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Addendum StartPage: 0

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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 §

RECEIVED  
PUBLIC UTILITY COMMISSION  
BEFORE THE STATE OFFICE  
FILING CLERK

OF

ADMINISTRATIVE HEARINGS

**TEXAS INDUSTRIAL ENERGY CONSUMERS' ERRATA TO  
THE DIRECT TESTIMONY AND EXHIBITS OF CHARLES GRIFFEY**

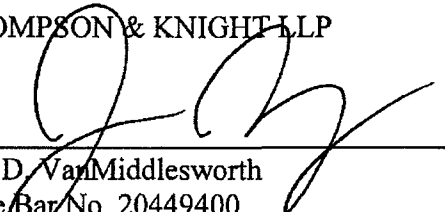
Texas Industrial Energy Consumers ("TIEC") submits the following errata to the Direct Testimony and Exhibits of Charles Griffey:

- Page 4, Line 18: Strike "Yes."; and
- Page 20, FN 27: Replace "23" with "30"; and
- Page 31, Line 4: Replace "EIA Low Case" with "lowest EIA case"; and
- Page 31, Line 5: Strike "Q," and replace with "Q."; and
- Page 31, Line 5: Replace "EIA Low Case" with "lowest EIA case"
- Page 31, Line 6: Strike "2019" and replace with "2020"; strike "resource and technology" and replace with "oil and gas supply"; and
- Page 31, Line 7: Strike "10%" and replace with "23%"; strike "only 5% above" and replace with "6% *below*"; and
- Page, 31, Line 8: Strike sentence beginning "It is expected that the 2020 EIA . . ."; and
- Page 31, FN 46: Strike "2051" and replace with "2050 using SWEPCO's discount rate"; and
- Page 46, Line 21: Delete the quotation marks around "limited guarantees".

Clean and redline errata pages are attached.

Respectfully submitted,

THOMPSON & KNIGHT LLP



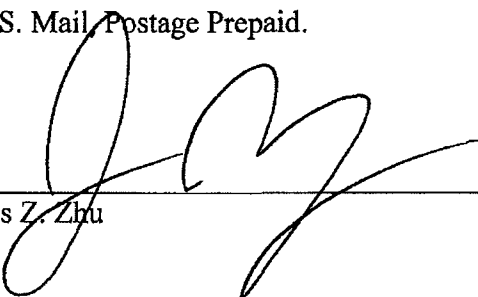
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**ATTORNEYS FOR TEXAS INDUSTRIAL  
ENERGY CONSUMERS**

**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 3<sup>rd</sup> day of February, 2020 by facsimile, electronic mail and/or first Class, U.S. Mail, Postage Prepaid.



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James Z. Zhu

1 Previously I served on the staff of the PUC and testified as to the prudence of utility  
2 fuel procurement and integrated resource planning.

3 **Q. PLEASE DESCRIBE YOUR CONSULTING EXPERIENCE ON RESOURCE**  
4 **PLANNING ISSUES.**

5 A. As a consultant I have testified on the prudence of utility resource planning and evaluated  
6 utility resource planning in numerous jurisdictions. I have testified on the prudence of  
7 SWEPCO's decision to complete construction of the Turk coal plant in Texas PUC Docket  
8 No. 40443 and Southwestern Public Service Company's decision to enter into solar  
9 purchased power agreements in Texas PUC Docket No. 48973. I testified that Mississippi  
10 Power Company's continued efforts to complete the Kemper integrated gasification  
11 combined-cycle plant in Mississippi were imprudent, and I have also testified regarding  
12 proposed combined-cycle gas plants in Louisiana and Texas, Public Service Company of  
13 Colorado's plan for early retirement of two coal plants to replace them with renewables,  
14 Vectren South's proposal to build a solar facility in Indiana, and NIPSCO's plan to retire  
15 its coal fleet in favor of renewables.

