PUC DOCKET NO. 47461
SOAH DOCKET NO. 473-17-5481

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APPLICATION OF SOUTHWESTERN ELECTRIC POWER COMPANY FOR CERTIFICATE OF CONVENIENCE AND NECESSITY AUTHORIZATION AND RELATED RELIEF FOR THE WIND CATCHER ENERGY CONNECTION PROJECT IN OKLAHOMA	§ § § § § § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

ORDER

This Order addresses the application of Southwestern Electric Power Company (SWEPCO) for a certificate of convenience and necessity (CCN) to authorize it to acquire, develop, and own a wind generation facility with a nameplate capacity of 2,000 megawatts (MW) and a 765-kilovolt (kV) generation tie-line to transmit electric energy from the Oklahoma Panhandle to eastern Oklahoma (together, the project). SWEPCO proposed to own 70% of the project, with the remaining 30% to be owned by its affiliate, Public Service Company of Oklahoma (PSO). SWEPCO also requested a good-cause exception to 16 Texas Administrative Code (TAC) § 25.236 to allow it to treat the costs associated with the project as a fuel expense and the federal production tax credit as a credit against the fuel expense. In addition, SWEPCO requested Commission approval to defer for ratemaking purposes a portion of the federal production tax credits into a regulatory liability to be credited back to consumers starting 11 years after the project begins operation. Finally, SWEPCO also filed an application under PURA § 14.101 but argued that section does not apply to this proceeding. In the alternative, SWEPCO requested a public interest finding under that section if the Commission were to find that PURA § 14.101 applies.

The Commission referred the application to the State Office of Administrative Hearings (SOAH) and a hearing on the merits was held on February 13 through February 22, 2018. On May 18, 2018, the SOAH administrative law judges (ALJs) issued a proposal for decision (PFD) in which they recommended approval of the application with certain guarantees to protect consumers if the project does not realize the benefits anticipated in the PFD assessment. After exceptions and replies to exceptions were filed by many of the parties, the ALJs issued a letter on July 6, 2018 making changes to some assumptions used in their analysis that reduced the amount

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of estimated benefits presented in the PFD, but did not change their recommendation to approve the application. The ALJs recommended changes to findings of fact 90, 92, 101, 109, and 123 through 125.

The Commission disagrees with the ALJs' recommendation to approve the application. The Commission finds that SWEPCO did not meet its burden of proof in this proceeding. Based on the evidence admitted in this proceeding, the Commission finds that SWEPCO failed to show that the project will lead to the probable lowering of cost to SWEPCO's consumers and, consequently, that it failed to show that the project is necessary for the service, accommodation, convenience, or safety of the public under PURA § 37.056.[1] Accordingly, the Commission must deny the application and does so for the reasons discussed in this Order. In addition, the Commission adopts only those portions of the PFD as specified in this Order.

I. Discussion

Under PURA § 37.056, the Commission may grant a certificate of convenience and necessity only if the Commission finds it is necessary for the service, accommodation, convenience, or safety of the public. In evaluating whether to grant an application under that section, the Commission must consider certain factors, including the probable lowering of cost to consumers.[2] SWEPCO acknowledged in its application, and all parties in this docket agree, that this project is not needed to meet increased load or address capacity issues and that service is adequate. Instead, SWEPCO stated that it filed this application because it believes this project will provide savings to its consumers.[3] Because the project is located entirely outside of the state of Texas, the ALJs concluded that the Commission should not evaluate the site-specific factors listed in PURA § 37.056, such as community, historical, and aesthetic values.[4] Thus, while the ALJs did address other factors,[5] the main focus of this proceeding and the PFD was a single factor: whether the project would result in the probable lowering of cost to consumers.

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[1] Tex. Util. Code Ann. §§ 11.001–58.302 (West 2016 & Supp. 2017), §§ 59.001–66.016 (West 2007 & Supp. 2017 (PURA).

[2] *See* PURA § 37.056(c).

[3] PFD at 2.

[4] *Id.* at 2, 65.

[5] *See* Finding of Fact Nos. 13–18.

The burden of proof in this proceeding resides with SWEPCO, the applicant, to prove that the project is necessary for the service, accommodation, convenience, or safety of the public. SWEPCO calculated the purported benefits of the project, the lowering of cost to consumers, based on certain assumptions. It estimated the likely amount of benefits to consumers over the life of the project to be $1.495 billion on a net-present-value basis.[6]

The ALJs adjusted three of SWEPCO's assumptions[7] and found that the amount of purported benefits was significantly lower than what SWEPCO estimated but still concluded that some benefits were likely to occur.[8] Because of this lower amount of benefits, the ALJs recommended certain protections for consumers, including a guarantee of 100% of the production tax credits that SWEPCO would receive based on the actual output of the facility with an exception for changes in law, a guarantee of a cost cap of 103% of the estimated costs of the project, and a guarantee of a 44.7% net capacity factor without an exception for force majeure or change in law.[9]

Other parties in this case vigorously disagreed with the assumptions used by SWEPCO in its analysis. Using different assumptions, they found that the project would not lead to a probable lowering of cost to consumers and, indeed, could lead to a net cost to consumers. One intervenor, the Office of Public Utility Counsel (OPUC), argued that the net cost could be $912 million,[10] another intervenor, Texas Industrial Energy Consumers (TIEC), argued that the net cost could exceed $1 billion,[11] and yet another intervenor, Cities Advocating Reasonable Deregulation (CARD), argued that the net cost to consumers could be $1.971 billion.[12]

The parties in this case raised many issues in challenging SWEPCO's estimates regarding the costs of the project. SWEPCO's own witness stated that for every 1% of capital-cost overrun, the net present value of the project's benefits would decrease by $30 million.[13] Commission Staff's

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[6] PFD at 2, 8.

