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

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**

PUBLIC – REDACTED VERSION

Direct Testimony and Exhibits

of

JEFFRY POLLOCK

On Behalf of

Texas Industrial Energy Consumers

January 14, 2020

J. POLLOCK
INCORPORATED

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

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JP-2	Comparison of EIA Reference Case Henry Hub Natural Gas Price Forecasts
JP-3	SWEPCO Modeled Locational Marginal Prices
JP-4	Implied Market Heat Rates

GLOSSARY OF ACRONYMS

Term	Definition
AEO	Annual Energy Outlook
AEP	American Electric Power
CCN	Certificate of Convenience and Necessity
CO_2	Carbon Dioxide
DISIS	Definitive Interconnection System Impact Study
DTA	Deferred Tax Asset
EIA	U.S. Energy Information Administration
GE	GE Renewables North America, LLC
GIA	Generation Interconnection Agreement
GW	Gigawatt
GWh	Gigawatt-Hour
IM	SPP Integrated Marketplace
ITP10	Ten-Year Integrated Transmission Planning
kW	Kilowatt
LMP	Locational Marginal Price
MMBTU	One Million British Thermal Units
MWh	Megawatt-Hour
NPV	Net Present Value
NYMEX	New York Mercantile Exchange
PSO	Public Service Company of Oklahoma
PTC	Production Tax Credit
SPP	Southwest Power Pool
SPS	Southwestern Public Service Company
SWEPCO	Southwestern Electric Power Company
TIEC	Texas Industrial Energy Consumers

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AFFIDAVIT OF JEFFRY POLLOCK

State of Missouri)
) SS
County of St. Louis)

Jeffry Pollock, being first duly sworn, on his oath states:

1. My name is Jeffry Pollock. I am President of J. Pollock, Incorporated, 12647 Olive Blvd., Suite 585, St. Louis, Missouri 63141. We have been retained by Texas Industrial Energy Consumers to testify in this proceeding on its behalf;

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony, Exhibits and Appendices A and B, which have been prepared in written form for introduction into evidence in SOAH Docket No. 473-19-6862 and Public Utility Commission of Texas Docket No. 49737; and,

3. I hereby swear and affirm that my answers contained in the testimony are true and correct.

Jeffry Pollock

Subscribed and sworn to before me this 14 day of January 2020.

KITTY TURNER
Notary Public - Notary Seal
State of Missouri
Commissioned for Lincoln County
My Commission Expires: April 25, 2023
Commission Number: 15390610

Kitty Turner, Notary Public
Commission #: 15390610

My Commission expires on April 25, 2023.

Direct Testimony of Jeffry Pollock

1. INTRODUCTION, QUALIFICATIONS AND SUMMARY

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Jeffry Pollock; 12647 Olive Blvd., Suite 585, St. Louis, MO 63141.

Q WHAT IS YOUR OCCUPATION AND BY WHOM ARE YOU EMPLOYED?

A I am an energy advisor and President of J. Pollock, Incorporated.

Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A I have a Bachelor of Science Degree in Electrical Engineering and a Master's Degree in Business Administration from Washington University. Since graduation in 1975, I have been engaged in a variety of consulting assignments, including energy procurement and regulatory matters in both the United States and several Canadian provinces. I have participated in numerous regulatory proceedings before the Public Utility Commission of Texas, including rate cases and rulemaking cases. My qualifications are documented in **Appendix A.** A partial list of my appearances is provided in **Appendix B** to this testimony.

Q HAVE YOU PREVIOUSLY PARTICIPATED IN PROCEEDINGS EVALUATING THE NEED, COSTS AND BENEFITS OF UTILITY-PROPOSED GENERATING PROJECTS?

A Yes. I have evaluated and submitted testimony in several utility-proposed generating projects, including projects proposed by Entergy Texas, Inc., Southwestern Public Service Company (SPS) in both Texas and New Mexico, Southwestern Electric Power

Company (SWEPCO), Entergy Arkansas, and Entergy Louisiana. These matters are listed in **Appendix B**.

Q ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A I am testifying on behalf of Texas Industrial Energy Consumers (TIEC). TIEC members purchase substantial amounts of electricity from SWEPCO under various rate schedules.

Q WHAT ISSUES ARE YOU ADDRESSING IN YOUR DIRECT TESTIMONY?

