bidder in any its regulatory filings.
- 2.11. Non-Binding. This RFP is not a commitment by the Company to acquire any Project and it does not bind the Company or its affiliates in any manner. The Company in its sole discretion will determine which Bidders, if any, it wishes to engage in negotiations with that may lead to definitive agreements for the acquisition of a selected Project.

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2.12. RFP Questions. All questions regarding this RFP should be emailed to:

SWEPCOWindRFP2019@aep.com

3. Project Description and Requirements

- 3.1. <u>Completed Project</u>. Each Project must be a complete, commercially operable, integrated wind-powered electric generating plant, including all facilities that are necessary to generate and deliver energy into SPP by the Commercial Operation Deadline.
- 3.2. <u>Project Location</u>. All Projects must be physically located in, and interconnected to, the SPP in Arkansas, Louisiana, Texas or Oklahoma.
- 3.3. Minimum Project Size. Each Project must have a minimum nameplate rating of 100 MW.
- 3.4. <u>Interconnection</u>. Each Project must be interconnected to the SPP with the demonstrated ability to achieve commercial operation of the Project by the Commercial Operation Deadline.
- 3.5. Existing Projects. Bidders may submit Proposals for wind projects that either are already in service or that are an expansion of an existing Project provided that such expansion has separate metering and a metering protocol that is acceptable to the Company.
- 3.6. <u>PTC Qualification</u>. Each Project must qualify for at least 80% of the PTC in accordance with Section 45 of the Internal Revenue Code of 1986, as amended.
- 3.7. Wind Resource Analysis/Study. Each Project must have a robust wind resource analysis/study prepared by an independent consultant which shows the expected energy output from the Project utilizing the turbines that will be used for the Project. Such analysis should include P50, P75, P90, P95 and P99 output with 1-year, 5-year, 10-year, 20-year and 30-year estimates. During the Company's evaluation process, Bidders will be required to provide additional site information including raw meteorological data to the Company for use by the Company's independent consultant.
- 3.8. <u>AEP Wind Generation Facility Standards</u>. Each Project must satisfy the AEP Wind Generation Facility Standards (see Appendix E).
- 3.9. AEP Transmission System Connection Requirements for New Facilities and Existing Facilities. Project substation and interconnection facilities must conform to the AEP Transmission System Connection Requirements for New Facilities and Existing Facilities (Appendix E).

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4. Bid Price and Structure

- 4.1. Proposal pricing must be for the Company's acquisition of a turnkey Project that is complete, commercially operable, integrated wind-powered electric generating plant designed for a minimum of a 30-year life; including, but not limited to, wind turbine generators, balance of plant equipment, operations and maintenance ("O&M") facilities, SCADA and all facilities required to deliver energy into SPP. In addition, pricing must include costs associated with ALTA/title insurance and construction financing.
- 4.2. In addition to Section 4.1, Proposal pricing must include the costs associated with the following:
 - 4.2.1. a minimum of two-year comprehensive warranty from a creditworthy entity for all non-turbine balance of plant equipment including design, labor and materials, and fitness for purpose;
 - 4.2.2. post-commercial operation power curve testing activities and associated costs, including the installation and removal of any temporary test met towers; and
 - 4.2.3. transmission and interconnection facilities required for the Project, including system or network upgrades, as required by SPP for the Project to interconnect to SPP.
- 4.3. Projects should be proposed at both (a) maximum nameplate rating and (b) if possible, in 50-100 MW increments above the 100 MW minimum and up to maximum nameplate rating.



5. Interconnection/Delivery Point

- 5.1. The Proposal must include identification of the Project's proposed transmission interconnection point(s) within SPP, including any studies, applications, line extensions and system upgrades identified as part of the interconnection approval process.
- 5.2. The Bidder is responsible during Project start-up period for following the established SPP, NERC and transmission operator policies and procedures that are in effect regarding facility interconnection and operation associated with a utility's transmission system.
- 5.3. Each Project must have a completed SPP System Impact Study with the demonstrated ability to achieve commercial operation of any interconnection for the full output of the Project by the Commercial Operation Deadline. An electronic copy of all completed SPP studies must be included with Bidder's Proposal.

6. RFP Schedule and Proposal Submission

6.1. The following schedule and deadlines apply to this RFP. The Company reserves the right to revise this schedule at any time in its sole discretion.

RFP Timeline		
Draft RFP Filed with LPSC	October 30, 2018	
Bidder's Technical Conference	December 5, 2018*	
RFP Issued	January 7, 2019*	
Notice of Intent	January 30, 2019	
Proposal Due Date	March 1, 2019	
Short-List and Negotiation	March – July, 2019	
Execute Final Contract(s)	July 30, 2019	
File for Regulatory Approvals	August 1, 2019	
Required Regulatory Approvals	No later than August 1, 2020	
Notice to Proceed	No later than August 15, 2020	
Commercial Operation Date	No later than December 15, 2021	

^{*} Subject to review/input from state regulatory commissions

6.2. By the Notice of Intent date, Bidders should send a written notice to SWEPCO via email at SWEPCOWindRFP2019@aep.com indicating their intention to submit a Proposal which shall describe (a) the Project size and location and (b) the SPP interconnection location and the SPP queue unique identifier for the interconnection request.

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- 6.3. Proposals must be complete in all material respects and be received no later than 4:00 p.m. EST on the Proposal Due Date at AEPSC's Columbus, Ohio location as defined in Section 7 of this RFP.
- 6.4. Proposals should include an electronic copy of all SPP Studies completed to date for the Project, including a completed SPP System Impact Study or expectation of same.
- 6.5. Bidders will be required to execute a Confidentiality Agreement prior to receiving the following form documents:
 - Appendix E: AEP Wind Generation Facility Standards
 - Appendix G: O&M Services Scope of Work
- 6.6. Bidders should request the Confidentiality Agreement from SWEPCO via email at SWEPCOWindRFP2019@aep.com
- 6.7. The Company reserves the right to solicit additional information or Proposals and the right to request additional information from Bidders during the Proposal evaluation process.
- 6.8. Proposals and bid pricing must be valid for at least 180 days after the Proposal Due Date at which time Proposals shall expire unless the Bidder has been notified that its Proposal has been included in Final Project Selection.
- 6.9. A Proposal should be as comprehensive as possible to enable the Company to make a definitive and final evaluation of the Proposal's benefits to its customers without further contact with the Bidder.

7. Proposal Submittal

Two hard copies and two electronic thumb drive copies of the Bidder's Proposal shall be submitted by the Proposal Due Date to:

American Electric Power Service Corporation Attn: SWEPCO Wind Energy 2019 RFP Manager 1 Riverside Plaza (14th Floor) Columbus, OH 43215

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8. Proposal Content

- 8.1. New Build Projects. Bidders must submit the following information for Proposals for new Projects or expansion of existing projects:
 - 8.1.1. A completed Appendix G (Proposal Content Check Sheet).
 - 8.1.2. An executive summary of the Project's characteristics and timeline, including any unique aspects and benefits.
 - 8.1.3. Summary documentation demonstrating the Project will qualify for at least 80% of the PTCs under Section 45 of the Internal Revenue Code of 1986, as amended.
 - 8.1.4. A completed Appendix A (Wind Project Summary).
 - 8.1.5. Detailed information regarding the turbine manufacturer's warranty offering including parts and labor coverage, warranted turbine availability levels, power curve warranty, liquidated damages and other key terms.
 - 8.1.6. The identity of all persons and entities that have a direct or indirect ownership interest in the Project.
 - 8.1.7. A completed Appendix B (Bidder's Credit-Related Information).
 - 8.1.8. A completed Appendix C (Bidder Profile). Bidders shall provide a general description of its (including its affiliates) background and experience in the development and construction of at least three large-scale wind projects similar to the Projects sought by the Company in this RFP. In additional, Bidders should provide at least three third-party references for such projects.
 - 8.1.9. Any exceptions to the terms and conditions contained in the PSA Term Sheet (Appendix D).
 - 8.1.10. Any exceptions to the AEP Wind Generation Facility Standard (Appendix E).
 - 8.1.11. Expected land lease payments and property tax costs over a 30-year period.
 - 8.1.12. OPTIONAL: Bidders may provide a separate O&M services proposal for a full 10-year warranty from the Project's turbine manufacturer. The scope of work for the O&M services proposal will be provided to Bidders after a Confidentiality Agreement has been executed pursuant to Section 6.5.

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- 8.2. Existing Projects: In addition to the information required in Section 8.1, Bidders must submit the following information for Proposals for existing Projects:
 - 8.2.1. Audited financial statements (two years, last quarterly-unaudited) and FERC Form 1 if applicable.
 - 8.2.2. Documentation supporting PTC qualification and remaining PTC life including any supporting documentation.
 - 8.2.3. Historical production data (annual MWh) from initial commercial operation date through July 1, 2018.
 - 8.2.4. Hourly production (MWh) for the period January 1, 2016 through July 1, 2018.
 - 8.2.5. Historical operations and maintenance expenses for the period from commercial operation through December 31, 2017.
 - 8.2.6. Forecasted operations and maintenance costs for the period from January 1, 2019 through the end of the expected life of the asset.
 - 8.2.7. A summary of all outages for the period of January 1, 2013 through January 1, 2018, including the reasons for such outages.
 - 8.2.8. A summary of all turbine and balance of plant warranty issues experienced to date.

9. RFP Proposal Evaluation

The evaluation process will be conducted in three sequential phases:

Section 9.1 Eligibility and Threshold Requirements

Section 9.2 Detailed Analysis

Section 9.3 Final Project Selection

- 9.1. <u>Eligibility and Threshold Requirements</u>. A preliminary screening of each Proposal will be undertaken by the Company to determine if the Proposal is eligible to proceed to the Detailed Analysis phase. Bidders and their associated Proposals Projects must satisfy the following Eligibility and Threshold Requirements:
 - 9.1.1. the Project must be physically located in, and interconnected to the SPP, in Arkansas, Louisiana, Texas or Oklahoma;
 - 9.1.2. the Bidder must have submitted an identical proposal in the PSO RFP;
 - 9.1.3. the Project will qualify for at least 80% of the PTC;

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- 9.1.4. the Project must be interconnected to SPP and have a completed System Impact Study which remains active in the SPP queue process with the demonstrated ability to achieve commercial operation of any interconnection for the full output of the Project by the Commercial Operation Deadline;
- 9.1.5. the turbines for the Project must be manufactured by GE, Vestas or Siemens-Gamesa;
- 9.1.6. the Bidder must have completed the development, construction, financing, and commissioning of a similar-sized wind project in the United States or Canada and/or otherwise have demonstrated appropriate experience;
- 9.1.7. the Project's minimum name-plate rating is 100 MW;
- 9.1.8. the Bidder has substantial Project site control;
- 9.1.9. the Project must be capable of achieving commercial operation by the Commercial Operation Deadline;
- 9.1.10. the Bidder must include an independent wind report as required in Section 3.7;
- 9.1.11. the Project must not be located in an area in which deliverability is determined by the Company to be either severely limited or non-deliverable to the AEP West load zone (Tulsa area), based upon (a) its analysis of various groupings of Proposals of dependence of the Project on existing transmission lines as determined through a current distribution factor method ("DFAX")¹ analysis performed by the Company, and (b) a First Contingency Incremental Transfer Capability ("FCITC")² analysis performed by the Company on each area;
- 9.1.12. the Project, and a potential generation-tie line that may be constructed by the Company in the future to avoid or alleviate anticipated transmission congestion, if necessary, must be constructible taking into account (a) the impact on wildlife, the environment and identified cultural resources, (b) its location on or proximity to tribal or government lands and (c) other factors that would materially impact Project constructability; and

DFAX analysis is an analysis of each generator to determine individual responses to transmission lines across SPP Based on the response factors, generators will be aggregated into generator clusters.

A FCITC analysis is an analysis on the generator clusters which Bidders plan to interconnect which will measure the amount which could be transferred from the Bidder's interconnection area to the AEP West load zone (Tulsa area) while ensuring that the system is operated respecting operating limits that will not be exceeded in the event of certain outages (or contingency).



9.1.13. the Bidder's exceptions to the PSA Term Sheet, considered individually or in the aggregate, are acceptable to the Company.

The Company reserves the right to reject any Proposal which proceeded to the Detailed Analysis phase but which is subsequently determined by the Company not to satisfy the Eligibility and Threshold Requirements.

- 9.2. <u>Detailed Analysis</u>. Proposals meeting the Eligibility and Threshold Requirements in Section 9.1 will move to the Detailed Analysis phase which is comprised of the Economic Analysis and the Non-Price Factor Analysis set forth below.
 - 9.2.1. <u>Economic Analysis</u>. The Economic Analysis will result in a Levelized Net Revenue Requirement which will be weighted 90% by the Company. The Levelized Net Revenue Requirement will be calculated as follows:
 - 9.2.1.1. The Company will first determine a Levelized Adjusted Cost of Energy ("LACOE") by adding together (a) the Levelized Cost of Energy ("LCOE") associated with each Proposal as calculated by the Company and (b) the value of Transmission Congestion as determined by the Company's Transmission Congestion Screening Analysis. The Transmission Congestion Screening Analysis will evaluate (a) value of transmission congestion into the 345 kV system in the AEP West load zone (Tulsa area) using PROMOD and (b) the risk-adjusted cost effectiveness of various Project groupings including the cost of mitigating or eliminating potential future congestion of the various Projects.
 - 9.2.1.2. The Company will then calculate the Levelized Net Revenue Requirement by taking the difference between (a) the levelized expected SPP Revenues for the Proposal's energy in the SPP market and (b) the LACOE for each Proposal.
 - 9.2.2. <u>Non-Price Factor Analysis</u>. The Non-Price Factor Analysis will be weighted 10% by the Company and be comprised of the following non-price factors:
 - 9.2.2.1. the Project's, including associated transmission and interconnection facilities, impact on wildlife, the environment and identified cultural resources;
 - 9.2.2.2. the Project's, including associated transmission and interconnection facilities, location on or proximity to tribal or government lands;
 - 9.2.2.3. the Bidder's exceptions to the AEP Wind Generation Facility Standards (Appendix E);

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- 9.2.2.4. the Bidder's exceptions to the PSA Term Sheet (Appendix D);
- 9.2.2.5. <u>if applicable</u>, the scope and terms of the O&M services proposal described in Section 8.1.12;
- 9.2.2.6. the development status of the Project including, but not limited to, permitting, transmission and interconnection facilities;
- 9.2.2.7. the operating history of other similar wind generation facilities that were developed and constructed by the Bidder or its affiliates; and
- 9.2.2.8. the credentials of the Bidder's independent consultant who prepared the Wind Resource Analysis/Study for the Project as described in Section 3.7.
- 9.3. <u>Final Project Selection</u>. Based upon the results of the Economic Analysis and the Non-Price Factor Analysis described above, the Company will determine which Projects will be included in the Final Project Selection. The Company will notify Bidders whose Proposals are included in the Final Project Selection and commence the negotiation of definitive agreements.