[7] *Id.* at 8–9, 29–30, 33, 36–37.

[8] *Id.* at 2.

[9] *Id.* at 59-61; ALJs' Exceptions Letter at 2–4 (July 6, 2018).

[10] OPUC's Reply to Exceptions to the Proposal for Decision at 5 (June 25, 2018).

[11] TIEC's Reply to Exceptions to the Proposal for Decision at 4 (June 25, 2018).

[12] CARD's Exceptions to the Proposal for Decision at 13 (June 12, 2018).

[13] Tr. at 1049:14–17 (Pearce Cross) (Feb. 20, 2018).

witness testified that no facility study has been conducted by the Southwest Power Pool (SPP) and without such a study, the full costs of the project are not sufficiently known to provide an adequate cost-benefit analysis.[14] Evidence also showed that because of the length and location of the generation tie-line, difficulty in acquisition of rights-of-way and exposure to weather-related events may occur, which could add delay and additional cost to the project,[15] either of which would lower any projected benefits of the project.

The other parties also raised many issues that cast doubt on the assumptions SWEPCO used to evaluate the economics of the project. A central issue of this case is the forecasted price of natural gas. SWEPCO used an in-house analysis called the *fundamentals forecast*, which was provided to all American Electric Power (AEP) companies in October 2016. The ALJs found SWEPCO's base-case assumption, at a levelized price of $7.35 per million British thermal units (MMBtu), to be too high and based on an out-of-date forecast.[16] Instead, the ALJs used the levelized Energy Information Administration (EIA) 2018 reference forecast of $5.32 per MMBtu.[17] Because a decrease of $1 per MMBtu in gas prices would reduce the estimated base-case savings of the project by approximately $392 million on a net-present-value basis, the ALJs reduced the estimated amount of benefits of the project by $678 million.[18]

Other parties put forth evidence showing that in recent Commission proceedings, lower gas prices were used that are more aligned with the New York Mercantile Exchange (NYMEX) futures pricing, which represents actual transactions between buyers and sellers who put real money at risk in their day-to-day operations.[19] In Docket No. 46936,[20] the Southwestern Public

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[14] Direct Testimony of David Smithson, Commission Staff Ex. 3A at 10.

[15] Tr. at 231–233, 669–674 (Weber Cross) (Feb. 13, 2018); Staff Ex.3A at 6 (Smithson Direct); Direct Testimony of Jeffry Pollock, TIEC Ex.1 at 42; TIEC's Initial Brief at 16–17.

[16] PFD at 29.

[17] *Id.* at 29–30; ALJs' Exceptions Letter at 2.

[18] *Id.*

[19] TIEC Ex. 1 at 14 (Pollock Direct).

[20] *Application of Southwestern Public Service Company for Approval of Transactions with ESI Energy, LLC, Invenergv Wind Development North America LLC, to Amend a Certificate of Convenience and Necessity for Wind Generation Projects and Associated Facilities in Hale County, Texas and Roosevelt County, New Mexico and for Related Approvals*, Docket No. 46936, Supplemental Settlement Testimony of David T. Hudson on Behalf of Southwestern Public Service Company (Apr. 19, 2018).

Service Company (SPS), in its low-gas-price forecast, projected a levelized price of natural gas at $3.55 per MMBtu, and in Docket No. 46416,[21] Entergy Texas, Inc. (ETI) projected $3.68 per MMBtu.[22] The NYMEX futures price, when trended to 2045, of $3.58 per MMBtu was also well below SWEPCO's forecast.[23] EIA's lowest gas-price case, at $4.12 per MMBtu, was also suggested by OPUC because, as noted by the ALJs, it has been the forecast that has more closely tracked the actual prices of natural gas for the last several years.[24] Using either EIA's lowest gas-price case or the SPS's low gas-price forecast, intervenors argued that the net present value of the project's projected benefits would be reduced by over $1 billion.[25]

Gas-price forecasts were not the only contested factor used in evaluating the economics of the project. The ALJs also reduced the amount of benefits of the project by $550 million to remove the costs related to an assumed future carbon tax used in SWEPCO's modeling.[26] Other parties strongly criticized this assumption and associated costs, and the ALJs concluded that such costs were not supported by the evidence, stating "there was no credible evidence to show that the imposition of such a carbon tax is likely in the future."[27]

The ALJs also found that approximately 6,000 MW of new wind generation have pending or completed generation interconnection agreements and are likely to be deployed in the SPP footprint, which would decrease the net present value of the project by $76 million.[28] TIEC presented evidence that the SPP interconnection queue includes an additional 10,000 MW of wind projects in the SPP Facility Study Stage, which is one step away from a generation interconnection agreement, and another 24,000 MW are in the Definitive Interconnection System Impact Study

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[21] *Application of Entergy Texas, Inc. to Amend its Certificate of Convenience and Necessity to Construct Montgomery County Power Station in Montgomery County*, Docket No. 46416 (Oct. 7, 2016).

