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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 §

BEFORE THE STATE OFFICE

PUBLIC UTILITY COMMISSION  
FILING CLERK

OF

ADMINISTRATIVE HEARINGS

**TEXAS INDUSTRIAL ENERGY CONSUMERS' ERRATA TO  
THE DIRECT TESTIMONY AND EXHIBITS OF JEFFRY POLLOCK**

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

- Page 4, Line 24: Strike "Technology" and replace with "Supply"; and
- Page 18, Line 10: Strike "(the red dashed line)" and replace with ". Recently the EIA released its 2020 Annual Energy Outlook (AEO) Reference Case, which is shown as the red-dashed line."; and
- Page 18, Line 13: Strike "Technology Case. This scenario is represented by the blue-dashed line in **Exhibit JP-1.**" and replace with "Supply Case, formerly known as the High Oil and Gas Resource and Technology Case (the blue-dashed line in **Exhibit JP-1.**)"; and
- Page 18, Line 15: Strike "Technology Scenario" and replace with "Supply Scenario"; and
- Page 18, Line 16: Strike "EIA" and replace with "EIA's 2020 AEO"; and
- Page 18, Line 17: Strike paragraph beginning with "In the High Oil and Gas Resource and Technology case" and replace with "In the High Oil Supply case (formerly known as the High Oil and Gas Resource and Technology case), the estimated ultimate recovery per well is assumed to be 50% higher than in the Reference case for
- Tight oil
  - Tight gas
  - Shale gas in the United States
  - Undiscovered resources in Alaska
  - Offshore Lower 48 states

Rates of technological improvement that reduce costs and increase productivity in the United States are also 50% higher than in the Reference case. In addition, tight oil and shale gas resources are added to reflect new prospects or the expansion of known prospects.”

- Page 19, FN 15 Strike “2019” and replace with “2020”; and strike “5” and replace with “5-6”; and strike “*Jan. 2019*” and replace with “*Jan. 2020*”; and
- Page 19, Line 5 Strike “Technology” and replace with “Supply”; and
- Page 19, Line 7 Strike “Technology” and replace with “Supply”; and
- Page 19, Line 9 Strike “Technology” and replace with “Supply”; and strike “7%” and replace with “23%”; and
- Page 19, Line 11 Strike “Technology” and replace with “Supply”; and
- Page 19, Line 14 Strike “Technology” and replace with “Supply”; and
- Page 21, Table 5 Strike “1/19 Reference Case” and replace with “2020 Reference Case”; and strike “\$5.26” and replace with “\$4.24”; and strike “1/19 High Oil and Gas Technology Case” and replace with “2020 High Oil and Gas Supply Case”; and strike “\$4.18” and replace with “\$3.46”; and add “, 2020 EIA AEO” after “(Errata)”; and
- Page 21, Line 12 Strike “very similar to” and replace with “significantly higher than”; and
- Page 21, Line 13 Add “In fact, even SWEPCO’s Low Gas projection is higher than the 2020 EIA Reference case projection.” after “projections.”; and
- Page 22, Line 5 Strike “Annual Energy Outlook (AEO)” and replace with “AEO”; and strike “The EIA has stated that it will release the 2020 AEO later this month, and the” and replace with “The recently released 2020 EIA Reference Case is \$1.02/MMBtu lower than the 2019 Reference Case. The”; and
- Page 22, Line 7 Add “, which I have included in Table 5” after “available information”; and
- Page 22, Line 13 Add “Additionally, the EIA’s most recent natural gas price forecast from the 2020 AEO is shown.” after “through 2019.”; and
- Page 22, Line 15 Strike “The 2019 AEO reveals the lowest natural gas projection by far. However, even that forecast is 11 months old as of the filing


of this testimony.” and replace with “The 2020 AEO showed an even more significant reduction in the EIA’s natural gas price projections than the 2019 AEO.”; and

Page 22, Line 21	Strike “Technology” and replace with “Supply”; and
Page 34, Line 1	Strike “deffered” and replace with “deferred”; and
Exhibit JP-1	Strike and replace with Exhibit JP-1 (Errata); and
Exhibit JP-2	Strike and replace with Exhibit JP-2 (Errata).

Clean and redline errata pages are attached. The errata workpapers are provided on the attached CD.

Respectfully submitted,

THOMPSON & KNIGHT LLP



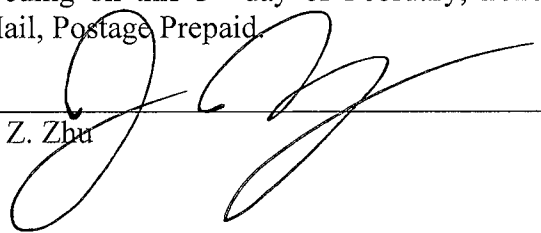
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**ATTORNEYS FOR TEXAS INDUSTRIAL  
ENERGY CONSUMERS**

### **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

- Congestion and loss costs were derived from just two years of PROMOD model runs and ignore the build-out of the Southwest Power Pool (SPP) transmission system to further alleviate congestion after 2029.
- In addition to using inflated natural gas prices, SWEPCO inflated its projected LMPs because it significantly understated the influx of renewable energy into the SPP Integrated Marketplace (IM). As a result, the implied market heat rate is assumed to remain relatively steady over the study period, rather than decline as more renewable energy resources and more advanced generation technologies enter the market. Reducing the market heat rate by 500 Btu/kWh reduces the net benefits at the P95 (P50) Operating Level by \$138 (\$150) million NPV under SWEPCO's Low Gas scenario and \$162 (\$176) million under its Base Gas scenario.
- The presumption of a capacity deferral benefit is premature because SPP has not yet accredited the proposed Wind Projects, and there are no approved generation interconnection agreements. Whether and when the Wind Projects would defer capacity additions is speculative.