10. Confidentiality

The Company will take reasonable precautions and use reasonable efforts to maintain the confidentiality of the Proposals. Bidders should clearly identify each page of information considered to be confidential or proprietary. The Company reserves the right to release any Proposals to agents or consultants for purposes of Proposal evaluation. The Company's disclosure policies and standards will be binding upon its agents and consultants. Regardless of such confidentiality, all such information may be subject to review by the appropriate state authority or any other governmental authority or judicial body with jurisdiction relating to these matters and may be subject to legal discovery. Under such circumstances, the Company will make all reasonable efforts to protect Bidder's confidential information.

11. Bidder's Responsibilities

- 11.1. It is the Bidder's responsibility to comply with the deadlines specified in this RFP.
- 11.2. Bidders are responsible for the timely completion of the Project by the Commercial Operation Deadline and are required to submit proof of their financial and technical wherewithal to ensure the successful completion of the Project.

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11.3. Bidders are responsible for costs incurred by them in the preparation of their Proposal.

12. Reservation of Rights

A Proposal will be deemed accepted only when the Company and the successful Bidder have executed definitive agreements for the Company's acquisition of the Project. The Company has no obligation to accept any Proposal, whether or not the stated price in such Proposal is the lowest price offered, and the Company may reject any Proposal in its sole discretion and without any obligation to disclose the reason or reasons for rejection.

BY PARTICIPATING IN THE RFP PROCESS, EACH BIDDER AGREES THAT ANY AND ALL INFORMATION FURNISHED BY OR ON BEHALF OF THE COMPANY IN CONNECTION WITH THE RFP IS PROVIDED WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, AS TO THE USEFULNESS, ACCURACY, OR COMPLETENESS OF SUCH INFORMATION, AND NEITHER THE COMPANY NOR ITS AFFILIATES NOR ANY OF THEIR PERSONNEL OR REPRESENTATIVES SHALL HAVE ANY LIABILITY TO ANY BIDDER OR ITS PERSONNEL OR REPRESENTATIVES RELATING TO OR ARISING FROM THE USE OF OR RELIANCE UPON ANY SUCH INFORMATION OR ANY ERRORS OR OMISSIONS THEREIN.

The Company reserves the right to modify or withdraw this RFP, to negotiate with any and all qualified Bidders to resolve any and all technical or contractual issues, or to reject any or all Proposals and to terminate negotiations with any Bidder at any time in its sole discretion. The Company reserves the right, at any time and from time to time, without prior notice and without specifying any reason and, in its sole discretion, to (a) cancel, modify or withdraw this RFP, reject any and all Proposals, and terminate negotiations at any time during the RFP process; (b) discuss with a Bidder and its advisors the terms of any Proposal and obtain clarification from the Bidder and its advisors concerning the Proposal; (c) consider all Proposals to be the property of the Company, subject to the provisions of this RFP relating to confidentiality and any confidentiality agreement executed in connection with this RFP, and destroy or archive any information or materials developed by or submitted to the Company in this RFP; (d) request from a Bidder information that is not explicitly detailed in this RFP, but which may be useful for evaluation of that Bidder's Proposal; (e) determine which Proposals to accept, favor, pursue or reject; (f) reject any Proposals that are not complete or contain irregularities, or waive irregularities in any Proposal that is submitted; (g) accept Proposals that do not provide the lowest evaluated cost; (h) determine which Bidders are allowed to participate in the RFP, including disqualifying a Bidder due to a change in the qualifications of the Bidder or in the event that the Company determines that the Bidder's participation in the RFP has failed to conform to the requirements of the RFP; (i) conduct negotiations with any or all Bidders or other persons or with no Bidders or other persons; and (j) execute one or more definitive agreements with any Bidder.

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13. Contacts

All correspondence and questions regarding this RFP should be directed to:

SWEPCOWindRFP2019@aep.com

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	mpany Information	
Bidder (Company):	-	
Contact Name (Title):		
Address:		
City:	State: Zip	Code:
Work Phone:	Cell Phone:	
Email Address:		
Is the Proposal being submitted through a part so, please identify all partners, joint ventures,		
	al Project Information	
Project Name:		
	inty,[]	
Percentage of Federal Production Tax	Credit that the Project will quali	fy for: %
Source of wind energy forecast:		
SPP Queue #:	SPP Study Status:	
PSO	RFP Participation	
Bidder confirms it has (or plans to) sul into PSO RFP	bmitted same proposal and pricing	ng (Y/N):
Interconne	ection and Point of Delivery	,
SPP Queue #:	Substation Name / Vo	ltage:
System Impact Study Complete (Y/N):	System Impact Study	Report Date:
Feasibility Study Complete (Y/N): Feasibility Study Repo		ort Date:
Point of Interconnection with:		
SPP Interconnection Status (describe):		· · · ·

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Proposal Bid Pricing

Size, MW	Expected COD by	Turbine Manufacturer	Bid Price (\$)
	12/15/2021		

Turbine Manufacturer Options¹

Turbine Manufacturer	GE	Siemens/Gamesa	Vestas
Nameplate (MW)			
# of Turbines			
Model #			
Expected Capacity Factor (%)			
Expected Annual Energy (MWh)			
Year 1 Capacity Factor (%) ²			
Year 1 Expected Annual Energy ²			

Note 1: Bidder is required to identify the Turbine Manufacturer and associated data above for their bid. The additional columns are available IF multiple turbine manufacturers are available.

Note 2: Year 1 production data is required to account for potential lower Year 1 production due to routine maintenance associated with the break-in period.

Proposal Bid Pricing

Size, MW	Expected COD by	Turbine Manufacturer	Bid Price (\$
	12/15/2021		
	12/15/2021		

Note 1: Optional size(s) provided <u>cannot</u> be contingent on Bidder selling the remaining portion of the Project to another party via a sale of a portion of the LLC or a power purchase agreement.

The table below shall be replicated for each size option listed above.

Turbine Manufacturer Options¹

Turbine Manufacturer	GE	Siemens/Gamesa	Vestas
Nameplate (MW)			
# of Turbines			
Model #			
Expected Capacity Factor (%)			
Expected Annual Energy (MWh)			
Year 1 Capacity Factor (%) ²			
Year 1 Expected Annual Energy ²			

Note 1: Bidder is required to identify the Turbine Manufacturer and associated data above for their bid.

The additional columns are available IF multiple turbine manufacturers are available.

Note 2: Year I production data is required to account for potential lower Year I production due to routine maintenance associated with the break-in period.

Wind Turbine Selection & Federal Production Tax Credit

Wind Turbine Generator (WTG) Manufacturer:

Has final selection been made (Y/N)? Have WTGs been secured / purchased (Y/N)?

If final WTG selection has not been made, please provide the following:

- Attach a description of the selection process and schedule.
- List the candidate manufacturers, models, sizes (MW) and the costs of each option.
- Attach an electronic copy of the 3rd party wind report of each option being considered.

Federal PTC

Percentage of Federal Production Tax Credit that the Project will qualify for: %

Describe how the project will qualify for the percentage of the Federal PTC noted above:

Wind Data

- 1. Please attach the independent wind energy report.
- 2. If not detailed in above wind energy report, please describe the amount of historical wind data available (# of met towers, map, commissioning and service records.
- 3. Proposal must provide the source and basis of the wind speed data used in the development of energy projections for the project. Explain all assumptions for wake losses, line losses, etc. and the location where the data was measured.
- 4. Proposals must provide the wind turbine power curve adjusted for the site's specific air density.
- 5. Provide a description of the system intended to provide real-time telemetry data.
- 6. Attach an 8760 calendar year hourly energy forecast, net of all losses (See attached Excel spreadsheet (*Energy Input Sheet*).
- 7. Bidders shall provide a summary of representative wind data with measurement height referenced and any extrapolations used to estimate the wind speeds at the proposed hub height. (This item shall be provided in the electronic (CD, flash drive, etc.) version of the Proposal only.)

Independent Consultant	Information	(please attach	resume to	Proposal))
~ ~					

Name:

Address:

Email:

Contact Number:

Site Information / Permits

Site Legal Description:			
Address:			
City:	State: Zip Code:		
County	Longitude:	Latitude:	
Site Control (lease, own, site purchase	pending, etc.):		
Site Acres:			
Is there potential for expansion (Y / N): If Yes; acres available:			

Preliminary Site Questions ¹	(Y/N)
Has the site been assessed for any environmental contamination? Describe any known environmental issues. If necessary, please describe on a separate attachments	
Are there any Tribal Lands or Tribal mineral ownership rights within Project boundary or vicinity?	
Are there any Federally or State owned or controlled lands within Project boundary or vicinity?	
Are there any Federally or State owned or controlled lands within Project boundary or vicinity?	
Has TNC, WAFWA or any other non-governmental organizations been engaged?	
Are there CRP, WRP or other conservation easements within the Project boundary or vicinity?	

Attachments Required

- <u>Site Layout:</u> Attach a diagram identifying anticipated placement of major equipment and other project facilities, including transmission layouts and Point of Delivery.
- <u>Leases</u>: Attach (electronic version only) a copy of all leases, easements or other ownership documentation.
- <u>Permit Matrix</u>: Attach a comprehensive permit matrix and status of all required permits, including, but not limited to Federal (USF&W, FAA), State, County, City, etc.
- Environmental Report Summary: The initial Proposals shall include a <u>summary</u> of all environmental and other reports associated with the site. (See Note 1 for reports to summarize)

Note 1: Other reports shall be available upon request such as Tier I/II Site Characterization Report, Environmental Work/Survey Plan, Bat Acoustic Survey Report, Avian Use Survey Report, Raptor Nest Survey Report, Prey-base Survey Report, Wetland, Waters and Playa Survey / Assessment Report, Whooping Crane Habitat Assessment Report, Lesser Prairie Chicken Survey / Assessment Report, Phase I Environmental Site Assessment Report, Historical and Cultural Resource Survey / Assessment Report, All Other Species and Environmental Resource Survey and Study Reports, Record and Notes of all Federal or State Resource Agency Correspondence and Meetings, Turbine and Environmental Resource Shapefiles (.kmz format), and Bird and Bat Conservation Strategy and Eagle Conservation Plan (if available).

Wind Projects Completed

Provide a summary of all wind projects (≥ 100 MW) that Bidder has successfully developed and completed in the United States or Canada. For each project, describe the Bidder's specific role in the project.

Project	Location	MW	Bidder's Role
	and the second s		

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Appendix B

Bidder's Credit-Related Information

Full Legal Name of the Bidder:
Type Bidder Entity (corporation, partnership, etc.):
Bidder's Percentage Ownership in Project:
Full Legal Name(s) of Parent Corporation:
1.
2.
3.
Entity Providing Credit Support on Behalf of Bidder (if applicable):
Name:
Address:
City:
Zip Code:
Type of Relationship:
Current Senior Unsecured Debt Rating:
1. S&P:
2. Moodys:
Bank References & Name of Institution:
Bank Contact:
Name:
Title:
Address:
City:
Zip Code:
Phone Number:
Legal Proceedings: As a separate attachment, please list all lawsuits, regulatory proceedings, or
arbitration in which the Bidder or its affiliates or predecessors have been or are engaged that
could affect the Bidder's performance of its bid. Identify the parties involved in such lawsuits,
proceedings, or arbitration, and the final resolution or present status of such matters.

Financial Statements: Please provide copies of the Annual Reports for the three most recent fiscal years and quarterly reports for the most recent quarter ended, if available. If available

electronically, please provide link:

Appendix C

Bidder Profile

Please list Bio	lder's affiliate companies:
1.	
2.	
3.	
4.	
Please attach	a summary of Bidder's background and experience in Wind Energy projects.
	References
1. Comp	any
	Contact Name:
b.	Contact Number:
c.	Project:
2. Comp	any
a.	·
b.	Contact Number:
c.	Project:
3. Com	pany
	Contact Name:
b.	Contact Number:
c.	Project:
4. Comp	anv
	Contact Name:
b.	Contact Number:
c.	Project:
<u>. </u>	y

Appendix D

TERM SHEET FOR PURCHASE AGREEMENT FOR BUILD TRANSFER OF WIND ENERGY PROJECT

Confidential

This Term Sheet is part of that Request for Proposals for Wind Energy Resources (the "RFP"), issued by American Electric Power Service Corporation ("AEPSC"), as agent for Southwestern Electric Power Company ("SWEPCO").

Capitalized terms used but not defined in this Term Sheet shall have the meaning specified in the RFP. References in this Term Sheet to Appendix A are to Appendix A of Bidder's Proposal.

By submitting its Proposal, Bidder will be deemed to have accepted the terms and conditions set forth in this Term Sheet except for the specific exceptions noted in the Bidder's Proposal.

This Term Sheet does not constitute an offer or otherwise create a binding agreement or obligation to consummate any contemplated transaction. Any such obligation or agreement will be created only by the execution of definitive agreements, the provisions of which, if so executed, will supersede this Term Sheet and all other agreements, if any, related to this Term Sheet.