[22] TIEC Ex. 1 at 12 (Pollock Direct).

[23] *Id.*

[24] OPUC's Exceptions to the Proposal for Decision at 8 (June 12, 2018); PFD at 28.

[25] *See* TIEC Ex. 1 at 51 (Pollock Direct) (using the SPS low gas case would lead to a reduction of $1.141 billion in benefits); OPUC's Exceptions at 8 (using EIA lowest gas-price case would lead to a reduction of $1.266 billion).

[26] PFD at 33.

[27] *Id.*

[28] ALJs' Exceptions Letter at 2–3.

Stage.[29] TIEC advocated for assuming a portion, 14,000 MW, of that interconnection queue will be developed, which would decrease the estimated benefits of the project by $499 million.[30]

Another of SWEPCO's assumptions regarding the benefits of the project challenged by the other parties is the project's assumed net capacity factor. Based on studies performed by independent consulting firms, SWEPCO assumed a 51.1% net capacity factor at a P50 estimate, which means there is a 50% likelihood that the actual output will be greater and a 50% likelihood that the actual output would be less than 51.1%.[31] SWEPCO also acknowledged that each 1% reduction in net capacity factor would lead to a $95.6 million reduction in the net present value of the project benefits.[32] Other parties raised issues with the process used by the consulting firms to reach the 51.1% assumption and concerns about the availability of the generation tie-line, which would affect the actual net capacity factor.[33] Additionally, SWEPCO was not willing to guarantee the full 51.1% net capacity factor, placing the risk of underperformance on the consumers.

SWEPCO's assumption of the future capacity value of the wind facility was also contested. SWEPCO contended that the project will allow it to defer the construction of two natural gas combined-cycle units during the life of the project, and to account for this deferral, it included $269 million in its calculation of project benefits. The ALJs noted that much of the proceeding is based on projections and that SWEPCO's estimate of capacity value was reasonable.[34] Intervenors argued that this amount of capacity value is supported by minimal testimony and is dependent on a number of unknown and speculative factors.[35]

The ALJs also identified, but did not quantify, several issues for the Commission to consider that could affect the benefits of the project. First, the ALJs noted that the contingency percentage in the contract with the wind-facility developer was low, at only 3.2% of the total cost

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[29] TIEC Ex.1 at 27–28 (Pollock Direct).

[30] TIEC Exceptions at 35.

[31] PFD at 38.

[32] Tr. at 1050–51 (Pearce Cross) (Feb. 20, 2018).

[33] TIEC Ex.1 at 44–45 (Pollock Direct); Commission Staff Ex. 3A at 6–9 (Smithson Direct).

[34] PFD at 45.

[35] Tr. at 1235–1236 (Pollock Direct) (Feb. 21, 2018); PFD at 45.

of the wind facility.[36] Also, the ALJs determined that, as mentioned above, because of the length and location of the generation tie-line, the difficulty in acquiring right-of-way and the exposure to weather-related events may add delay and additional cost to the project.[37] Third, the ALJs noted that SWEPCO's analysis of additional reserve costs due to the project was not reliable or convincing.[38] Fourth, the ALJs stated that the effect on project benefits from additional wind generation may be understated, because SWEPCO's congestion costs, which have an impact on the locational marginal pricing calculation, are likely too high due to a reliance on the natural gas prices in AEP's fundamentals forecast.[39] Fifth, SWEPCO did not offer to guarantee that consumers would receive the full benefits of the production tax credits in the event that a change in law were to occur, and the ALJs noted that the Commission may wish to consider the effect that a change in law would have on its decision.[40] The Commission takes note of these issues and finds that they add additional uncertainties in the projected benefits and further show that SWEPCO has failed to prove the project will lead to a probable lowering of cost to its consumers.

As mentioned above, the ALJs calculated their projection of potential benefits to consumers and found it insufficient without implementing certain guarantees to protect consumers.[41] In rebuttal testimony, SWEPCO offered various conditions to act as hedges against some of the cost risks of the project.[42] Intervenors also proposed different, more stringent guarantees to protect consumers.[43] In the PFD, the ALJs rejected some proposed guarantees and decided to recommend the following four guarantees: first, two cost caps recommended by Commission Staff, one for the cost of the wind facility and the other for the cost of the project, without exceptions for force majeure and change in law;[44] second, a 30-year life span for the

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[36] PFD at 18.

[37] *Id.* at 19.

[38] *Id.* at 19.

[39] *Id.* at 37.

[40] *Id.* at 44.

[41] *Id.* at 2.

[42] *Id.* at 47.

[43] *Id.* at 56–59.