A I will provide an overview and assessment of the Traverse, Maverick, and Sundance Wind Projects, including whether SWEPCO's projected net benefits are achievable and whether the facilities are needed to serve Texas retail customers. My analysis concludes that the Commission should deny SWEPCO's request for Certificates of Convenience and Necessity (CCNs) for the proposed Wind Projects.

Q ARE YOU SPONSORING ANY EXHIBITS TO YOUR DIRECT TESTIMONY.

A Yes. I am sponsoring **Exhibits JP-1** through **JP-4**. These exhibits were prepared either by me or under my supervision and direction.

Q ARE YOU ADDRESSING ALL OF THE ISSUES IDENTIFIED IN THE COMMISSION'S PRELIMINARY ORDER IN THIS PROCEEDING?

A No. However, the fact that I am not addressing every issue should not be interpreted as an endorsement of SWEPCO's proposals in this proceeding.

Summary

Q PLEASE SUMMARIZE YOUR FINDINGS.

A The benefits of the proposed Wind Projects critically depend on:

- Production cost savings ranging from $1.11 billion to $1.25 billion net present value (NPV);
- Achieving a minimum 38% capacity factor and generating over $0.5 billion NPV of PTCs;
- Deferring future fossil-fuel capacity additions (*i.e.,* capacity deferral benefit); and
- A 30-year lifespan on the initial $1.089 billion of capital investment.

However, the net benefits are overstated because:

- SWEPCO has not explained what differences there are between the proposed Wind Projects and Wind Catcher (which was to be engineered for a 25-year useful life) that would justify adding five years to the assumed useful life. The five additional years increases the net benefits by between $97 million and $104 million NPV, respectively, under SWEPCO's Low and Base Gas cases, at the P95 Operating Level, Without Carbon, and with No Gen-Tie line.
- SWEPCO's track record has been to overstate natural gas prices. The projections in this case are stark relative to other publicly available natural gas price forecasts and current NYMEX natural gas futures contracts. The latter are projected to be below SWEPCO's breakeven gas price. Every $1/MMBtu reduction in levelized natural gas prices reduces the net benefits by approximately $138 ($166) million NPV under the P95 (P50) Operating Level, Without Carbon, and No Gen-Tie Line scenario.
- Future natural gas prices are a key input into SWEPCO's AURORA model in determining the projected locational marginal prices (LMPs). LMPs determine both the production cost savings and the congestion and loss costs. Every $1/MWh reduction in LMPs reduces the net benefits by approximately $19 million NPV under SWEPCO's Low Gas, Without Carbon, P95 Operating Level and No Gen-Tie scenario.

- 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 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.

Under these assumptions, the three proposed Wind Projects would not benefit SWEPCO's customers. Accordingly, the Commission should reject the proposed CCNs.

2. OVERVIEW OF THE PROPOSED WIND PROJECTS

Q FOR WHAT FACILITIES IS SWEPCO SEEKING A CERTIFICATE OF CONVENIENCE AND NECESSITY IN THIS PROCEEDING?

A SWEPCO is seeking CCNs to acquire the Traverse, Maverick, and Sundance Wind Projects (hereinafter referred to as the proposed Wind Projects), located in North Central Oklahoma. The characteristics of the three proposed Wind Projects are summarized in Table 1.

Table 1
Summary of Proposed Wind Projects

Description	Traverse	Maverick	Sundance	Total
Location (OK Counties)	Custer, Blaine	Garfield, Kingfisher, Major	Woods, Alfalfa, Major	
Nameplate Capacity (MW)	999	287	199	1,485
SWEPCO Share (MW)	545	156	109	810
Capacity Factor (P95 Level)	37.3%	39.6%	40.3%	38.1%
SWEPCO Share of Project Investment ($ Millions)	$702	$219	$167	$1,089
Capital Cost ($/kW)	$1,289	$1,401	$1,541	$1,345
In-Service Date	12/21	12/21	12/20	
PTC Qualification	80%	80%	100%	

Source: Application, Torpey Benefits Model, Exhibit JGD-1, Exhibit JGD-3.