1.	Parties	The Bidder (herein referred to as the "Seller") and AEPSC as agent for SWEPCO (provided that SWEPCO's affiliate and Public Service Company of Oklahoma ("PSO") may participate as a co-buyer in such undivided percentage as SWEPCO and PSO determine) ("Buyer"). Seller and Buyer are hereinafter called a "Party" or collectively, the "Parties."
2.	Project; Assets	The wind electric generating facility Project described in Appendix A with the nameplate capacity set forth in Appendix A (the "Project"). The "Assets" shall consist of all property, contracts and assets, real, personal or mixed, tangible and intangible, of every kind and description, wherever located, related to the Project held by Seller, the Project Company or their affiliates. The provisions in this Term Sheet assume that the Project is not in commercial operation. If Bidder's Proposal is for a Project that is in commercial operation the provisions of this Term Sheet would apply with appropriate modifications.
3.	Project Company	The wholly owned direct subsidiary of Seller that owns and is developing the Project and whose sole assets consist of the Project and the Assets, and which does not have any liabilities other than liabilities related to its ownership, development and construction of the Project.
4.	Transaction	The transaction shall be structured as a build-transfer arrangement pursuant to which following Substantial Completion of the Project Buyer will either (a) purchase all of the equity interests in the Project Company from Seller for the Purchase Price, or (b) purchase the Project and all of the Assets from the Project Company for the Purchase Price, such election by buyer between

		alternative "(a)" and alternative "(b)" to be made prior to execution of the Definitive Agreements (the "Transaction").	
5. Purchase Price; Holdbacks		The purchase price for the purchase of the equity interests in the Project Company (or for the purchase of the Project and all the Assets from the Project Company, if applicable) (the "Purchase Price") shall be the amount set forth under "Proposal Bid Pricing" in Appendix A, payable at closing under the PSA ("Closing") without any pre-Closing progress or other payments.	
		Prior to Closing, the Parties will obtain (a) a final wind report from a wind consultant acceptable to the Parties reflecting final micro-siting of turbines, any other changes in turbine locations of the turbines and any wildlife curtailment, and (b) an updated mechanical load analysis from the turbine supplier, with a Purchase Price reduction for any adverse changes from the wind report furnished to Buyer by Seller pursuant to Section 3.7 of the RFP and any loss of energy production compared to the Proposal.	
		Buyer shall hold back amounts necessary to complete punch list items and rectify any known breaches of representations or covenants of Seller, which amounts shall be payable upon final completion or cure of such breaches, respectively.	
		Buyer shall holdback a specified amount per Post-Closing Turbine reflecting the value thereof. To the extent Seller completes the installation and commissioning of Post-Closing Turbines on or before the earlier of 90 days after Closing and December 15, 2021, Buyer will release such amount to Seller. Buyer will have the right to require that Seller remove any Post-Closing Turbines not installed and commissioned within such period.	
		Buyer shall be entitled to the benefit of all test power proceeds net of payments to landowners based on such proceeds.	
6.	Seller Credit Support	If Seller's credit is not satisfactory to Buyer, Seller will furnish credit support satisfactory to Buyer as security for the obligations of Seller and its affiliates under the Definitive Agreements in accordance with the credit matrix that will be provided by Seller for the RFP technical conference.	
7.	Project Level Credit Support	Except as set forth in Seller's Proposal, Buyer shall not be required to replace any deposits, guarantees, letters of credit, bonds or other security posted by Seller or its affiliates under the interconnection agreements or otherwise with respect to the Project.	
8.	No Buyer Parent Guarantee; Several Liability of Buyer	obligations under the Definitive Agreements. If PSO is a co-buyer with	
9.	Scope of Work	Seller shall design, develop, engineer, procure, construct, commission and start up the Project (including sufficient temporary meteorological towers for post-completion power curve / performance testing), which shall be a fully complete, commercially operable, integrated wind-powered electric	

		generating facility, including all facilities necessary to generate and deliver energy to the point of delivery specified in Seller's Proposal.
		Prior to NTP, Seller shall deliver to Buyer a site plan and final scope of work for Buyer's review. The site plan will include the layout and location for the turbines, permanent meteorological towers, O&M building, access roads, electrical collector system, substation, communication lines, and setbacks of the turbines from roads and other structures, the location of areas subject to crossing agreements, the boundaries of each tract or parcel of real property included in the Project, wetlands (if any), and areas of concern (if any) as identified in the then current environmental site assessment for the Project. In addition, Seller shall deliver an updated mechanical load analysis from the turbine supplier and an updated wind resource report from a wind engineering consultant acceptable to the Parties showing no loss of energy production compared to the Proposal. Buyer shall provide any comments it may have thereon within 30 days after receipt.
		The Project shall satisfy Buyer's technical specifications in Appendix E of the RFP. Buyer shall have the right to approve the specifications for major electrical equipment such as main power transformer(s), breakers, cabling, and pad mount transformers prior to execution of the Definitive Agreements. Buyer shall have full access and inspection rights during construction.
10.	TSA	The Project Company will enter into a turbine supply agreement ("TSA") acceptable to Buyer from a Tier 1 turbine supplier described under "Proposal Bid Pricing" in Appendix A.
11.	BOP Contract	The Project Company will enter into a balance of plant construction contract ("BOP Contract") with Seller or an affiliate of Seller (whose obligations under the BOP Contract will be guaranteed by Seller), or a recognized third party contractor experienced in the constructing similar projects that is acceptable to Buyer and whose credit is acceptable to Buyer, ("Contractor"), covering the entire scope of work for the Project other than the procurement of turbines under the TSA and the services provided by the turbine supplier thereunder (the "TSA Work").
		Commissioning, Start-Up and Testing. Contractor will conduct all calibration, functional testing and start-up, commissioning and testing of the Work in accordance with the BOP Contract and the TSA other than the TSA Work. Contractor will coordinate its calibration, functional testing and start-up testing for the Work with the Project Company, turbine supplier, any independent engineer, interconnection utility and transmission system operator. Prior to, and as a condition to, Substantial Completion, Contractor will have performed the Work such that the Project satisfies the performance criteria with respect to the acceptance tests described in the BOP Contract ("Acceptance Tests"). If the Project fails to pass an Acceptance Test, Contractor will, at Contractor's sole cost and expense, take such corrective actions as are necessary or appropriate to address such failure.
		Substantial Completion. Substantial completion for the Work ("Substantial Completion") will be deemed to have occurred when the following have been completed (or waived in writing by Project Company with the prior D-3

written consent of Buyer), except with regard to punch list items related thereto:

- (a) completion of infrastructure including the roads, foundations and collection systems;
- (b) completion of the substation(s) and any transmission line(s) included in the Project;
- (c) completion of all of the turbines (other than the Post-Closing Turbines, if any);
- (d) satisfaction of the Acceptance Tests;
- (e) all quality assurance documentation has been provided in accordance with the quality assurance plan and all non-conforming quality assurance issues have been resolved in accordance with the quality assurance plan;
- (f) delivery of all required lien waivers and no claims, security interests or other encumbrances;
- (g) delivery of preliminary as-built drawings;
- (h) Contractor shall have delivered, and Project Company (with the prior written consent of Buyer) shall have approved, a punch list with respect to all the Work; and
- Project Company (with the prior written consent of Buyer) shall have accepted a substantial completion certificate.

Safety. Contractor shall have, and shall use only subcontractors that are qualified prior to bidding with, an "EMR" no greater than 1.0 and a "TRIR" less than 2.7. Seller shall develop a site specific safety plan which will serve as minimum requirements for the site safety plans implemented by contractors which is reasonably acceptable to Buyer.

Notwithstanding any force majeure provisions in the BOP Contract, in no event will a delay in Contractor's completion of the work under the BOP Contract due to force majeure or otherwise extend the December 15, 2021 termination deadline in Section 21(a).

12. Project Warranty

Contractor shall warrant that, for the duration of the applicable Warranty period, the Project and all equipment and materials and other Work furnished by the Project Company or any subcontractor, including installation (but excluding the TSA Work) will be free from improper workmanship; defects in design, engineering, construction, fabrication, workmanship, materials and operations; will be new and unused, be of good quality, undamaged and in good condition, and conform to the requirements of the BOP Contract (the "Warranty").

Contractor shall remedy all defects arising or discovered before Substantial Completion. Contractor shall remedy at its cost all defects and deficiencies covered by the Warranty (including any necessary uncovering and recovering) arising or discovered until 2 years following Substantial Completion, and 12 months for all other portions of the Work. The Warranty period will be extended for any parts or equipment replaced or work done as Warranty work for 12 months after completion of such work. The Warranty period also will be extended by the period during which the Project cannot be fully used because of such defect.

Contractor shall be responsible for making good any latent or serial defect

		(and damage caused by or resulting from such defect, and including uncovering and recovering) that subsisted at the end of the Warranty period but was not revealed through normal Project operations, and that is discovered within 5 years after Substantial Completion.
13.	PTC Qualification	Buyer will have the benefit of that percentage of the federal production tax credit ("PTC") set forth in "Wind Turbine Selection & Federal Tax Credit" of Appendix A (but not less than 80%). Seller shall confirm that it has qualified the Project for such percentage of the PTC by "beginning construction", either by performing physical work of a significant nature or by satisfying the 5% safe harbor before the applicable date (i.e., January 1, 2017 for 100% of the PTC or January 1, 2018 for 80% of the PTC). Seller shall provide factual evidence of performance of physical work of a significant nature in the form of a report issued by a qualified third party, or factual evidence of satisfaction of the 5% safe harbor, as applicable, and factual representations by Seller of the work that has been performed, or the costs paid or incurred, as applicable. Seller shall be responsible for meeting the applicable continuous construction or continuous effort requirement.
14.	PUC Approvals	Following execution of the PSA, Buyer will file for the necessary regulatory approvals from the applicable public utility commissions ("PUC Approvals"). Seller shall reasonably cooperate with Buyer in such proceedings, including without limitation, providing information concerning the Project and the Assets.
15.	FERC Approval	Following execution of the PSA, the Parties shall use commercially reasonably efforts to seek any necessary approvals of the Transaction from the Federal Energy Regulatory Commission (including approval under Section 203 of the Federal Power Act) (the "FERC Approval"), if required, in order to obtain such approval reasonably in advance of the expected Closing date. The FERC Approval shall be acceptable to Buyer in its sole discretion. Seller shall reasonably cooperate with Buyer in such proceeding, including without limitation, providing information concerning the Project and the Assets.
16.	NTP	Buyer will issue the notice to proceed ("NTP") with construction of the Project within 30 days after satisfaction (or waiver by Buyer in its sole discretion) of the following conditions: (a) Buyer shall have received PUC Approvals that are acceptable to Buyer in its sole discretion and that have become final and non-appealable; (b) all of the major Project contracts shall have been executed, shall be in full force and effect, and Buyer shall have received estoppel certificates from the counterparties thereto; (c) Buyer shall have received the updated wind report and mechanical loads analysis described in Section 9; and (d) there shall have been no material adverse change to the PTCs or other federal or state tax benefits to Buyer.
		If the NTP is not issued on or before August 15, 2020, each Party shall have the right to terminate the Transaction.
17.	Seller Covenants	The PSA will include customary covenants, including the following covenants of Seller:

		(a) develop and construct the Project in accordance with applicable	
		contracts, laws and prudent industry practices and achieve Substantial	
		Completion of the Project by December 15, 2021; (b) payall costs of developing and constructing the Project through final	
		 pay all costs of developing and constructing the Project through final completion; 	
		(c) not cause or permit the Project Company to:	
		(i) make any material change in the accounting methods except as	
		required by GAAP;	
		(ii) merge, combine or consolidate with any other entity;	
		(iii) issue, sell or transfer any equity interest in the Project Company except (A) pursuant to, or in connection with, the pledge of any	
		such equity interests to Seller's lenders under the construction	
		loan for the Project as collateral with respect to the construction	
		financing for the Project and (B) pursuant to, or in connection	
		with, the exercise of remedies by all or any of the lenders with	
		respect to the construction financing;	
		(iv) acquire (by merger, consolidation or acquisition of stock or	
		assets or otherwise) any corporation, partnership or other	
		business organization or division thereof or collection of assets	
		constituting all or substantially all of a business or business unit;	
		(v) make or change any method of accounting with respect to taxes,	
		make or change any income or other material tax election, file	
		any amended tax return (other than sales and use or personal	
		property tax returns), enter into any closing or similar agreement, consent to any extension or waiver of the limitation period	
		applicable to any tax claim or assessment against the Project	
		Company or the Assets;	
		(vi) change the governing documents of the Project Company (other	
		than in connection with the construction loan agreement for the	
		Project);	
		(vii) hire any employee or adopt any benefit plan or incur any liability	
		under any benefit plan;	
		(viii) undertake any recapitalization, reorganization, liquidation,	
		dissolution or winding up, or not maintain the Project	
		Company's existence;	
		(ix) engage in any line of business or activity other than the continued construction, development, operation and maintenance	
		of the Project;	
		(x) terminate any material contract or amend, modify or waive any	
		material right under any material contract in a way that would	
		reasonably be expected to have an adverse effect;	
		(xi) settle or initiate any action in a manner that would be contrary to	
		prudent industry practices; or	
		(xii) commit or agree orally or in writing to do any of the foregoing.	
18.	Seller	Seller shall make the following representations with respect to itself and the	
	Representations	Project Company:	
	and Warranties	(a) existence and good standing;	
		(b) authorization, execution and enforceability of transaction documents;	
		(c) organization and qualification; (d) no conflicts or violation;	
		(e) no brokers;	
	n 6		

- (f) governmental approvals and filings and third party consents (including any consents or approvals required to enable the Project Company to be merged into Buyer, or distribute the Project and the Assets to Buyer, immediately following Closing);
- (g) legal proceedings and claims;
- (h) regulatory status;
- (i) Project developed for re-sale;
- (j) bankruptcy and solvency

(Items (a)-(e), (i) and (j) above, and items (a), (b), (e), (h), (q), (r), (v) and (x) below, are herein called the "Fundamental Representations" and the other representations and warranties of Seller are herein called the "Non-Fundamental Representations")

With respect to the Project Company and the Project:

- (a) special purpose entity status;
- (b) capitalization and ownership of the equity interests in the Project Company including no liens on the equity interests other than liens to be released at or prior to Closing by the construction lenders to the Project Company;
- (c) no subsidiaries;
- (d) financial statements, changes subsequent to the date of the financial statements, and no undisclosed liabilities;
- (e) Project Company real property and other assets and title thereto, validity and enforceability and no breach or default under real property documents; no liens except for agreed permitted liens; schedule of rents and royalties payable under each lease or parcel and in the aggregate as to the Project as a whole;
- (f) contracts and project documents; in full force and effect, validity and enforceability, no breach or defaults under by Project Company and, to Project Company's and Seller's knowledge, as to the counterparties thereto;
- (g) required permits;
- (h) factual matters supporting "beginning of construction", "continuous construction or "continuous efforts", as applicable, with respect to PTC qualification;
- (i) reports and studies related to the Project including wildlife, wetland, archaeological and other customary studies and surveys having been obtained for the Project;
- guaranties and other existing credit support (to include all items to be replaced by Buyer that are listed in Seller's Proposal);
- (k) wind data;
- (l) intellectual property;
- (m) sufficiency of real property interests, permits, contract rights and intellectual property for construction and operation of the Project;
- (n) compliance with laws;
- (o) environmental matters including compliance with environmental laws
- (p) litigation and claims affecting the Project Company or the Project;
- (q) no existing or former employees, no labor matters, no benefit plan liabilities;
- (r) taxes;
- (s) insurance;

(t) related party transactions;	
(u) bank accounts and powers of attorney;	i
(v) not an "investment company";	
(w) no willful exclusion of material information; and	
(x) no illegal payments.	
19. Buyer Buyer shall make the following representations:	
Representations (a) existence and good standing;	
and Warranties (b) authorization, execution and enforceability of tra	insaction documents;
(c) organization and qualification;	
(d) no conflicts or violation;	
(e) no brokers;	
(f) governmental approvals and filings and third par	ty consents; and
(g) legal proceedings and claims.	
20. Conditions to The PSA will include the following conditions to Clo	osing:
Closing (a) achievement of Substantial Complet	
that Buyer will be able to place the Project in	
operation in its business, and of agreed-upon t	
purposes of the TSA and the BOP Contract, and	satisfactory completion
NERC or other required testing, in each	case, for all turbines
constituting the Project; provided that this cond	ition will be satisfied if
no more than 10% of the turbines (the "Po	st-Closing Turbines")
included in the Project have not achieved substa	
remaining turbines and the remainder of the	Project have achieved
Substantial Completion;	\$
(b) as of the Closing date, as a con	
obligation to close, each of the representations	
other Party shall be true and correct in all mate	
representations and warranties that are quali	
material adverse effect, in which case suc	
warranties shall be true and correct in all respect	
(c) performance by the other Party in al	l material respects of its
respective closing actions and covenants;	
(d) receipt of all required regulatory,	
including all required third party consents,	upon terms reasonably
satisfactory to both Parties;	***
(e) Seller's delivery to Buyer of a permi	
(f) the Project Company will have obtain	
for the construction, completion, ownership and	operation of the Project
and such permits will be in full force and effect;	locina deliveries (e ~
(g) the Parties' receipt of customary (assignment of membership interest agreement	
release of Seller claims against the Project Comp	
(h) delivery of a commitment to issue	
recognized title insurance company in a form r	
Buyer, subject only to "permitted encumbrances"	
(i) delivery of landowner estoppels, da	
days prior to the Closing date, for real property	
to cover at least a certain percentage of both	
1 we send a versum percentage of both	turbine and non-turbine
locations (with such thresholds to be agreed in t	

		agreements to be agreed upon by the Parties; (j) delivery of lien waivers; (k) no litigation seeking to enjoin the transaction or litigation that would reasonably be expected to have a material adverse effect on the Project or Project Company; and (l) Seller shall provide customary evidence to Buyer that, upon Buyer's payment of the Purchase Price, the construction loan financing arrangements affecting the equity interests in the Project Company or the Project shall be paid in full and that liens related thereto shall be released or otherwise extinguished.
21.	Termination	 (a) By the applicable Party if its conditions to Closing have not been satisfied (or waived by it) on or before December 15, 2021 (such date will not be extended for force majeure events under the BOP Contract or otherwise, or interconnection or transmission line delays); (b) by either Party upon the occurrence of a bankruptcy event with respect to the other Party; (c) as provided in Section 16; and (d) by Buyer if there is an adverse change in the PTC or other material federal or state tax benefits prior to issuance of the NTP.
22.	Seller Retained Obligations	Seller will retain and indemnify Buyer and the Project Company for: (a) any liabilities incurred or accruing prior to the Closing date; (b) any liability of the Project Company, Seller or its affiliates for taxes with respect to any taxable period, or portion thereof, prior to the Closing date; (c) any liability under the Project documents, the leases and land contracts, permits, permit applications, interconnection agreements or other contracts to which the Project Company is a party or by which the Project is bound to the extent such liability (but for a breach or default by the Project Company, Seller or any of its affiliates or a waiver or extension given to or by the Project Company, Seller or any of its affiliates) would have been paid, performed or otherwise discharged, or was or would have been incurred or accrued, on or prior to the Closing date; (d) any liability (i) relating to the Project or any present or former developer, owner, lessee or operator of the Project or (ii) of the Project Company to Seller or its affiliates, in either case, incurred or accrued prior to the Closing date, whether or not associated with or arising from the Assets; (e) any liabilities for violations of law, or for remediation of releases of hazardous substances, occurring prior to the Closing date; (f) any claims by any prior employees of the Company relating to their employment and any liability of the Project Company with respect to any benefit plan that any entity maintains or in the past maintained (or to which such entity ever contributed or was required to contribute); and (g) any liabilities associated with the construction loan agreement.

23.	Indemnification:	(a) Seller's indemnification for breach (i) of the Non-Fundamental Representations shall be capped at 20% of the Purchase Price and (ii) of the Fundamental Representations shall be capped at the Purchase Price; such caps shall not be applicable to fraud, bad faith, gross negligence or willful misconduct; (b) deductible of 0.1% of the Purchase Price before Seller is required to make indemnification payments for aggregate losses to Buyer for breach of the Non-Fundamental Representations (other than for claims related to fraud, bad faith, gross negligence or willful misconduct); (c) survival periods: (i) Non-Fundamental Representations24 months (except as provided in clause (iii) below); (ii) Fundamental Representations90 days after the expiration of the statute of limitations; and (iii) breach of representations with respect to environmental matters, zoning, permits, and real property—3 years; (d) materiality qualifiers in representations shall be disregarded for indemnification-related purposes (i.e., determining whether a breach has occurred and calculating damages); (e) Buyer's knowledge of breach at Closing shall not be deemed to waive right to claim breach; and (f) damages will include lost revenues and lost PTCs and other
24.	Documentation	If Seller's Proposal is included in the Final Project Selection described in Section 9.4 of the RFP, then the Parties will attempt to negotiate definitive, legally binding, written agreements reflecting the structure, final configuration, and binding terms and conditions applicable to the Transaction, including without limitation: a purchase and sale agreement ("PSA") for the purchase of the equity interests in the Project Company (or for the purchase of the Project and the Assets if Buyer elects to purchase the Project and the Assets directly), the form of BOP Contract and any other related agreements necessary to address the other matters described in this Term Sheet (collectively, the "Definitive Agreements").
25.	Buyer Access to Project, Information and Personnel	Seller shall furnish access to relevant records in response to requests from Buyer in connection with Buyer's review of the Transaction. Seller shall make its personnel reasonably available to Buyer representatives, and upon reasonable advance notice, Seller shall permit Buyer representatives to conduct on-site reviews and to be present on site continuously through construction and testing of the Project.
26.	No Liability Under Term Sheet	Neither Party shall be liable to the other in contract, tort, or otherwise, for any claims, liabilities or losses alleged to result from the failure to enter into any of the Definitive Agreements. In no event shall either Party be liable to the other Party pursuant to this Term Sheet (including without limitation for any incidental, indirect, special, punitive or consequential damages for lost profits).

2'	7. Expenses	Except as may otherwise be provided in the Definitive Agreements, each of the Parties hereto will be responsible for its own expenses in connection with the proposed Transaction, including fees and expenses of legal,	
		accounting and financial advisors.	
28	Governing Law	New York; customary waiver of jury trial.	

Appendix E

AEP Wind Generation Facility Standard

See Section 6.5 for instructions for obtaining the AEP Wind Generation Facility Standards.

- 1. Wind Generation Facility Standards
- 2. O&M Building Standard
- 3. AEP Transmission system Connection Requirements for New Facilities and Existing Facilities
- 4. AEP Telecommunications Standard

Appendix F

Projected O&M Costs & O&M Services Scope of Work (OPTIONAL)

See Section 6.5 for instructions for obtaining the Projected O&M Costs spreadsheet and the O&M Services Scope of Work.

Appendix G Proposal Content Check Sheet

New Build Projects

Section	New Build Projects Item	Completed
9.1.3	Executive Summary	
	Appendix A (Wind Project Summary)	
	- Company Information	
	o Identify all persons & entities that have a direct or	
	- General Project-Information	
	- PSO RFP Participation	
	- Interconnection and Point of Delivery	
	- Proposal Bid Pricing	
	- Turbine Manufacturer Options	
	- Wind Turbine Selection & Federal PTC	
9.1.4	- Wind Data	
	 Attach 3rd Party Wind Energy Report 	
	o Energy Input sheet (electronic copy only)	
	- Site Information	
	 Describe any known environmental issues. 	
	o Attach "Site Layout"	
	o Attach "Leases"	
	o Attach "Permit Matrix"	
	o Attach "Environmental Report Summary"	
	- Wind Projects Completed Summary	
9.1.7	Appendix B (Bidder's Credit-Related Information	
9.1.8	Appendix C (Bidder Profile)	
9.1.9	Appendix D (Term Sheet - including exceptions)	
9.1.10	Appendix E (exceptions to the AEP Wind Generation Facility	
9.1.11	Land lease payments & property tax cost for 30-year period.	
9.1.11	30-year O&M Budget	
9.1.12	O&M Services Proposal (optional)	

Existing Projects (in addition to above, as applicable)

Section	Item	Completed
9.2.1	Executive Summary	
9.2.2	Production data (annual MWh) COD – 7/1/18	
9.2.3	Production data (hourly MWh) 1/1/16 – 7/1/18	
9.2.4	O&M Expenses (COD – 12/31/17)	
9.2.5	Forecasted O&M (1/1/19 – end of life)	
9.2.6	Outage details (1/1/13 – 1/1/18)	
9.2.7	Warranty claims	

G-1

2019 Wind Energy Resources RFP

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DRAFT CONFIDENTIALITY AGREEMENT

Mutual Confidentiality Agreement

American Electric Power Service Corporation 1 Riverside Plaza Columbus, OH 43215
Developer: [] Project Name: []
This Mutual Confidentiality Agreement ("Agreement") dated as of, 2019 ("Effective Date") is made and entered into by and between American Electric Power Service Corporation ("AEPSC"), as agent for Southwestern Electric Power Company ("SWEPCO"), and insert full legal name, a(n) insert state of formation insert type of company ("Bidder").
Recitals:
I. Bidder is or is considering submitting a proposal (the "Proposal") in response to a Request for Proposals for Wind Energy Resources (the "RFP") issued by AEPSC on behalf of SWEPCO as described in the RFP.
II. It may become desirable that AEPSC and Bidder exchange other confidential information pursuant to questions, responses or other communications that are not contained in the Proposal and which the parties desire to protect as confidential.
III. In addition, if the Proposal, if submitted, is selected by AEPSC, then Bidder and AEPSC intend to negotiate about a proposed agreement between AEPSC (and one or more of AEPSC's affiliates) and Bidder to implement the Proposal (the "Proposed Agreement"). Bidder and AEPSC desire to keep all negotiations concerning the Proposed Agreement, including the Proposed Agreement itself and all drafts of the Proposed Agreement, confidential.
IV. The parties are willing to exchange such confidential information pursuant to the terms of this Agreement.

Section 1. Definitions.

parties agree as follows:

Email to:

zmyetzer@aep.com

1.1. (a) "Confidential Information" means any information that is disclosed by the Disclosing Party to the Receiving Party or its Representatives in connection with

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the

the RFP or any Proposed Agreement (collectively, the "Transaction"), whether before or after the date hereof and irrespective of the format in which the information is provided. For avoidance of doubt, "Confidential Information" includes:

- (i) Written information or machine-readable data, including questions, responses or communications in connection with AEPSC's RFP or any Proposed Agreement, notes, reports, assessments, specifications, drawings, financial statements and projections, software and databases, customer information, sales and marketing strategies, and any other written information or machine-readable data;
- (ii) Orally conveyed information, including but not limited to demonstrations that are directly related to written or other tangible Confidential Information;
- (iii) Any hardware, including but not limited to samples, devices and any other physical embodiments delivered to the Receiving Party;
- (iv) Any Evaluation Material; or
- (v) The existence of this Agreement, the terms of this Agreement and any Proposed Agreement, including all drafts of the Proposed Agreement and all negotiations concerning the Proposed Agreement, that may arise stemming from the Bidder's Proposal.
- (b) "Confidential Information" does not include information which:
 - (i) is, or subsequent to disclosure becomes, part of the public domain through no fault of the Receiving Party;
 - (ii) is lawfully disclosed to the Receiving Party by a third party which, to the knowledge of the Receiving Party, does not have a confidentiality obligation to the Disclosing Party;
 - (iii) was lawfully in the possession of the Receiving Party prior to disclosure by the Disclosing Party; or
 - (iv) is lawfully and independently developed by the Receiving Party without use of the Confidential Information disclosed by the Disclosing Party.
- 1.2. "Disclosing Party" means the party disclosing Confidential Information.
- **1.3.** "Evaluation Material" means notes, reports or other documents which reflect, interpret, evaluate, include or are derived from the Confidential Information.
- 1.4. "Receiving Party" means the party receiving Confidential Information.