16 **Q. WHAT REGULATORY COMMISSIONS AND COURTS HAVE YOU TESTIFIED**  
17 **BEFORE?**

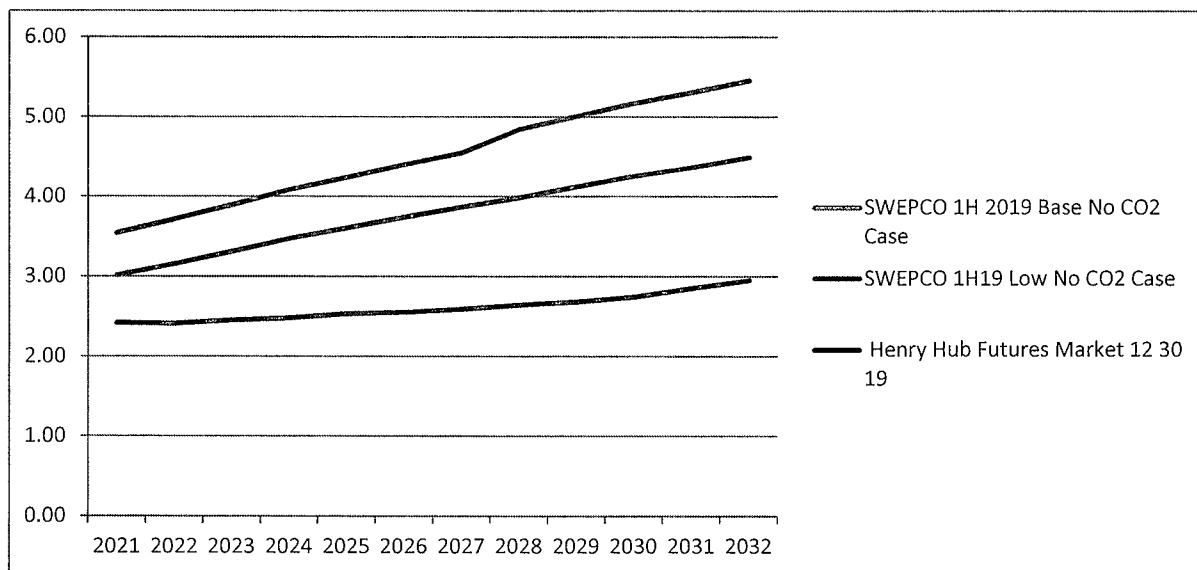
18 A. ~~Yes.~~ I have testified before the Federal Energy Regulatory Commission ("FERC") and the  
19 state regulatory commissions of Colorado, Indiana, Kansas, Louisiana, Maryland,  
20 Mississippi, New Mexico, Pennsylvania, and Texas. I have testified or provided expert  
21 reports to state and federal courts and provided testimony before the Texas Legislature. As  
22 a consultant, I have testified on behalf of ratepayer coalitions, industrial customers, retail  
23 electric providers, generators, fuel suppliers, and the Staff of the Texas Public Utility

accomplished at the forward price well into the future. Yet SWEPCO dismisses futures prices as unreliable and insists that economic analyses rely upon its fundamentals forecast.

**Q. HOW DO SWEPCO'S FORECASTS COMPARE TO ACTUAL MARKET GAS PRICES?**

A. I show the Henry Hub futures (NYMEX) prices compared with SWEPCO's base no-carbon and low no-carbon cases in the chart below:

**Figure 3**  
SWEPCO Gas Forecasts and Breakeven Compared to Current Futures Price (\$/MMBtu)<sup>27</sup>



The current NYMEX is well below any of AEP's recent fundamentals forecasts, including its "Low Gas/No CO2 Case" forecast. The differences are quite dramatic, as even SWEPCO's most recent low-case gas price forecast is 150% above current futures market prices by 2032.

adjustment for returns for holding the physical commodity). The appropriate risk premium to use to discount natural gas spot prices is discussed later in my testimony.

<sup>27</sup> Henry Hub futures price from ICE dated 12/23/19.

1 and energy modelers have noted that EIA, despite knowing of the potential for shale gas  
 2 for decades, failed to forecast low prices by not addressing the issues of known unknowns  
 3 and unknown unknowns in its process.<sup>44</sup> The Commission itself has noted that the EIA  
 4 Reference Case has been too high and has focused on the ~~EIA Low Case~~ lowest EIA case  
 5 in the past.<sup>45</sup>

6 **Q. HOW DOES THE ~~EIA LOW CASE~~ LOWEST EIA CASE COMPARE TO**  
 7 **SWEPCO'S LOW CASE?**

8 A. The January ~~2019-2020~~ EIA high ~~resource and technology~~ oil and gas supply case is  
 9 approximately ~~10%-23%~~ lower than SWEPCO's own low case, and ~~only 5% above 6%~~  
 10 below SWEPCO's calculated breakeven gas price case.<sup>46</sup> ~~It is expected that the 2020 EIA~~  
 11 ~~forecasts will be issued as soon as this month, and I would request the opportunity to update~~  
 12 ~~this testimony if those forecasts are issued prior to the hearing in this case.~~

13 **Q. WHAT MIGHT BE THE INCENTIVE-BASED REASONS WHY SWEPCO'S GAS**  
 14 **PRICE FORECASTS ARE CONSISTENTLY HIGH?**

15 A. High natural gas price forecasts make utility investments in generation technology,  
 16 particularly renewables and coal, appear more reasonable. Utilities only earn a return on  
 17 invested capital used and useful in providing electric service. They do not earn a return on  
 18 fuel (although some receive a small percentage of savings on power purchase/sales to  
 19 encourage them to pursue opportunities). Thus, utilities have a natural incentive to build

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<sup>44</sup> "Generally speaking, most analytical approaches in the energy sector do not consider disruptions well. In the case of the shale gas revolution, modelers were aware of the uncertainties associated with shale gas development and even noted it in their forecasts, but had no coherent method for inserting such knowledge into the definitive outputs of the work itself." *Energy Transitions*, August 2019, "Interrogating uncertainty in energy forecasts: the case of the shale gas boom," Reed, et. al.

