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

TEXAS INDUSTRIAL ENERGY CONSUMERS' REPLY BRIEF

REDACTED

March 17, 2020

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GLOSSARY OF ACRONYMS

AEO	Annual Energy Outlook
AEP	American Electric Power
ATC	Around-the-Clock
CCN	Certificate of Convenience and Necessity
DTA	Deferred Tax Asset
EIA	Energy Information Administration
GW	Gigawatt
GWh	Gigawatt-hour
ICE	InterContinental Exchange
ITP10	Integrated Transmission Planning
LCOE	Levelized Cost of Energy
LBNL	Lawrence Berkeley National Laboratory
LMP	Locational Marginal Price
MMBtu	Million British Thermal Units
MW	Megawatt
MWh	Megawatt-hour
NCF	Net Capacity Factor
NPV	Net Present Value
NYMEX	New York Mercantile Exchange
O&M	Operations and Maintenance
PFD	Proposal for Decision
PPA	Purchased Power Agreement
PSO	Public Service Company of Oklahoma
PTC	Production Tax Credit
RFP	Request for Proposals
SOM	State of the Market
SPP	Southwest Power Pool

SPS	Southwestern Public Service Company
SWEPCO	Southwestern Electric Power Company
TIEC	Texas Industrial Energy Consumers

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TEXAS INDUSTRIAL ENERGY CONSUMERS' REPLY BRIEF[1]

I. Introduction

SWEPCO's principal argument in this case is that the Low, Base, and High natural gas forecasts Mr. Bletzacker prepared a year ago represent the entire range of plausible projections, and that any forecasts outside that range represent "worst-case-scenarios" and "sky-is-falling" hysteria.[2] Of course, SWEPCO has no alternative but to make that argument, because the Wind Facilities are uneconomic at levels below SWEPCO's so-called "Low" forecast, even with all of SWEPCO's unsupported assumptions about capacity factors, carbon costs, congestion costs, renewable penetration, capacity savings, gen-tie costs, PTC levels, the timing of AEP's tax appetite for tax credits, and the length of the Wind Facilities' useful life. But the fact is that all of SWEPCO's year-old gas price projections are well above the current gas price forecasts that the Commission has relied on in prior cases. SWEPCO's three cases should actually be called High ($4.50/MMBtu), Higher ($5.30/MMBtu), and Highest ($6.21/MMBtu).[3]

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[1] TIEC again has attempted to minimize the references to information SWEPCO has designated as highly sensitive or confidential, and TIEC does not believe that designation is warranted in many cases. However, TIEC must defer to SWEPCO's designation. TIEC has reiterated its request that SWEPCO identify any material referenced in TIEC's initial brief that can be de-designated and continues to await a response. TIEC will make a similar request for the evidence referenced in this brief that SWEPCO has designated as highly sensitive or confidential.

[2] SWEPCO's In. Br. at 2, 8.

[3] TIEC Ex. 1B, Workpapers to the Direct Testimony of Jeffry C. Pollock at WP "Exhibit JP 1,3,4 Henry Hub Benchmarks, Implied Heat Rates, Futures Prices (Errata).xlsx," Tab "Henry Hub Benchmarks" (showing levelized prices for SWEPCO's low/no carbon, base/no carbon, and high cases) (Pollock Dir. Workpapers).

The lowest of SWEPCO's cases has a levelized price of $4.50/MMBtu.[4] That is 6% higher than the EIA Reference Case,[5] which is the case that the ALJs recommended but the Commission rejected in Wind Catcher.[6] SWEPCO's "Low" case is 30% higher than the EIA Low Case,[7] which the Commission relied on and cited in the Wind Catcher order as the most accurate of the EIA cases in recent years.[8] It is 45% higher than the trended NYMEX futures prices that the Commission cited favorably in Wind Catcher.[9] [redacted][10] Just as in Wind Catcher, all of SWEPCO's natural gas price cases are well above a reasonable range of forecasts, and just as in Wind Catcher, the Commission should find that SWEPCO's forecasts are unrealistically high and that SWEPCO's assumptions regarding gas prices are insufficient to demonstrate ratepayer savings.[11]

It should be noted that the EIA forecast and NYMEX futures prices the Commission has relied on in the past are far from worst-case scenarios. In fact, the NYMEX market has been falling for many years, and the NYMEX prices from even two years ago were considerably higher than today.[12] The Commission's findings in Wind Catcher show NYMEX prices of $3.58/MMBtu,[13] compared to January 2020 spot prices under $2.00/MMBtu[14] and January 2020 NYMEX futures prices of $3.10/MMBtu.[15] One would now look at NYMEX futures prices from two years ago as being overly optimistic from SWEPCO's standpoint, not a worst-case scenario. As has become

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[4] TIEC Ex. 1, Direct Testimony and Exhibits of Jeffry Pollock at 21 (Pollock Dir.).

[5] *Id.* 4.50/4.24 = 106%.

[6] *Compare 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*, Docket No. 47461, PFD at FoFs 90-92 (May 18, 2018) *with* TIEC Ex. 5 at FoFs 90-92.

[7] TIEC Ex. 1, Pollock Dir. at 21. 4.50/3.46 = 130%.

[8] TIEC Ex. 5 at FoF 89.

[9] *Id.* 4.50/3.10 = 145%.

[10] *Compare* TIEC In. Br. at 29 *with id.* at 31 (HSPM) (simple average basis). [redacted]

[11] TIEC Ex. 5 at 4-5, 17-18, FoFs 75-92A.

[12] *Id.* at FoF 84.

[13] *Id.*

[14] Tr. at 224:10-13 (Bletzacker Cross) (Feb. 24, 2020).

[15] TIEC Ex. 1, Pollock Dir. at 21.

apparent even in the last six weeks, external events can and do continue to drive gas and oil prices lower even than estimates from a few months ago. The NYMEX futures price represents buyers' and sellers' collective market decisions on future prices, and NYMEX futures are just as likely to err on the high side as on the low side.

After finding that SWEPCO's natural gas price assumptions alone warranted a finding that SWEPCO had failed to meet its burden of proof on the issue of a probable lowering of costs,[16] the Commissioners in Wind Catcher went on to note the numerous other areas in which SWEPCO failed to meet its burden of proof, including on many of the issues contested in this case.[17] TIEC requests that for the purpose of a complete PFD, the ALJs also make findings on those issues. In light of the Commissioners' finding on natural gas in Wind Catcher, they did not find it necessary to calculate specific dollar amounts for each of SWEPCO's other overstatements of the benefits. Where possible, however, TIEC has provided dollar estimates in the event the ALJs wish to include those calculations in the PFD.

SWEPCO has responded to the Commission's rejection of its Wind Catcher CCN with a proposal for Wind Facilities that are less efficient, face greater congestions costs, and would be even more costly to ratepayers than the Wind Catcher facilities. And SWEPCO justifies its proposal on the same discredited gas price forecast methodologies and other assumptions that the Commission rejected in Wind Catcher. The Commission should again reject SWEPCO's proposal.

II. Certificate of Convenience and Necessity Standard of Review (P.O. Issue No. 2)

SWEPCO's initial brief invokes a classic logical fallacy in support of its misstatement of the CCN standard of review—that if SWEPCO can show that the Wind Facilities would ***probably*** lower costs, it is entitled to a CCN.[18] As it happens, that mischaracterization matters little in this specific case because SWEPCO has not come close to meeting its burden to prove that the Wind Facilities would probably lower costs. But, since this is only the second contested case in which

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[16] TIEC Ex. 5 at 9.

[17] *Id.* at 5-7, 18-21, FoFs 93-120.

[18] SWEPCO's In. Br. at 6.

the PUC has considered the issue, it is important to reject SWEPCO's formulation and set forth the proper statutory standard, as the Commission did in the Wind Catcher proceeding.

SWEPCO's statement of what it asserts is required to meet the standard of review under PURA Section 37.056 is as follows:

> The Company's guarantees further establish the ***probable*** lowering of costs to customers. Accordingly, the Commission should grant a CCN for the acquisition of the Selected Wind Facilities because SWEPCO has met the criteria established under PURA § 37.056 for approval or its application.[19]

In contrast, the actual standard of review for granting a CCN is stated in PURA as a limitation on the Commission's authority—that the Commission may approve a CCN "only if the Commission finds that a certificate is necessary for the service, accommodation, convenience, or safety of the public."[20] Note that there is nothing in this statutory standard that suggests that a 51% probability of slightly lower costs would require the Commission to issue a CCN, as SWEPCO suggests. In fact, the issue of lowering costs appears only in a list of factors other than need, adequacy of service, and effect on proximate utilities that the Legislature expressly designated as non-exclusive.[21] SWEPCO has taken this non-exclusive list of "other factors" and made the completely illogical leap to the conclusion that if even a single listed other factor weighs in its favor, it has met the standard for a CCN. In this case, SWEPCO relies on one of the two factors listed in subsection 37.056(c)(4)(E), but its logic would apply just as readily to a utility that shows that any single one of the other non-exclusive factors (community values, historical values, environmental integrity, improvement of service, etc.) weighs in favor of a new generating plant. SWEPCO's argument simply proves too much.

SWEPCO points to the only other contested PUC case in which a utility sought to obtain a CCN solely based on a project's economics—its own Wind Catcher proceeding.[22] In that case, the Commission found that SWEPCO had not shown a probable lowering of costs (or in one

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[19] *Id.* (emphasis in original).

[20] *See* Public Utility Regulatory Act (PURA) § 37.056(a).

[21] PURA § 37.056(c)(4).

[22] SWEPCO's In. Br. at 5.

formulation, "enough certainty of a probable lowering of cost"), and denied the CCN request.[23] SWEPCO's failure to meet the burden of proof on the single factor on which it based its entire case obviously required denial of the CCN in the Wind Catcher case, but that says nothing about what the Commission would have done had SWEPCO succeeded in proving a probable lowering of costs. SWEPCO's argument that it does is a classic example of the fallacy of the inverse. SWEPCO suggests that since it was denied a CCN when it failed to prove a probable lowering of costs, that means that proving a probable lowering of costs would be sufficient in and of itself to meet the statutory standard for a CCN. That is a non-sequitur. The PUC did not state that if SWEPCO had shown a slight probability of lowering costs, that would have ended the inquiry. And the Commission's actions in considering a unanimous settlement for SPS's wind plants make clear that that is not the standard the Commission applies.

In the SPS wind case, the Commission initially declined to approve a unanimous settlement in support of granting a CCN based on stipulated projected savings. The SPS wind facilities were far superior to SWEPCO's proposal in this case in numerous respects, including having a 53.7% P50 net capacity factor (NCF) that would provide over 20% more energy per installed MW of capacity than SWEPCO's proposed Wind Facilities.[24] Despite this, the Commission insisted on taking additional evidence to test the economics of the SPS plants under a variety of assumptions.[25] The parties then submitted substantial additional evidence on, among other things, the economics of the project assuming maximum capital costs, a minimum guaranteed NCF (with no exceptions) of 48%, and natural gas prices at what was considered in early 2018 a very low level of $3.37/MMBtu levelized.[26] The final order is replete with references to the economics under a "worst-case-scenario,"[27] an analysis that would have been completely unnecessary if the

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[23] TIEC Ex. 5 at 8.

[24] *Application of Southwestern Public Service Company for Approval of Transactions with ESI Energy, LLC and Invenergy 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 at 15 (Apr. 19, 2018). 53.7/44.0 = 122%.

[25] Docket No. 46936, Final Order at 3 (May 25, 2018); Docket No. 46936, Chairman Walker's Memo (Apr. 11, 2018).

[26] Docket No. 46936, Final Order at 3-4; Docket No. 46936, Supplemental Settlement Testimony of David T. Hudson at 15.

[27] Docket No. 46936, Final Order at 3, 4, 21.

Commission were simply applying SWEPCO's proposed probability-of-lowering-costs standard. The final order specifically found that in this "worst-case-scenario," the SPS wind projects would still provide savings of $232 million NPV.[28] Thus, it is clear that for a plant that is not needed for capacity or reliability reasons, the Commission insists on much more than a 51% probability that the project would lower costs. Rather, the Commission insists on confirming that the project would provide substantial savings under a series of assumptions that stressed the economics far more than anything that SWEPCO has presented in this case.

The economics of SWEPCO's proposed Wind Facilities are under water under any reasonable set of assumptions about natural gas prices, the level of renewables in the Southwest Power Pool (SPP), congestion costs, gen-tie costs, and various other factors at issue in this case. Accordingly, SWEPCO has not remotely proven that the Wind Facilities are more likely than not to produce savings to ratepayers, and the inquiry can end there, as it did in the Wind Catcher case. But in addition, the Commission has made clear that a showing of a bare probability of lowering costs is not in and of itself sufficient to meet the standard that a facility is necessary for the service, accommodation, convenience, or safety of the public under PURA § 37.056(a). In the Wind Catcher case, the Commission rejected the PFD's adoption of the conclusion of law that SWEPCO has again proposed here on obtaining a CCN for economic reasons,[29] and instead the Commission added the actual statutory standard.[30] TIEC requests that the Commission do the same in this case.

III. Analysis of Economics of Selected Wind Facilities (P.O. Issue Nos. 2, 3, 5, 6, 19, 23)

In this portion of its brief, SWEPCO attempts to diminish the uncertainty surrounding its projected benefits for the Wind Facilities by characterizing intervenor positions as "worst case scenarios."[31] SWEPCO's choice of framing device is ironic given that the Commission demanded a "worst case scenario" that still showed benefits before approving the SPS wind CCN (despite the fact that it was a settled case), as discussed above. Further, the record in this proceeding

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[28] *Id.* at FoF 113.

[29] TIEC Ex. 5 at CoL 4.