[44] PFD at 59–60, Proposed Finding of Fact No. 125; *see also* PFD at 48 (discussing Commission Staff's proposal).

depreciation rate of the project;[45] third, a net capacity-factor guarantee of 44.7% without exceptions for force majeure or change in law;[46] and fourth, a guarantee that consumers would receive 100% of the production tax credits that SWEPCO would receive based on a 51.1% net capacity factor with an exception for changes in law.[47] The ALJs rejected a base-case gas-savings guarantee and SWEPCO's 10-year look-back guarantee because they would not properly protect consumers due, in part, to inaccuracies and uncertainties in the methodologies.[48]

After exceptions were filed, the ALJs filed a letter recommending two changes to the guarantees they implemented in the PFD: they changed the project cost cap to 103% on a company-wide basis and clarified that the production tax credit guarantee applied only to the actual output of the facility, not at a 51.1% net capacity factor.[49]

At the Commission's July 12, 2018 open meeting, the Commissioners requested that the parties attempt to reach agreement on the issue of guarantees to protect consumers. Following the open meeting, the parties made various filings that indicated no agreement had been reached between SWEPCO and the other parties in this case regarding the guarantees.

The Commission finds that the guarantees set forth in the PFD and the ALJs' exceptions letter do not sufficiently protect consumers because they do not provide enough certainty of a probable lowering of cost to consumers.

The Commission in this Order does not address the accuracy or reasonableness of any individual assumption made by any party that underlies their analyses in this docket regarding whether this project will provide benefits to consumers. The Commission notes the many assumptions, the range in values of the parties' assumptions, and the significant range of benefits or costs to consumers presented by the parties, ranging from SWEPCO's $1.495 billion in benefits to OPUC's $912 million in costs, TIEC's $1.1 billion in costs, and CARD's $1.971 billion in costs. The bulk of the evidence in this proceeding casts doubt on the assumptions SWEPCO, who bears

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[45] PFD at 60, Proposed Finding of Fact No. 140.

[46] PFD at 61; Proposed Findings of Fact Nos. 126–28.

[47] PFD at 61–62, Proposed Findings of Fact Nos. 129–31.

[48] PFD at 60–61, 62, Proposed Findings of Fact Nos. 33–37.

[49] ALJs' Exceptions Letter at 3–4.

the burden of proof, used to determine that benefits to consumers are probable. The Commission need not choose a single number within this range given the uncertainty of assumptions and the magnitude of the risk that could be imposed upon consumers. In addition, sufficient consumer safeguards have not been offered by SWEPCO that would allow the Commission to conclude there is a probability of benefits to consumers from the project.

For the reasons discussed in this Order, the Commission finds that SWEPCO failed to show that it is probable the project will lead to lower cost for consumers and, consequently, the Commission cannot approve the application. The Commission disagrees with the PFD's conclusion and finds that SWEPCO has failed to show that the project is likely to lead to lower cost for consumers. Accordingly, the Commission adopts those portions of the PFD, including findings of fact and conclusions of law, that address procedure and the positions and arguments of the parties, and other portions consistent with this Order and the decision of the Commission.

To reflect its decision in this matter, the Commission deletes as either unnecessary or incompatible with its decision findings of fact 24, 33, 43, 51 through 56, 58, 59, 74, 85 through 88, 98, 100, 102, 107, 108, 121, 127, 128, 130, 131, 139, 145, and 149, and conclusions of law 4 and 10; modifies findings of fact 60, 83, 84, 89, 99, 105, and 136 and conclusions of law 1, 7, and 11; and adds new findings of fact 50A, 60A, 77A, 92A, 99A, 106A, 109A, and 139A and new conclusion of law 10A.

Findings of fact 90 and 123 are modified and finding of fact 125 is deleted as recommended by the ALJs in their July 6, 2018 letter. The Commission deletes as either unnecessary or incompatible with its decision findings of fact 92, 101, 109, and 124, which also included modifications recommended by the ALJs.

Due to the Commission's decision above, the Commission does not address SWEPCO's request for a good-cause exception to 16 TAC § 25.236, SWEPCO's request to defer a portion of the federal production tax credits into a regulatory liability, SWEPCO's likelihood of obtaining the full amount of the production tax credits, the additional guarantees proposed by intervenors, the effect that approving the application would have on Lubbock Power & Light's or Rayburn Country Electric Cooperative's proposal to become part of the Electric Reliability Council of Texas, or the applicability of PURA § 14.101 to this proceeding. Therefore, it does not adopt the

PFD on these issues and deletes findings of fact 19, 110 through 118, 140 through 144, 148, and 150 through 158 and conclusions of law 5 and 8.

Finally, the Commission also makes non-substantive changes to the findings of fact and conclusions of law for such matters as capitalization, spelling, grammar, punctuation, style, correction of numbering, and readability.

The Commission adopts the following findings of fact and conclusions of law:

II. Findings of Fact

Background and Procedural History

1. SWEPCO is a wholly owned subsidiary of AEP and is a fully integrated electric utility serving retail and wholesale consumers in Texas, Arkansas, and Louisiana.