The proposed Wind Projects would be jointly owned by SWEPCO and its affiliate, Public Service Company of Oklahoma (PSO). The proposed ownership shares are 55% and 45%, respectively, for SWEPCO and PSO. SWEPCO anticipates that the proposed Wind Projects will be placed in service between December 2020 and

December 2021. SWEPCO's share of the estimated cost to construct the proposed Wind Projects is $1.089 billion, which translates into a capital cost of $1,345 per kilowatt (kW). The capital cost includes all interconnection and upgrade costs.[1] SWEPCO has stated that it will "guarantee" that the capital costs do not exceed $1.09 billion (*i.e.,* "Capital Cost Cap Guarantee").[2]

Q DOES SWEPCO ASSERT THAT THE THREE PROPOSED WIND PROJECTS WILL BENEFIT CUSTOMERS?

A Yes. SWEPCO estimates that the net benefits would range from 4% to 17% of the projected capital costs under SWEPCO's Low Gas and Base Gas cases.[3] The components of SWEPCO's net benefit analysis are summarized in Table 2.

The projected costs of the proposed Wind Projects include:

- The revenue requirement associated with the proposed Wind Projects, which includes the recovery of a return on and of $1.089 billion of projected capital costs over a 30-year period;
- The costs associated with congestion and losses incurred to deliver electricity from the proposed Wind Projects to the AEP West load zone based on the projected output; and
- SWEPCO's proposal to include a deferred tax asset in rate base to recover the financing costs associated with flowing through all production tax credits (PTCs) when they are actually earned even though they cannot be fully monetized against taxable income.

[1] SWEPCO Application at 2.

[2] *Id.* at 6.

[3] At the P95 Operating Level, Without Carbon, and No Gen-Tie.

Table 2 SWEPCO Net Benefits Analysis P95 Operating Level, Without Carbon, No Gen-Tie (NPV $Millions)		
Scenario	**Base Gas**	**Low Gas**
Wind Facility Revenue Requirement	($1,348)	($1,348)
Congestion and Losses	(233)	(199)
Deferred Tax Asset Carrying Charges	(96)	(96)
Production Cost Savings	1,255	1,111
Production Tax Credits Grossed Up	546	546
Deferred Capacity Value	57	29
Net Benefits	$181	$43
Sources: Exhibit JFT-3 (Errata) and Supplemental Response to TIEC 2-2.		

The projected benefits of the proposed Wind Projects include:

- Production (*i.e.,* primarily fuel) cost savings ranging from $1.11 billion (SWEPCO Low Gas) to $1.25 billion (SWEPCO Base Gas) net present value (NPV) at the P95 Operating Level;
- Over $0.5 billion NPV in PTCs based on the guaranteed P95 output; and
- Deferral of future fossil-fuel capacity additions.

Q REFERRING TO TABLE 2, WHY HAVE YOU PRESENTED THE NET BENEFITS USING SWEPCO'S BASE AND LOW GAS SCENARIOS WITHOUT A CARBON TAX AT THE P95 OPERATING LEVEL AND NO GEN-TIE LINE?

A SWEPCO's gas price projections are a key input in determining both the production cost savings and congestion/loss costs. As discussed later, SWEPCO's High Gas scenario is not remotely plausible, and it is not reasonable to assume that an explicit carbon tax applied directly to fossil-fuel generation will be enacted in the future. More

realistic scenarios reveal that natural gas prices would be materially below SWEPCO's Low Gas case. The P95 Operating Level reflects SWEPCO's proposed "Minimum Production Guarantee." Specifically, SWEPCO is proposing to guarantee that the proposed Wind Projects would operate at an average 38% capacity factor over each five-year period during the first ten years of commercial operation. This guarantee, however, is not firm, as it would be subject to force majeure events and SPP curtailments.[4] Finally, SWEPCO is not proposing to construct a generation-tie line to physically interconnect the proposed Wind Projects to the AEP West load zone.

In summary, the benefits of the proposed Wind Projects critically depend on:

- Production cost savings ranging from $1.11 billion to $1.25 billion NPV;
- Achieving a minimum 38% capacity factor and generating over $0.5 billion NPV of PTCs;
- Deferring future fossil-fuel capacity additions; and
- A 30-year lifespan on the initial $1.089 billion of capital investment.

As discussed next, I have serious concerns about SWEPCO's net benefits analysis.

[4] Direct Testimony of Thomas P. Brice at 19.

3. ECONOMIC ASSESSMENT

Q WHAT ARE YOUR SPECIFIC CONCERNS ABOUT SWEPCO'S NET BENEFITS ANALYSIS?

A For various reasons as discussed below, SWEPCO has overstated the projected benefits of the proposed Wind Projects.