- 1.5. "Representatives" means a party's employees, officers, directors, attorneys, accountants, consultants, advisors and agents (including potential lenders, equity partners, underwriters, or other parties involved in the Transaction for the party), and the party's affiliates and the employees, officers, directors, attorneys, accountants, consultants, advisors and agents thereof.
- Section 2. Confidentiality. Except as provided in Section 5, the parties hereby agree that the Confidential Information will be kept confidential during the term of this Agreement. The parties also agree that without the prior written consent of the Disclosing Party, the Confidential Information will not be disclosed by the Receiving Party, in whole or in part, to any other person except as provided herein. Each party shall use the same care in protecting the other's Confidential Information as it uses to protect its own confidential information, provided that neither party shall use less than reasonable efforts to protect the other's Confidential Information. Notwithstanding the foregoing, the Receiving Party may (a) disclose Confidential Information to its Representatives whose access is necessary to conduct the evaluations and negotiations in connection with the Transaction, or for supervisory, regulatory or similar purposes, and who have been informed of and have agreed to abide by the confidentiality restrictions contained in this Agreement and (b) make a limited number of copies of the Confidential Information in order for the Receiving Party to adequately use the Confidential Information subject to the terms and conditions of this Agreement. Each party agrees to be responsible for the actions, uses and disclosures of any of its Representatives in accordance with the terms and restrictions of this Agreement.
- Section 3. Ownership and Use of Confidential Information. All Confidential Information (except Evaluation Material) shall remain the property of the Disclosing Party. No license or other rights under any patents, trademarks, copyrights or other proprietary rights is granted or implied by the disclosure of the Confidential Information. Neither party shall use the Confidential Information for any purpose other than for evaluation of and negotiations relating to the Transaction.
- Section 4. Disposition of Confidential Information. The Receiving Party, upon written request from the Disclosing Party, shall promptly return or destroy all Confidential Information in its possession; provided, however, with respect to Evaluation Materials, the Receiving Party may at its discretion destroy such Evaluation Material. If requested by the Disclosing Party, the Receiving Party shall provide the Disclosing Party with a certification that all Confidential Information and Evaluation Material has either been returned or destroyed, as appropriate. Notwithstanding the foregoing, the Receiving Party may retain one copy of the Confidential Information solely for archival purposes and for the purpose of demonstrating compliance with this Agreement. The return or destruction of the Confidential Information shall not extinguish any rights or obligations under this Agreement with respect to the Confidential Information.
- Section 5. Legally Required Disclosures. If the Receiving Party or its Representatives become subject to a bona fide requirement or request by any regulatory, governmental, judicial or supervisory authority (by subpoena, oral deposition, interrogatories, request for production of documents, civil investigative demand, administrative order or otherwise), to disclose any of the

Confidential Information, or if such disclosure is necessary in order to obtain or maintain regulatory or governmental approvals, applications or exemptions, the Receiving Party will provide the Disclosing Party with as much advance notice as and to the extent as permitted and practicable to afford the opportunity to seek an appropriate protective order or other appropriate remedy to prevent the disclosure. The Receiving Party or any of its Representatives being compelled to disclose such Confidential Information shall reasonably cooperate with the Disclosing Party, at its expense, to enable the Disclosing Party to obtain a protective order or other reliable assurance that confidential treatment will be accorded the same. If such protective order or other appropriate remedy is not obtained, the Receiving Party or any of its Representatives being compelled to disclose such Confidential Information may disclose the information without liability hereunder provided that the party may only furnish that portion of the Confidential Information which is legally required or necessary.

Section 6. Term. If the Bidder's Proposal and/or related negotiations do not result in a final agreement, then this Agreement is effective for two (2) years from the Effective Date stated above. If the negotiations result in a final agreement, then this Agreement is effective until two (2) years after the termination of the final agreement.

Section 7. No Warranties. The Disclosing Party makes no representations or warranties as to the reliability, accuracy or completeness of the Confidential Information. The Disclosing Party shall not be subject to any liability to the Receiving Party based on the Receiving Party's use of the Confidential Information.

Section 8. Remedies. The parties acknowledge that improper or unauthorized use or disclosure of Confidential Information could cause irreparable harm to the Disclosing Party and that monetary damages would not be an adequate remedy for a breach of this Agreement. In the event of any breach or threatened breach of this Agreement, the non-breaching party shall be entitled to pursue injunctive and other equitable relief, and the breaching party agrees to waive any requirement for the posting of a bond in connection with such remedy. Such injunctive and equitable relief shall not be deemed to be the exclusive remedy for a breach of this Agreement, but shall be in addition to all other available remedies. In no event shall either party be liable to the other for any incidental, indirect, special, punitive or consequential damages (including without limitation damages for lost profits).

Section 9. Relationship of Parties. Neither party shall have any obligation to commence or continue discussions or negotiations, to exchange any Confidential Information, to reach or execute any agreement with the other party, to refrain from engaging at any time in any business whatsoever, or to refrain from entering into or continuing any discussions, negotiations or agreements at any time with any third party, until each party executes a definitive agreement. Until such definitive agreement is executed, neither party shall have any liability to the other party with respect to the Transaction except as set forth in this Agreement. Neither party shall have any liability to the other party in the event that, for any reason whatsoever, no such definitive agreement is executed.

Section 10. General.

- 10.1 Governing Law. This Agreement shall be construed and enforced in accordance with the laws of the State of New York.
- 10.2 Entire Agreement. This Agreement constitutes the entire Agreement between the parties, supersedes any prior understandings or representations relating to the confidential treatment of the Confidential Information, and shall not be modified except by a written agreement signed by both parties.
- **10.3 Assignability.** This Agreement may not be assigned by either party without the prior written consent of the other party; provided, however, that AEPSC may assign this Agreement to one or more of its affiliated companies.
- 10.4 Severability. All provisions of this Agreement are severable, and the unenforceability of any of the provisions of this Agreement shall not affect the validity or enforceability of the remaining provisions of this Agreement.
- 10.5 No Waiver. Failure of either party to insist upon strict performance of any of the terms and conditions shall not be deemed to be a waiver of those terms and conditions.
- 10.6 Counterparts and Faxed Signatures. This Agreement may be executed in counterparts, and in the absence of an original signature, faxed signatures will be considered the equivalent of an original signature.
- 10.7 Notices. Notices shall be in writing and shall be sent to the addresses listed below, either by personal delivery, by the U.S. Mail, overnight mail, fax or other similar means. All notices shall be effective upon receipt.

 The parties have signed this Agreement effective as of the later signature date set forth below.

SIGNATURES ON FOLLOWING PAGE

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The parties have signed this Agreement effective as of the later signature date set forth below.

American Electric Power Service Corporation, as agent for Southwestern Electric Power Company	[BIDDER:]	
Ву:	Ву:	
Print Name:	Print Name:	
Title:	Title:	
Date:	Date:	
	Bidder Address:	
	Attn:	

Louisiana Public Service Commission



POST OFFICE BOX 91154
BATON ROUGE, LOUISIANA 70821-9154
www.lpsc.louisiana.gov

COMMISSIONERS

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Telephone: (225) 342-9888

BRANDON M. FREY Executive Secretary

KATHRYN H. BOWMAN Executive Counsel

August 5, 2019

JOHNNY E. SNELLGROVE, JR Deputy Undersecretary

VIA HAND DELIVERY

Ms. Terri Bordelon Louisiana Public Service Commission Records and Recordings 602 N. Fifth St. Galvez Bldg, 12th Fl. Baton Rouge, LA 70802

RE: Docket No. X-35085 Southwestern Electric Power Company, ex parte.

Dear Ms. Bordelon:

Enclosed for filing is a Final Status Report of the Commission Staff in the above-referenced docket.

Please do not hesitate to contact me if you have any questions concerning this filing.

Very Truly Yours,

Kathryn H. Bowman Staff Attorney

KHB/kst cc: Service List Enclosure LA PUBLIC SETTICL

BEFORE THE LOUISIANA PUBLIC SERVICE COMMISSION

2019 AUG -5 PH 3: 26

SOUTHWESTERN ELECTRIC POWER COMPANY, COMMISSION EX PARTE

DOCKET NO. X-35085

In re: Request for Proposal pursuant to the Commission's General Order dated October 29, 2008 ("MBM Order") for Wind Energy Resources.

FINAL STATUS REPORT OF THE COMMISSION STAFF

Background and Procedural History

On October 24, 2018, Southwestern Electric Power Company ("SWEPCO") or the "Company") submitted correspondence to Executive Secretary Brandon Frey providing notice of SWEPCO's intent to conduct a Request for Proposal ("RFP") for the purchase of wind energy resources pursuant to the Commission's General Order dated October 29, 2008 ("MBM Order"). SWEPCO's correspondence ("Initial Notice Letter") also requested a waiver of the 30-day advanced notice period required in the MBM Order.

In its Initial Notice Letter, SWEPCO indicated the waiver of the 30 days advance notice was necessary given the limited period of time to evaluate and acquire certain new wind resources before the anticipated reduction of the federal Production Tax Credits, which require a project be placed into service by December 31, 2021. SWEPCO indicated issuing the final RFP by January 2019 in order to meet the PTC deadline and that it did not intend to submit self-build bids or bids from any affiliates. On October 31, 2018, SWEPCO made its informational filing, and submitted a courtesy copy of the proposed draft RFP to Staff. Therefore, only 7 days elapsed between the advanced notice filing and the informational filing.

SWEPCO's request for waiver of the 30-day notice was taken up before the Commission at its November 16, 2018 Business and Executive Session, and unanimously adopted by the Staff's Status Report Page 1

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Commission, with the condition that the waiver was limited solely to the facts and circumstances of this request and was deemed non-precedential. Pursuant to the Commission vote, Special

Order 87-20018 was issued December 11, 2018, which memorialized the Commission's vote.

On January 7, 2019, SWEPCO issued the final RFP for the purchase of wind energy resources and filed the same into the record on January 8, 2019. Thereafter, SWEPCO conducted its RFP, updating Staff periodically. Ultimately, SWEPCO selected projects through this RFP process and filed for certification of those selected projects with the Commission on July 15, 2019.

Jurisdiction

The Commission exercises its jurisdiction in this proceeding pursuant to Article IV, Sec. 21 of the Louisiana Constitution, and Commission Orders issued pursuant to this constitutional authority. La. Const. Art. IV, Sec. 21 provides in pertinent part:

The Commission shall regulate all common carriers and public utilities and have such other regulatory authority as provided by law. It shall adopt and enforce reasonable rules, regulations, and procedures necessary for the discharge of its duties, and perform other duties as provided by law.

The Commission's MBM Order augments the procedures of the Commission's 1983 General Order¹ and requires a utility proposing to acquire or build new generating capacity or to enter into purchased power contracts to "employ a market-based mechanism" consisting of [an RFP] competitive solicitation process." The utility must present the results and analysis from this RFP to the Commission as part of the "justification" required by Paragraph (2) of the 1983 General Order. In addition, the MBM Order prescribes procedures to be followed by the utility

¹ General Order dated September 20, 1983, LPSC, ex parte, In Re: In the Matter of the Expansion of Utility Power Plant, Proposed Certification of New Plant by the Louisiana Public Service Commission, as most recently amended by the Commission's General Order dated May 27, 2009 (Docket No. R-30517).

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in conducting the RFP process and presenting the results of that process to the Commission

Staff."

Status Report of SWEPCO's RFP process

Beginning in November 2018, SWEPCO engaged Staff with the Company's proposed

RFP and solicited input from Staff on the same. The Company and Staff began discussions

regarding the proposed RPF, and Staff submitted a redline to SWEPCO of proposed

modifications to the draft RFP, which included both substantive and non-substantive

recommendations. SWEPCO accepted some of Staff's recommended revisions, but not all. The

main substantive revision that SWEPCO included from Staff's recommendations was the

specific amount of capacity sought pursuant to this RFP. The main substantive revision that

SWEPCO elected not to include from Staff's recommendations was a justification for the

amount of capacity needed, the type of resource the utility proposes to acquire and resource

alternatives considered but rejected by the utility; SWEPCO's response to Staff was that the

utility's Integrated Resource Plan contemplated the addition of wind energy resources.

On December 6 and 10, 2018, AEP conducted bidders' conferences for PSO and

SWEPCO, respectively. Staff participated in the December 10, 2018 bidders' conference, which

was a webinar providing an overview of SWEPCO's RFP, the evaluation process for any bids

received and the timeline for SWEPCO's RFP and selection process. Staff received a list of the

participants at both bidders' conferences, which were deemed confidential by SWEPCO.

SWEPCO allowed for questions and answers until February 22, 2019, with bids due March 1,

2019, and final selection by July 30, 2019 with the regulatory approval process beginning by

August, 2019.

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age 3

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SWEPCO issued a Request for Proposals ("RFP") on January 7, 2019 seeking

competitively priced wind energy resources on a turnkey basis through acquisition of the

ownership interest in one or more wind projects totaling up to 1,200 MW physically located in,

and interconnected to, the Southwest Power Pool in Arkansas, Louisiana, Texas, or Oklahoma.

Any projects submitted must have 100 MW minimum nameplate capacity that are either

currently in commercial operation or that would achieve commercial operation by December 15,

2021. Concurrently with SWEPCO's RFP, American Electric Power Service Corporation

("AEP") administered an RFP on behalf of Public Service Commission of Oklahoma ("PSO")

seeking the same wind energy resources in the same geographical area as SWEPCO through the

acquisition of one or more wind projects. Both RFPs contemplated that any selected resources

may be jointly owned by SWEPCO and PSO. SWEPCO issued this RFP to solicit competitively

priced wind energy in order to diversify the utility's portfolio, not because the utility identified a

future need for additional capacity.

SWEPCO received a total of 19 bids, and using the criteria outlined in Section 9.1 of the

RFP, determined 11 projects met the Eligibility and Threshold criteria in order to move forward

to the Detailed Analysis phase of the RFP process. Of the eight projects that failed, three failed

due to the time required to complete network upgrades,² one failed due to lack of a robust wind

resource,3 and four failed due to deliverability issues.4 For the 11 projects that passed the

Eligibility and Threshold criteria, SWEPCO then evaluated each proposed project and graded it

based upon the scoring criteria within the RFP. SWEPCO evaluated the bids on the basis of

pricing and non-pricing factors. The non-pricing factors included, but were not necessarily

limited to: environmental and cultural impact, bidder operating history, term sheet exceptions

² See Section 9.1.4 of the RFP.

³ See Section 9.1.10 of the RFP.

⁴ See Section 9.1.12 of the RFP.

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proposed by the bidder, interconnection status and requirements, and adherence to AEP wind

facility standards.

For SWEPCO's evaluation of the pricing factors, SWEPCO determined a Levelized

Adjusted Cost of Energy ("LACOE"), by adding together the levelized cost of energy associated

with each proposal as calculated by SWEPCO and the value of Transmission Congestion as

determined by SEPCO's Transmission Congestion Screening Analysis. Next, SWEPCO

calculated the levelized net revenue requirement by taking the difference between the levelized

expected Southwest Power Pool ("SPP") revenues for the proposal's energy in the SPP market

and the LACOE for each bid. Based on the LACOE, the Company then put together an initial

ranking, and removed projects that were not included within the first approximate 2,200 MWs

identified. This removed 5 projects from further consideration.