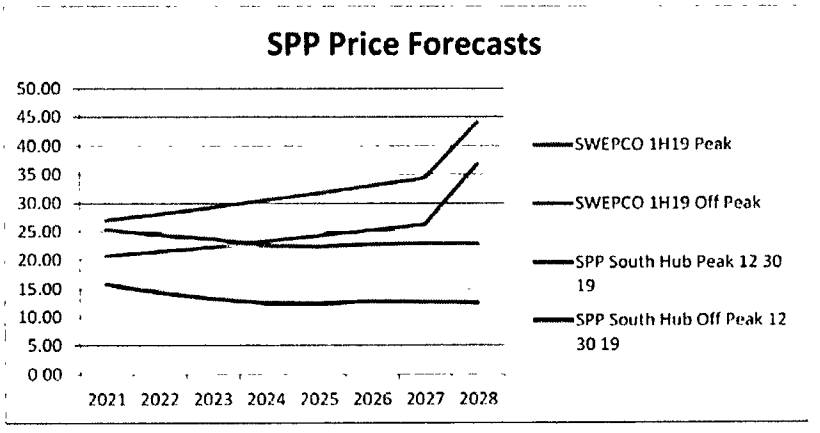
[30] *Id.* at CoL 10A.

[31] SWEPCO's In. Br. at 6-8. SWEPCO quotes Mr. Pollock's testimony in which he stated that the Wind Facilities should be stress-tested under "worst case scenarios or probable scenarios," but ignores the latter half of Mr. Pollock's statement. *Id.*

demonstrates that Staff and intervenors are correct to challenge SWEPCO's unrealistic assumptions.

SWEPCO's analysis is riddled with flawed assumptions that serve to inflate its projected benefits. To take just a few examples, assuming more realistic natural gas prices—such as those indicated by the NYMEX futures market and the EIA case the Commission recently found to the most accurate—does not constitute worst-case-scenario planning.[32] Nor does rejecting SWEPCO's self-serving assumption that an unprecedented carbon-tax will be adopted.[33] It is not worst-case thinking to assume that SWEPCO's projected congestion costs are too low when SWEPCO has artificially held those costs constant after 2029 and admits that its model understates congestion.[34] And it is certainly not a worst-case-scenario assumption to point out that SWEPCO's modeled locational marginal prices (LMPs) are too high when AEP's Fundamentals Forecast (the primary source of those LMPs) projects future market prices that greatly exceed those available in the market, as shown in the following figure Mr. Griffey included in his testimony:[35]

Figure 9
($/MWh)



[32] *See* TIEC's In. Br. at 14-32; *see also infra* Section III.C.2.a.

[33] *See* TIEC's In. Br. at 33-36; *see also infra* Section III.C.2.b.i.

[34] *See* TIEC's In. Br. at 52-58; *see also infra* Section III.C.2.e.

[35] TIEC Ex. 2, Direct Testimony and Exhibits of Charles S. Griffey at 36 (Griffey Dir.). The "SWEPCO 1H19" prices are from the Fundamentals Forecast base case. *Id.* The "SPP South Hub" prices are from the InterContinental Exchange's (ICE) futures market for delivery of electric power at SPP's South Hub, which "represents pricing nodes in the south-central portion of the [SPP] footprint, generally in central Oklahoma." SWEPCO Ex. 20A, Workpapers to the Rebuttal Testimony of Johannes P. Pfeifenberger at WP "2018 annual state of the market report.pdf" at 111 (Pfeifenberger Reb. Workpapers).

It is SWEPCO—not Staff and intervenors—that has stacked flawed assumption upon flawed assumption in an effort to distort the economics of the Wind Facilities. The adjustments proposed by Staff and intervenors simply substitute realistic assumptions for SWEPCO's use of what might charitably be called "best case scenarios."

Indeed, SWEPCO's arguments in this section completely miss the mark. It contends that it has provided numerous sensitivity cases,[36] but ignores that even its lowest case (the low/no carbon case) projects gas prices that are higher than the most recent EIA base case (the Reference Case), which itself has been too high in recent years.[37] Thus, SWEPCO has not in fact "considered reasonable sensitivities to stress test the benefits forecast."[38] To the contrary, SWEPCO's application is essentially premised on the notion that market conditions for gas and power prices will change dramatically and immediately, thus transforming Wind Facilities into an economic proposition. In other words, SWEPCO is asking the Commission for permission to make a long-shot "bet on the come" with its ratepayers' money. The Commission should reject that request, as it did in the Wind Catcher case.

A. Request for Proposals Selection Process

It is telling that SWEPCO devotes the largest section of its brief to its request for proposals (RFP) process, even though the true question before the Commission is whether the Wind Facilities SWEPCO ultimately selected should be approved on their merits based on the evidentiary record in this case. It is also telling that SWEPCO's recitation of its RFP process does not even address the flaws raised by TIEC in its initial brief (and Mr. Griffey's testimony), which include that it was a sole-source solicitation and that SWEPCO did not consider purchased power agreement (PPA) options.[39] In any event, this is a CCN case, not a prudence case, and the reasonableness of SWEPCO's RFP process (or lack thereof) is not controlling. The issue in this case is whether SWEPCO has met its statutory burden of proof that these projects are necessary for service to the public. The evidentiary record in this case shows that the economics of the facilities have

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[36] SWEPCO's In. Br. at 8.

[37] *See infra* Section III.C.2.a.

[38] SWEPCO's In. Br. at 8.

[39] TIEC's In. Br. at 9.

deteriorated substantially since SWEPCO began its RFP process in 2018.[40] No matter how the Wind Facilities may have appeared at the time, the record demonstrates that they are now an unacceptably risky proposition for ratepayers that are far likelier to result in net costs than net benefits.

B. Project Description and Cost

SWEPCO's description of the project omits any mention of a potential gen-tie. While SWEPCO's position is that it is currently not proposing to construct that gen-tie, the cost of a gen-tie should be considered as part of the project for the purposes of the economic analysis for the reasons set forth in TIEC's initial brief.[41] The addition of a gen-tie—which SWEPCO preliminarily estimates to cost $480 million (2026 dollars), a highly uncertain projected amount that is not based on any routing plans or project timelines[42]—significantly worsens the project's economics. Other issues with SWEPCO's projected costs of the project are discussed in the Section III.C.6 below.

C. Economic Modeling

1. Modeling Methodology

In this section of its brief, SWEPCO lays out an explanation of how it calculated its breakeven LMPs,[43] which are set forth in Mr. Torpey's direct testimony.[44] Implicit in its presentation of these breakeven LMPs is the claim that the Wind Facilities will be economic as long as LMPs stay above this point. However, as discussed below, simplifications and unwarranted assumptions in SWEPCO's breakeven calculation render this claim invalid. SWEPCO's purported breakeven LMPs do not demonstrate that the Wind Facilities will provide net benefits to ratepayers.

First, SWEPCO presents its breakeven LMPs as around-the-clock (ATC) prices,[45] which say little about the LMPs that will occur when the Wind Facilities are actually running. An ATC price

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[40] *See infra* Section III.C.2.a.

[41] TIEC's In. Br. at 55-57.

[42] TIEC Ex. 59.

[43] SWEPCO's In. Br. at 21.

[44] SWEPCO Ex. 8, Direct Testimony of John F. Torpey at 7, Errata Figure 1 (Torpey Dir.).

[45] SWEPCO's In. Br. at 21.

is simply an average price for all hours of the day. If, for instance, LMPs were $40/MWh for 12 on-peak hours and $20/MWh for 12 off-peak hours, that would result in an ATC price of $30/MWh. In that scenario, comparing a wind farm with a levelized cost of energy (LCOE) of $25/MWh to the ATC price may show that the project will be economic, but the project could in fact be losing money since it is primarily running during the off-peak hours with lower LMPs. The Wind Facilities are no exception to this dynamic, as they will primarily run during the off-peak hours.[46] As a result, comparing SWEPCO's breakeven ATC LMPs against forecasted ATC LMPs or historical ATC LMPs reveals nothing about the economics of the Wind Facilities.

Second, SWEPCO's simulation of an hourly dispatch in its modeling captures the hourly differences in prices, but the simplified calculation of breakeven ATC LMPs it cites in its brief does not. SWEPCO calculated its purported breakeven LMPs by first determining the percentage reduction in production cost savings that was required to take the total projected net benefits to zero.[47] SWEPCO then applied this percentage reduction to the ATC LMPs assumed in its modeling for each year to get breakeven ATC LMPs.[48] Mr. Bletzacker then converted these breakeven ATC LMPs to a breakeven gas price using the market heat rate that is implied in his forecast.[49] SWEPCO never reran its modeling using lower gas prices, or assuming more wind, or making any other changes in assumptions that would lower the ATC LMPs to the breakeven level. By basing the percentage drop on ATC prices, SWEPCO's breakeven analysis instead assumes that LMPs will drop by exactly the same percentage in every hour of the day. SWEPCO offers no proof that that assumption holds true (and it would be a miraculous coincidence if it did), so SWEPCO's calculated breakeven LMPs are meaningless.

To take an example of the problems with SWEPCO's approach, SWEPCO calculated its breakeven power price as 21% lower than the low/no carbon case.[50] If off-peak power prices drop

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[46] The projected hourly shape of the Wind Facilities for each month can be seen in SWEPCO Ex. 3, Direct Testimony of Jay F. Godfrey at Ex. JFG-6 at 55 (Traverse), 102 (Sundance) & 201 (Maverick) (Godfrey Dir.). These hourly shapes show that the highest capacity factors are during the winter months, and during the nighttime hours.

[47] SWEPCO's In. Br. at 21.

[48] *Id.*; *see also* TIEC Ex. 2, Griffey Dir. at 33.

[49] SWEPCO's In. Br. at 21.

[50] TIEC Ex. 2, Griffey Dir. at 43-44.

by 42%, but on-peak power prices stay the same, this would result in a 21% lower ATC price.[51] However, the Wind Facilities, which primarily produce during off-peak hours, would be far underwater in such a scenario, even though the ATC LMPs are at the breakeven price. This hypothetical demonstrates that the breakeven ATC LMPs do not capture the impact of errors in SWEPCO's modeling that would cause the LMPs during the hours in which the Wind Facilities are running to drop by more than the LMPs in other hours. One such flaw is SWEPCO's undercounting of future wind resources, which does not affect LMPs uniformly, as explained more fully in Section III.C.2.b.ii below. Additional wind would largely affect LMPs when the wind is blowing, which tends to be the strongest during off-peak nighttime hours.[52] These are the same hours when the Wind Facilities would likely be generating.[53] Additional wind resources would have a more significant impact on these nighttime hours in which they tend to generate, even if the impact on ATC LMPs is limited. SWEPCO's breakeven ATC LMPs do not capture this dynamic and thus do not demonstrate that the Wind Facilities will break even at that ATC power price.

Third, SWEPCO's calculated breakeven LMPs include all of SWEPCO's other unreasonable assumptions that do not affect power prices, including the projected congestion costs, the P50 capacity factor, and a 30-year useful life. The flaws in these assumptions are explained throughout TIEC's initial brief and this brief, and correcting them would result in much higher breakeven LMPs than the ones SWEPCO asserts.

Finally, even setting aside the flaws in SWEPCO's breakeven methodology addressed above, SWEPCO's breakeven LMPs are below current market projections of future power prices. This can be seen in the SPP South Hub forward prices shown in Figure 9 from Mr. Griffey's testimony set out in Section III above. In his rebuttal testimony, Mr. Torpey claims that the proposed facilities will break even at a power price curve that averages only $21/MWh over the first ten years.[54] However, forward prices for the SPP South Hub (which is located in central Oklahoma,

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[51] Assuming a definition of on-peak and off-peak hours such that they are equal.

[52] Tr. at 575:11-20 (Daniel Cross) (Feb. 25, 2020); SWEPCO Ex. 20A, Pfeifenberger Reb. Workpapers at WP "2018 annual state of the market report.pdf" at 47.

[53] SWEPCO Ex. 3, Godfrey Dir. at Ex. JFG-6 at 55 (Traverse), 102 (Sundance) & 201 (Maverick).

[54] SWEPCO Ex. 8, Torpey Reb. at 7.

the same area as the Wind Facilities[55]) for the off-peak hours that the Wind Facilities tend to run are in the $12-15/MWh range. On-peak power prices start in the $25/MWh range and decline. Even if SWEPCO's breakeven LMPs had any value in assessing the economics of the Wind Facilities (which they do not), they do not demonstrate that the projects will provide benefits to ratepayers.

2. Projected Production Cost Savings

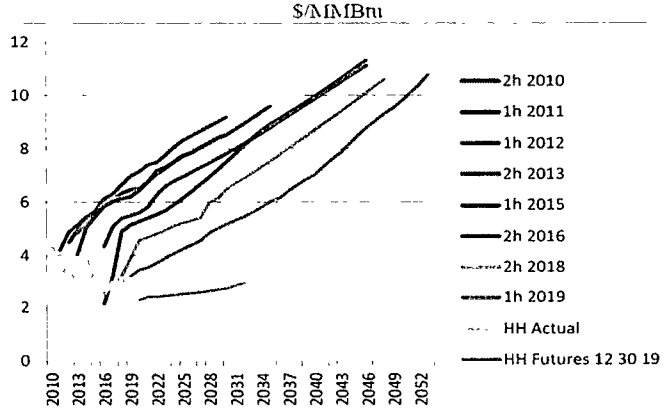
a. Natural Gas Prices

SWEPCO's projected natural gas prices are overstated and should be rejected. Using more realistic assessments of future natural gas prices reveals that the Wind Facilities would be an unduly risky—and ultimately losing—bet for ratepayers. None of SWEPCO's arguments to the contrary change this fact.

<u>AEP's Fundamentals Forecast is Inflated and Unreliable</u>

The evidence demonstrates that AEP witness Mr. Bletzacker's Fundamentals Forecast gas price projections are once again overstated and should not be used to evaluate the Wind Facilities. As shown in the following figure included in Mr. Griffey's testimony, AEP's forecasts have overstated actual market prices during the past decade and continue to do so:[56]

Figure 4
Comparison of SWEPCO Gas Forecasts for Henry Hub to Historical and Current Market
$/MMBtu



[55] SWEPCO Ex. 20A, Pfeifenberger Reb. Workpapers at WP "2018 annual state of the market report.pdf" at 111.

[56] TIEC Ex. 2, Griffey Dir. at 21.

Indeed, SWEPCO acknowledges that AEP's forecasts have overstated actual natural gas prices over the last decade.[57] Nevertheless, SWEPCO dutifully attempts to defend the reasonableness of AEP's latest projections in its brief.[58] As explained below, each of SWEPCO's contentions fail.