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<sup>46</sup> Comparing levelized prices based on the period 2022-2050 using SWEPCO's discount rate.

\$550 million NPV decrease from SWEPCO's Low Gas/No CO2 case, which results in a \$314 million NPV net cost to ratepayers.

**Q. WHAT LEVEL OF ENERGY PRODUCTION DOES THIS ASSUME?**

A. This analysis assumes that the Wind Projects will have a capacity factor at SWEPCO's forecasted P50 level.

**Q. ARE THERE RISKS ASSOCIATED WITH THAT LEVEL OF ENERGY PRODUCTION?**

A. Yes. SWEPCO has only guaranteed energy output from the Wind Projects at the P95 level.

**Q. WHAT IS THE IMPACT OF THE ANALYSIS AT SWEPCO'S GUARANTEED ENERGY PRODUCTION LEVELS?**

A. Assuming a P95 capacity factor would reduce the expected savings from the figure shown above by an additional \$178 million NPV, for a total net cost of \$492 million NPV.

**IV. REASONABLENESS OF SWEPCO'S DECISIONMAKING PROCESS**

A. SWEPCO's Decision to Have a Sole-Source Solicitation for Build-Transfer-Own Wind Power Is Not Reasonable.

**Q. IS SWEPCO'S DECISION TO CONDUCT A SOLE SOURCE SOLICITATION FOR BUILD/TRANSFER/OWN WIND POWER REASONABLE IN THIS CASE?**

A. No. The justification SWEPCO provides is that it believes acquiring owned wind power provides it with greater ability to manage congestion risk, the potential to run the projects at the end of their useful lives, and the ability to offer the "limited guarantees" around capital cost, PTC eligibility and production that SWEPCO has made.<sup>70</sup>

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21 and federal courts and provided testimony before the Texas Legislature. As a consultant,  
22 I have testified on behalf of ratepayer coalitions, industrial customers, retail electric  
23 providers, generators, fuel suppliers, and the Staff of the Texas Public Utility Commission.  
24 Exhibit CSG-1 lists the testimony I have presented and a summary of my work experience.

1 Q. IS YOUR TESTIMONY BASED ON YOUR PERSONAL KNOWLEDGE AND  
2 EXPERIENCE AND THE INFORMATION YOU REVIEWED IN THIS CASE?

3 A. Yes.

4 Q. DID YOU RELY ON SOURCES OF INFORMATION THAT YOU REGARD AS  
5 RELIABLE AND ARE ORDINARILY AND CUSTOMARILY USED AND RELIED  
6 ON BY THOSE INVOLVED IN THE ELECTRIC INDUSTRY?

7 A. Yes. The RFIs and discovery materials that I relied upon are attached as Exhibit CSG-3.

8 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

9 A. SWEPCO's request should not be granted because its flawed resource planning analysis  
10 does not properly capture the relative risks, benefits, and costs of the wind facilities. Its  
11 analysis is flawed in the following ways:

12 1. SWEPCO's natural gas price forecast is too high, and its uncertainty bands are too  
13 narrow. SWEPCO's "fundamentals" forecast has been consistently too high for years,  
14 yet SWEPCO has not changed its process. Simply adjusting SWEPCO's overstated  
15 gas prices to more reasonable levels, without any other corrections to SWEPCO's  
16 model, shows that the Wind Projects are uneconomical;

17 2. Independent of gas prices, SWEPCO has likely overstated its forecasted price of  
18 Southwest Power Pool (SPP) wholesale power, as evidenced by its projection of flat  
19 implied market heat rates. The current futures market prices for power delivered to the  
20 SPP South Hub, which SWEPCO identifies as the hub closest to its generation, are  
21 below SWEPCO's calculated breakeven prices;

22 3. SWEPCO has improperly inflated the assumed benefits of the Wind Projects by  
23 assuming the enactment of a carbon tax, which would increase the price of electricity,

1 while ignoring the possibility that a carbon mitigation policy, if any, could be  
2 implemented through continued subsidies to renewable projects, which would lower  
3 the price of electricity applicable to the Wind Projects;

4 4. SWEPCO understates the congestion costs associated with the Wind Projects by  
5 assuming that those costs will not increase after 2029. SWEPCO also assumes that a  
6 generation tie-line would be economic if congestion increases, yet it does not include  
7 the cost of the generation tie-line in all of the cases where it limits congestion.  
8 SWEPCO admits that the PROMOD model, upon which the congestion estimates are  
9 based, understates congestion, but it did not make any adjustments to correct this  
10 deficiency;