After the initial selection was narrowed, SWEPCO then calculated a total score for the

six remaining eligible projects based on the economic analysis (90% of score) and the non-price

factor (10% of score). Based on the total score ranking, SWEPCO then conducted site visits to

the "short-list" of projects. After the site visits and determination that based upon bid

economics, geographic locations, deliverability relative to the AEP West zone, the short-list

resulted in a robust, balanced portfolio.

Based upon this determination, SWEPCO filed an application on July 15, 2019 seeking

certification of three wind facilities selected through SWEPCO and PSO's RFP processes

totaling 1,485 MW, with SWEPCO's share being approximately 54%, or 810 MW.

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Conclusion

While Staff initially raised questions and provided revisions to SWEPCO's draft RFP that were not incorporated into the final RFP, Staff does find that SWEPCO generally comported with the Commission's MBM Order. Staff indicates generally for two reasons: first, Staff would like to have been more involved in the RFP process than what occurred; however, based upon the requirements of the MBM Order, SWEPCO did keep Staff informed and involved as required. Second, Staff's concerns regarding justification for the additional capacity, while raised

in the RFP process, are ultimately determinations to be made in the Company's certification

proceeding for the selected wind facilities, which has been docketed as Docket No. U-35324.

Since SWEPCO provided notice to Staff of the final selection of projects under the RFP process, and the certification docket has now been opened, this docket is deemed complete and now can be closed.

Respectfully Submitted,

Kathryn H. Bowman (Bar Roll No. 31628)

Executive Counsel

Louisiana Public Service Commission 602 N. Fifth Street, Galvez Bldg., 12th Floor

Baton Rouge, Louisiana 70802 Telephone: (225) 342-9888

kathryn.bowman@la.gov

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Service List for X-35085 as of 8/5/2019

LPSC Staff Counsel

Kathryn Bowman, LPSC Staff Attorney

LPSC Staff

Patrick Roque, LPSC Auditing Division Donnie Marks, LPSC Utilities Division

Petitioner: Southwestern Electric Power Company

Bobby S. Gilliam

Wilkinson Carmody & Gilliam 400 Travis Street, Suite 1700 Shreveport, LA 71101

Email(s): bgilliam@wcglawfirm.com

Fax:(318)221-3705; Telephone 1:(318)221-4196;

Jonathan P. McCartney

Wilkinson Carmody & Gilliam 400 Travis Street, Suite 1700, Shreveport, LA 71101

Email(s): jmccartney@wcglawfirm.com

Fax:(318)221-3705; Telephone 1:(318)221-4196;

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-20:

Please provide the Definitive Interconnection System Impact Studies (DISIS) for all bidders in response to the Eligibility and Threshold Requirement in RFP 9.14.

Response No. 2-20:

Please refer to ETEC-NTEC-002-20 Attachment 1, which includes links to the SPP DISIS reports for the RFP bids.

Prepared By: Adam J. Hickman Title: Dir Trans Bus Development

Prepared By: Anita A. Sharma Title: Engineer Staff

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-21:

From page 13, line 15 through page 14, line 1 of Witness Godfrey's direct testimony, please describe what criteria and threshold is used to determine the "severely limited" status of deliverability to the AEP West load zone.

Response No. 2-21:

Please refer to Section III. Threshold Deliverability Analysis of Wind RFPs of the Direct Testimony of witness Ali, p 3:1 through p 8:15.

Prepared By: Anita A. Sharma Title: Engineer Staff

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-22:

For each project, please provide the information referenced in RFP 5.1.

Response No. 2-22:

Please see the Company's responses to ETEC NTEC 1-11 through ETEC NTEC 1-13.

Prepared By: Joseph A. Karrasch Title: Dir Renewable Energy Devlpmnt

Prepared By: Edward J. Locigno Title: Regulatory Analysis & Case Mgr

Sponsored By: Jay F. Godfrey Title: VP Energy Mktng & Renewables

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-23:

Please provide all work papers, reports, documents, outputs, and power flow data, including, but not limited to models and input files in machine readable, program executable format used in the development of (i) the DFAX analysis, and (ii) the FCITC analysis.

Response No. 2-23:

The information responsive to this request is HIGHLY SENSITIVE under the terms of the Protective Order. The Highly Sensitive information is available for review at the Austin offices of American Electric Power Company (AEP), 400 West 15th Street, Suite 1520, Austin, Texas, 78701, (512) 481-4562, during normal business hours.

See ETEC 2-23 Highly Sensitive Attachment 1 for DFAX Analysis and ETEC 2-23 Highly Sensitive Attachment 2 for FCITC Analysis.

Prepared By: Anita A. Sharma Title: Engineer Staff

Sponsored By: Kamran Ali Title: Mng Dir Trans Planning

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-24:

From page 20, Table 4 of Witness Godfrey's direct testimony, the nameplate MW capacities for the three selected projects are listed. Please provide the Summer Net Renewable Capability in total MWs for each project as determined by the accreditation calculation tool for wind and/or solar renewable resources based on SPP Planning Criteria 7.1.5.3 Section 7.

Response No. 2-24:

The requested analysis has not been performed. See also the response to CARD 3-17.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-25:

From page 22, lines 4-7 of Witness Godfrey's direct testimony, the PSA structure mitigates the projects' "schedule risk since closing (the actual purchase of the project) does not occur until on or about timely completion of the project." How is the Production Tax Credit Eligibility Guarantee risk mitigated?

Response No. 2-25:

Please see ETEC NTEC 2-15.

Prepared By: Joseph A. Karrasch

Title: Dir Renewable Energy Devlpmnt

Prepared By: Edward J. Locigno Title: Regulatory Analysis & Case Mgr

Sponsored By: Jay F. Godfrey Title: VP Energy Mktng & Renewables

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-26:

From page 26 of Witness Godfrey's direct testimony, the total purchase price for the Selected Wind Facilities is approximately \$1,253/kW, which includes all costs associated with interconnecting the facilities to the SPP transmission system and any assigned network upgrade costs. Please provide the approximate \$/kW cost of capacity for the selected projects based on their Summer Net Renewable Capability.

Response No. 2-26:

While wind investments such as this one do provide some capacity value, they are primarily energy value and PTC value investments. Evaluating the cost of capacity as requested in the question does not take into account the main benefit of the investment. The \$1,253/KW cost of nameplate capacity, converted to a cost per MWH of energy delivered and then netted against the PTC value and energy value to is a more meaningful way to evaluate the cost of this investment. However in order to be responsive to this request, the Company calculated the cost per KW based on 227 MW of accredited capacity value (15.3% of 1,485 MW total) is \$8,793/KW.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-27:

From page 13, lines 14-20 of Witness Deruntz, the Companies will retain review rights on all contracts Invenergy enters above a certain dollar amount before they are executed. Are the land leases for sighting the wind turbines, collector system, supporting facilities and or substation based on fixed price or indexed to WTG production?

Response No. 2-27:

Please see Exhibit B of Exhibit Q-2 in Substituted Highly Sensitive Exhibit JFG-3 for payment terms associated with land leases.

Prepared By: Joseph A. Karrasch Title: Dir Renewable Energy Devlpmnt

Prepared By: Edward J. Locigno Title: Regulatory Analysis & Case Mgr

Sponsored By: Joseph G. DeRuntz

Title: Director - Projects

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-28:

Please describe how the presence of the generation tie-line was treated in the PROMOD, Aurora and PLEXOS analyses.

Response No. 2-28:

The Company did not explicitly model any generation tie-line in PROMOD, Aurora or PLEXOS models employed by the Company for the customer benefits analysis of the Selected Wind Facilities under the gen-tie scenarios. Instead, the Company performed the customer benefits analyses for the gen-tie cases by (1) assuming that a gen-tie would be placed in-service in 2026. Based on this assumption, company witness Torpey then (2) replaced the 2026-2051 projected cost of congestion and losses associated with the delivery of the Selected Wind Facilities (provided by Mr. Sheilendranath) with the estimated annual revenue requirement and losses for the assumed gen-tie. Mr. Torpey's analysis also assumed that the gen-tie would experience 3 percent average transmission losses annually, which was reflected in the cost of the gen-tie in the benefits analysis.

Beyond these calculations, it was assumed that the contemplated gen-tie from the Selected Wind facilities to Tulsa will not have a material impact Aurora and PROMOD simulated pricing of the AEP West load zone or the SWEPCO thermal generation market prices that are used in the evaluation of customer benefits analysis in PLEXOS.

Prepared By: James F. Martin Title: Regulatory Case Mgr

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-29:

If congestion values are held constant from 2031-2051, is the proposed generation tie-line assumed to be in place by 2030? If not, when is the expected in-service date of the tie-line?

Response No. 2-29:

The Company is not proposing a gen-tie because SPP system conditions do not indicate the need for a gen-tie solution for the Selected Wind Facilities at this time, so there is no expected inservice date. However, for illustration purposes Company witness Torpey prepared three illustrative cases which included a gen-tie being place in service at the end of 2026. These are presented on pages 10-12 of his Errata Exhibit JFT-3. The Company intends to monitor congestion after the facilities are placed in service in order to evaluate the costs vs benefits of a gen-tie. 2026 was chosen for the illustrative cases as the in service date allowing for a period of time to observe actual congestion and then site and build the line, as discussed on page 13 of Company witness Ali's testimony.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr
Prepared By: James F. Martin Title: Regulatory Case Mgr

Prepared by: Cecile Bourbonnais Title: Research Analyst, The Brattle Group Prepared by: Sophie Leamon Title: Research Analyst, The Brattle Group

Sponsored By: John F. Torpey
Title: Mng Dir Res Plnning&Op Anlysis
Sponsored by: Akarsh Sheilendranath
Title: Senior Associate, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-30:

Did the models used assume any transmission upgrades contemplated between 2022 and 2024 will be in service?

- a. Are there any new projects in the 2024 models that will not be in service in 2022? If so, please list the project.
- b. Are there any new projects in the 2024 models that will not be in service in 2023? If so, please list the project.

Response No. 2-30:

The transmission topology represented in SPP's 2019 ITP PROMOD models is based on SPP's 2017 STEP report and the 2018 ITP Near-Term (ITP NT) transmission updates. SPP's 2017 STEP project list includes transmission upgrades with SPP-determined in-service dates between 2022 and 2024. The company's understanding is that SPP's 2019 ITP PROMOD models for 2024 and 2029 include these STEP upgrades with in-service dates between 2022 and 2024.

The 2017 and 2018 STEP Project Lists can be accessed on SPP website at:

https://www.spp.org/spp-documents-

<u>filings/?document_name=SPP+Transmission+Expansion+Plan&docket=&start=&end=&filter_filetype=&search_type=filtered_search.</u>

a.-b. Please refer to SPP's 2017 STEP Project List referenced above. It includes upgrades with SPP-determined in-service dates in 2023 and 2024. The Company's understanding is that SPP included these projects in its 2019 ITP PROMOD model for 2024 and 2029.

Prepared By: Anita A. Sharma Title: Engineer Staff

Prepared by: Cecile Bourbonnais

Title: Research Analyst, The Brattle Group
Prepared by: Sophie Leamon

Title: Research Analyst, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-31:

In Figure 1 on page 7 of Witness Sheilendranath's direct testimony, is the congestion cost calculated on a gen-weighted basis for both the source and the sink? What is the difference in the congestion values if a load-weighted hub for the AEP West load zone is used?

Response No. 2-31:

Yes, the referenced congestion costs are calculated by Mr. Sheilendranath on a generation-weighted basis for both the source and the sink. This is because the congestion cost incurred by the selected wind facilities when delivering from their generation source locations to the AEP load zone must be calculated as (1) the difference in congestion component of LMPs at the AEP load zone and the generation source node; multiplied with (2) the injected increment of wind generation at the source node.

Valuing wind-generation related congestion on an AEP load-weighted basis would not correctly capture the congestion experienced in delivering the actual wind generation MWh injected to load. Doing so would result in calculating the congestion cost by injecting and withdrawing different amounts of generation at the source and sink nodes. As a result, this analysis has not been performed.

Prepared by: Cecile Bourbonnais Title: Research Analyst, The Brattle Group Prepared by: Sophie Leamon Title: Research Analyst, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-32:

Please provide the PROMOD models and associated outputs used to generate the values in Figure 1 on page 7 of Witness Sheilendranath's direct testimony.

Response No. 2-32:

The information responsive to this request is HIGHLY SENSITIVE under the terms of the Protective Order. The Highly Sensitive information is available for review at the Austin offices of American Electric Power Company (AEP), 400 West 15th Street, Suite 1520, Austin, Texas, 78701, (512) 481-4562, during normal business hours.

Please see ETEC 2-32 Highly Sensitive Attachment 1.

Prepared By: Anita A. Sharma Title: Engineer Staff

Prepared by: Cecile Bourbonnais Title: Research Analyst, The Brattle Group Prepared by: Sophie Leamon Title: Research Analyst, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-33:

Please provide the criteria used to group generators into the nine clusters, including the following information:

- a. The highest and lowest DFAX for every generator in each cluster regardless of impacted element,
- b. The highest and lowest DFAX for every generator in each cluster for each impacted element,
- c. The criteria used to exclude transmission system elements from the DFAX calculation,
- d. Any correspondence received by or initiated by Witness Ali regarding the assumptions, methodology, approach, or results of the DFAX analysis.

Response No. 2-33:

The information responsive to this request is HIGHLY SENSITIVE under the terms of the Protective Order. The Highly Sensitive information is available for review at the Austin offices of American Electric Power Company (AEP), 400 West 15th Street, Suite 1520, Austin, Texas, 78701, (512) 481-4562, during normal business hours.