- **The weather-normalized nature of AEP's forecasts does not excuse their chronic inaccuracy.**

SWEPCO's primary defense of AEP's consistently inflated forecasts is to argue that they are weather-normalized and that this must be accounted for in comparisons to actual prices.[59] This argument fails for at least three reasons. First, SWEPCO has made no effort whatsoever to quantify the extent to which weather has caused its forecasts to be overstated, as the Commission found in Wind Catcher.[60] Indeed, SWEPCO has not conducted any comparison of AEP's historical forecasted prices to actual prices on any basis—weather-normalized or otherwise.[61] For example, Mr. Pollock performed an analysis showing that SWEPCO's forecasts have overshot actual prices.[62] If SWEPCO thought this was because of unusual weather, it could have performed a similar analysis, but using weather-adjusted actual prices. However, as Mr. Bletzacker confirmed at the hearing, SWEPCO did not do so.[63]

Moreover, SWEPCO has offered no reason to believe that thirteen years of uniformly high-side projections can be explained simply by "abnormal weather." As Mr. Griffey testified, "since weather is a random variable, over time the effects of weather should be washed out and the trend should emerge."[64] That trend has in fact emerged: AEP's gas price projections are consistently overstated, and often egregiously so.[65]

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[57] *Id.* at 109 (SWEPCO's Response to TIEC 7-11).

[58] SWEPCO's In. Br. at 22-24.

[59] *Id.* at 23-24.

[60] TIEC Ex. 5 at FoF 81.

[61] TIEC Exs. 38, 39.

[62] TIEC Ex. 1, Pollock Dir. at 17.

[63] Tr. at 257:24-258:22 (Bletzacker Cross) (Feb. 24, 2020).

[64] TIEC Ex. 2, Griffey Dir. at 22.

[65] *Id.* at 21; TIEC Ex. 1, Pollock Dir. at 17.

Finally, AEP's normalization period is so long that it ignores recent trends in weather, and thus may actually be a cause of the problem with AEP's forecasts rather than a valid excuse for their inaccuracy. Specifically, Mr. Bletzacker uses a 30-year weather normalization.[66] The Commission, however, has repeatedly rejected the use of that normalization period because it does not capture trends in weather.[67] Instead, the Commission has found that a 10-year weather normalization period is a reasonable way to capture trends. For example, in Docket No. 46449, SWEPCO's most recent rate case, the Commission found:

> 271. Weather data are not randomly distributed by year. There can be weather trends, including both warming and cooling trends.
>
> 272. The use of a 30-year period for normalizing weather is not a reasonable means of capturing such trends.
>
> 273. The use of 10 years of data is a reasonable means of capturing such weather trends.[68]

To accept SWEPCO's weather-normalization defense of AEP's forecasting, one would have to believe not only that it has been abnormally warm over the last decade plus, but that this extended period of warm weather will not continue in the future. Stated differently, even if one were to accept the notion that AEP's forecasts have only been inflated due to warm weather over the last decade, if the weather trend from that time period continues, the current forecast will also be inflated due to Mr. Bletzacker's use of a 30-year normalization period that only very gradually reflects more recent trends.[69]

Ultimately, SWEPCO's contentions regarding weather say nothing about the likelihood that Mr. Bletzacker's current forecast will be more accurate than its inflated predecessors. Notably, SWEPCO made the same weather-normalization defense of its prior forecasts in the Wind Catcher

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[66] Tr. at 258:5-8 (Bletzacker Cross) (Feb. 24, 2020).

[67] *Application of Southwestern Electric Power Company for Authority to Change Rates*, Docket No. 46449, Order on Rehearing at FoF 271-73 (May 19, 2018); *Application of Southwestern Electric Power Company for Authority to Change Rates and Reconcile Fuel Costs*, Docket No. 40443, Order on Rehearing at FoFs 256-58 (Mar. 6, 2014).

[68] Docket No. 46449, Order on Rehearing at FoFs 271-73.

[69] Mr. Bletzacker testified to this dynamic at the hearing, acknowledging that if current weather trends hold, his forecast would "eventually catch up as the rolling 30-year averages begin to take effect," a process he confirmed occurs "one year at a time." Tr. at 260:23-262:8 (Bletzacker Cross) (Feb. 24, 2020).

case,[70] and that did not stop the Commission from making its finding that "[e]ach of AEP's past forecasts, dating back to 2007, has been on the high side of actual natural gas prices."[71] And the Commission specifically found that SWEPCO's natural gas assumptions were inadequate for SWEPCO to demonstrate that there would be a probable lowering of costs to customers from its application.[72] The same is true of the 2019 version of AEP's forecast in this case.

- **The process by which SWEPCO's forecast is created does not support its reasonableness.**

SWEPCO also touts that its gas-price projections come from a long-term "Fundamentals Forecast" that is derived using the AURORA model.[73] SWEPCO states, for example, that NYMEX futures prices cannot be substituted for such a forecast.[74] But referring to a set of projections as coming from a "Fundamentals Forecast" does not make them reasonable.

While Mr. Bletzacker uses the AURORA model to create his forecasts, his process is based heavily on his judgment and lacks transparency. He begins by inputting certain gas price assumptions into the model.[75] He sometimes uses the results of his prior Fundamentals Forecast as the initial inputs, though he is not sure what prices he used to start his model run for the current forecast.[76] He then makes a run to measure changes in electric demand at a given price of natural gas.[77] He adds the electric demand for natural gas indicated by the model run to demand from other sectors, which he divines from third-party sources such as the EIA, to obtain a total demand for natural gas.[78] At the end of each model run, he takes that total demand and manually changes the price of natural gas based on an assumed price-elasticity ratio.[79] He then makes another run

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[70] Docket No. 47461, PFD at 23, 25.

[71] TIEC Ex. 5 at FoF 80.

[72] *Id.* at FoF. 92A.

[73] SWEPCO's In. Br. at 22-23.

[74] *Id.* at 27.

[75] Tr. at 225:15-18 (Bletzacker Cross) (Feb. 24, 2020).

[76] *Id.* at 238:17-239:7.

[77] *Id.* at 241:16-242:4.

[78] *Id.* at 239:15-240:2; TIEC Ex. 33 at 1-2 ("Total North American natural gas demand for each year is calculated outside the Aurora model including EIA's projected demand for all sectors other than electric generation.").

[79] Tr. at 240:2-241:21 (Bletzacker Cross) (Feb. 24, 2020).

with the new gas prices. He repeats this process through many model runs until he is satisfied that price and demand are correlated in the manner he deems appropriate.[80]

The price-elasticity ratio that Mr. Bletzacker uses in this process is not derived from the AURORA model, but is something he comes up with based on his review of third-party forecasts, such as EIA's.[81] In this case, Mr. Bletzacker used a price-elasticity ratio range of 0.4 to 1.4.[82] This ratio is the percentage change in demand divided by the percentage change in price.[83] Mr. Bletzacker thus does not specifically account for changes in the supply of natural gas in his modeling process. Rather, he simply assumes that supply will equal demand and is thus implicitly captured in the price-elasticity ratio he uses.[84] Accordingly, his forecast methodology does not reflect, for example, that natural gas is sometimes flared, as this would represent produced natural gas (supply) that is never consumed (demand).[85] At the hearing Mr. Bletzacker acknowledged both that his approach does not account for flaring and that flaring can be an indication of a glut of natural gas.[86]

Mr. Bletzacker does not keep a record of the specific price-elasticity ratio that he used in any particular year of the forecast, and he does not keep copies of his model runs.[87] Additionally, there are no written parameters that govern when the modeling process is over and the forecast is complete. Rather, that is just a decision that Mr. Bletzacker makes based on his experience.[88] As the foregoing makes clear, Mr. Bletzacker's methodology for arriving at his natural gas projections is based almost exclusively on his judgment, and it is almost completely lacking in any paper trail or transparency. Yet SWEPCO asks the Commission to approve more than a billion-dollar ratepayer commitment on the strength the numerous unsupported judgment calls of a single AEP employee whose idiosyncratic forecasts have consistently been wrong on the high side—and not

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[80] *Id.* at 241:22-242:4.

[81] *Id.* at 240:15-24; TIEC Ex. 44.

[82] TIEC Ex. 32; Tr. at 240:25-241:3 (Bletzacker Cross) (Feb. 24, 2020).

[83] TIEC Ex. 31.

[84] Tr. at 244:14-245:14 (Bletzacker Cross) (Feb. 24, 2020).

[85] *Id.* at 245:15-18.

[86] *Id.* at 245:15-246:7.

[87] *Id.* at 244:3-8.

[88] *Id.* at 244:9-15.

just by a little bit—for as long as he has been testifying in support of AEP's proposed capital additions.

SWEPCO also attempts to buttress the credibility of its forecasts by noting that the AURORA model is routinely back-tested against history.[89] But that does not mean that Mr. Bletzacker's Fundamentals Forecast—with its opaque and convoluted methodology discussed above—is back-tested to test its accuracy. And the record is clear it is not.[90] In fact, SWEPCO has disputed the value of comparing the results of Mr. Bletzacker's forecasts to actual prices. For example, when asked in discovery whether it agrees that its forecasts have been higher than actual prices over the last decade, SWEPCO agreed, but stated in the same breath that "the Company does not believe hindsight is a valid way to evaluate a forecast."[91] In other words, SWEPCO sees no value in determining whether its forecasts accurately project future gas prices. It is thus unsurprising that SWEPCO could not identify any lessons learned from the last ten years of failed forecasts.[92] And it has not made any changes to its forecasting methodology during that time.[93] Notably, the Commission does not share SWEPCO's view that there is no value in comparing prior forecasts to actual prices to judge a forecast's accuracy. In the Wind Catcher case, the Commission compared AEP's prior forecast to actual prices in its criticism of that forecast, and it also made a finding that the EIA Low Case has been the most accurate in recent years.[94]

As Mr. Griffey testified, utilities have an incentive to create high-side natural gas projections because it makes high capital cost rate-base investments in generation technology, particularly renewables and coal, appear more reasonable.[95] The evidence confirms that Mr. Bletzacker's forecasts have been and continue to be inflated, consistent with this incentive. SWEPCO's references to its projections as based on a model-driven "Fundamentals Forecast" do not change this fact.

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[89] SWEPCO's In. Br. at 23.

[90] *See, e.g.,* TIEC's In. Br. at 27-28.

[91] TIEC Ex. 2, Griffey Dir. at 109 (SWEPCO's Response to TIEC 7-11).

[92] *Id.* at 23.

[93] *Id.* at 111 (SWEPCO's Response to TIEC 7-13).

[94] TIEC Ex. 5 at FoFs 80-82, 89.

[95] TIEC Ex. 2, Griffey Dir. at 31.

- **AEP's "low case" is not a reasonable low gas price sensitivity.**

SWEPCO argues that AEP's Fundamentals Forecast sensitivity cases provide a plausible range of outcomes regarding future prices.[96] The record evidence says otherwise. Indeed, SWEPCO's contention is conclusively refuted by the fact that the 2020 EIA Reference case (EIA's version of a "base case") is on a levelized basis $0.26/MMBtu ***lower*** than even AEP's lowest gas case, the low/no carbon case.[97] As discussed in TIEC's initial brief, EIA's Reference Case has consistently overstated gas prices in the shale era, making it all the more problematic that even this base case is now below SWEPCO's lowest price case.[98] Further, EIA's Low Case is now fully $1.04/MMBtu lower than the lowest "plausible" case that AEP included in its forecasts.[99]

Mr. Griffey testified to the problems with AEP's method of deriving its low case.[100] Specifically, AEP calculated a 15% standard deviation in the annual average of daily Henry Hub spot prices over each of the last five years, and applied that reduction to its unreasonably inflated base case for each year into the future.[101] In other words, the average gas price in AEP's low case is simply 15% below the average price in its base case for every year of the forecast period.[102] As Mr. Griffey explained, that calculation is flawed because, among other things, "for a commodity with random walk tendencies, volatility should be calculated based on the change in price, not the price itself."[103] Because uncertainty increases over time, the range of probable outcomes also increases.[104] Accordingly, the forecasted low (and high) case prices should increase in their distance from the base case over time (like a flared cone), rather than stay in a tight band as AEP's approach assumes.[105] Notably, as Mr. Griffey demonstrated in his testimony, even if one were to

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[96] SWEPCO's In. Br. at 22.

[97] TIEC Ex. 1, Pollock Dir. at 21.

[98] TIEC's In. Br. at 16-18.

[99] TIEC Ex. 1, Pollock Dir. at 21.

[100] TIEC Ex. 2, Griffey Dir. at 25-29.

[101] *Id.* at 25-26.

[102] *Id.*; Tr. at 746:13-17 (Bletzacker Cross) (Feb. 26, 2020).

[103] TIEC Ex. 2, Griffey Dir. at 26.

[104] *Id.*

[105] *Id.*

credit AEP's inflated base case, a properly calculated low sensitivity off of that case based on AEP's 15% standard deviation would be below SWEPCO's breakeven gas price in this case.[106]

Finally, an additional problem with AEP's low case—like all of the case—it is that it is now stale. AEP created these forecasts in April 2019.[107] As discussed above, Mr. Bletzacker uses information from EIA in his forecasting methodology.[108] And, in his direct testimony, he touted the similarities between his base case projections and the 2019 EIA Reference Case projections.[109] But EIA has now released its 2020 Annual Energy Outlook (AEO). Accordingly, even if one were to accept AEP's method of deriving a low case (reduce the base case by 15%), that method would be better applied to the 2020 EIA Reference Case than to AEP's 2019 forecast, which will be more than a year old by the time this case is finally decided. Reducing the EIA 2020 Reference Case by 15% yields a price that is not only significantly below AEP's low case, but is also below SWEPCO's breakeven price. Specifically, on a levelized basis, EIA's 2020 Reference Case price is $4.24/MMBtu, which when reduced by 15% yields a levelized price of $3.60/MMBtu.[110] SWEPCO's low case does not demonstrate that it has adequately projected plausible natural-gas-price outcomes. It shows just the opposite.