2. On July 21, 2017, SWEPCO filed an application with the Commission to amend its CCN to authorize acquisition of an interest in the project to be located in Oklahoma. The application also requested preapproval of various ratemaking treatments to recover the project costs from SWEPCO's consumers.

3. The Commission referred the application to SOAH on August 2, 2017.

4. SWEPCO provided notice of the application by publication once a week for two consecutive weeks in a newspaper having general circulation in each county in SWEPCO's service territory. SWEPCO's notice by newspaper publication was completed on September 9, 2017.

5. SWEPCO provided notice to SWEPCO's Texas retail consumers by bill insert, which was completed on September 26, 2017.

6. SWEPCO provided individual notice to Commission Staff and OPUC by hand-delivering a copy of SWEPCO's filing to each party's counsel. Individual notice was also provided to the legal representative of all parties in Docket No. 46449, SWEPCO's last base-rate case, and Docket No. 42527, SWEPCO's most recent fuel reconciliation proceeding. Individual notice was completed on July 31, 2017.

7. The following parties intervened and participated in this docket: TIEC; OPUC; Golden Spread Electric Cooperative, Inc.; East Texas Electric Cooperative, Inc. and Northeast

Texas Electric Cooperative, Inc.; Wal-Mart Stores Texas, LLC and Sam's East, Inc.; CARD; South Central MCN, LLC; and Tri-County Electric Cooperative, Inc..

8. On August 18, 2017 in SOAH Order No. 2, the SOAH ALJ established the procedural schedule and issued notice of the time and place of the hearing.

9. The Federal Tax Cuts and Jobs Act (TCJA) was signed into law on December 22, 2017, with an effective date of January 1, 2018.

10. On January 17, 2018, SWEPCO filed a motion to postpone taking evidence until January 22, 2018 because, after further study of the TCJA, SWEPCO determined that certain testimonies and exhibits would need to be amended or supplemented to reflect accurately the impact of the TCJA.

11. The hearing on the merits was held on February 13 through 16 and on February 20 through 22, 2018.

12. The record closed on April 30, 2018, following the admission of evidence to update the status of the regulatory proceedings in other jurisdictions.

CCN Issues

13. The investment in the project will have a significant impact on SWEPCO's finances.

14. Because the project will be located entirely within the state of Oklahoma, there will be no adverse effects on any other electric utility in Texas.

15. There will be no adverse effect on community values, recreational and park areas, historical and aesthetic values, or environmental integrity in Texas because the project is located entirely within the state of Oklahoma.

16. Because there is no need for the project to serve retail load, the addition of the project will not improve service.

17. Texas has already met its renewable energy goals, so the project will have no effect on those goals.

18. SWEPCO is not currently in the process of implementing customer choice in its service territory.

19. DELETED.

Analysis of Economics of Wind Catcher (PO Issues 10, 12, 14, 25, 26)

20. SWEPCO contends that consumers will experience $1.495 billion in net benefits using its base-gas-price case (which it believes is the correct case to use), $1.114 billion in net benefits under its low-gas-price case, and $1.932 billion in benefits under the high-gas-price case.

Project Description and Cost (PO Issues 10 and 12)

21. The project consists of the Wind Catcher generation tie-line and a wind facility with 800 General Electric model 2.5-MW wind-turbine generators that would provide 1,900 MW of delivered and 2,000 MW nameplate wind energy. The total estimated project costs, including allowance for funds used during construction are set forth in the table below:

	SWEPCO (billions)	TOTAL (billions)
WIND FACILITY	$2.031	$2.902
GENERATION TIE-LINE	$1.137	$1.624
PROJECT (BOTH)	$3.168	$4.526

22. The wind facility is being constructed by Invenergy Wind Development North American LLC, which commenced construction in 2016 and has continuously maintained construction.

23. Invenergy has targeted completion of the wind facility for September 30, 2020.

24. DELETED.

25. On July 26, 2017, the developers and participants in the wind facility entered into an agreement entitled the Membership Interests Purchase Agreement (MIPA) to acquire, subject to regulatory approvals and other conditions, States Edge Wind I LLC, an Invenergy single-purpose subsidiary that will own the rights and assets of the wind facility.

26. The MIPA is a fixed-price arrangement whereby Invenergy will manage all phases of construction and deliver the wind facility upon completion to SWEPCO and PSO. Invenergy will pay all construction financing costs, which are included in the purchase price.

27. The purchase price for the wind facility is \$2.694 billion. The total estimated cost, including the MIPA purchase price and other cost components, is \$2.902 billion. SWEPCO's share is approximately \$2.031 billion.

28. The generation tie-line would deliver the wind facility's energy directly to the AEP load zone, bypassing congestion and curtailment on the SPP system in western Oklahoma.

29. The generation tie-line would consist of a proposed 345-kV-to-765-kV generation substation at the wind facility; a proposed 350-to-380-mile, radial, single-circuit 765-kV transmission line; and a proposed 765-kV to 345-kV substation, which is in the Tulsa AEP load zone.

30. The purpose of the generation tie-line is to transmit the wind facility's energy from western Oklahoma to the Tulsa AEP load zone.