- a. The generator to cluster mapping sheet is included in ETEC 2-33 Highly Sensitive Attachment 1 and using this as a reference the requested data can be extracted from the DFAX data for all the generators on all transmission lines included in ETEC 2-23 Highly Sensitive Attachment 1.
- b. Please see response to 2-33a.
- c. The DFAX of the considered generator projects were reported for all the transmission lines 100 kV and above. The transmission lines were excluded from the DFAX Calculation if the;
 - DFAX of all projects were either 0 or 1, indicating that they were radial lines
 - DFAX of all the projects had a standard deviation of one percent or less on an absolute value basis
 - DFAX of 97% or greater of the projects were 0.1 percent or less on an absolute value basis, indicating that the majority of projects will have minimal impact on the line.
- d. See ETEC 2-33 Confidential Attachment 2.

Prepared By: Anita A. Sharma Title: Engineer Staff

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-34:

On page 8, line 6 of Witness Ali's direct testimony, please describe the criteria used to determine "reasonable outage scenarios." Please admit or deny that the criteria differs from the Company's FCITC analysis used in any other studies performed for the Company. If admit, please explain why and how the criteria differs.

Response No. 2-34:

As also explained in the Direct Testimony of witness Ali and witness Pfeifenberger, market simulation software tools such as PROMOD used in this analysis, make certain simplified assumptions including, but not limited to, a fully intact transmission system (i.e. no transmission outages). As a result, the congestion and curtailment risk identified by such a simulation is understated compared to what may be realized in the real market, where multiple transmission lines may be out of service at any given time. Please refer to p 5:5 to p 6:4 of the Direct Testimony of witness Ali and p 5:1 to p 6:7 of the errata Direct Testimony of witness Pfeifenberger for additional explanation on the limitations of the PROMOD tool. Based on SPP's '2018 Annual State of the Market Report', wind capacity has more than doubled from 8.6GW in 2014 to 20.6GW in 2018. At the same time, wind generation has constituted a growing and significant part of the annual generation, from around 12 percent in 2014 to 24 percent in 2018. In the same report, SPP also stated that most of the highest congested corridors on the SPP system were significantly impacted by the inexpensive wind generation. Furthermore, the Company reported approximately 80 GW of wind energy resources in the SPP interconnection queue at the time of the study and the Company believes that there is a high potential for wind deployment the SPP footprint going additional resources in Company's methodology to evaluate deliverability of the wind resources under outage scenarios was designed to address the unique challenges foreseen in the SPP Region related to impacts of wind energy growth on the transmission system and the limitations of existing production cost simulations tools to capture congestion under real time market conditions.

The Company has not performed FCITC analysis for evaluating RFP respondents in the past but the Company believes such an FCITC analysis was warranted to assess the relative risk and sensitivity to transmission congestion and curtailment under projected conditions with increased levels of wind penetrations for the wind generators that responded to the RFP. The Company clustered the proposed wind facilities based on their distribution factors on the transmission system followed by FCITC analysis between each cluster and the AEP West Load Zone to determine the most critical transmission element that will result in transfer limitations. The transmission limits are reported at increasing transfer levels. The contingency associated with the first transfer limit from this analysis was used to determine reasonable outage scenarios for each cluster. The FCITC analysis was repeated using the power flow model that included the transmission outage and the transfer limit from this analysis was established as the maximum capacity deliverable from each cluster.

Prepared By: Anita A. Sharma Title: Engineer Staff

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-35:

Please provide a copy of the Company's NERC TPL criteria.

Response No. 2-35:

The NERC TPL criteria can be accessed from the following link, https://www.nerc.com/pa/Stand/Reliability%20Standards/TPL-001-4.pdf

Prepared By: Anita A. Sharma Title: Engineer Staff

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-36:

Please provide a list of all changes made to the SPP ITP models for the Transmission Congestion Screening Analysis, including, but not limited to:

- a. Each Generator addition,
- b. Each Transmission System topology change,
- c. Any changes to load values,
- d. Any changes to fuel forecast, and
- e. Any changes to generator parameters.

Response No. 2-36:

The information responsive to this request is CONFIDENTIAL under the terms of the Protective Order. The Confidential information is available for review at the Austin offices of American Electric Power Company (AEP), 400 West 15th Street, Suite 1520, Austin, Texas, 78701, (512) 481-4562, during normal business hours.

- a. Please see ETEC 2-36 Confidential Attachment 1.
- b. SWEPCO did not add any new transmission to the SPP 2019 ITP PROMOD models utilized for the congestion screening analysis in the RFP Bid Evaluation process. Instead, SWEPCO relieved transmission constraints associated with the transmission network upgrades identified by SPP as part of the participating bids' generation interconnection process. Relieving transmission constraints in PROMOD modeling means that PROMOD simulations will ignore those constraints in PROMOD's security constrained unit commitment and dispatch decisions. Additionally, as explained on p. 23 of witness Pfeifenberger's errata direct testimony, SWEPCO assumed that the Cleveland 138 kV bus-tie, located west of Tulsa, will be addressed by an SPP solution in the near term since it was identified by SPP as both an economic and operational need in the 2019 ITP Study and the transmission upgrade costs were expected to be low. This Cleveland 138 kV bus-tie modeling constraint was also relieved in the PROMOD modeling undertaken for the RFP Bid Evaluation analysis.
- c. No changes.
- d. No changes.
- e. No changes.

Prepared By: Anita A. Sharma Title: Engineer Staff

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Ouestion No. 2-37:

Referencing page 9, lines 8-10 of Witness Ali's direct testimony, please explain how "the impacts of transmission facilities planned to be upgraded as part of any added generator's network upgrades identified in their specific SPP system impact study were also included." Please provide the SPP System Impact Study reports for each generator addition referenced in regard to the aforementioned statement from Witness Ali's direct testimony.

Response No. 2-37:

Please see p 19:17 through p 20:2 of witness Pfeifenberger's errata direct testimony for an explanation of how the impacts of the referenced transmission facilities were included in the Company's analysis. Please refer to ETEC/NTEC 2-20 for the SPP System Impact Study reports for each generator addition.

Prepared By: Anita A. Sharma Title: Engineer Staff

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Ouestion No. 2-38:

On page 18, lines 12-13 of Witness Torpey's direct testimony, what is the Selected Wind Facilities' capacity MW value used to calculate benefits? How does this MW value compare to the Summer Net Renewable Capability MW value calculated for the Selected Wind Facilities based on SPP Planning Criteria 7.1.5.3 Section 7?

Response No. 2-38:

Witness Torpey assumed a 15.3% capacity benefit or 124 MW for SWEPCO under the proposed ELCC accreditation methodology (SPP planning criteria section 7.1.6.1) for Tier 2 resources in for all years. The capacity value for new facilities under 7.1.5.3 Section 7 criteria was 5% for 3 years and then 15% thereafter. The benefits analyses assumed the selected wind facilities would not allow for the deferral of other capacity until 2037, so the difference between the two methods from then on is 0.3% or 2 MW (124 vs 122 MW).

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-39:

From page 10, lines 15-19 of Witness Torpey's direct testimony, please provide the basis for the assumption to cap the addition of wind resources to "a maximum of roughly forty percent of each company's energy production to prevent the model from selecting an amount of wind resources that could be inconsistent with maintaining SPP's grid stability."

- a. Please provide any documents, white papers or presentations developed by SPP that the Company relied upon to assess SPP grid stability.
- b. Does the location of wind resources impact the stability of the SPP grid?
- c. What assumptions did the Company make in the PROMOD, AURORA, or PLEXOS models regarding the location of planned wind facilities that could have a negative impact on SPP grid stability?

Response No. 2-39:

The 40 percent of energy production figure is a general planning assumption. As stated in JFT Exhibit 1, the 2018 Integrated Resource Plan, Section 4.5.5.2, the 40% limit was informed by the 2015 DOE Wind Vision report, which suggests transmission grids should be able to support intermittent resources at a level of 20 to 30 percent. However, in 2018, according to the U.S. Energy Information Administration, wind generation in Oklahoma, Kansas, and Iowa accounted for 32%, 36%, and 34%, respectively, of total generation, suggesting levels greater than 30% could be achieved. A 2019 study published in "Energies" (Energies 2019, 12, 712; doi:10.3390/en12040712), states that Denmark had the highest wind power concentration rate at 44% of annual consumption of electricity in 2017.

- a. The Company did not rely on any specific documents or statements by SPP.
- b. It is possible that the location of a resource could impact grid stability. SPP's DISIS Study includes stability analysis for each Generator Interconnection Request and stability issues are considered for transmission reinforcements under ERIS. Generators that fail to meet SPP's stability requirements for damping or dynamic voltage are assigned recovery upgrades such that these requirements can be met.
- c. The Company utilized the SPP-developed 2019 ITP PROMOD model which included PSO/SWEPCO's existing wind facility contracts. The Company modified the PROMOD model to include Selected Wind Facilities not in the SPP Reference Case and assigned the Selected Wind Facilities to the AEPW Zone. The Selected Wind Facilities were

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connected to the proposed interconnection locations on the SPP Transmission Grid in the PROMOD models. The impacts of the Selected Wind Facilities on SPP grid stability were evaluated by SPP through its DISIS study process. Moreover, the databases in the Company's AURORA and PLEXOS models are not set up as transmission models, thus specific geographic locations are not specified therein.

Prepared By: Anita A. Sharma Title: Engineer Staff

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-40:

Does the PLEXOS model use a transmission system model to calculate locational impacts or is the model solely used to compute an average price for each region?

Response No. 2-40:

Energy prices are an input to the PLEXOS model as used by the Company. SWEPCO does not use PLEXOS to compute market prices. PLEXOS is used with a given set of inputs for unit costs and market prices to determine hourly unit dispatch. The PLEXOS model does not use a transmission system model to calculate locational impacts.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-41:

Please describe how the Company computed the amount and deliverability associated with offsystem sales.

Response No. 2-41:

Off system sales volume is a function of SWEPCO's forecasted generation and committed purchases from *PLEXOS®* and forecasted internal load on an hour by hour basis. An off-system sale is forecasted to occur in a given hour when the sum of SWEPCO's total forecasted generation and committed purchases is greater than its internal load requirement. The Company assumes 100% deliverability.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr
Prepared By: James F. Martin Title: Regulatory Case Mgr

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-42:

From page 21, lines 17-20 of Witness Torpey's direct testimony, please explain how the change from the existing SWEPCO fleet is minimal when the addition of the Selected Wind Facilities is supposed to reduce the energy output of coal facilities from 83% to 44%.

Response No. 2-42:

The referenced lines in Witness Torpey's errata direct testimony refer to energy output of individual units in SWEPCO's existing fleet between the With and Without Selected Wind Facilities PLEXOS cases for each scenario. The drop in coal energy from 83% to 44% (as shown in the 2018 IRP Figures ES-4 and ES-5) is the difference between forecasted coal energy from 2019 to 2039. The percentage of SWEPCO's total energy from coal declines because new wind, solar and gas units are projected to be added over time, while retiring selected coal units. The denominator in the ratio (SWEPCO total energy) gets larger while the numerator (SWEPCO coal energy) declines as coal units retire, so the coal percentage declines. The projected capacity factor of the Company's coal units are not impacted by the addition of the Selected Wind Facilities.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-43:

Please provide the basis for the in service date of the gen-tie in 2026.

Response No. 2-43:

See the Company's response to ETEC 2-29. For illustration purposes the Company picked the earliest year it expects it could get the line in service while allowing for some time to observe congestion prior to commencing construction. This illustrates potential near-term impacts assuming high congestion arises early in the facilities' lives.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-44:

Please provide any changes to the SPP transmission expansion that have been identified that are not included in the Company's analysis.

Response No. 2-44:

Since the Company performed congestion analysis using SPP's 2019 ITP economic models, SPP has identified transmission solutions for the 2019 ITP transmission needs through their 2019 ITP Assessment Study process. SPP recommends transmission projects based on benefit-to-cost thresholds and a stakeholder approved consolidation methodology developed to select transmission projects from the two futures analyzed in the 2019 ITP. The transmission projects for the 2019 ITP Assessment were approved by the SPP Board in October 2019 and are not included in the Company's analysis. However, given the uncertainty about the specific transmission projects that would be approved by SPP at the time of the study, the Company used the list of SPP-ITP-identified transmission needs and implemented the associated transmission upgrades by relieving the SPP-identified constraints in the simulations.

Prepared By: Anita A. Sharma Title: Engineer Staff

Prepared by: Akarsh Sheilendranath

Title: Senior Associate, The Brattle Group

Sponsored by: Johannes P. Pfeifenberger Title: Principal, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-45:

Please confirm that the load forecast used in the PLEXOS, AURORA and PROMOD models are the same.

Response No. 2-45:

Denied. PLEXOS, Aurora and PROMOD rely upon contemporaneous load forecasts unique to each of their modeled regions, states, or specific electric power system.

Prepared By: Anita A. Sharma Title: Engineer Staff

Prepared By: Jon R. Maclean Title: Resource Planning Mgr Prepared By: James F. Martin Title: Regulatory Case Mgr

Prepared By: Connie S. Trecazzi

Title: Economic Forecast Anlyst Staff

Sponsored By: Karl R. Bletzacker Title: Dir Fundamental Analysis Sponsored By: Kamran Ali Title: Mng Dir Trans Planning

Sponsored By: John F. Torpey
Title: Mng Dir Res Plnning&Op Anlysis
Sponsored by: Akarsh Sheilendranath
Title: Senior Associate, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-46:

Please confirm or deny: The load in the PROMOD is not grossed up for losses.

Response No. 2-46:

Deny. The Load Forecasts used in the PROMOD models represent Load and Losses combined. As a direct current representation of the system, PROMOD lacks the capability to accurately calculate losses in the simulations and must therefore use the Loss assumptions which are included in the Load Forecasts.

Prepared By: Anita A. Sharma Title: Engineer Staff

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-47:

What is the expected MW and percent penetration of wind facilities in 2024 and 2029 in the SPP region as referenced on Page 7, Lines 6-9 of Witness Pfeifenberger's direct testimony.

Response No. 2-47:

The 2019 ITP PROMOD Reference Case (Future 1) referenced on page 7 of witness Pfeifenberger's errata direct testimony includes SPP's assumption for future wind capacity of 24,200 MW in 2024 and 24,600 MW in 2029.