- **Summary on AEP's Forecast**

The evidence shows that SWEPCO's natural gas price forecast is completely unreliable. Not only have AEP's projections consistently overshot actual gas prices over the last decade, but as recently as 2013, Mr. Bletzacker was testifying that $5.50/MMBtu would serve as a hard floor for natural gas prices,[111] a projection that has proven to be wildly inaccurate.[112] SWEPCO has not

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[106] *Id.* at 29. Mr. Giffey also calculated a low case using a 25% standard deviation, which is based on the annual volatility of NYMEX futures contracts. *Id.* at 27-28. The use of a 25% standard deviation would result in a low case that is even further below SWEPCO's breakeven price. *Id.* at 29.

[107] Tr. at 201:13-16 (Bletzacker Cross) (Feb. 24, 2020).

[108] TIEC Ex. 33 at 1-2.

[109] SWEPCO Ex. 5, Bletzacker Dir. at 12.

[110] TIEC Ex. 1, Pollock Dir. at 21 (for 2020 EIA Reference levelized). $4.24 * 0.85 = $3.60.

[111] TIEC Ex. 41 at 1992-93. Mr. Bletzacker indicated that this was a 2010 real price, *id.*, which means that the purported "floor" would be higher in nominal terms.

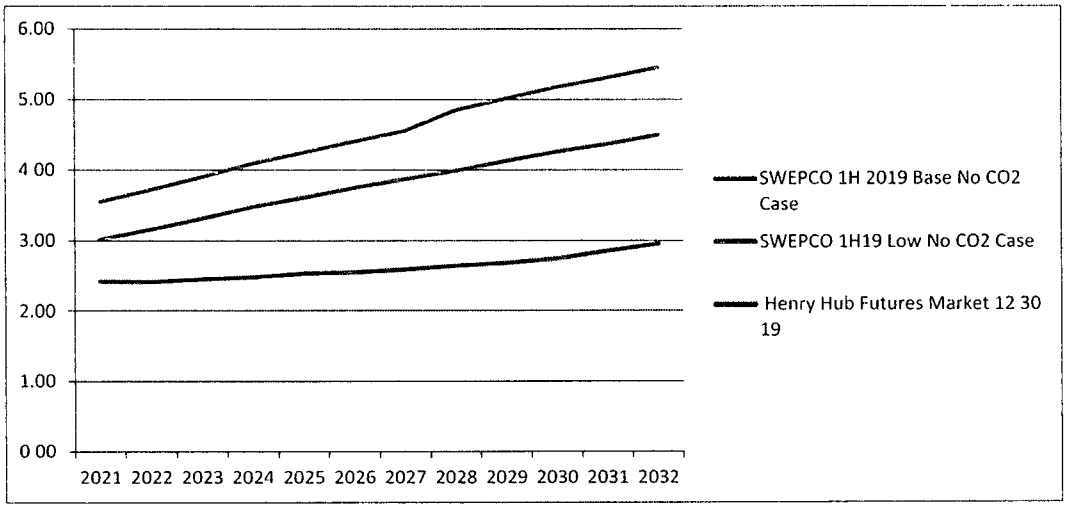
[112] The highest average annual Henry Hub price since 2013 was $4.37/MMbtu in 2014, with only one other year since then even having an average price above $3.00/MMbtu ($3.16 in 2018). TIEC Ex. 1B, Pollock Dir. Workpapers at WP "Exhibit JP-2 Analysis of EIA Reference Gas Forecasts (Errata).xlsx" at Tab "NG Actual Data".

provided any reason to believe that the current version of Mr. Bletzacker's Fundamentals Forecast will somehow be more accurate than the prior versions. Indeed, it is telling that when SWEPCO itself was required by the Louisiana Public Service Commission to make a significant purchase of natural gas for five years into the future, it knew better than to use the Mr. Bletzacker's forecast to evaluate that transaction.[113] It used NYMEX futures prices, and it did not even ask Mr. Bletzacker's opinion about the offers it received.[114] The Commission should follow suit by ignoring Mr. Bletzacker's forecasts in evaluating the Wind Facilities.

NYMEX futures prices provide valuable information about future natural gas prices.

SWEPCO continues to argue that NYMEX futures prices should be ignored in evaluating the Wind Facilities.[115] SWEPCO's desire to sweep away NYMEX prices is unsurprising, given that NYMEX prices are substantially lower than not only AEP's forecasts, but also SWEPCO's calculated breakeven price of $3.67/MMBtu (levelized), as shown in the following table included in Mr. Griffey's testimony:[116]

Figure 3
SWEPCO Gas Forecasts and Breakeven Compared to Current Futures Price ($/MMBtu)[27]



[113] TIEC's In. Br. at 24-26.

[114] Tr. 218:20-219:14 (Bletzacker Cross) (Feb. 24, 2020).

[115] SWEPCO's In. Br. at 26-27.

[116] TIEC Ex. 2, Griffey Dir. at 20.

But SWEPCO cannot escape the fact that NYMEX futures prices represent an actual market, in which actual buyers and sellers consummate actual transactions.[117] Further, as discussed in TIEC's initial brief, NYMEX futures provide a valuable market data point that is widely relied upon in the industry even as to future periods in which there is a low volume.[118]

TIEC previously addressed SWEPCO's contentions regarding NYMEX futures and will not repeat those arguments here.[119] TIEC notes, however, that SWEPCO raised the same arguments against consideration of NYMEX prices in the Wind Catcher case. This includes SWEPCO's contentions that NYMEX futures should not be used because (1) they only trade for 12 years,[120] (2) there is a lack of open interest beyond the "near term"[121] on the NYMEX exchange,[122] (3) the presence of hedging activities in the futures market,[123] and (4) NYMEX prices do not reflect the market's long-term expectations.[124] The Commission considered these arguments and rejected them. Specifically, the PFD proposed the following finding of fact:

> 84. The use of New York Mercantile Exchange (NYMEX) futures prices to forecast natural gas prices is problematic, considering the purpose of the futures market and the lack of long-term data for future years.[125]

But the Commission rejected that finding and replaced it with the following:

> 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.[126]

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[117] *E.g.*, TIEC Ex. 1, Pollock Dir. at 20.

[118] *E.g.*, TIEC Ex. 61; *see also* TIEC's In. Br. at 23-24.

[119] TIEC's In. Br. at 21-26.

[120] Docket No. 47461, PFD at 27.

[121] SWEPCO Ex. 5, Direct Testimony of Karl R. Bletzacker at 7 (Bletzacker Dir.).

[122] Docket No. 47461, PFD at 27 ("SWEPCO also points out that there were no settled NYMEX futures transactions for the years 2020 onward.").

[123] *Id.* at 22-23.

[124] *Id.* at 27.

[125] *Id.* at FoF 84.

[126] TIEC Ex. 5 at FoF 84.

It is clear that the Commission considered NYMEX futures prices in evaluating Wind Catcher, and SWEPCO has not provided any reason for a different result in this case.

Ultimately, SWEPCO's arguments with the use of NYMEX futures natural gas prices reflect nothing more than an attempt to deny the conditions that have prevailed in the post-shale revolution era. As with its defense of Mr. Bletzacker's chronically overstated forecasts, SWEPCO is simply arguing against reality. SWEPCO cannot simply wish away current market conditions, but that is what it is attempting to do in ignoring NYMEX futures prices.

EIA and Third-Party Forecasts confirm that the Wind Facilities should be rejected.

In an attempt to distract from current market expectations regarding future natural gas prices, SWEPCO points to "40 long-term, weather normalized, publicly available and proprietary third party natural gas forecasts."[127] SWEPCO included all of these forecasts in a single figure in its rebuttal testimony, apparently attempting to show that its breakeven price is reasonable.[128] But SWEPCO's convoluted figure shows no such thing.

SWEPCO includes numerous outdated forecasts in its figure[129] and does not bother to explain how those forecasts are relevant. This is particularly strange given that SWEPCO itself seems to acknowledge that gas forecasts are generally declining year over year under current conditions. Indeed, in an attempt to defend the accuracy of his prior forecasts, Mr. Bletzacker included in his rebuttal testimony a table showing that his projected gas prices have declined as new Fundamentals Forecasts are issued in the shale-era.[130] Yet SWEPCO chose to include forecasts from 2018 and early 2019 in its figure.[131]

Considering the up-to-date third party forecasts, including EIA's forecasts, leads to a conclusion that the Wind Facilities should be rejected. This is discussed further in TIEC's initial

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[127] SWEPCO's In. Br. at 24-25.

[128] SWEPCO Ex. 17, Rebuttal Testimony of Karl R. Bletzacker at 21 (Bletzacker Reb.).

[129] SWEPCO Ex. 17C, HIGHLY SENSITIVE Workpapers to the Rebuttal Testimony of Karl R Bletzacker at WP "Bletzacker WP Highly Sensitive," Tab "Benchmark Prices Chart" (HSPM) (Bletzacker HS Reb. Workpapers).

[130] SWEPCO Ex. 17, Bletzacker Reb. at 21.

[131] SWEPCO Ex. 17C, Bletzacker HS Reb. Workpapers at WP "Bletzacker WP Highly Sensitive," Tab "Benchmark Prices Chart" (HSPM).

brief and Mr. Griffey's testimony, and will not be repeated here.[132] [redacted]

SWEPCO also points to the range of 2020 EIA cases, ignoring the fact that even EIA's Reference Case has been overstated in recent years.[135] The Commission found that EIA's Low Case has been its most accurate in recent years in the Wind Catcher case, and the evidence in this case shows both that this continues to be true and that even this lowest-price case has overshot actuals in recent years.[136] Notably, EIA's projections have also been declining with the issuance of new AEOs.[137] For example, the 2020 EIA Low Case dropped by nearly $1/MMBtu on average from the 2019 version, as shown below:[138]

Year	EIA 2019 Low	EIA 2020 Low	Year	EIA 2019 Low	EIA 2020 Low
2021	$ 2.81	$ 2.50	2036	$ 4.83	$ 4.00
2022	$ 2.82	$ 2.44	2037	$ 4.95	$ 4.13
2023	$ 2.97	$ 2.45	2038	$ 5.07	$ 4.24
2024	$ 3.19	$ 2.52	2039	$ 5.20	$ 4.34
2025	$ 3.47	$ 2.77	2040	$ 5.33	$ 4.43
2026	$ 3.66	$ 3.08	2041	$ 5.44	$ 4.52
2027	$ 3.79	$ 3.28	2042	$ 5.58	$ 4.62
2028	$ 3.88	$ 3.36	2043	$ 5.72	$ 4.68
2029	$ 3.97	$ 3.39	2044	$ 5.95	$ 4.74
2030	$ 4.05	$ 3.42	2045	$ 6.13	$ 4.82
2031	$ 4.15	$ 3.50	2046	$ 6.32	$ 4.93
2032	$ 4.29	$ 3.61	2047	$ 6.55	$ 5.02
2033	$ 4.45	$ 3.72	2048	$ 6.78	$ 5.12
2034	$ 4.56	$ 3.82	2049	$ 6.97	$ 5.22
2035	$ 4.71	$ 3.89	2050	$ 7.24	$ 5.34
			Simple Average	$ 4.83	$ 3.93

[132] TIEC's In. Br. at 28-32; *see also* TIEC Ex. 2, Griffey Dir. at 30.

[133] TIEC Ex. 5 at 5 & FoF 83.

[134] TIEC's In. Br. at 29-31.

[135] TIEC Ex. 1, Pollock Dir. at Ex. JP-2.

[136] TIEC's In. Br. at 19-20.

[137] TIEC Ex. 1, Pollock Dir. at Ex. JP-2.

[138] TIEC Ex. 3.

EIA's Low Case is already below SWEPCO's breakeven price, but if this trend continues, EIA's forecasts will drop even lower in the future.

Conclusion on Natural Gas Prices

The record shows that SWEPCO's natural gas price projections are inflated and unreliable, just as the Commission has found them to be in the past. The Commission should rely on NYMEX futures and the EIA Low Case to evaluate SWEPCO's application, as it did in the Wind Catcher case. In arguing otherwise, SWEPCO is essentially asking the Commission to simply assume that the natural-gas paradigm that has held sway for the last decade will change, and that SWEPCO's envisioned higher prices will come to pass, almost immediately and for a long time. SWEPCO has not come close to proving that point. And ratepayers should not be forced into betting the massive revenue requirement of the Wind Facilities based on speculation that dramatic changes in conditions will make natural gas prices skyrocket.

b. Other Assumptions Affecting Locational Marginal Prices

i. Carbon Assumption

SWEPCO's attempts to support its base-case assumption that an unprecedented carbon tax will be imposed in 2028 are meritless.[139] SWEPCO's chief contention is that there is a possibility "greater than zero" that such a tax will be adopted in the future.[140] But, of course, it is also possible that Congress will extend renewable-energy tax credits (such as PTCs) in the future, or even adopt new subsidies to encourage renewable energy development.[141] Unlike the imposition of a carbon tax, there actually is precedent for Congress adopting new renewable-energy subsidies (and extending existing ones).[142] And unlike assuming a carbon-tax in the modeling (which makes wind generation appear more valuable[143]), assuming additional renewable subsidies in the analysis would make the Wind Facilities less economic.[144] But SWEPCO did not account for the "non-

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[139] SWEPCO's In. Br. at 28.

[140] *Id.*

[141] *E.g.*, TIEC Ex. 1, Pollock Dir. at 27.

[142] *Id.*; *see also* TIEC Ex. 2, Griffey Dir. at 39.

[143] SWEPCO's In. Br. at 28.