First, SWEPCO assumed a 30-year useful life. This is in stark contrast to the 25-year useful life that SWEPCO assumed for its Wind Catcher project (Docket No. 47461). Using a 30-year, rather than a 25-year, useful life substantially increases SWEPCO's projected net benefits. This is because (1) the initial capital cost of the wind facilities would be spread over a longer recovery period, and (2) the projected production cost savings would greatly exceed the incremental costs in the years 2046 through 2051. In fact, SWEPCO projects that 28% of the nominal production cost savings would occur during these last five years.[5] SWEPCO has not explained what differences there are between the proposed Wind Projects and Wind Catcher that would justify adding five years to the assumed useful life.

Second, SWEPCO's projected natural gas prices are overstated. The degree of the overstatement is stark when compared to other publically available natural gas price forecasts and current NYMEX natural gas futures contracts. As discussed below, future natural gas prices are a key input in determining the projected SPP market energy for LMPs. LMPs reflect the market-clearing price of energy, and they determine how much revenue SWEPCO receives for selling its generation into the SPP IM.

[5] At the P95 Operating Level SWEPCO's Low Gas case Without Carbon and No Gen-Tie scenario.

Third, in addition to using inflated natural gas prices, SWEPCO inflated its projected LMPs in other ways, for example, by using simplistic assumptions to quantify congestion and loss costs and by understating the influx of renewable energy into the SPP system.

Congestion and losses affect the delivered cost of generating resources, including the proposed Wind Projects.[6] Congestion costs reflect the differential between the hourly LMPs at the proposed Wind Project nodes and the corresponding AEP West load zone LMPs, where SWEPCO's load is located. The former LMPs also determine the production cost savings. However, SWEPCO's AURORA model is not sufficiently granular to project hourly nodal LMPs at each of the proposed Wind Projects and the AEP West load zone. Thus, SWEPCO had to rely on a different, more detailed model to derive the key inputs of its net benefits analysis.

Specifically, PROMOD was used to derive the percentage (or basis) differentials between the hourly SPP Central Hub LMPs, which are projected in AURORA, and the hourly nodal LMPs where the proposed Wind Projects and SWEPCO's load are located. However, only two years of PROMOD model runs were available to SWEPCO: 2024 and 2029. Thus, a key assumption is that the PROMOD-derived percentage differentials for the years 2024 and 2029 would be representative of the LMPs used to calculate both production cost savings and congestion and loss costs for the entire 30-year lives of the proposed Wind Projects. Later in my testimony, I discuss the other limitations of AURORA.

[6] Direct Testimony of Johannes P. Pfeifenberger at 42.

Further evidence of the unrealistically high LMPs is that SWEPCO's projections reveal little change in the market "implied heat rate." The market implied heat rate, which is the price of energy ($/MWh) divided by the price of natural gas ($/MMBtu), is an indicator of the efficiency of plants in the market, as well as the amount of renewable penetration in the market. As generation technology continues to evolve and more renewable energy resources are added to the system, the implied heat rate should decline.

Finally, SWEPCO assumed a capacity deferral benefit. However, this assumption 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.

A more in-depth discussion of these concerns follows.

Useful Life

Q WHAT IS THE BASIS FOR SWEPCO'S ASSUMPTION THAT THE PROPOSED WIND PROJECTS WILL HAVE A 30-YEAR USEFUL LIFE?

A SWEPCO witness, Mr. Deruntz, stated that the proposed Wind Projects will be engineered to have a 30-year design life.[7] Further, he indicated that the ongoing operation and maintenance *and capital forecast* is based on maintaining the availability and performance of the turbines over 30 years of operation.[8]

[7] Direct Testimony of Joseph G. Deruntz at 18.

[8] *Id.*, at 19.

Q DO THESE ASSURANCES MEAN THAT THE INITIAL $1.089 BILLION OF CAPITAL WILL LAST 30 YEARS?

A No. As Mr. Deruntz admits, SWEPCO will incur ongoing capital costs to maintain the availability and performance of the turbines over 30 years. Thus, there will be interim capital additions and retirements as components wear out and require periodic replacements. While SWEPCO has included ongoing capital costs in its economic analysis, those costs are mere projections at this point. Further, SWEPCO has only proposed cost guarantees for the initial capital investment, not for any ongoing capital additions.[9]

Q WHAT USEFUL LIFE DID SWEPCO ASSUME FOR ITS PROPOSED WIND CATCHER PROJECT?