Based on my analysis, the net benefits analysis should reflect the following assumptions:

- The useful life should be 25 years.
- NYMEX futures prices are a much better indicator of future natural gas prices than SWEPCO's fundamentals forecasts. Use of NYMEX futures prices is consistent with the Commission's findings in SWEPCO's Wind Catcher case. To a lesser extent, the EIA High Oil and Gas ~~Technology~~Supply Case can be used in evaluating the net benefits.
- Projected LMPs should reflect a much greater influx of renewable resources even if only a fraction of the 114 gigawatts of renewable generation in the current SPP Generation Interconnection Agreement (GIA) queue enters the market.
- Consistent with the Commission's findings in the Wind Catcher case, it is not necessary to assume the adoption of an unprecedented carbon tax to address the potential for future government action on carbon. Whether and in what form a carbon tax might take is sheer speculation. It is more likely that future carbon policies will make renewable resources less expensive rather than make fossil fuel resources more expensive.
- No capacity deferral benefit should be included.

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## 1. Introduction, Qualifications and Summary

1 Q HAVE YOU ANALYZED SWEPCO'S PROJECTED NATURAL GAS PRICES IN  
2 THIS CASE?

3 A Yes. **Exhibit JP-1** shows SWEPCO's projected natural gas prices in nominal dollars  
4 (as depicted by the solid lines) at the Henry Hub.<sup>14</sup> SWEPCO provided several  
5 scenarios:

- 6 • Base Gas (in red);
- 7 • Low Gas (in blue); and
- 8 • High Gas (in green).

9 SWEPCO also provided the January 2019 U.S. Energy Information Administration  
10 (EIA) Reference Case ~~(. Recently, the EIA released its 2020 Annual Energy Outlook~~  
11 ~~(AEO) Reference Case, which is shown as the red-dashed line).~~

12 Q IS THE EIA REFERENCE CASE THE ONLY CASE THAT EIA PROVIDES?

13 A No. The EIA provides several other scenarios, the most accurate of which has been  
14 the High Oil and Gas Supply Case, formerly known as the High Oil and Gas Resource  
15 and Technology Case. ~~This scenario is represented by the (the~~ blue-dashed line in  
16 ~~Exhibit JP-1).~~

17 Q WHAT IS THE EIA'S HIGH OIL AND GAS ~~TECHNOLOGY SCENARIOS~~SUPPLY  
18 SCENARIO?

19 A ~~EIA~~EIA's 2020 AEO describes this scenario as follows:

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<sup>14</sup> Henry Hub is a distribution hub on the natural gas pipeline system in Erath, Louisiana. Due to the volumes of gas that move through it, Henry Hub has become the primary pricing point for natural gas futures contracts. The natural gas prices used in SWEPCO's filing and in this testimony are Henry Hub prices.

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### 3. Economic Assessment



In the High Oil Supply case (formerly known as the High Oil and Gas Resource and Technology case, the estimated ultimate recovery per well for tight is assumed to be 50% higher than in the Reference case for

- Tight oil, tight
- Tight gas, or shale
- Shale gas in the United States and undiscovered
- Undiscovered resources in Alaska and the offshore
- Offshore Lower 48 states is assumed to be 50% higher than in the Reference case.

Rates of technological improvement that reduce costs and increase productivity in the United States are also 50% higher than in the Reference case. In addition, tight oil and shale gas resources are added to reflect new playsprospects or the expansion of known plays. The total unproved technically recoverable resource of crude oil increases to 419 billion barrels, and the natural gas resource increases to 3,075 Tcf compared with unproved resource estimates of 267 billion barrels of crude oil and 2,137 Tcf of natural gas in the Reference case at the start of 2017prospects.<sup>15</sup>

**Q HOW DOES THE EIA'S HIGH OIL AND GAS TECHNOLOGYSUPPLY NATURAL GAS FORECAST COMPARE WITH ITS OTHER FORECASTS?**

A The High Oil and Gas TechnologySupply case provides the lowest of EIA's projected natural gas prices. As demonstrated later, the levelized cost under EIA's 2019 High Oil and Gas TechnologySupply scenario is 723% below the corresponding levelized cost under SWEPCO's Low Gas scenario.