The Company has not calculated the wind penetration levels in the SPP region based on SPP's 2019 ITP PROMOD Reference Case, and therefore does not have the requested information. However, note that in 2016, SPP published its 2017 Variable Generation Integration study, which analyzed the SPP transmission system performance in 2017 and 2021, under 45% and 60% wind penetration levels, where penetration was defined as the aggregate wind output during Light Load condition (i.e., wind output as a percentage of SPP Light load). Based on this study, in 2021, the 45% wind penetration level corresponded to 11.1 GW of total wind output, and the 60% penetration level to 14.7 GW of total wind output, compared to a 24.6 GW Light Load level.

The study is publicly available on SPP's website at https://www.spp.org/documents/45106/2017%20variable%20generation%20intergration%20stud y%20(vis)%20-%20170221.pdf.

Prepared by: Akarsh Sheilendranath

Title: Senior Associate, The Brattle Group

Sponsored by: Johannes P. Pfeifenberger Title: Principal, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-48:

If the projected wind penetration in SPP is greater than 40%, please explain why wind penetration in SWEPCO and PSO was limited to 40% in Witness Torpey's direct testimony.

Response No. 2-48:

See the response to ETEC 2-39.

Prepared By: Jon R. Maclean Title: Resource Planning Mgr
Prepared By: James F. Martin Title: Regulatory Case Mgr

Sponsored By: John F. Torpey Title: Mng Dir Res Plnning&Op Anlysis

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-49:

Please provide any documents, white papers or presentations relied upon to make the assumption that coal and gas-fired generators over the age of 60 will be retired.

Response No. 2-49:

The Company's analysis is based on SPP's ITP PROMOD Reference Case (Future 1), which included the SPP assumption that all fossil fuel units over the age of 60 would be retired subject to stakeholder input. Please see SPP's "2019 Integrated Transmission Planning Assessment Scope," published on October 16, 2018 and available at https://www.spp.org/documents/60005/2019%20itp%20scope.pdf.

This assumption was developed by SPP in coordination with its stakeholders, and the Company does not have in its possession any documents and/or stakeholder presentations relied upon by SPP, and/or its stakeholders in developing this assumption.

Prepared by: Akarsh Sheilendranath Title: Senior Associate, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-50:

How are the concerns regarding SPP grid stability impacted by the assumed retirement of the coal and gas-fired generation over the age of 60. Please provide any stability analysis conducted by the Company or SPP that shows the impact of the coal and gas-fired generation as referenced above.

Response No. 2-50:

The Company has not performed any stability assessments for 2024 and/or 2029 to assess the stability impact of the SPP-assumed coal and gas-fired generation retirements in its 2019 ITP study. The Company is also not aware of any grid stability assessment was performed by SPP to assess the stability impact of the SPP-assumed coal and gas-fired generation retirements.

SPP's recently published "2019 Integrated Transmission Planning Assessment Report," dated October 2019, notes that the recommended final ITP portfolio addresses any system voltage stability concerns, and that the planned system supports future-specific generation dispatches under which SPP assessed the 2024 and 2029 transmission system's voltage stability performance. For SPP's voltage stability assessment discussion in the ITP Assessment Report, please see Section 8.4 at the following link: https://www.spp.org/Documents/60730/2019%20ITP%20Report v0.5.zip

Prepared by: Akarsh Sheilendranath

Title: Senior Associate, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Ouestion No. 2-51:

Please provide a list of all transmission projects placed into service in the SPP region from 2014 to 2019.

Response No. 2-51:

Please see SPP's quarterly tracking portfolio and associated appendices (in Microsoft Excel format) for Q4 2019. This document is publicly available on SPP's website at: https://www.spp.org/spp-documents-filings/?id=18641.

To identify transmission projects placed into service from 2014 to 2019, please access the excel file "Q4 2019 SPP Quarterly Project Tracking Appendix I.xlsx", and filter the list of projects to those with a "Project Status" (column R) of "COMPLETE" or "IN SERVICE", and a "Project Owner Indicated In-Service Date" (column I) between 2014 and 2019.

Prepared by: Akarsh Sheilendranath

Title: Senior Associate, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-52:

Referencing page 15, lines 3-5 of Witness Pfeifenberger's direct testimony, please provide the analysis of all transmission alternatives considered by the Company that were considered to mitigate congestion costs.

Response No. 2-52:

Please refer to the direct testimony of Company witness Kamran Ali, p. 10, line 1 - p.12, line 6 for a discussion of the transmission alternatives considered by the Company to mitigate potential future congestion costs. As discussed in Mr. Ali's direct testimony, the Company analyzed the cost of directly connecting the RFP generators to the AEP West Load Zone in Tulsa, via a gentie to mitigate future congestion and curtailment risk. Please refer to ETEC-NTEC 2-52 Attachment 1 for this analysis.

Prepared By: Adam J. Hickman Title: Dir Trans Bus Development

Prepared By: Anita A. Sharma Title: Engineer Staff

Sponsored By: Kamran Ali Title: Mng Dir Trans Planning

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-53:

Please provide congestion hedges for each Company generating asset or purchased power agreement, including:

- a. The source and sink of each congestion hedge,
- b. The requested volume of each congestion hedge,
- c. The granted volume of each congestion hedge, and
- d. The time period covered by each congestion hedge.

Response No. 2-53:

The information responsive to this request is HIGHLY SENSITIVE under the terms of the Protective Order. The Highly Sensitive information is available for review at the Austin offices of American Electric Power Company (AEP), 400 West 15th Street, Suite 1520, Austin, Texas, 78701, (512) 481-4562, during normal business hours.

a.-d. Please see ETEC-NTEC 02-53 HIGHLY SENSITIVE Attachment 1 for the requested information.

Prepared By: Charles R. Ross Title: Mng Dir RTO Policy & FERC Rec

Prepared By: Scott E. Mertz

Title: Regulatory Consultant Staff
Sponsored By: Thomas P. Brice

Title: VP Regulatory & Finance

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-54:

Please provide the event (.eve) file used for each PROMOD case.

Response No. 2-54:

The information responsive to this request is HIGHLY SENSITIVE under the terms of the Protective Order. The Highly Sensitive information is available for review at the Austin offices of American Electric Power Company (AEP), 400 West 15th Street, Suite 1520, Austin, Texas, 78701, (512) 481-4562, during normal business hours.

Please see ETEC 2-54 Highly Sensitive Attachment 1.zip

Prepared By: Anita A. Sharma Title: Engineer Staff

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-55:

At what MW level of penetration will SPP achieve a 40% wind penetration level:

- a. In 2024?
- b. In 2029?

Response No. 2-55:

The Company does not have not have the requested information. Please also see response to ETEC 2-47.

Prepared by: Akarsh Sheilendranath Title: Senior Associate, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-56:

Please provide any documents, work papers, presentations, and notes regarding the "constraint identification" step referenced in footnote 7 of Witness Pfeifenberger's direct testimony, including:

- a. The initial event file provided by SPP,
- b. The constraints considered by the Company in the "constraint identification" step, and
- c. The final event file used for each PROMOD case.

Response No. 2-56:

The information responsive to this request is HIGHLY SENSITIVE under the terms of the Protective Order. The Highly Sensitive information is available for review at the Austin offices of American Electric Power Company (AEP), 400 West 15th Street, Suite 1520, Austin, Texas, 78701, (512) 481-4562, during normal business hours.

The "constraint identification" was conducted using the PROMOD Analysis Tool. The analysis was entirely contained within that tool and there are no documents, work paper, presentations, or notes to provide. The results of that effort are contained within the event files themselves.

- a. Please see ETEC 2-56 Highly Sensitive Attachment 1.zip for the Original SPP Event Files
- b. The event files contain the constraints considered by the Company in the "constraint identification" step. A text file comparison tool can be used to compare the event files to identify the changes.
- c. Please see ETEC 2-56 Highly Sensitive Attachment 2.zip.

Prepared By: Anita A. Sharma Title: Engineer Staff

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Ouestion No. 2-57:

Referencing page 20, lines 13-15 of Witness Pfeifenberger's direct testimony, please provide all work papers, models, input files, output files, reports and presentations detailing the "likely future transmission upgrades" the Company included in their refinement of the SPP PROMOD case.

Response No. 2-57:

As explained on pages 33-34 of Mr. Pfeifenberger's errata Direct Testimony, SWEPCO assumed for the purpose of its "Base Case" customer benefit analysis that 2019 ITP needs identified by SPP would be addressed by SPP when it develops and finalizes the 2019 ITP solutions. For SWEPCO's customer benefits analysis of the Selected Facilities based on the PROMOD "Base Case", this means the constraints associated with these SPP-identified 2019 ITP needs were relieved (i.e., ignored in the PROMOD security constrained unit commitment and dispatch simulations).

In the customer benefits analysis of the Selected Facilities under the high congestion scenario using the "No-SPP-Upgrades" PROMOD case (which is used for gen-tie evaluation), SWEPCO assumed that none of these SPP-identified 2019 ITP needs would be addressed (with the exception of the Cleveland 138 kV bus-tie transmission need as noted in footnote 8 in Mr. Pfeifenberger's testimony).

Please see ETEC 2-56 Highly Sensitive Attachment 2, which provides the event files that list the 2019 ITP needs-related constraints that SWEPCO assumed would be addressed by SPP by 2024/2029 through its ITP process.

Prepared by: Cecile Bourbonnais Title: Research Analyst, The Brattle Group
Prepared by: Sophie Leamon Title: Research Analyst, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-58:

Please provide the SRP RFP IE Briefing, dated April 16, 2019 (see page 26 of Witness Pfeifenberger's direct testimony).

Response No. 2-58:

The information responsive to this request is HIGHLY SENSITIVE under the terms of the Protective Order. The Highly Sensitive information is available for review at the Austin offices of American Electric Power Company (AEP), 400 West 15th Street, Suite 1520, Austin, Texas, 78701, (512) 481-4562, during normal business hours.

Please see ETEC 2-58 Highly Sensitive Attachment 1.

Prepared by: Akarsh Sheilendranath

Title: Senior Associate, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-59:

Please confirm or deny: The PROMOD model can be used to calculate the SPP Central market prices.

Response No. 2-59:

Yes, SPP's 2019 ITP PROMOD model can be used (and was used) to compute the SPP Central zone's market prices. However, note that the SPP Central zone is a zone defined in the Aurora model. SPP's 2019 ITP PROMOD model does not include this Aurora-defined SPP Central zone, but this Aurora-defined SPP Central zone closely corresponds to the generation resources nodes of SPP's AEP, GRDA, OKGE, SPS, and WFEC zones. Therefore, to compute a price AURORA-defined "SPP Central zone" in PROMOD, Mr. Sheilendranath calculated the hourly generation-weighted-average LMP for the five PROMOD-defined SPP generation zones.

Prepared by: Akarsh Sheilendranath

Title: Senior Associate, The Brattle Group

Sponsored by: Johannes P. Pfeifenberger Title: Principal, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-60:

Is the scaling of the market prices between PROMOD and AURORA performed based on the monthly difference or the annual difference? If based on the annual difference, please explain the reason for not using monthly scaling.

Response No. 2-60:

The scaling of market prices between PROMOD and AURORA relies on annual average differentials calculated for each hour (1-24) of the day.

Aurora's fundamental forecasts of SPP Central market prices were only adjusted to reflect congestion and loss costs between SPP Central and: (1) the SWEPCO generation zone, and (2) the AEP Load zone. This congestion-and-loss adjustment was based on the annual average PROMOD market price differentials, calculated by hour ending 1 to 24 of the same SPP Central to SWEPCO generation and AEP load differences in PROMOD. This resulted in 24 annual average differential values—one for each hour of the day, which allowed for maintaining a reasonable daily shape of market prices when scaling between PROMOD and Aurora prices.

Use of monthly average differentials were considered, but were not adapted in order to preserve the seasonal price shapes of Aurora's fundamental forecast for market prices. Note that PROMOD and Aurora models are developed for very different purposes (as explained by witness Pfeifenberger in his testimony) and therefore do not have the same fundamentals assumptions, and thus do not result in the same seasonal shapes of market prices. Taking the adjustment for congestion and losses with a seasonal shape from PROMOD would not have matched the seasonal shape of prices in AURORA.

Prepared by: Akarsh Sheilendranath

Title: Senior Associate, The Brattle Group

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-61:

In reference to the direct testimony of SWEPCO witness John Aaron, page 6, lines 18 through 23, please explain why SWEPCO is using an estimated energy allocator to allocate the revenue requirement of the proposed wind facilities and PTCs in the current docket, rather than the estimated kW demand allocator described on page 6, lines 13 through 20, of the direct testimony of SWEPCO witness John Aaron in Docket No. 47461. Include an explanation of what is different and/or what has changed regarding the allocation of wind facility costs since Docket No. 47461.

Response No. 2-61:

As stated in the direct testimony of SWEPCO witness John Aaron, page 6, lines 20 -21, an energy allocation matches the costs of the Facilities with the benefits generated by the Facilities and the PTCs earned. This allocation is appropriate given the Selected Wind Facilities do not produce capacity savings until 2037. Mr. Aaron does not recall any differences or changes regarding the allocation of the wind facility costs since Docket No. 47461 other than the allocation in that docket was based on a traditional demand allocation.

Note that the allocation of all costs to wholesale customers will be performed in accordance with the terms of their contracts, as was the case in Docket No. 47461, regardless of treatment of costs in the Company's retail jurisdictions.

Prepared By: James F. Martin

Title: Regulatory Case Mgr

Prepared By: Jacob A. Miller

Title: Regulatory Consultant Sr

Sponsored By: John O. Aaron Title: Dir Reg Pricing & Analysis

SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO EAST TEXAS ELECTRIC COOPERATIVE, INC. AND NORTHEAST TEXAS ELECTRIC COOPERATIVE, INC.'S SECOND REQUEST FOR INFORMATION

Question No. 2-62:

Please calculate the estimated kW demand allocators for the Arkansas, Louisiana, and Texas retail jurisdictions, for the FERC wholesale jurisdiction (by state and by customer), and for all Texas customer classes using the allocation methodology shown on Exhibit JOA-2 from Docket No. 47461.

Response No. 2-62:

The requested estimated kW demand allocators have not been calculated.

Prepared By: James F. Martin Title: Regulatory Case Mgr

Prepared By: Jacob A. Miller Title: Regulatory Consultant Sr

Sponsored By: John O. Aaron Title: Dir Reg Pricing & Analysis