11 5. SWEPCO conducted a sole-source solicitation for build/transfer/own (BTO) wind  
12 projects. In doing so, it fails to demonstrate that these projects are better for ratepayers  
13 than other resources, such as solar, or purchased power agreements (PPAs), or buying  
14 financial forwards;

15 6. SWEPCO claims that the Wind Projects represent a hedge on future price increases,  
16 but it fails to recognize that its customers are already largely hedged against higher  
17 power prices (both natural gas and market heat rates) through SWEPCO's coal plants  
18 and against higher market heat rates by its gas fleet. Instead, SWEPCO's proposed  
19 acquisition of the Wind Projects would put it in a long position on power in the SPP at  
20 ratepayer expense. This means that the Wind Projects would effectively place  
21 ratepayers in the position of being merchant wind generators. This reinforces the next

1 point that a regulated utility's cost of capital is the wrong rate to use to discount the  
2 cash flows of the Wind Projects;

3 7. SWEPCO fails to recognize the difference in the relative certainty of the *costs* it would  
4 be incurring in acquiring the Wind Projects, compared to the large uncertainty in the  
5 *benefits* of the projects, which are based on forecasts on avoided energy costs over 30  
6 years into the future. The benefits should be discounted at an appropriate risk-adjusted  
7 discount rate, which is higher than the utility's regulatory approved rate of return;

8 8. SWEPCO does not need capacity, which means it does not have to acquire a resource  
9 at this time. Acquiring the Wind Projects now will lock in the detriment to ratepayers  
10 if power prices remain low. If, on the other hand, SWEPCO foregoes the Wind  
11 Projects, and power prices increase, SWEPCO can likely still mitigate those costs.  
12 When a decision can be delayed, the ability to delay is an option that has significant  
13 value when the future benefits of a project are uncertain.

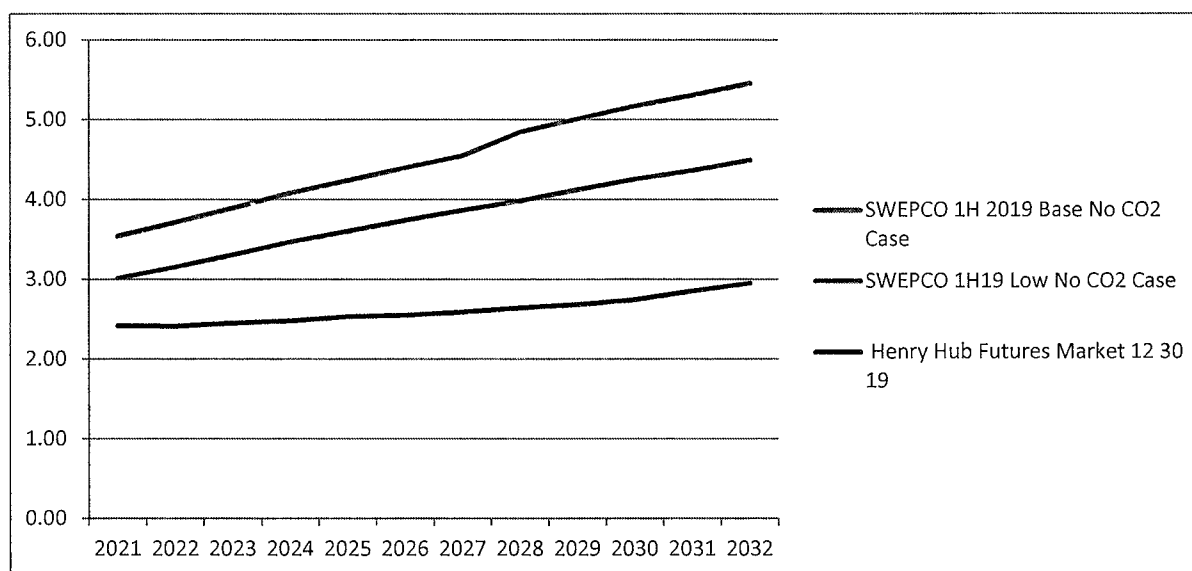
14 In summary, SWEPCO has failed to properly analyze the relative costs and benefits of the  
15 Wind Projects, the appropriateness of the Wind Projects relative to other resources, and the  
16 value of the ability to delay a decision in order to gather additional information in the face  
17 of uncertainty. A reasonable utility monitoring the market and valuing the ability to delay  
18 making what amounts to a billion-dollar, 30-year position on energy prices would not  
19 acquire the Wind Projects.

accomplished at the forward price well into the future. Yet SWEPCO dismisses futures prices as unreliable and insists that economic analyses rely upon its fundamentals forecast.

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