**Q WHAT IS THE SIGNIFICANCE OF THE EIA'S HIGH OIL AND GAS TECHNOLOGYSUPPLY SCENARIO?**

A The Commission found in SWEPCO's Wind Catcher case that the lowest EIA case (i.e., the High Oil and Gas TechnologySupply scenario) has been the most accurate of EIA's cases in recent years.<sup>16</sup>

<sup>15</sup> U.S. Energy Information Administration, *Annual Energy Outlook 20192020* Case Descriptions at 5-6 (Jan. 20192020).

<sup>16</sup> Docket No. 47461, *Order* at 18, Finding of Fact No. 89 (Aug. 13, 2018).

1    **Q     IS THERE ANY MARKET DATA AVAILABLE REGARDING FUTURE NATURAL**  
2       **GAS PRICES?**

3    A     Yes. The New York Mercantile Exchange (NYMEX) operates a natural gas futures  
4       market and publishes natural gas futures contracts prices. I have included the NYMEX  
5       natural gas prices (depicted by the black line) in **Exhibit JP-1** based on the 30-day  
6       average closing price of the 2021 – 2031 futures contracts traded at the Henry Hub  
7       through January 7, 2020.

8    **Q     DO NYMEX FUTURES CONTRACT PRICES PROVIDE VALUABLE INFORMATION**  
9       **ABOUT FUTURE LONG-TERM ENERGY MARKET FUNDAMENTALS?**

10   A     Yes. Futures contracts are highly liquid in the near term, and futures prices are highly  
11       visible because they are widely disseminated by the various financial and commodity  
12       exchanges. Thus, futures contract prices are an important source of price discovery  
13       for sellers and producers. According to the American Enterprise Institute for Public  
14       Policy Research:

15       Price discovery is an information-based contribution of futures markets,  
16       whereas hedging implies a transactions role for futures contracts. In both cases  
17       the main contribution appears to lie in establishing prices for the future delivery  
18       of a commodity and for providing a forum for transacting at such prices. This is  
19       an obvious contribution to those dealing in the cash commodity who need  
20       prices to plan production and consumption decisions. Moreover, merchants  
21       and consumers who want to avoid the risk of future price fluctuations can  
22       eliminate that risk by buying or selling a futures contract today.<sup>17</sup>

23       Thus, futures contract prices are an essential tool for making future production and  
24       consumption decisions. Further, they represent actual transactions between buyers

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<sup>17</sup> American Enterprise Institute for Public Policy Research, Washington, D.C., *The Economic Role of Financial Futures*, William L. Silber (1985).



1 and sellers who put real money at risk in their day-to-day operations. The NYMEX  
2 futures prices are based on an actual market.

3 **Q HAS THE COMMISSION PREVIOUSLY RELIED ON NYMEX GAS FUTURES**  
4 **PRICES IN ASSESSING THE NET BENEFITS OF RENEWABLE ENERGY**  
5 **PROJECTS?**

6 **A** Yes. In fact, in the SWEPCO Wind Catcher case, the Commission agreed with my  
7 assessment of the usefulness of NYMEX futures prices stating:

8 84. The NYMEX futures prices represent actual transactions between buyers  
9 and sellers who put real money at risk in their day-to-day operations. The  
10 NYMEX futures prices, when trended to 2045, are \$3.58 per MMBtu.<sup>18</sup>

11 **Q HAVE YOU COMPARED EACH OF THE NATURAL GAS PRICE SCENARIOS?**

12 **A** Yes. A summary of the levelized gas prices under the various gas price scenarios  
13 shown in **Exhibit JP-1** is provided in Table 5.

Table 5 Levelized Natural Gas Price Forecast At the Henry Hub	
Scenario	\$/MMBtu*
SWEPCO Base Gas	\$5.30
EIA <del>1/19</del> 2020 Reference Case	<del>\$5.264.24</del>
SWEPCO Low Gas	\$4.50
EIA <del>1/19</del> 2020 High Oil and Gas <del>Technology</del> Supply Case	<del>\$4.183.46</del>
"Breakeven" Gas Price	\$3.67
NYMEX Futures**	\$3.10
<p><b>Source:</b> Henry Hub Benchmarks KRB workpaper (Errata-), <u>2020 EIA AEO</u>.  *7.09% Blended Discount Rate.  **30-Day average closing prices of futures contracts (2021-2031) through January 7, 2020; 2032 – 2051 prices escalated at the average 2027-2031 escalation rate.</p>	

<sup>18</sup> Docket No. 47461, Order at 18 (Aug. 13, 2018).

1 As Table 5 demonstrates, SWEPCO's Base Gas projection is ~~very similar~~  
2 ~~to significantly higher than~~ the EIA Reference case projections. In fact, even  
3 SWEPCO's Low Gas projection is higher than the 2020 EIA Reference case  
4 projection.

5 Q ~~YOU PREVIOUSLY STATED THAT SWEPCO~~ ALSO INCLUDED IN ITS FILING A  
6 COMPARISON OF ITS FORECASTS TO EIA'S 2019 ANNUAL ENERGY OUTLOOK  
7 REFERENCE FORECAST. DO YOU HAVE ANY SPECIFIC CONCERNS ABOUT  
8 THE EIA'S REFERENCE CASE NATURAL GAS FORECASTS?