31. The participating utilities have entered into a fixed-price contract with Quanta Services, a Houston company, for engineering, procurement, and construction services for the generation tie-line.

32. Under the Quanta contract, all engineering, procurement, and construction are covered under the scope of Quanta's work.

33. DELETED.

34. The total estimated capital cost for the generation tie-line is \$1.624 billion including \$148 million for allowance for funds used during construction. SWEPCO's share of the estimated total cost would be 70%, or \$1.1 billion.

35. The generation tie-line has a projected completion date of December 15, 2020.

36. The generation tie-line's projected completion date is slightly more than two weeks before the end of the Internal Revenue Service (IRS) safe-harbor date for wind-production tax credits.

37. Production tax credits are assured for projects in service before the safe-harbor date. Projects that enter into service later may still receive the credits, but must show they meet certain criteria.

38. If the project were to be built on budget, it would increase SWEPCO's rate base established in its most recent rate proceeding by over 72%, leading to a base-rate increase in Texas of at least $150 million in 2021, depending on the timing of a rate case.

39. Although the MIPA includes a provision for contingencies, that amount is $93.3 million, which is only 3.2% of the total wind facility cost.

40. The generation tie-line cost is not guaranteed, but is subject to increases based on a number of factors, including the cost to acquire land (including the cost of possible eminent domain proceedings), internal labor and overhead, allowance for unknown risks, and allowance for funds used during construction.

41. Including those additional costs, the generation tie-line is anticipated to cost a total of $1.624 billion.

42. The generation tie-line contract price is set with limited reopeners, a stringent process for obtaining change orders, and numerous contractual protections.

43. DELETED.

44. The contract with Quanta provides exceptions to the definition of a force majeure event by excluding weather events that are normal weather for the period, season, and geographic area of the generation tie-line except to the extent that such normal weather causes physical damage to towers or the work in progress.

45. If weather that does not cause physical damage occurs, the contractor must provide climatological data over the preceding five years substantiating that the weather conditions were unusually adverse for the period of time and location based on historical data and could not have been reasonably anticipated.

46. The contract with Quanta requires the contractor to spend up to $5 million to mitigate damage to the generation tie-line work and any delay in the project schedule's critical path before claiming additional compensation. It also includes a provision requiring an expedited schedule if a force majeure event creates any delay.

47. SPP's practice in calculating the operating reserve requirement is to base it on 100% of the largest SPP generating unit, plus 50% of the second largest.

48. If approved and built, the project would become the largest generating unit in the SPP system.

49. Although SWEPCO believes that the effect on reserves costs would be only a little over $200,000, it based its estimate on SPP setting the requirement on an hourly basis.

50. SPP currently sets the reserve requirement on a daily basis.

50A. No facility study has been conducted on the project by SPP.

51. DELETED.

52. DELETED.

53. DELETED.

54. DELETED.

55. DELETED.

56. DELETED.

57. The generation tie-line contract is a fixed-cost agreement, with certain additional costs to be determined.

58. DELETED.

59. DELETED.

60. The length and location of the generation tie-line raise greater possibilities of additional delays and costs.

60A. For every 1% in capital cost over-run, the net present value of the project's benefits calculated by SWEPCO would be decreased by $30 million.

61. The record does not include a reliable calculation of the reserve costs based on a daily calculation.

Economic Evaluation Methodology and Assumptions (PO Issues 12 and 14)

Evaluation Methodology

62. To evaluate the economics of the projects, SWEPCO developed and compared three cases—three alternative resource procurement paths.

63. The first case—the base case—assumed no new development or purchase of any wind resources between 2021 and 2045. The second case—the project case—reflected the development of the project.

64. To determine the estimated benefits of the project, SWEPCO compared the difference between the base case and the project case for the period modeled, 2021 to 2045.

65. The third case—the generic wind case—assumed the procurement of 1,900 MW of wind generation at 24 different wind sites across SPP.

66. SWEPCO estimated that the project would produce approximately $685 million more in customer savings than the generic wind case would relative to the base case.

67. The three cases were modeled using PROMOD® and PLEXOS® simulation tools to estimate the production-related costs and benefits of each case. SWEPCO used both models because neither was sufficient on its own to analyze the project's lifetime impact.

68. The PROMOD® model is available only for two years (2020 and 2025) and analyzed only cost impacts for individual SPP transmission zones such as the AEP zone, in the aggregate.

69. The PLEXOS® model does not simulate the entire SPP footprint and does not simulate transmission constraints or marginal losses. Therefore, SWEPCO input data for 2020 and 2025 into the PROMOD® model, interpolated between those two points, and then extrapolated that trend going outward for the life of the project.

70. SWEPCO used that data in PLEXOS® to estimate the costs and the benefits of the project for SWEPCO consumers.

71. SWEPCO and PSO, in the fall of 2016, issued a request for proposal soliciting bids to construct a wind-energy project.

72. The 2016 projects would have connected to the SPP system in congested areas and did not account for economic curtailment costs.

73. The competitive market would not have provided the project, and the timing of a request for proposal would have precluded the construction of the project in time to take full advantage of the production tax credits.