A SWEPCO assumed a 25-year useful life for its proposed Wind Catcher project.[10]

Q IS ANY OTHER UTILITY PROPOSING A 25-YEAR LIFE FOR A NEWLY COMMISSIONED WIND FACILITY?

A Yes. In its pending rate case, SPS is proposing to use a 25-year useful life for its Hale Wind Plant. According to SPS, the 25-year useful life is based on the estimated average service life of the turbines provided by the turbine manufacturer, and further, it is also the service life used by its affiliates in other wind projects.[11]

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[9] SWEPCO Response to TIEC 2-15.

[10] *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, Direct Testimony of Michael L Bright at 3 (Jul. 3, 2017).

[11] *Application of Southwestern Public Service Company For Authority to Change Rates*, Docket No. 49831, Direct Testimony of Mark Lytal at 77 (Aug. 8, 2019).

Q HAS SWEPCO IDENTIFIED ANY CHANGES IN TECHNOLOGY OR OTHER CIRCUMSTANCES THAT WOULD JUSTIFY THE ADDITIONAL FIVE YEARS OF USEFUL LIFE?

A No. As I mentioned earlier, SWEPCO previously stated that the Wind Catcher Project was to be engineered to have a design life of 25 years. The same wind turbine manufacturer, GE Renewables North America, LLC (GE), and platform (GE 2 MW) would be used for the proposed Wind Projects. Additionally, the majority of the wind turbines at the proposed Wind Projects would have the same tower height (88.6 meter) and rotor diameter (127 meter). The only significant difference is that the majority of wind turbines would be slightly larger for the proposed Wind Projects (2.82 MW) than for Wind Catcher (2.5 MW).

Q HOW WOULD SHORTENING THE USEFUL LIFE FROM 30 YEARS TO 25 YEARS AFFECT THE NET BENEFITS ANALYSIS?

A A shorter useful life would reduce the projected net benefits. This is because removing the production cost savings in the years 26 through 30 would more than outweigh removing the incremental costs. For example, the projected production cost savings would be $134 million NPV as compared with only $71 million NPV of incremental costs.[12] Additionally, shortening the 25-year useful life would also reduce the net benefits by reducing the period of time over which the initial investment in the Wind Projects is recovered.

[12] At the P95 Operating Level, SWEPCO's Low Gas case Without Carbon and No Gen-Tie scenario.

Q HOW SHOULD THE USEFUL LIFE BE DETERMINED?

A The useful life should reflect the period over which the *initial* capital investment is expected to remain in service.

Q HAS SWEPCO RECEIVED ANY GUARANTEES THAT THE EQUIPMENT SUPPLIED BY THE WIND MANUFACTURERS WOULD REMAIN IN SERVICE FOR 30 YEARS?

A No. In fact, GE is willing to warrant the turbine generators for only [redacted] after the start of commercial operation.[13] As previously stated, the manufacturer of the equipment installed at SPS's Hale Wind Plant stated that the wind turbine would have an average 25-year useful life.

Q HAVE YOU QUANTIFIED THE NET BENEFITS BASED ON A 25-YEAR USEFUL LIFE?

A Yes. Table 3 shows the projected net benefits calculation based on a 25-year (rather than a 30-year) useful life at the P95 Operating Level. This includes the impact of (1) removing the last five years of projected benefits, (2) increasing the revenue requirement on the initial capital investment, and (3) removing O&M costs for the last five years and ongoing capital expenditures. The impacts of the last two adjustments net out to be about $14 million NPV increase to the net benefits, so the change is primarily driven by the removal of projected energy benefits for the last five years.

[13] Direct Testimony of Jay F. Godfrey, Substituted Highly Sensitive Exhibit No. JFG-3 (Traverse at 1140; Maverick at 2337; and Sundance at 1287).

Table 3
Summary of SWEPCO's Net Benefits Analysis
P95 Operating Level, Without Carbon, No Gen-Tie Line
(NPV $Millions)

Scenario	Useful Life		Net Change
	30 Years	25 Years	
Base Gas	$181	$77	($104)
Low Gas	$43	($54)	($97)

Source: Torpey Benefits Model (Errata) and Supplemental Response to TIEC 2-2.

The corresponding 30-year net benefits as projected by SWEPCO are shown for reference. As Table 3 demonstrates that at the P95 Operating Level, shortening the useful life to 25 years would reduce the net benefits by over 50% under SWEPCO's Base Gas case. However, there would be no benefits under SWEPCO's Low Gas case.