[144] TIEC Ex. 1, Pollock Dir. at 27; TIEC Ex. 2, Griffey Dir. at 39.

zero" possibility of additional or extended renewable-energy subsidies in its analysis; it only included the carbon-tax assumption.[145]

SWEPCO also points to the recognition of carbon dioxide as a pollutant under the Clean Air Act over a decade ago, and legislation proposed by Congressional Democrats (which has not been adopted) to limit carbon emissions, in support of its carbon-tax assumption.[146] Neither development indicates that it is likely that a carbon tax will be imposed. As Mr. Pollock testified, there was a strong bipartisan push for carbon burdens around 2008 (at about the time President Obama took office), but those efforts failed and bipartisanship around the issue has all but disappeared.[147] This indicates that the likelihood that Congress will muster the will to adopt a carbon tax in the future is lower now than it appeared in that time frame.[148] As Mr. Pollock testified at the hearing:

> Q So your opinion is that there is a zero possibility that there will be an enforced carbon burden sometime over the next 30 years?
>
> A It's not a – it's not that I'm saying there's a zero possibility. I'd say the probability is low given the history; certainly, going back to 2008. And subsequent to that, where policymakers have decided that the best way to encourage renewable development is through tax credits, not through a carbon tax.[149]

Given the failure to adopt a carbon tax when it was hotly debated over the last decade, a reasonable expectation is that it is more likely that Congress will address carbon in the future as it has in the past—by incenting additional carbon-free generation.[150] That would diminish the value of SWEPCO's proposed Wind Facilities, not increase it. In the meantime, neither the U.S. Congress nor the Texas Legislature has directed the Commission to make resource planning

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[145] SWEPCO's inconsistency on this point is particularly egregious given that it also undercounts the amount of renewable generation that is likely to be developed in the SPP in the future, as discussed elsewhere in TIEC's briefing. TIEC's In. Br. at 54; *see also infra* Section III.C.2.b.ii.

[146] SWEPCO's In. Br. at 29.

[147] Tr. at 637:5-638:23 (Pollock Redir.) (Feb. 26, 2020).

[148] *Id.*

[149] Tr. at 622:3-11 (Pollock Cross) (Feb. 26, 2020).

[150] TIEC Ex. 1, Pollock Dir. at 27.

decisions on the basis that carbon will be taxed in the future, and SWEPCO has provided no basis for doing so.

SWEPCO unsuccessfully made the same arguments in support of a carbon-tax assumption in the Wind Catcher case as it now makes in this case, including that the status quo might change over the long-term, and that certain TIEC members "favor carbon emissions regulations."[151] The Commission, however, was not persuaded by SWEPCO's arguments, finding that:

> 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.[152]

Nothing has changed since the Wind Catcher case that would justify a different result in this case.

Reduced to its essence, SWEPCO's justification for its carbon-tax assumption is little more than an argument that the world might change and therefore the Commission should adopt an assumption that greatly benefits the economics of SWEPCO's proposal (while ignoring other contingencies that are both more likely and have the opposite effect).[153] As an initial matter, SWEPCO has not come close to meeting its burden of proving that the adoption of a carbon tax is likely. Moreover, the mere argument that things can change is patently insufficient to support a billion-dollar-plus generation acquisition that is not needed for capacity or reliability reasons. The ALJs in the Wind Catcher case recognized this, concluding that the possibility of a carbon tax "should not be used as a partial justification for the construction of a multi-billion-dollar generating

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[151] Docket No. 47461, PFD at 32.

[152] TIEC Ex. 5 at 19, FoFs 96, 97.

[153] Assuming that an unprecedented carbon burden will be adopted in the evaluation of a regulated utility's request to construct an expensive power plant is an aggressive assumption in that it might cause the approval of a marginal project based on a speculative future contingency. On the other hand, for a business in private enterprise, such as the oil and gas industry, a carbon-tax assumption can have the opposite effect: it can be a conservative, constraining assumption that serves as a "stress-test" for the company's plans. Tr. at 624:21-625:6 (Pollock Cross) (Feb. 26, 2020).

facility."[154] As it did in that proceeding, the Commission should evaluate SWEPCO's proposal without a carbon-tax assumption in this case.

ii. Renewable Additions

The evidence in this case shows that SWEPCO is again underestimating the addition of renewable energy in the SPP footprint, just as the Commission found it did in Wind Catcher.[155] SWEPCO's primary justification for the understated amount of future renewable penetration it assumes is that it relied on the PROMOD models developed by SPP in its 2019 Integrated Transmission Planning (ITP10) process,[156] which is precisely what SWEPCO did in Wind Catcher, albeit with the 2017 ITP10.[157] As an initial matter, the primary model that affects power prices is not PROMOD—which is used merely to set percentage differentials and to model congestion costs—but AURORA.[158] And Mr. Bletzacker's AURORA model assumes a slightly lower level of renewable generation than SWEPCO's PROMOD model,[159] including the highly questionable assumption that there would be no new wind added in the SPP after 2020.[160] Moreover, SWEPCO ignores the fact that SPP creates two different cases as part of its ITP10 process, including a "Future 2" case that assumes higher levels of renewable penetration.[161] Notably, AEP representatives participating in the SPP stakeholder process have publicly commented that Future 2 aligns better with expected reality, stating that the SPP "region will likely have over 30 GW of wind power in the not distant future."[162] Yet, Mr. Bletzacker's AURORA modeling assumes that the SPP will not reach even 25 GW of wind generation during the entire study period.[163]

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[154] Docket No. 47461, PFD at 33.

[155] TIEC Ex. 5 at FoFs 99, 99A.

[156] SWEPCO's In. Br. at 29-30.

[157] Docket No. 47461, PFD at 33 ("SWEPCO witness Pfeifenberger explained that SWEPCO's PROMOD analysis began with SPP's 2017 ITP10 base models with modifications for the purpose of analyzing the economics of the project.").

[158] *See, e.g.*, SWEPCO Ex. 20, Rebuttal Testimony of Johannes P. Pfeifenberger at 22-23 (Pfeifenberger Reb.).

[159] *Id.* at 7.

[160] TIEC Ex. 2, Griffey Dir. at 48-49.

[161] Tr. at 376:10-19 (Ali Cross) (Feb. 25, 2020).

[162] TIEC Ex. 55.

[163] TIEC Ex. 45 (showing a maximum of 24,983 MW of wind even in the high gas with carbon case).

SWEPCO's assumptions regarding future wind penetration are flatly inconsistent with what SPP stakeholders, including the Company itself, are expecting.

SWEPCO attacks Mr. Pollock's testimony that the existing SPP interconnection queue suggests a higher level of renewable penetration by arguing that reliance on the interconnection queue is speculative. However, SWEPCO itself has relied on the queue in a discovery response as an indicator of the likely amount of wind generation that is to be deployed in the SPP.[164] Additionally, the Commission specifically entered a finding regarding the SPP interconnection queue in the Wind Catcher proceeding when it concluded that SWEPCO's modeling understated the amount of new wind generation in SPP.[165] SPP's interconnection queue has grown substantially since then, from 40 GW of wind generation[166] to 114 GW of renewable generation, including 80 GW of wind projects.[167]

Mr. Pollock's testimony that SWEPCO is again undercounting future wind is also supported by the EIA's projections, which also confirm—contrary to SWEPCO's suggestions[168]—that Mr. Pollock is not being inconsistent in asserting that SWEPCO is assuming both too-high natural gas prices and too-low wind penetration. EIA is not only projecting significant renewable growth in its Reference Case—which has lower gas prices than SWEPCO's low/no carbon case[169]—but also in its Low Case (High Oil and Gas Supply).[170] As shown in the following figure, EIA is projecting that "[d]eclining costs for new wind and solar projects [will] support the growing renewables share of the generation mix ***across a wide range of assumptions***."[171]

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[164] TIEC Ex. 51 ("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 additional wind resources deployment in the SPP footprint going forward.").

[165] TIEC Ex. 5 at FoFs 99, 99A.

[166] *Id.* at FoF 99A.

[167] TIEC Ex. 1, Pollock Dir. at 30. As noted above, SWEPCO reported 80 GW of wind generation in the queue at the time of the FCITC study, which was conducted during the RFP evaluation process in the spring of 2019. *Id.*; SWEPCO Ex. 7, Direct Testimony of Kamran Ali at 7-8 (Ali Dir.); SWEPCO Ex. 3, Godfrey Dir. at 12-14 (noting that bids were received on March 1, 2019).

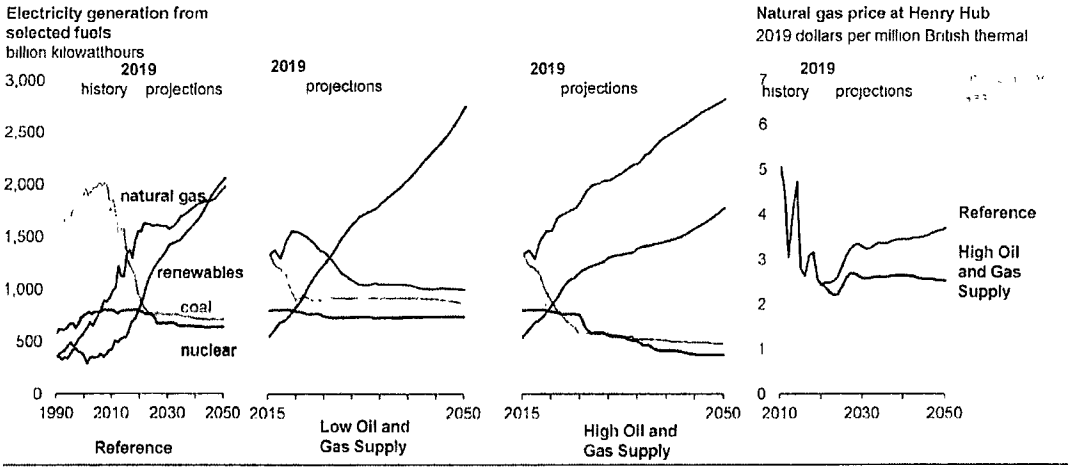
[168] SWEPCO's In. Br. at 30.

[169] TIEC Ex. 1, Pollock Dir. at 21.

[170] TIEC Ex. 46 at 67.

[171] *Id.* (emphasis added).

Declining costs for new wind and solar projects support the growing renewables share of the generation mix across a wide range of assumptions—



Consistent with its view on rising renewable penetration and low gas prices, the EIA is also projecting falling electricity prices, led by declining generation costs, which is in stark contrast to SWEPCO's assumption of ever-increasing power prices.[172]

Finally, SWEPCO contends that future renewable penetration has a limited impact on SPP market prices, citing to two analyses presented by Mr. Pfeifenberger in rebuttal testimony purporting to show the impact of more wind.[173] However, Mr. Pfeifenberger's analyses focus on average (i.e., ATC) prices, and therefore ignore the true impact that additional wind generation will have on the projected benefits of the Wind Facilities.[174] First, additional wind penetration will have the greatest impact in driving down LMPs during the windiest hours, which will also tend to be those hours when the Wind Facilities are running. Indeed, the Lawrence Berkley National Laboratory (LBNL) study that Mr. Pfeifenberger cited for his calculation of the impact on LMPs of greater renewable penetration looked at this relationship in Oklahoma, where the Wind Facilities are located:

> ***The region with the highest concentration of negative wholesale prices and the lowest average prices in 2017 is in the SPP footprint covering states in and around Oklahoma.***

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[172] TIEC Ex. 46 at 74.

[173] SWEPCO's In. Br. at 30 n.119.

[174] SWEPCO Ex. 20, Pfeifenberger Reb. at 8-12.

> Figure 17 shows that average RT LMPs in the Oklahoma region of SPP were low at times when overall system load (i.e., electricity demand) was low and higher when load was higher. More recently, and especially in 2017, the amount of overall SPP wind generation has also affected that relationship. ***Specifically, periods with high system-wide wind generation have been correlated with lower LMPs, particularly if the load was also simultaneously low. The impact of wind on average LMPs appears to have become stronger over time, such that average LMPs in 2017 were low when the wind was strongest even when system-wide load was relatively high.***[175]

Second, wind generation only sets the price in the hours in which wind is on the margin, and those prices are generally negative due to PTCs.[176] As renewable penetration increases, the number of hours in which wind sets the price increases. Importantly, this relationship is not linear. With low levels of wind penetration, wind will not be on the margin even in times of low load; with higher levels of wind penetration, wind will quite often be on the margin in times of low load, and possibly even in times of high load. As the same LBNL study explained:

> While negative prices were nearly nonexistent in the Oklahoma region of SPP in 2011, irrespective of system-wide load and wind generation, by 2017 negative prices occurred in nearly 40% of the hours when wind was generating above 50% of its nameplate capacity and load was below 50% of its peak level. Even when load was high in 2017, prices were sometimes negative when wind output was high. In contrast, in 2015, negative prices were unlikely to occur if the demand was high, regardless of the level of wind generation.[177]

Simply looking at how a small amount of additional wind would affect ATC LMPs, as Mr. Pfeifenberger did, does not account for these effects, and such an analysis understates the impact that assuming a more reasonable amount of wind would have on the projected net benefits of the Wind Facilities. In order to fully assess those impacts, SWEPCO's models would have to be rerun using the appropriate assumptions.

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[175] SWEPCO Ex. 20A, Pfeifenberger Reb. Workpaper at WP "LBNL Study_wind_and_solar_impacts_on_wholesale_prices_approved.pdf" at 36-37 (emphases added).

[176] Tr. at 335:10-336:1 (Sheilendranath Cross) (Feb. 25, 2020).

[177] SWEPCO Ex. 20A, Pfeifenberger Reb. Workpaper at WP "LBNL Study_wind_and_solar_impacts_on_wholesale_prices_approved.pdf" at 37-38.

SWEPCO has not met its burden to prove that the amount of SPP renewable penetration it has assumed is reasonable, or that assuming a more reasonable amount of future renewables would not significantly reduce the projected benefits of the Wind Facilities.

c. Capacity Factor

SWEPCO failed to meet its burden of proving that the Wind Facilities will generate as much energy as SWEPCO assumes in its economic models. Contrary to SWEPCO's contentions, it is not "equally likely that production from the [Wind] Facilities will be above or below the P50 level"[178]—not even according to the wind resource assessments prepared by SWEPCO's wind consultant. The calculated P50 level explicitly does not account for force majeure events, mechanical defects, and curtailments, all of which would lower the expected output of the Wind Facilities.[179] These unmodeled risks are asymmetric—force majeure events, mechanical defects, and curtailments (or similar unforeseen circumstances[180]) do not somehow increase the energy production level of the Wind Facilities; they only decrease it. Thus, the P50 level does not represent the actual median of possible outcomes. Low-probability, high-impact events—such as mechanical breakdowns or a seasonal shutdown of the Wind Facilities due to the whooping crane's migration path, which crosses the Traverse project[181]—represent real risks to ratepayers, yet are completely unaccounted for in SWEPCO's P50 analysis. Further, SWEPCO discounts the risks of force majeure and curtailment while being unwilling to take on even a portion of that risk in the guarantees it has offered in this proceeding.[182]

In light of SWEPCO's failure to provide any analysis of the effect of force majeure events or curtailments over the assumed 30-year life of the facilities, it has not met its burden to show that the P50 level is appropriate for evaluating the economics of the projects. In the SPS wind case, the Commission evaluated the economics based on SPS's absolute guarantee of a minimum 48%

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[178] SWEPCO's In. Br. at 31.