9 A Yes. First, the 2019 ~~Annual Energy Outlook (AEO)~~ is now almost a year old. The  
10 recently released 2020 EIA has stated that it will release Reference Case is  
11 \$1.02/MMBtu lower than the ~~2020 AEO later this month, and the~~ 2019 Reference Case.  
12 The record should reflect this more recently available information, which I have  
13 included in Table 5. Second and more importantly, EIA's Reference Case forecasts  
14 have consistently overstated future natural gas prices. This is demonstrated in **Exhibit**  
15 **JP-2.**

16 Q PLEASE EXPLAIN EXHIBIT JP-2

17 A **Exhibit JP-2** compares the EIA's Reference natural gas price forecasts published in  
18 its AEOs for the years 2013 through 2019 to actual spot gas prices for the years 2017  
19 through 2019. Additionally, the EIA's most recent natural gas price forecast from the  
20 2020 AEO is shown. All of EIA's Reference Case forecasts projected much higher  
21 natural gas prices than actually occurred. Further, since 2015, EIA has consistently  
22 lowered its gas forecasts. The ~~2019~~ 2020 AEO ~~reveals the lowest~~ showed an even  
23 more significant reduction in the EIA's natural gas price projections, ~~by far. However,~~

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### 3. Economic Assessment

1        ~~even that forecast is 11 months old as of~~ than ~~the filing of this testimony.~~ 2019 AEO.

2        **Q        PLEASE SUMMARIZE YOUR ASSESSMENT OF SWEPCO'S NATURAL GAS**  
3        **PROJECTIONS.**

4        **A        The Commission should reject SWEPCO's inflated natural gas projections. The**  
5        Commission should instead look to NYMEX futures contracts and, to a lesser extent,  
6        the EIA High Oil and Gas ~~Technology~~ Supply Case, in evaluating SWEPCO's proposed  
7        project.

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**3. Economic Assessment**

**J. POLLOCK**  
INCORPORATED

1 Q IS THE FUTURE RATE IMPACT OF SWEPCO'S PROPOSED  
2 ~~DEFERRED~~DEFERRED TAX ASSET RATEMAKING TREATMENT KNOWABLE  
3 AT THIS TIME?

4 A No. The amount of PTCs that SWEPCO would actually utilize and defer would be  
5 based on AEP's future income tax liabilities. These future income tax liabilities cannot  
6 be reliably predicted in advance. The rate impact of the DTA will also depend upon  
7 SWEPCO's future capital structure, the cost of long-term debt and authorized return  
8 on equity at the time that any DTA would be included in rate base. None of these  
9 assumptions can be predicted with confidence years in advance.

10 Q HAS AEP REACHED AGREEMENTS IN OTHER STATES REGARDING THE  
11 DEFERRED TAX ASSET?

12 A Yes. In Oklahoma, AEP agreed to the following:

13 (a) Deferred Tax Asset (DTA). The Company will earn a return on the DTA  
14 balance resulting from unused production tax credits over the first twenty (20)  
15 years of operation of the SWFs using its then applicable cost of long term debt  
16 (currently 4.72%) on any deferred tax asset balance.<sup>28</sup>

17 Q WHAT WOULD BE THE EFFECT OF SUCH A PROPOSAL ON THE ECONOMICS  
18 OF SWEPCO'S WIND PROJECTS?

19 A It would reduce the projected costs by approximately \$44 million NPV based on  
20 SWEPCO's analysis.

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<sup>28</sup> Application Of Public Service Company Of Oklahoma (PSO) For Approval Of The Cost Recovery Of The Selected Wind Facilities (SWFs); A Determination There Is A Need For The SWFs; Approval For Future Inclusion In Base Rates Cost Recovery Of Prudent Costs Incurred By PSO For The SWFs; Approval Of A Temporary Cost Recovery Rider; Approval Of Certain Accounting Procedures Regarding Federal Production Tax Credits; and Such Other Relief The Commission Deems PSO Is Entitled, Cause No. PUD 201900048, Joint Stipulation and Settlement Agreement at 3 (Dec. 10, 2019).

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### 3. Economic Assessment

- Congestion and loss costs were derived from just two years of PROMOD model runs and ignore the build-out of the Southwest Power Pool (SPP) transmission system to further alleviate congestion after 2029.
- In addition to using inflated natural gas prices, SWEPCO inflated its projected LMPs because it significantly understated the influx of renewable energy into the SPP Integrated Marketplace (IM). As a result, the implied market heat rate is assumed to remain relatively steady over the study period, rather than decline as more renewable energy resources and more advanced generation technologies enter the market. Reducing the market heat rate by 500 Btu/kWh reduces the net benefits at the P95 (P50) Operating Level by \$138 (\$150) million NPV under SWEPCO's Low Gas scenario and \$162 (\$176) million under its Base Gas scenario.
- The presumption of a capacity deferral benefit is premature because SPP has not yet accredited the proposed Wind Projects, and there are no approved generation interconnection agreements. Whether and when the Wind Projects would defer capacity additions is speculative.