74. DELETED.

Assumptions Impacting Locational Marginal Prices

Natural Gas Prices

75. Future natural gas prices are an essential element of the project benefits calculation. The higher the expected future natural gas prices, the greater the expected benefits from the project.

76. SWEPCO used AEP's Long-Term North American Energy Market Forecast (fundamentals forecast) to forecast the expected project benefits.

77. The fundamentals forecast was made available to all AEP operating companies on October 27, 2016.

77A. The fundamentals forecast contained natural-gas-price projections for a base case, a high case, and a low case. The base case was used by SWEPCO to analyze the economics of the project. The base case used a levelized natural gas price of $7.35 per MMBtu.

78. Natural gas prices are important because fuel prices are a key component in determining the supply stack, or merit order, for the dispatch of generating units.

79. The 2016 fundamentals forecast employed a carbon dioxide dispatch burden on all existing fossil-fuel-fired generating units that escalated from $2.92 per ton in 2024 to $26.31 per ton in 2032 to achieve national mass-based emission targets similar to those proposed in the national Clean Power Plan.

80. Each of AEP's past forecasts, dating back to 2007, has been on the high side of actual natural gas prices.

81. Although the 2016 fundamentals forecast was weather-normalized, the evidence did not quantify the impact of abnormal weather on prior forecasts.

82. SWEPCO's forecasts start out higher than current prices and have been higher than actual prices for several years.

83. The gas prices of the SPS and ETI forecasts used in recent Commission proceedings were significantly lower than SWEPCO's fundamentals forecast. The SPS low case forecast projected a levelized price of natural gas at $3.55 per MMBtu. The ETI low case forecast projected a levelized price of natural gas at $3.68 per MMBtu.

84. The NYMEX futures prices represent actual transactions between buyers and sellers who put real money at risk in their day-to-day operations. The NYMEX futures prices, when trended to 2045, are $3.58 per MMBtu.

85. DELETED.

86. DELETED.

87. DELETED.

88. DELETED.

89. The lowest Energy Information Administration (EIA) case has been the most accurate in recent years.

90. The levelized natural-gas-price forecast from EIA's 2018 reference case for the years 2021 through 2045 is approximately $5.32 per MMBtu.

91. A decrease of $1 per MMBtu in gas prices would reduce the estimated base-case savings for the project by approximately $392 million net present value.

92. DELETED.

92A. The record in this proceeding fails to show that the assumptions made by SWEPCO regarding gas prices will result in a probable lowering of cost to consumers.

Cost of Carbon

93. SWEPCO's three cases employ a carbon dioxide dispatch burden (allowance price) on all existing fossil-fuel-fired generating units.

94. SWEPCO designed the carbon burden to achieve emission targets similar to those proposed in the federal Clean Power Plan.

95. In the base case, the carbon burden is zero in 2021 to 2023, then escalates from $2.92 per ton in 2024 to $26.31 in 2032.

96. Although it is possible that a carbon tax will be imposed in the future, such a tax has not been imposed in the past, there is not one in place now, and there was no credible evidence to show that the imposition of such a tax is likely in the future.

97. SWEPCO's modeling of the locational marginal prices should not have included the carbon-burden component, and the calculation of the estimated benefits of the project should be reduced accordingly.

98. DELETED.

Other Assumptions

99. SWEPCO's modeling understated the amount of new wind generation in SPP.

99A. The SPP interconnection queue includes an additional 6,000 MW of projects with pending or completed interconnection agreements, 10,000 MW of additional wind projects in the SPP Facility Study Stage, and another 24,000 MW in the Definitive Interconnection System Impact Study stage.

100. DELETED.

101. DELETED.

102. DELETED.

103. SWEPCO's calculated congestion costs are likely too high due to high estimated natural gas prices.

Net Capacity Factor

104. A crucial measure of generation output is the wind facility's net capacity factor, which is the ratio of the actual output of a generating unit over a period of time to its potential output at full nameplate capacity.

105. Based on the results of two studies, SWEPCO estimates a project net capacity factor of 51.1% at a P50 estimate, which means there is a 50% likelihood that the actual output will be greater and a 50% likelihood that the actual output would be less than 51.1%.

106. Each 1% reduction in net capacity factor would lead to a $95.6 million reduction in net present value project benefits, considering both production cost savings and lower production tax credits.

106A. If the generation tie-line is not available due to outages, maintenance, or force majeure events, the actual net capacity factor will be diminished.

107. DELETED.

108. DELETED.

Projected Benefits of Wind Catcher

109. DELETED.

109A. SWEPCO failed to provide evidence to show it is probable the project would provide a reduction in cost to consumers.

Production Tax Credits (PO Issues 25 and 26)

110. DELETED.

111. DELETED.

112. DELETED.

113. DELETED.

114. DELETED.

115. DELETED.

116. DELETED.

117. DELETED.

118. DELETED.

Capacity Value of the Wind Facility (PO Issue 14)

119. SWEPCO calculated the future capacity value of the wind facility and included that calculation, $269 million on a net-present-value basis, as one of the financial benefits of the project.

120. The forecasted incremental value was based on the deferral of a future natural gas combined-cycle (NGCC) unit from 2026 to 2033 and the avoidance of a second NGCC unit from 2038 through the end of the modeling period, 2045.