[179] SWEPCO Ex. 3, Godfrey Dir. at Ex. JFG-6 at 58; Tr. at 56:11-22 (Smoak Cross) (Feb. 24, 2020).

[180] Extremely heavy winds would in fact decrease, not increase the energy production level. As shown in the wind resource reports, there is a loss factor called "high-wind hysteresis," which reflects events when the wind speed exceeds the turbine's maximum speed and the turbine shuts down. SWEPCO Ex. 3, Godfrey Dir. at Ex. JFG-6 at 54.

[181] Tr. at 39:21-40:21 (Smoak Cross) (Feb. 24, 2020).

[182] Tr. at 114:2-6 (Brice Cross) (Feb. 24, 2020).

NCF for both energy savings and PTCs, with no exceptions for force majeure or curtailments.[183] SWEPCO has been unwilling to make such a commitment even at its P95 level of 38.1% in this case. Accordingly, Mr. Pollock's assessment of the Wind Facilities at SWEPCO's "guaranteed" P95 production level is more generous to SWEPCO than the Commission's evaluation of SPS's wind projects in Docket No. 46936. Although the Wind Facilities lose money even at SWEPCO's P50 NCF, Mr. Pollock's assessment of the Wind Facilities at the P95 level is useful for demonstrating the magnitude of the potential negative impact on ratepayers, consistent with how the Commission has analyzed prior projects.

d. Useful Life of Wind Facilities

SWEPCO has changed its assumed life for wind facilities from 25 years in Wind Catcher to 30 years in this case and offered only conclusory statements in support of that change. In SWEPCO's base case analysis, the Wind Facilities provide $658 million (nominal) in benefits in years 26-30, and SWEPCO submitted no analysis of the benefits under the 25-year life case that both SWEPCO and SPS have used for their recent wind facilities. SWEPCO asserts that a 30-year design life was required by the RFP,[184] but there are no consequences to the bidders if the facilities do not last that long.[185] And there are no actual examples of wind facilities that have lasted 30 years, nor of the level of replacement or maintenance costs necessary to extend the life that long.[186] There is considerable uncertainty on how long these facilities would actually last, and SWEPCO is not entitled to the benefit of the doubt.

Even if it were possible to extend the Wind Facilities' life to 30 years, that extension would require substantial interim capital expenditures and operations and maintenance (O&M) costs,[187] and those costs are mere projections at this point.[188] Whether it would make economic sense to incur the additional expense in the future to extend the useful life of the Wind Facilities to 30 years

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[183] Docket No. 46936, Order at FoFs 113-14.

[184] SWEPCO's In. Br. at 32.

[185] TIEC Ex. 1, Pollock Dir. at 15 (noting warranty period for turbines).

[186] Tr. at 726:5-18 (DeRuntz Cross) (Feb. 26, 2020).

[187] SWEPCO Ex. 16, Rebuttal Testimony of Joseph G. DeRuntz at 3 (DeRuntz Reb.).

[188] TIEC Ex. 1, Pollock Dir. at 13.

is unknown. Indeed, the LBNL report cited by Mr. DeRuntz agrees that the O&M cost for extending useful lives to 30 years is highly uncertain:

> ***The O&M implications of extended useful lives are uncertain.*** Some turbine components can easily last 30+ years whereas others, such as gearboxes, would likely require refurbishment or replacement. While acknowledging uncertainty in future O&M costs, a limited number of respondents indicated that they do not anticipate a fundamental step-change in O&M expenditures to achieve 25-year lives. ***Others indicated that heightened O&M costs and component refurbishment and replacement go hand-in-hand with extended project life, as might increased performance degradation, especially to achieve 30-year life spans***—also noting that these effects are factored-in when assessing overall plant profitability and determining useful life. ***Ultimately, the actual useful life of wind assets will depend critically on how components wear over time, which will affect O&M expenditures.***[189]

SWEPCO cannot meet its burden of proof on changing to a 30-year life for the analysis of the Wind Facilities merely by asserting that they can possibly last 30 years, without any proof of the heightened capital expenditures and O&M costs necessary to achieve that useful life. SWEPCO claims in its brief that the "O&M and capital forecast is based on sustaining a minimum of 30 years of operation."[190] However, its O&M and capital forecast is scaled only for inflation, which does not account for expected heightened O&M costs.[191] Indeed, for this precise reason, the same LBNL study SWEPCO relies on concedes that its "analysis overstates the benefits of extended project lifetimes."[192]

Another indication that SWEPCO may be understating the expected O&M costs is the high proportion of project benefits that it expects during the later years of the Wind Facilities. SWEPCO's low/no carbon case projects that a ***third*** of the expected NPV of benefits are expected to come from the last five years alone.[193] However, respondents to the LBNL survey noted that "the actual incremental value of years 25 to 30 is generally quite low in present value terms,

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[189] SWEPCO Ex. 16, DeRuntz Reb. at Ex. JGD-2R at 4 (emphases added).

[190] SWEPCO's In. Br. at 32.

[191] Tr. at 724:22-725:14, 727:3-22 (DeRuntz Cross); SWEPCO Ex. 16, DeRuntz Reb. at Ex. JGD-2R at 6; TIEC Ex. 74.

[192] SWEPCO Ex. 16, DeRuntz Reb. at Ex. JGD-2R at 7.

[193] TIEC's In. Br. at 51 nn.247-48. Indeed, Mr. Griffey also demonstrated that SWEPCO's economic modeling showed net benefits jumping in the last five years in an incongruous fashion and there is no "reason to place any credibility on a jump in claimed energy savings that far out in time." TIEC Ex. 2, Griffey Dir. at 60.

especially if there is a need for increased O&M or refurbishment."[194] As Mr. Pollock recommended, due to the high uncertainty of the cost of extending the useful lives of the Wind Facilities to 30 years, which goes far beyond the warranty provided by the turbine manufacturer,[195] a 25-year useful life should be assumed for the purpose of the economic analysis. SWEPCO has not met its burden of proof that a longer life should be assumed.

e. Congestion and Losses (Including Gen-Tie)

SWEPCO has not met its burden of proof that the level of congestion costs will be at the low level it assumes. Among the flaws in SWEPCO's congestion analysis are that (1) it assumes that congestion will stay constant from 2029 forward, and (2) SWEPCO's modeling generally understates congestion. These problematic assumptions, and SWEPCO's attempts to defend them, are discussed below.

SWEPCO's artificial cap on congestion costs is speculative and unsupported.

SWEPCO's economic modeling holds congestion costs constant from 2029 to 2051 in all cases despite the fact that, as its witnesses acknowledge, (1) the PROMOD model has limitations that cause its results to understate actual congestion costs,[196] (2) congestion costs are directly correlated with power prices,[197] which SWEPCO assumes will continuously increase throughout the project period,[198] and (3) there is a significant risk of additional wind generation that will increase congestion costs.[199] In its brief, SWEPCO's offers two justifications to support its strained assumption that congestion will stay flat after 2029. First, SWEPCO argues, that if congestion cost increase beyond the level it modeled for that year, SPP will advance transmission

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[194] SWEPCO Ex. 16, DeRuntz Reb. at Ex. JGD-2R at 6.

[195] TIEC Ex. 1, Pollock Dir. at 15.

[196] SWEPCO Ex. 7, Ali Dir. at 5-6; SWEPCO Ex. 9, Direct Testimony of Johannes P. Pfeifenberger at 5-6 (Pfeifenberger Dir.).

[197] Tr. at 317:4-15, 342:10-16 (Sheilendranath Cross) (Feb. 25, 2020).

[198] TIEC Ex. 43.

[199] Tr. at 375:7-21 (Ali Cross) (Feb. 25, 2020); SWEPCO Ex. 7, Ali Dir. at 10; TIEC Ex. 51 ("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 additional wind resources deployment in the SPP going forward.").

solutions that will solve the problem.[200] Second, SWEPCO argues that if congestion costs continue to grow, it will build a gen-tie.[201] Neither rationale supports holding congestion costs constant.

- **SWEPCO's speculation about what SPP will do over a decade from now does not justify its artificial cap on congestion-cost growth.**

SWEPCO contends that it is appropriate to assume that congestion costs will not grow after the level it projects for 2029 because of its speculation that "SPP's planning process will identify transmission solutions to address transmission congestion and prevent congestion costs from rising further."[202] For instance, SWEPCO witness Mr. Pfeifenberger testified in rebuttal:

> While the PROMOD simulations tend to understate congestion, holding all else equal, the projected congestion costs ***may*** not be understated given that SPP ***may*** further expand the transmission system over time relative to the system modeled. However, as I have also explained in my direct testimony, ***the fact that PROMOD simulations tend to understate congestion means that there is the risk that future congestion levels could be higher than simulated in the base case.***[203]

Thus, SWEPCO's economic analysis artificially caps congestion costs based on the company's speculation of what the SPP may do in the future regarding congestion. This cap is different depending on the gas price and carbon scenario: for SWEPCO's base case, the 2029-2051 generation-weighted congestion costs are $12.98/MWh in nominal terms; in the low/no carbon case, they are held constant at $8.68/MWh.[204]

To be clear, SWEPCO's position that SPP will address future congestion for the Wind Facilities is not based on any known plans or statements from SPP.[205] Indeed, Mr. Pfeifenberger testified that "[w]hether and when SPP would identify and approve such further [transmission] upgrades is uncertain . . . ."[206] Rather, it is based on speculation that SPP will advance transmission

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[200] SWEPCO's In. Br. at 34-35.

[201] *Id.* at 35.

[202] *Id.* at 34.

[203] SWEPCO Ex. 20, Pfeifenberger Reb. at 20 (emphases added).

[204] SWEPCO Ex. 6, Direct Testimony and Exhibits of Akarsh Sheilendranath at 15, 17 (Sheilendranath Dir.).

[205] Tr. at 325:13-21 (Sheilendranath Cross) (Feb. 25, 2020).

[206] SWEPCO Ex. 9, Pfeifenberger Dir. at 35.

solutions when congestion costs reach a certain level.[207] In this connection, SWEPCO cites Mr. Sheilendranath's testimony that SPP will implement transmission solutions when congestion costs reach a range of $9-10/MWh.[208] Mr. Sheilendranth's range was based on an LBNL study that estimated the point at which it becomes economical to address congestion costs.[209] However, Mr. Pfeifenberger later testified that he had cited that same LBNL study in the Wind Catcher proceeding, and that the study in fact concluded that the cost of transmission solutions was in the range of $10/MWh to $20/MWh.[210] Thus, the cited $10/MWh only represents the bottom end of a wide range of estimates of the level of congestion that would justify transmission solutions—the threshold point could in fact be double that amount.

Moreover, the $10/MWh figure was in real terms for the year for which the estimate was made.[211] Since Mr. Pfeifenberger cited the study in the Wind Catcher proceeding, which was filed in July 2017 and tried in February 2018,[212] the study could not have been published any later than 2017. Assuming the $10/MWh was in 2017 real terms and the 2% inflation rate used by SWEPCO to escalate its projected O&M costs,[213] the 2030 nominal cost would be $12.94/MWh.[214] The 2051 nominal cost would be $19.61/MWh.[215] Nevertheless, SWEPCO assumed that the $10/MWh trigger for transmission solutions would not scale with inflation, with the rationale being that technological improvements will lower the cost of such solutions.[216] But, as TIEC explained in its initial brief, it is inconsistent and unreasonable for SWEPCO to assume that future technological improvements will lower future transmission costs, but will do nothing to mitigate continuously

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[207] SWEPCO In. Br. at 34-35.

[208] *Id.* at 34-35 & nn.146-48 (citing to various portions of Mr. Sheilendranath's testimony at the hearing).

[209] Tr. at 322:9-22, 339:22-340:1 (Sheilendranath Cross) (Feb. 25, 2020).

[210] Tr. at 485:1-15 (Pfeifenberger Cross) (Feb. 25, 2020).

[211] Tr. at 340:2-4 (Sheilendranath Cross) (Feb. 25, 2020).

[212] TIEC Ex. 5 at FoFs 2, 5.

[213] SWEPCO Ex. 4, Direct Testimony of Joseph G. DeRuntz at 17-18 (DeRuntz Dir.). Although Mr. Ali did not testify as to the exact inflation rate assumed, a similar inflation rate was assumed for the cost of the gen-tie to get it from $443 million 2021 dollars to $480 million 2026 dollars. Tr. at 394:15-25 (Ali Cross) (Feb. 25, 2020).

[214] $10/MWh * (1.02) ^ (2030-2017).

[215] $10/MWh * (1.02) ^ (2051-2017).

[216] SWEPCO Ex. 20, Pfeifenberger Reb. at 19; Tr. at 341:5-14 (Sheilendranath Cross) (Feb. 25, 2020).

increasing power prices.[217] SWEPCO's flat $10/MWh cap on future congestion costs is unsupported.

Further, even if $10/MWh were an appropriate cap on future congestion costs for SWEPCO's base case, that cap would not keep congestion costs from escalating in SWEPCO's low cases in which power prices and thus congestion costs are lower. For instance, the 2029 generation-weighted average congestion cost in the low gas/no carbon case was $8.68/MWh.[218] In that case, congestion costs would have to continue to rise before hitting the $10/MWh threshold at which SWEPCO claims it will be cost effective for the SPP to advance transmission solutions.[219]

Finally, TIEC notes that Mr. Sheilendranath made the conclusory assertion at the hearing that SWEPCO can build a potential gen-tie at about $9/MWh, and that this means that it would also make sense for the SPP to construct transmission solutions at that level.[220] However, this testimony makes no sense given SWEPCO's economic analysis in this case. SWEPCO's base case without a gen-tie shows congestion from 2029 onward at $12.98/MWh.[221] And SWEPCO states that the cost of congestion in that case is lower than the cost of building a gen-tie.[222] Thus, it is entirely unclear how it could be economic for SWEPCO to construct a gen-tie when congestion is at $9/MWh.