Based on my analysis, the net benefits analysis should reflect the following assumptions:

- The useful life should be 25 years.
- NYMEX futures prices are a much better indicator of future natural gas prices than SWEPCO's fundamentals forecasts. Use of NYMEX futures prices is consistent with the Commission's findings in SWEPCO's Wind Catcher case. To a lesser extent, the EIA High Oil and Gas Supply Case can be used in evaluating the net benefits.
- Projected LMPs should reflect a much greater influx of renewable resources even if only a fraction of the 114 gigawatts of renewable generation in the current SPP Generation Interconnection Agreement (GIA) queue enters the market.
- Consistent with the Commission's findings in the Wind Catcher case, it is not necessary to assume the adoption of an unprecedented carbon tax to address the potential for future government action on carbon. Whether and in what form a carbon tax might take is sheer speculation. It is more likely that future carbon policies will make renewable resources less expensive rather than make fossil fuel resources more expensive.
- No capacity deferral benefit should be included.

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**1. Introduction, Qualifications  
and Summary**



1     **Q     HAVE YOU ANALYZED SWEPCO'S PROJECTED NATURAL GAS PRICES IN**  
2     **THIS CASE?**

3     A     Yes. **Exhibit JP-1** shows SWEPCO's projected natural gas prices in nominal dollars  
4     (as depicted by the solid lines) at the Henry Hub.<sup>14</sup> SWEPCO provided several  
5     scenarios:

- 6             • Base Gas (in red);
- 7             • Low Gas (in blue); and
- 8             • High Gas (in green).

9     SWEPCO also provided the January 2019 U.S. Energy Information Administration  
10    (EIA) Reference Case. Recently, the EIA released its 2020 Annual Energy Outlook  
11    (AEO) Reference Case, which is shown as the red-dashed line.

12    **Q     IS THE EIA REFERENCE CASE THE ONLY CASE THAT EIA PROVIDES?**

13    A     No. The EIA provides several other scenarios, the most accurate of which has been  
14    the High Oil and Gas Supply Case, formerly known as the High Oil and Gas Resource  
15    and Technology Case (the blue-dashed line in **Exhibit JP-1**).

16    **Q     WHAT IS THE EIA'S HIGH OIL AND GAS SUPPLY SCENARIO?**

17    A     EIA's 2020 AEO describes this scenario as follows:

18             In the High Oil Supply case (formerly known as the High Oil and Gas Resource  
19             and Technology case), the estimated ultimate recovery per well is assumed to  
20             be 50% higher than in the Reference case for

- 21             • Tight oil

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<sup>14</sup> Henry Hub is a distribution hub on the natural gas pipeline system in Erath, Louisiana. Due to the volumes of gas that move through it, Henry Hub has become the primary pricing point for natural gas futures contracts. The natural gas prices used in SWEPCO's filing and in this testimony are Henry Hub prices.

- Tight gas
- Shale gas in the United States
- Undiscovered resources in Alaska
- Offshore Lower 48 states

Rates of technological improvement that reduce costs and increase productivity in the United States are also 50% higher than in the Reference case. In addition, tight oil and shale gas resources are added to reflect new prospects or the expansion of known prospects.<sup>15</sup>

**Q HOW DOES THE EIA'S HIGH OIL AND GAS SUPPLY NATURAL GAS FORECAST COMPARE WITH ITS OTHER FORECASTS?**

A The High Oil and Gas Supply case provides the lowest of EIA's projected natural gas prices. As demonstrated later, the levelized cost under EIA's 2019 High Oil and Gas Supply scenario is 23% below the corresponding levelized cost under SWEPCO's Low Gas scenario.

**Q WHAT IS THE SIGNIFICANCE OF THE EIA'S HIGH OIL AND GAS SUPPLY SCENARIO?**

A The Commission found in SWEPCO's Wind Catcher case that the lowest EIA case (*i.e.*, the High Oil and Gas Supply scenario) has been the most accurate of EIA's cases in recent years.<sup>16</sup>

**Q IS THERE ANY MARKET DATA AVAILABLE REGARDING FUTURE NATURAL GAS PRICES?**

A Yes. The New York Mercantile Exchange (NYMEX) operates a natural gas futures market and publishes natural gas futures contracts prices. I have included the NYMEX

<sup>15</sup> U.S. Energy Information Administration, *Annual Energy Outlook 2020 Case Descriptions* at 5-6 (Jan. 2020).

<sup>16</sup> Docket No. 47461, *Order* at 18, Finding of Fact No. 89 (Aug. 13, 2018).

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**3. Economic Assessment**



1 natural gas prices (depicted by the black line) in **Exhibit JP-1** based on the 30-day  
2 average closing price of the 2021 – 2031 futures contracts traded at the Henry Hub  
3 through January 7, 2020.