121. DELETED.

SWEPCO's Proposed Guarantees

122. SWEPCO proposed a cost cap for the wind facility, generation tie-line, and all SPP-assigned generation interconnection costs of $3.339 billion, which is 109% of the estimated cost of SWEPCO's 70% share of the project. This cost cap does not include allowance for funds used during construction.

123. In a settlement in Oklahoma, SWEPCO's sister company, PSO, agreed to a cost cap of 103% of project costs including allowance for funds used during construction, which is equivalent to $2,332 per kW of nameplate capacity as measured on a total parent-company gross-plant basis, without exceptions for force majeure or change of law.

124. DELETED.

125. DELETED.

126. SWEPCO proposed a guaranteed net capacity factor of 44.7%, which is 87% of the capacity projected in its application. This guarantee includes exceptions for force majeure and change in law.

127. DELETED.

128. DELETED.

129. SWEPCO's proposed production tax credit guarantee of eligibility for 100% of the production tax credits with exceptions for force majeure and change in law does not provide a sufficient guarantee to customers.

130. DELETED.

131. DELETED.

132. SWEPCO proposed to agree to flow to consumers 100% of the incremental off-system energy sales margins that would not have occurred but for the project and the net proceeds from the sale of renewable energy credits associated with the project.

133. SWEPCO proposed to agree to a 10-year look-back proposal based on the following formula:

> ***Net Benefit for Customers = Fuel Savings + Project Capacity Value + PTCs + Minimum Net Capacity Factor Guarantee Payments + RECs Value + Carbon Savings – Project Revenue Requirement***

134. If the net benefit for customers at the end of the ten-year period is positive, SWEPCO will not owe customers any compensation under this guarantee. If the net benefit calculation for customers at the end of the ten-year period is negative, SWEPCO will compensate customers for that amount under the formula.

135. SWEPCO's look-back proposal is unlikely to yield a calculation of savings given that the methodology does not look at the actual price on the SPP market, and instead looks at SWEPCO's bid stack to determine what SWEPCO's generation cost would have been had the resources been placed into the market.

136. SWEPCO's look-back proposal likely overstates customer benefits.

137. No other party presented sufficient evidence to adopt a different look-back proposal.

138. SWEPCO proposed a most favored nation guarantee such that, if terms more favorable to consumers are agreed to by PSO or SWEPCO in any of the state utility commission proceedings under which they are seeking approval of the project, SWEPCO would disclose the terms and incorporate them into the guarantees for the benefit of SWEPCO Texas consumers for the following: (1) the Gigawatt hours output of the production guarantee; (2) the production-tax-credit eligibility; or (3) the cost cap percentage.

139. DELETED.

139A. The guarantees offered by SWEPCO are not sufficient to protect consumers from the risk of the project.

Commission Staff or Intervenor Proposed Guarantees

140. DELETED.

141. DELETED.

142. DELETED.

143. DELETED.

144. DELETED.

Other CCN Issues

145. DELETED.

146. The project is located entirely outside of the State of Texas, and Texas' community values, parks, historical sites, and environment are unaffected.

147. Texas has met its renewable energy goals.

148. DELETED.

CCN for Economic Purposes

149. DELETED.

Ratemaking Treatments

150. DELETED.

151. DELETED.

152. DELETED.

153. DELETED.

154. DELETED.

155. DELETED.

156. DELETED.

157. DELETED.

158. DELETED.

III. Conclusions of Law

1. The Commission has jurisdiction over this application under PURA §§ 36.203, 36.204, 37.051, 37.053, 37.056, and 37.057.

2. SOAH has jurisdiction over this proceeding, including the preparation of this proposal for decision with findings of fact and conclusions of law under PURA § 14.053 and Texas Government Code § 2003.049.

3. Notice of the application was provided in compliance with PURA § 37.054 and 16 Texas Administrative Code (TAC) § 22.55.

4. DELETED.

5. DELETED.

6. SWEPCO is not implementing customer choice under PURA §§ 39.501(b) and 39.502(b) and 16 TAC § 25.422(e).

7. SWEPCO has not shown that the project will result in the probable lowering of cost to consumers in accordance with PURA § 37.056(c)(4)(e).

8. DELETED.

9. Texas has met its renewable energy goals under PURA § 39.904(a).

10. DELETED.

10A. SWEPCO has not met its burden of proof to show that the project is necessary for the service, accommodation, convenience, or safety of the public under PURA § 37.056.

11. SWEPCO is not entitled to approval of the application.

IV. Ordering Paragraphs

In accordance with these findings of fact and conclusions of law, the Commission issues the following orders:

1. The Commission denies the application, as outlined in this Order.

2. All other motions and any other requests for general or specific relief, if not expressly granted herein, are denied.

Signed at Austin, Texas the 13th day of August 2018.

PUBLIC UTILITY COMMISSION OF TEXAS

DEANN T. WALKER, CHAIRMAN

ARTHUR C. D'ANDREA, COMMISSIONER

SHELLY BOTKIN, COMMISSIONER

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