- **SWEPCO's contentions regarding a potential gen-tie do not justify its artificial cap on congestion-cost growth.**

SWEPCO's other rationale for capping congestion costs in its analysis is that, if costs grow higher, it will construct a gen-tie. However, it is not clear when the gen-tie would actually be constructed and thus how much congestion costs the gen-tie would actually avoid. While SWEPCO assumes in its gen-tie cases that it would get built in 2026, that is the earliest year in

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[217] TIEC Ex. 2, Griffey Dir. at 41-42. In fact, the EIA is projecting decreasing generation cot

[218] SWEPCO Ex. 6, Sheilandranath Dir. at 17.

[219] The $10/MWh cap would stay the same between cases because it is based on the cost of building transmission solutions, which has no relationship with power prices. Tr. at 342:24-343:1 (Sheilendranath Cross) (Feb. 25, 2020).

[220] *Id.* at 321:15-22.

[221] SWEPCO Ex. 6, Sheilendranath Dir. at 15.

[222] *Compare* SWEPCO Ex. 8, Torpey Dir. at JFT-3 at 1 (showing base case without gen-tie) *with id.* at 10 (showing base case with gen-tie).

which it could feasibly get built,[223] and if it is built any later, then the amount of avoided congestion costs would decrease.[224] Additionally, as TIEC laid out in its initial brief, if SWEPCO is placing a cap on the cost of congestion in its base cases based on its ability to build a gen-tie if congestion costs go over the cap, then the cost of the gen-tie should be accounted for in the economics of the Wind Facilities. As Mr. Griffey explained, "one should not claim that the gen-tie will limit congestion in the future without including the cost of that gen-tie in the analysis."[225] The cost of the gen-tie (based on SWEPCO's very uncertain estimate) adds an additional $480 million[226] in up-front capital costs to the project.

SWEPCO's congestion costs are generally understated.

SWEPCO discusses its use of PROMOD to model congestion costs in its brief, but offers no explanation as to why it failed to make any adjustment to its analysis to account for the fact that PROMOD understates congestion costs (which SWEPCO acknowledges).[227] As explained in TIEC's initial brief, SWEPCO took a different approach in the Wind Catcher case, adding a 5% curtailment adjustment on top of the modeled congestion costs to reflect additional risk not accounted for in PROMOD.[228] While SWEPCO details in its brief a threshold deliverability analysis it performed during the RFP process,[229] it does not explain how this analysis obviated the need to account for PROMOD's tendency to understate congestion.[230] Indeed, SWEPCO itself apparently did not consider the deliverability analysis to completely eliminate congestion and curtailment risk, as even the bids that passed that threshold analysis were subjected to an additional economic analysis that included 50% consideration of a dedicated gen-tie.[231] SWEPCO has not

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[223] Tr. at 386:21-387:21 (Ali Cross) (Feb. 25, 2020).

[224] *Id.* at 389:10-23.

[225] TIEC Ex. 2, Griffey Dir. at 41.

[226] Tr. at 394:15-25 (Ali Cross) (Feb. 25, 2020). This is in 2026 dollars.

[227] SWEPCO's In. Br. at 33-35.

[228] TIEC's In. Br. at 53-54.

[229] SWEPCO's In. Br. at 11.

[230] The deliverability analysis that SWEPCO performed did not eliminate all bids with any curtailment risk; it simply eliminated bids in a cluster where there was zero megawatts of deliverability and one bid that had an output that was greater than the deliverability of its entire cluster. SWEPCO Ex. 7, Ali Dir. at 8.

[231] SWEPCO Ex. 8, Torpey Dir. at 14.

met its burden of proving that it was reasonable to use unadjusted PROMOD congestion-cost projections in its analysis.

3. Capacity Value

SWEPCO's assertions in its initial brief that the Wind Facilities will provide capacity value are based on projections of deferring capacity needs nearly two decades into the future.[232] As TIEC witnesses Mr. Griffey and Mr. Pollock testified, that capacity value is speculative because (1) the projected need is based on load forecasts, and if the need is pushed out, as has happened in the past, then the assumed capacity benefit will be further discounted or eliminated,[233] and (2) the SPP has not yet accredited the Wind Facilities for capacity.[234] In Docket No. 47461, SWEPCO made a similar claim that Wind Catcher would provide $269 million NPV of future capacity deferral benefits to customers,[235] and TIEC witness Mr. Pollock similarly noted that these projected benefits were highly speculative.[236] While the PFD entered a finding of fact concluding that SWEPCO's estimate was "reasonable and should be used to help determine the expected net benefits of the Project,"[237] the Commission deleted that finding of fact in its final order.[238] As in Wind Catcher, SWEPCO has not met its burden of proof that the Wind Facilities will provide capacity value in the future, let alone the various specific dollar amounts assumed in SWEPCO's various analyses.

4. Production Tax Credits

SWEPCO claims in its in initial brief that the Commission can be confident in the expected energy output of the Wind Facilities, and thus the expected value of the PTCs.[239] However, for the reasons set forth in TIEC's initial brief and in Section III.C.2.c above, there are significant risks associated with the energy output level of the Wind Facilities—which are not addressed by

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[232] SWEPCO's In. Br. at 35-36.

[233] TIEC Ex. 2, Griffey Dir. at 44.

[234] TIEC Ex. 1, Pollock Dir. at 12.

[235] Docket No. 47461, PFD at FoF 119.

[236] *Id.* at 45.

[237] *Id.* at FoF 121.

[238] Docket No. 47461, Final Order at FoF 121.

[239] SWEPCO's In. Br. at 37.

SWEPCO's wind resource assessments or proposed guarantees—that would lower the value of the PTCs. Ratepayers are entirely at risk for any reductions in NCF down to the 38.1% level. And ratepayers also have no protection if force majeure events or curtailments lower the NCF below the 38.1% P95 level (and, of course, it is curtailments or force majeure events that would be most likely to have significant impacts on NCF). Further, SWEPCO has made clear that it insists that ratepayers bear 100% of the risk of any future reductions in the value of the PTCs due to changes in law,[240] which neither SWEPCO nor ratepayers can control. SWEPCO's economic analyses take none of these risks into account.

5. Deferred Tax Asset

As SWEPCO acknowledges in its initial brief,[241] the cost of the deferred tax asset to ratepayers is dependent upon projections of AEP's consolidated tax liability. However, when asked about those projections on the stand, AEP's tax witness, Mr. Multer, could not answer questions regarding how they were developed and stated that he was not involved in that process.[242] As explained in TIEC's initial brief, AEP's tax appetite is uncertain and would be significantly lower due to accelerated depreciation if AEP pursues the regulated renewable projects that it is telling investors that it will pursue in the next decade.[243] This is a real risk to ratepayers that is within AEP's control, yet SWEPCO has not proposed the type of deferred tax asset (DTA) caps that it proposed in the Wind Catcher proceeding.[244]

6. Wind Facilities Revenue Requirement

In its initial brief, SWEPCO sets forth the forecasted revenue requirement of the Wind Facilities,[245] which totals $3.2 billion (nominal) over their life,[246] including $1.8 billion (nominal) of return to SWEPCO's shareholders.[247] There is relatively little uncertainty around these costs—

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[240] Tr. at 152:24-153:19 (Brice Cross) (Feb. 24, 2020).

[241] SWEPCO's In. Br. at 38.

[242] Tr. at 531:1-17 (Multer Cross) (Feb. 25, 2020) (HSPM).

[243] TIEC's In. Br. at 60-61.

[244] Docket No. 47461, PFD at 50-51.

[245] SWEPCO's In. Br. at 40.

[246] TIEC Ex. 1, Griffey Dir. at 57.

[247] TIEC's In. Br. at 7 n.9.

if SWEPCO's application is approved and the projects are built, then SWEPCO's ratepayers will have to pay these costs and SWEPCO's shareholders will receive these amounts.[248]

In fact, ratepayers may be on the hook for even more than what SWEPCO projects. As SWEPCO notes, its calculation of the revenue requirement is based on Mr. DeRuntz's ongoing capital and O&M forecast,[249] which stays flat in real terms despite the fact that a 30-year useful life will require high levels of O&M costs.[250] The purported revenue requirement also does not include the cost of the gen-tie. The gen-tie's cost is very uncertain at this time, but SWEPCO has projected it to be a $480 million investment,[251] which would further add to SWEPCO's rate base and generate a return for its shareholders. In fact, the nominal revenue requirement of the gen-tie during the study period, using SWEPCO's assumed 60-year life, would be $712 million,[252] including a $314 million nominal return for shareholders.[253] At the end of the SWEPCO's assumed 30-year life of the Wind Facilities, there would still be a $154 million asset left on SWEPCO's books for the gen-tie.[254] These certain costs to ratepayers are not worth the uncertain benefits that SWEPCO touts.

D. Economic Evaluation and Summary

1. Economic Evaluation

In evaluating SWEPCO's application in this case, the ALJs will have the benefit of several recent cases in which the Commission considered a utility's proposed (or actual) acquisition of a renewable resource for economic reasons in the absence of a capacity need. This includes not only the Wind Catcher case, but also the SPS wind CCN case (Docket No. 49636),[255] and the recent SPS fuel reconciliation case (Docket No. 48973), in which the Commission found that SPS acted

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[248] TIEC Ex. 1, Griffey Dir. at 57.

[249] SWEPCO's In. Br. at 40.

[250] TIEC's In. Br. at 61-63.

[251] TIEC Ex. 59.

[252] SWEPCO Ex. 8B, Workpapers to the Direct Testimony of John F. Torpey at WP "Updated Torpey Errata Benefits Model Final.xlsx," Tab "P50 RR Base," cell F231 (Torpey Dir. Workpapers).

[253] *Id.* at line 91 (sum of total return on rate base amounts $575 million); *id.* at cell H110 (SWEPCO's portion is 54.55%). $575 * 0.5455 = $314 million.

[254] TIEC's In. Br. at 63 n.328.

[255] Docket No. 46936, Final Order (May 25, 2018).

imprudently in entering into certain solar PPAs.[256] At least two themes are apparent from a review of the Commission's decision in these cases: First, the Commission will be exacting in demanding that benefits be shown under a robust range of plausible assumptions, such as in the "worst case scenario" the Commission employed in considering the SPS wind settlement.[257] Second, the Commission will consider that a utility without a capacity need has an option to wait and to avail itself of other alternatives to address high energy prices should they materialize in the future.[258]

In this section of its brief, SWEPCO argues that is has "presented evidence of customer benefits under a wide range of plausible future outcomes," and that it has therefore met the standard for approval of its application.[259] SWEPCO is incorrect. Its analysis runs afoul of both of the above-described factors the Commission has looked to in deciding recent renewable-resource cases.

First, as discussed throughout TIEC's briefing, while SWEPCO has presented numerous sensitivity cases, none accurately reflect plausible market expectations of future gas and energy prices, much less a low sensitivity of market expectations. Even SWEPCO's lowest natural gas price case has prices that are above EIA's Reference Case, and far above NYMEX futures and the EIA Low Case, both of which were cited by the Commission in denying the Wind Catcher application.[260] Accordingly, SWEPCO has not provided any meaningful sensitivity analysis in support of its application at all.

Second, SWEPCO continues to ignore that, given its absence of a capacity need, it has an option to wait before committing itself to a billion-dollar investment in a resource. SWEPCO's

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[256] *Application of Southwestern Public Service Company for Authority to Reconcile Fuel and Purchased Power Costs*, Docket No. 48973, Final Order (Dec. 18, 2019).

[257] Docket No. 46936, Final Order at 3, 4, 21; *see also* Docket No. 48973, Final Order at FoFs 125, 146 ("A sensitivity analysis based on low gas prices is sometimes used in evaluating the economics of future resource acquisitions, but SPS did not undertake a sensitivity analysis with regard to the solar purchased power agreements."); TIEC Ex. 5 at 4-5 & FoFs 83, 84, 89, 90 (discussing a wide range of natural gas price assumptions).

[258] Docket No. 48973, Final Order at FoF 148 ("SPS's analysis did not reflect that it would have other options to obtain energy savings in the future should it have decided not to enter into the solar purchased power agreements."); TIEC Ex. 2, Griffey Dir. at 14 (citing Commissioner D'Andrea's open meeting statements in Wind Catcher noting that SWEPCO still has the ability to pursue future options for energy savings).

[259] SWEPCO's In. Br. at 40-41.

[260] *See supra* Section III.C.2.a.

analysis measures net benefits by comparing a world with the Wind Facilities to a world without them (and in which it takes no additional steps to mitigate high energy prices should they occur).[261] Thus, SWEPCO's analysis does not reflect that, even if it does not proceed with the Wind Facilities now, it will have other options to address high energy prices in the future (should such prices come to pass).[262] Consequently, SWEPCO's analysis—even if one were to accept all of its assumptions—overstates the projected benefits of the Wind Facilities.[263] In any event, the evidence in this case is clear that SWEPCO has failed to meet its burden of proving that the Wind Facilities should be approved.

2. Summary

SWEPCO incorrectly asserts that intervenor parties have presented "worst case scenarios" to demonstrate that the Wind Facilities are not economic. The quantitative analysis presented by TIEC in its initial brief used NYMEX futures prices, and made limited adjustments for the understatement of congestion costs, the undercounting of wind, the inclusion of capacity value, and the use of a 30-year useful life, which resulted in $314 million NPV net cost to ratepayers. These adjustments are not based on "worst case scenarios," but current market gas prices and corrections for faulty assumptions and modeling errors.

IV. Proposed Conditions (P.O. Issue No. 10, 19, 20, 24)

The conditions proposed by SWEPCO do little or nothing to protect ratepayers from the higher rates that would result from the Wind Facilities. While some of the conditions proposed by other intervenors or Staff could in theory protect ratepayers (i.e., a guarantee of net benefits calculated based on the actual LMPs in SPP), this case is ultimately about whether SWEPCO's proposal should be approved, and the Commission should follow the precedent in Wind Catcher and decline to address hypothetical additional guarantees proposed by other parties.[264]

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[261] SWEPCO Ex. 8, Torpey Dir. at 17-19.

[262] TIEC Ex. 2, Griffey Dir. at 13-14, 53-55.