4 **Q DO NYMEX FUTURES CONTRACT PRICES PROVIDE VALUABLE INFORMATION**  
5 **ABOUT FUTURE LONG-TERM ENERGY MARKET FUNDAMENTALS?**

6 A Yes. Futures contracts are highly liquid in the near term, and futures prices are highly  
7 visible because they are widely disseminated by the various financial and commodity  
8 exchanges. Thus, futures contract prices are an important source of price discovery  
9 for sellers and producers. According to the American Enterprise Institute for Public  
10 Policy Research:

11 Price discovery is an information-based contribution of futures markets,  
12 whereas hedging implies a transactions role for futures contracts. In both cases  
13 the main contribution appears to lie in establishing prices for the future delivery  
14 of a commodity and for providing a forum for transacting at such prices. This is  
15 an obvious contribution to those dealing in the cash commodity who need  
16 prices to plan production and consumption decisions. Moreover, merchants  
17 and consumers who want to avoid the risk of future price fluctuations can  
18 eliminate that risk by buying or selling a futures contract today.<sup>17</sup>

19 Thus, futures contract prices are an essential tool for making future production and  
20 consumption decisions. Further, they represent actual transactions between buyers  
21 and sellers who put real money at risk in their day-to-day operations. The NYMEX  
22 futures prices are based on an actual market.

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<sup>17</sup> American Enterprise Institute for Public Policy Research, Washington, D.C., *The Economic Role of Financial Futures*, William L. Silber (1985).

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**3. Economic Assessment**

1 Q HAS THE COMMISSION PREVIOUSLY RELIED ON NYMEX GAS FUTURES  
2 PRICES IN ASSESSING THE NET BENEFITS OF RENEWABLE ENERGY  
3 PROJECTS?

4 A Yes. In fact, in the SWEPCO Wind Catcher case, the Commission agreed with my  
5 assessment of the usefulness of NYMEX futures prices stating:

6 84. The NYMEX futures prices represent actual transactions between buyers  
7 and sellers who put real money at risk in their day-to-day operations. The  
8 NYMEX futures prices, when trended to 2045, are \$3.58 per MMBtu.<sup>18</sup>

9 Q HAVE YOU COMPARED EACH OF THE NATURAL GAS PRICE SCENARIOS?

10 A Yes. A summary of the levelized gas prices under the various gas price scenarios  
11 shown in **Exhibit JP-1** is provided in Table 5.

Table 5 Levelized Natural Gas Price Forecast At the Henry Hub	
Scenario	\$/MMBtu*
SWEPCO Base Gas	\$5.30
EIA 2020 Reference Case	\$4.24
SWEPCO Low Gas	\$4.50
EIA 2020 High Oil and Gas Supply Case	\$3.46
"Breakeven" Gas Price	\$3.67
NYMEX Futures**	\$3.10
<b>Source:</b> Henry Hub Benchmarks KRB workpaper (Errata), 2020 EIA AEO. *7.09% Blended Discount Rate. **30-Day average closing prices of futures contracts (2021-2031) through January 7, 2020; 2032 – 2051 prices escalated at the average 2027-2031 escalation rate.	

12 As Table 5 demonstrates, SWEPCO's Base Gas projection is significantly higher than  
13 the EIA Reference case projections. In fact, even SWEPCO's Low Gas projection is  
14 higher than the 2020 EIA Reference case projection.

<sup>18</sup> Docket No. 47461, *Order* at 18 (Aug. 13, 2018).

1     **Q     SWEPCO ALSO INCLUDED IN ITS FILING A COMPARISON OF ITS FORECASTS**  
2           **TO EIA'S 2019 ANNUAL ENERGY OUTLOOK REFERENCE FORECAST. DO YOU**  
3           **HAVE ANY SPECIFIC CONCERNS ABOUT THE EIA'S REFERENCE CASE**  
4           **NATURAL GAS FORECASTS?**

5     A     Yes. First, the 2019 AEO is now almost a year old. The recently released 2020 EIA  
6           Reference Case is \$1.02/MMBtu lower than the 2019 Reference Case. The record  
7           should reflect this more recently available information, which I have included in Table  
8           5. Second and more importantly, EIA's Reference Case forecasts have consistently  
9           overstated future natural gas prices. This is demonstrated in **Exhibit JP-2**.

10    **Q     PLEASE EXPLAIN EXHIBIT JP-2**

11    A     **Exhibit JP-2** compares the EIA's Reference natural gas price forecasts published in  
12           its AEOs for the years 2013 through 2019 to actual spot gas prices for the years 2017  
13           through 2019. Additionally, the EIA's most recent natural gas price forecast from the  
14           2020 AEO is shown. All of EIA's Reference Case forecasts projected much higher  
15           natural gas prices than actually occurred. Further, since 2015, EIA has consistently  
16           lowered its gas forecasts. The 2020 AEO showed an even more significant reduction  
17           in the EIA's natural gas price projections than the 2019 AEO.

18    **Q     PLEASE SUMMARIZE YOUR ASSESSMENT OF SWEPCO'S NATURAL GAS**  
19           **PROJECTIONS.**

20    A     The Commission should reject SWEPCO's inflated natural gas projections. The  
21           Commission should instead look to NYMEX futures contracts and, to a lesser extent,  
22           the EIA High Oil and Gas Supply Case, in evaluating SWEPCO's proposed project.

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**3. Economic Assessment**

1    **Q     IS THE FUTURE RATE IMPACT OF SWEPCO'S PROPOSED DEFERRED TAX**  
2           **ASSET RATEMAKING TREATMENT KNOWABLE AT THIS TIME?**

3    **A**     No. The amount of PTCs that SWEPCO would actually utilize and defer would be  
4           based on AEP's future income tax liabilities. These future income tax liabilities cannot  
5           be reliably predicted in advance. The rate impact of the DTA will also depend upon  
6           SWEPCO's future capital structure, the cost of long-term debt and authorized return  
7           on equity at the time that any DTA would be included in rate base. None of these  
8           assumptions can be predicted with confidence years in advance.

9    **Q     HAS AEP REACHED AGREEMENTS IN OTHER STATES REGARDING THE**  
10           **DEFERRED TAX ASSET?**

11   **A**     Yes. In Oklahoma, AEP agreed to the following:

12           (a) Deferred Tax Asset (DTA). The Company will earn a return on the DTA  
13           balance resulting from unused production tax credits over the first twenty (20)  
14           years of operation of the SWFs using its then applicable cost of long term debt  
15           (currently 4.72%) on any deferred tax asset balance.<sup>28</sup>

16   **Q     WHAT WOULD BE THE EFFECT OF SUCH A PROPOSAL ON THE ECONOMICS**  
17           **OF SWEPCO'S WIND PROJECTS?**

18   **A**     It would reduce the projected costs by approximately \$44 million NPV based on  
19           SWEPCO's analysis.

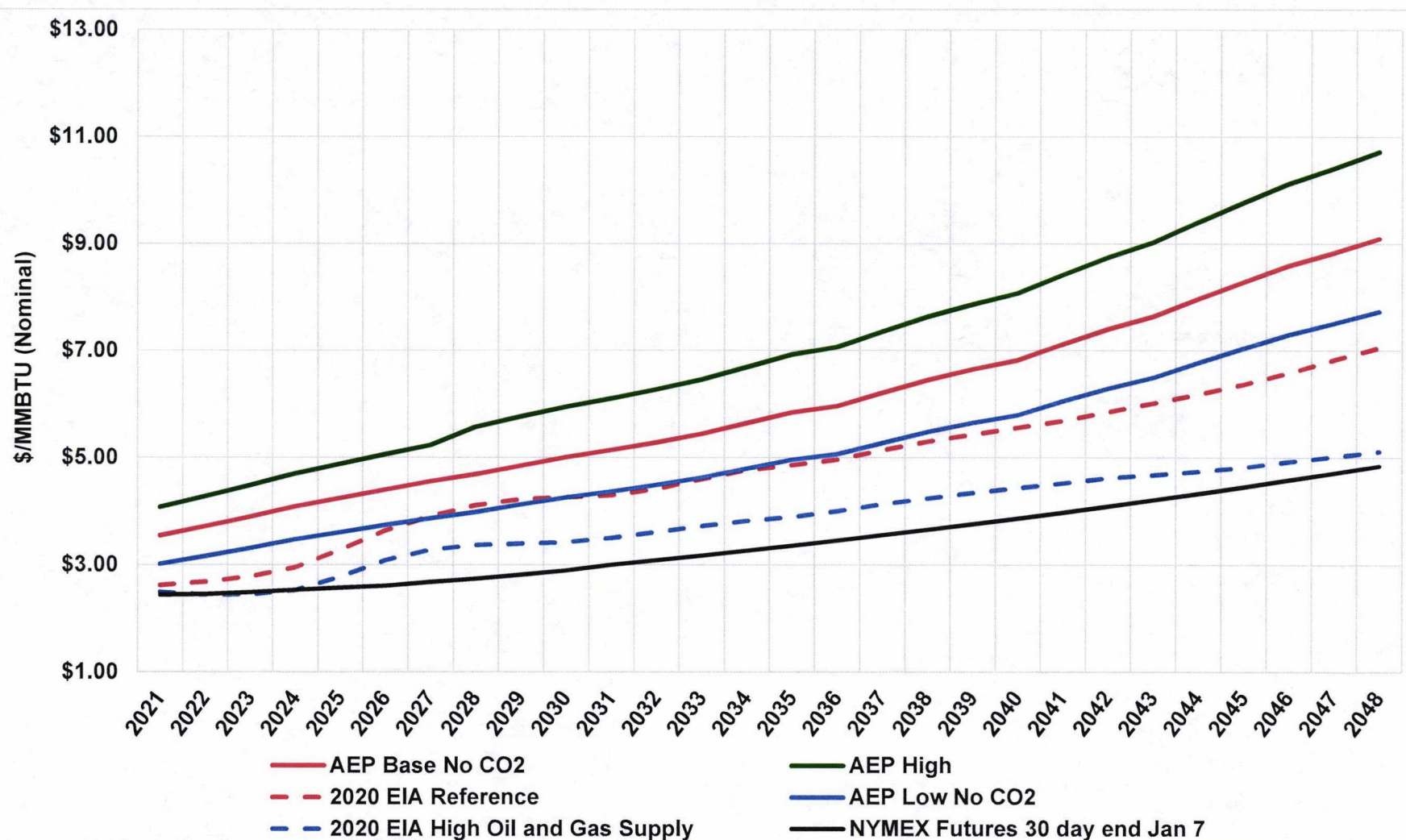
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<sup>28</sup> *Application Of Public Service Company Of Oklahoma (PSO) For Approval Of The Cost Recovery Of The Selected Wind Facilities (SWFs); A Determination There Is A Need For The SWFs; Approval For Future Inclusion In Base Rates Cost Recovery Of Prudent Costs Incurred By PSO For The SWFs; Approval Of A Temporary Cost Recovery Rider; Approval Of Certain Accounting Procedures Regarding Federal Production Tax Credits; and Such Other Relief The Commission Deems PSO Is Entitled, Cause No. PUD 201900048, Joint Stipulation and Settlement Agreement at 3 (Dec. 10, 2019).*