[263] *Id.* at 53.

[264] TIEC Ex. 5 at 9-10.

A. SWEPCO Proposed Conditions

SWEPCO's initial brief points to Exhibit TPB-1R in SWEPCO witness Mr. Brice's rebuttal testimony in support of its argument that SWEPCO's proposed conditions will protect ratepayers. In fact, Mr. Brice's rebuttal exhibit, which is attached hereto as Attachment A, shows just the opposite.[265] That exhibit shows SWEPCO's calculation of net benefits under a P95/low gas/no carbon scenario, which SWEPCO excluded from its initial filing.[266]

First, note that of the mere $43 million (NPV) in customer benefits over 30 years in that exhibit,[267] $29 million is attributable to speculative capacity value beginning in 2038.[268] As set forth in TIEC's and other parties' initial briefs, it is inappropriate to include a speculative capacity value in the economic analysis of the wind facilities. Removing that item leaves $14 million of NPV in Mr. Brice's exhibit.

Second, Mr. Brice's exhibit shows that any benefits are remote and back-end loaded, so that ratepayers would be forced to accept cumulative negative benefits from the Wind Facilities until the late 2040s.[269] From 2022 until 2027, Mr. Brice's exhibit shows that ratepayers would pay higher rates, even granting all SWEPCO's other assumptions in favor of the Wind Facilities. Then, following a few years of projected modest rate reductions, ratepayers would pay a total of $208 million in higher rates from 2032 to 2037. The project remains under water on a cumulative basis until the late 2040s, at which point SWEPCO projects the Wind Facilities to provide $371 million (nominal) of benefits in years 26 through 30 of their life, assuming that they operate that long. That is, ratepayers would have to be around until the final few years of the Wind Facilities' life before they see any benefits.

Third, Mr. Brice's exhibit is based on what SWEPCO calls its "low gas" case, which is not only far above NYMEX futures prices and the 2020 EIA Low Case projection, it is even above the

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[265] SWEPCO Ex. 14, Brice Reb. at Ex. TPB-1R (attached as Attachment A).

[266] SWEPCO Ex. 8, Torpey Dir. at Errata Ex. JFT-4.

[267] SWEPCO Ex. 14, Brice Reb. at Ex. TPB-1R at Line 8, Column NPV.

[268] *Id.* at Line 3, Column NPV.

[269] *Id.* at Line 8.

2020 EIA Reference Case.[270] Applying the EIA Low Case instead would reduce Mr. Brice's $14 million (NPV without capacity) by $143 million NPV.[271] Using the NYMEX futures prices would reduce Mr. Brice's calculated NPV by $193 million.[272]

Fourth, Mr. Brice adopts the optimistic "no-tie" line case for his exhibit. SWEPCO chose to not show in its testimony any P95 tie-line cases using its low gas scenario, and for good reason given what those cases would show about the Wind Facilities' economics. It is possible, however, to estimate the effect of the addition of a tie-line at the P95 level by comparing the difference between the P95 "Base Gas without CO2" cases with and without the gen-tie shown in Exhibit JFT-4 of SWEPCO witness Mr. Torpey's direct testimony. That comparison shows the addition of a tie-line would further reduce of the NPV of the Wind Facilities in the P95 case by an estimated $87 million.[273]

Fifth, Mr. Brice's exhibit incorporates SWEPCO's assumption that O&M costs will not increase after year 10, its understatement of the amount of renewable energy that will occur in SPP, its assumption that congestion costs will somehow decline in real terms after 2029, and the other unjustified assumptions pointed out by Staff and intervenors.

Finally, Mr. Brice's exhibit does not reflect the fact that SWEPCO's "guarantees" have numerous loopholes, including the following:

- There is no guarantee that the projected benefits of PTCs will not be reduced by congressional action. In fact, SWEPCO is quite explicit that "the company cannot guarantee what Congress may or may not do in the future."[274] But no one has asked SWEPCO to guarantee what Congress will do, the question is whether SWEPCO or the ratepayers should bear the risk of that prospective congressional action. SWEPCO insists on imposing that

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[270] TIEC Ex. 1, Pollock Dir. at 21.

[271] As noted by Mr. Pollock, a $1/MMBtu reduction in gas prices from SWEPCO's P95, low/no carbon case results in a $138 million NPV reduction in net benefits. TIEC Ex. 1, Pollock Dir. at 23. The difference between SWEPCO's low/no carbon case ($4.50/MMBtu) and EIA's 2020 Low Case ($3.46/MMBtu) is $1.04/MMBtu. *Id.* at 21. 1.04 * 138 = $143.5 million NPV.

[272] The difference between low/no carbon ($4.50/MMBtu) and NYMEX Futures ($3.10/MMBtu) is $1.40/MMBtu. 1.40 * 138 = 193.2 million NPV.

[273] SWEPCO Ex. 8, Torpey Dir. at Ex. JFT-4 (showing $181 million in net benefits for P95 base/no carbon without gen-tie and $94 million in net benefits for P95 base/no carbon with gen-tie).

[274] SWEPCO's In. Br. at 46.

risk on the ratepayers, but completely ignores any cost of that risk in its economic analysis.

- SWEPCO completely exempts from the P95 "guarantee" any reduction attributable to force majeure events.[275] SWEPCO offered no calculation of the likelihood of curtailments for environmental reasons or any other unanticipated reasons over the 30-year life of the facility.[276] Instead, SWEPCO's "guarantee" effectively assumes there are no such curtailments, and leaves the entire risk on ratepayers.

- SWEPCO also seeks to exempt economic curtailments, even though wind plants in the area have experienced significant curtailments.[277]

SWEPCO's proposed guarantees do nothing to protect ratepayers from the immediate and long-term rate increases that would result from the approval of the Wind Facilities.

1. Capital Cost Cap Guarantee

See Section IV.A above.

2. Production Tax Credit Eligibility Guarantee

See Section IV.A above.

3. Minimum Production Guarantee

See Section IV.A above.

B. Conditions Contained in Settlements Filed in Other Jurisdictions

As noted in TIEC's initial brief, SWEPCO and PSO's settlements in other states are irrelevant to the question of whether SWEPCO's request for a CCN in this case should be approved.[278] SWEPCO had every opportunity to modify its request while the record in this case was open. It did not do so in its rebuttal testimony, and it made clear at the hearing that it was not modifying its request in the Texas proceeding. Mr. Brice, who indicated that SWEPCO would "entertain"

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[275] Tr. at 114:2-6 (Brice Cross) (Feb. 24, 2020).

[276] *Id.*

[277] TIEC Ex. 18 (HS).

[278] TIEC's In. Br. at 70.

possible additional guarantees, gave no indication that SWEPCO would accept them, and made clear at the hearing that he had no authority to do so.[279]

It should be noted that the out-of-state settlement terms that SWEPCO has hinted that it would "entertain" do nothing to rescue this project from its dismal economics.[280] But more importantly, it is not the job of the ALJs to speculate about what possible additional terms above and beyond what the Company has proposed in the record should be suggested to SWEPCO in the hope that SWEPCO would decide to accept them. SWEPCO had every opportunity to modify its CCN request, and it did not do so. Consequently, it is SWEPCO's CCN request, as reflected in the record in this case, that the ALJs should review for a determination of whether to recommend approval or denial of that request. Further, there are no plausible modifications that would overcome the fact that the proposed Wind Facilities are woefully uneconomic based on 2020 natural gas prices, let alone correcting for the various other errors in SWEPCO's economic projections. SWEPCO's request for the CCN should simply be denied.

C. Staff/Intervenor Proposed Conditions

There is no need to consider various conditions suggested by Staff or intervenor witnesses in this case any more than there was in the Wind Catcher case. In Wind Catcher, the ALJs initially made a series of findings concerning the Staff/intervenor proposed conditions, adopting at least one of those conditions.[281] The Commission deleted all of the findings related to Commission Staff or intervenor proposed conditions,[282] and specifically stated that it was not addressing those proposed guarantees.

The Commission's approach in the Wind Catcher case was correct. Staff and intervenors can propose whatever they want, including Mr. Nalepa's proposal for guaranteed ratepayer savings of $396 million NPV based on Mr. Torpey's "Base Gas P50" calculation.[283] But that is not the request that SWEPCO made in this case, and it is not up to the ALJs or the Commission to

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[279] Tr. at 104:18-105:12, 109:20-113:3 (Brice Cross) (Feb. 24, 2020).

[280] *See supra* Section IV.A.

[281] Docket No. 47461, PFD at 92, FoFs 140-144.

[282] TIEC Ex. 5 at 23.

[283] OPUC Ex. 1, Direct Testimony and Exhibits of Karl J. Nalepa at 30 (Nalepa Dir.); SWEPCO Ex. 8, Torpey Dir. at Errata Ex. JFT-4.

speculate about what level of possible guarantees would allow this proposal to meet the public interest standard for CCN. The Commission has a proposal from SWEPCO before it that, as with Wind Catcher, fails to meet that standard and, as with Wind Catcher, there is no need to speculate about various levels of revisions or protections or guarantees that SWEPCO did not offer in this case.

It should be noted that the Commission did consider and reject a "net benefits proposal" submitted by SWEPCO in Wind Catcher.[284] But that proposal was actually submitted at the hearing, albeit not until cross-examination on SWEPCO's rebuttal case. The ALJs recessed the hearing to allow supplemental testimony on this eleventh-hour proposal and ultimately rejected it because it ignored actual LMPs and instead calculated benefits based on SWEPCO's bid stack.[285] But that was a proposal that the Company had offered into evidence at the hearing and made a part of its case. Accordingly, it was appropriate for the Commission to consider and reject that proposal. But no purpose is served by considering speculative proposals and guarantees by other parties that SWEPCO chose not to accept while the record was open in this case.

While it would be possible to imagine a set of conditions with high-enough guaranteed capacity factors, LMP-based guarantees of ratepayer savings, or any number of other provisions the parties might have wished SWEPCO had proposed, they are not a part of SWEPCO's proposal in this case, and the Commission should again decline to speculate about them.

VII. Rate Issues (P.O. Issue Nos. 21, 22, 25, 26, 27, 28, 29, 30, 31)

As explained in TIEC's initial brief, the Commission should not reach any rate issues in this case because the Commission should simply deny the application.

IX. Conclusion

For the reasons stated above and in TIEC's initial brief, TIEC respectfully requests that the Commission deny SWEPCO's application.

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[284] Tr. at 46:5-47:10 (Smoak Cross) (Feb. 24, 2020).

[285] TIEC Ex. 5 at 22, FoFs 133-135.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, James Z. Zhu, Attorney for TIEC, hereby certify that a copy of the foregoing document was served on all parties of record in this proceeding on this 18th day of March, 2020 by facsimile, electronic mail and/or first Class, U.S. Mail, Postage Prepaid.

/s/ James Z. Zhu
James Z. Zhu

Attachment A

NORTH CENTRAL WIND ENERGY FACILITIES - SWEPCO 810 MW SHARE OF ALL THREE PROJECTS
P95 15% CAPACITY CREDIT LOW GAS NO CARBON CUSTOMER COSTS AND BENEFITS - No Tie Line
$ in Millions (Nominal unless otherwise indicated)

Year	NPV	Total 31 Yr Nominal	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1 Production Cost Savings Excluding Congestion/Losses	$1,111	$3,486	$9	$65	$67	$70	$73	$76	$78	$81	$82	$85	$88
2 Congestion and Losses	($199)	($535)	($2)	($14)	($14)	($15)	($16)	($16)	($17)	($18)	($19)	($19)	($19)
3 Capacity Value	$29	$83	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4 Production Tax Credits, Grossed Up	$546	$834	$13	$76	$79	$79	$82	$82	$85	$85	$88	$88	$75
5 Deferred Tax Asset Carrying Charges	($96)	($163)	($0)	($3)	($8)	($12)	($14)	($16)	($17)	($18)	($19)	($19)	($18)
6 Wind Facility Revenue Requirement	($1,348)	($3,233)	($17)	($132)	($130)	($130)	($128)	($127)	($126)	($124)	($123)	($121)	($119)
7 Tie Line Revenue Requirement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8 Total Net Customer Benefits/(Cost)	**$43**	**$473**	**$3**	**($7)**	**($6)**	**($7)**	**($2)**	**($1)**	**$3**	**$6**	**$11**	**$15**	**$8**

Year	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
1 Production Cost Savings Excluding Congestion/Losses	$92	$99	$103	$107	$109	$113	$110	$107	$119	$115	$119	$129	$133
2 Congestion and Losses	($19)	($19)	($19)	($19)	($19)	($19)	($19)	($19)	($19)	($19)	($19)	($19)	($19)
3 Capacity Value	$0	($7)	($7)	($7)	($7)	($6)	$47	$55	($1)	$57	$56	($3)	($2)
4 Production Tax Credits, Grossed Up	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5 Deferred Tax Asset Carrying Charges	($13)	($5)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6 Wind Facility Revenue Requirement	($116)	($114)	($112)	($110)	($108)	($106)	($104)	($102)	($100)	($98)	($97)	($95)	($93)
7 Tie Line Revenue Requirement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8 Total Net Customer Benefits/(Cost)	**($57)**	**($46)**	**($35)**	**($29)**	**($24)**	**($17)**	**$35**	**$42**	**($1)**	**$55**	**$60**	**$12**	**$19**

Year	2045	2046	2047	2048	2049	2050	2051
1 Production Cost Savings Excluding Congestion/Losses	$140	$145	$189	$195	$200	$203	$185
2 Congestion and Losses	($19)	($19)	($19)	($19)	($19)	($19)	($16)
3 Capacity Value	($2)	($2)	$12	$11	($35)	($37)	($37)
4 Production Tax Credits, Grossed Up	$0	$0	$0	$0	$0	$0	$0
5 Deferred Tax Asset Carrying Charges	$0	$0	$0	$0	$0	$0	$0
6 Wind Facility Revenue Requirement	($91)	($89)	($88)	($86)	($85)	($86)	($81)
7 Tie Line Revenue Requirement	$0	$0	$0	$0	$0	$0	$0
8 Total Net Customer Benefits/(Cost)	**$29**	**$35**	**$95**	**$101**	**$61**	**$62**	**$52**