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### 3. Economic Assessment

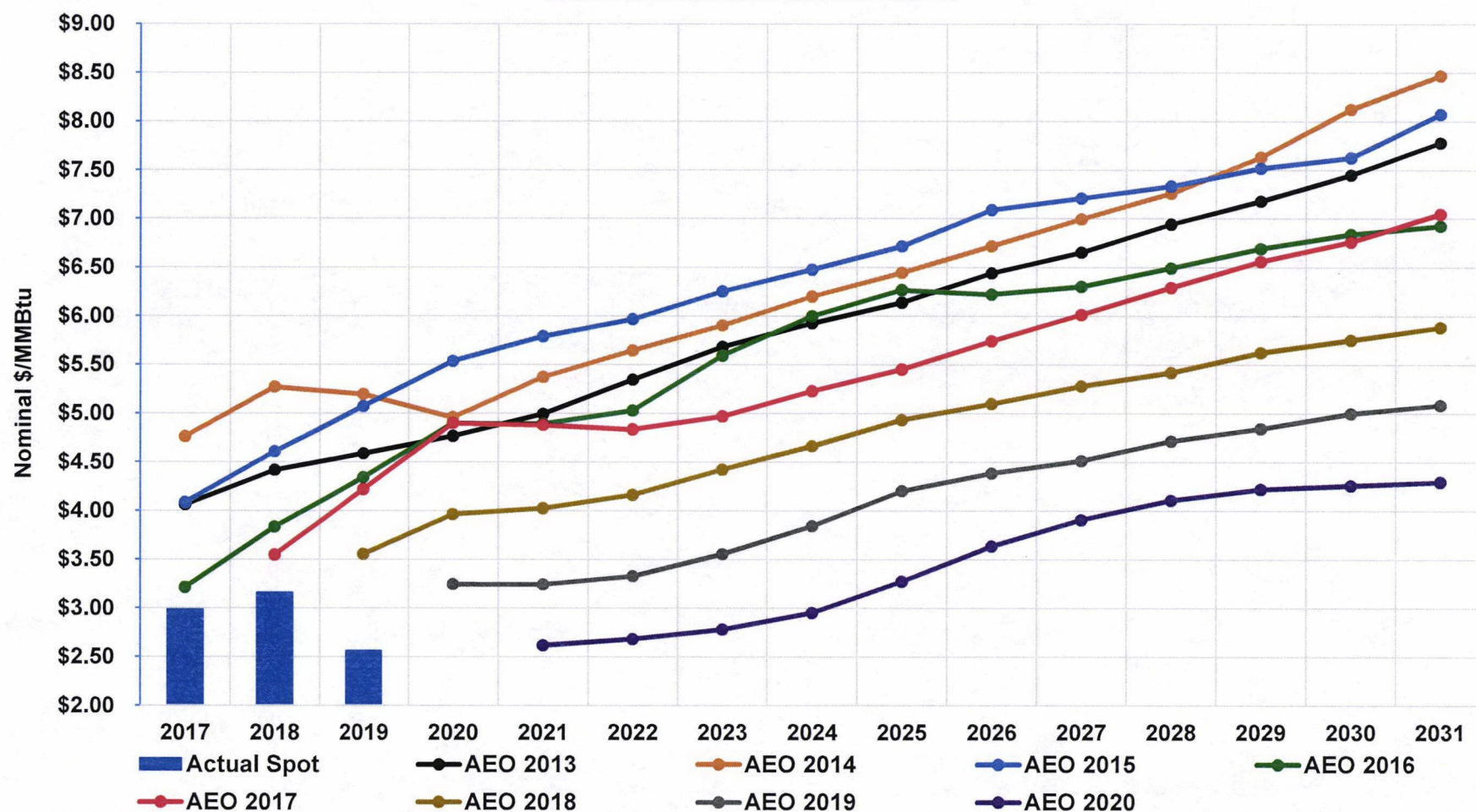
**SOUTHWESTERN ELECTRIC POWER COMPANY**  
**Natural Gas Forecasts at the Henry Hub**



Source: Updated Bletzacker Errata:Henry Hub Benchmarks KRB 8-19-2019 Workpaper, EIA Annual Energy Outlook, S&P Global Market Intelligence.



### Comparison of EIA Reference Case Henry Hub Natural Gas Price Forecasts



Source: EIA Annual Energy Outlook, S&P Global Market Intelligence