Natural Gas Prices

Q WHAT IS THE SOURCE OF SWEPCO'S NATURAL GAS PRICE FORECASTS?

A SWEPCO has relied on an in-house "Fundamentals" forecast produced by AEP. Similar in-house forecasts were used in the past to support SWEPCO's proposals to build the Wind Catcher Project and to build and construct the Turk power plant.

Q DOES SWEPCO HAVE A GOOD TRACK RECORD OF ACCURATELY FORECASTING NATURAL GAS PRICES?

A No. SWEPCO's track record has been to overstate natural gas prices, as shown in Table 4.

Q PLEASE EXPLAIN TABLE 4.

A Table 4 compares SWEPCO's forecasts by year with actual Henry Hub natural gas prices. For instance, the first line shows that SWEPCO forecasted in the second half of 2010 that 2019 gas prices would be $6.98/MMBtu. Actual 2019 prices were $2.56/MMBtu. Thus, SWEPCO's forecast 2019 gas price was 173% than the actual 2019 gas prices.

Table 4
Projected Vs. Actual Natural Gas Prices At the Henry Hub
($/MMBtu)

Description	2015	2016	2017	2018	2019
Past SWEPCO Forecasts					
2010 2H	$5.65	$6.12	$6.30	$6.64	$6.98
2011 1H	$5.52	$5.99	$6.13	$6.32	$6.46
2012 1H	$5.44	$5.97	$6.13	$6.32	$6.46
2013 2H	$5.47	$5.83	$6.01	$6.12	$6.19
2015 1H		$4.34	$5.09	$5.40	$5.50
2016 2H			$3.22	$4.89	$5.13
2018 2H					$3.88
2019 1H (Base Gas)					$3.21
Actual Henry Hub Gas Prices	$2.63	$2.51	$2.98	$3.16	$2.56
Difference From Actual	108% to 115%	73% to 144%	71% to 111%	55% to 110%	25% to 173%

Sources: Response to TIEC 1-9; S&P Global Market Intelligence.

As Table 4 demonstrates, AEP's forecasts overstated natural gas prices by between 25% and 173% higher than actual Henry Hub natural gas prices. Thus, AEP's forecasts have a track record of predicting much higher Henry Hub natural gas prices than what actually occurs.

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

A Yes. **Exhibit JP-1** shows SWEPCO's projected natural gas prices in nominal dollars (as depicted by the solid lines) at the Henry Hub.[14] SWEPCO provided several scenarios:

- Base Gas (in red);
- Low Gas (in blue); and
- High Gas (in green).

SWEPCO also provided the January 2019 U.S. Energy Information Administration (EIA) Reference Case (the red dashed line).

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

A No. The EIA provides several other scenarios, the most accurate of which has been the High Oil and Gas Technology Case. This scenario is represented by the blue-dashed line in **Exhibit JP-1**.

Q WHAT IS THE EIA'S HIGH OIL AND GAS TECHNOLOGY SCENARIO?

A EIA describes this scenario as follows:

> In the High Oil and Gas Resource and Technology case, the estimated ultimate recovery per well for tight oil, tight gas, or shale gas in the United States and undiscovered resources in Alaska and the 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 plays or the expansion of known plays.

[14] 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.

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 2017.[15]

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

A The High Oil and Gas Technology 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 Technology scenario is 7% below the corresponding levelized cost under SWEPCO's Low Gas scenario.

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

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

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 natural gas prices (depicted by the black line) in **Exhibit JP-1** based on the 30-day

[15] U.S. Energy Information Administration, *Annual Energy Outlook 2019 Case Descriptions* at 5 (Jan. 2019).

[16] Docket No. 47461, *Order* at 18, Finding of Fact No. 89 (Aug. 13, 2018).

average closing price of the 2021 – 2031 futures contracts traded at the Henry Hub through January 7, 2020.

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

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

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

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

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

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

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

> 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.[18]

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

A Yes. A summary of the levelized gas prices under the various gas price scenarios 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 1/19 Reference Case	$5.26
SWEPCO Low Gas	$4.50
EIA 1/19 High Oil and Gas Technology Case	$4.18
"Breakeven" Gas Price	$3.67
NYMEX Futures**	$3.10

Source: Henry Hub Benchmarks KRB workpaper (Errata).
*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.

As Table 5 demonstrates, SWEPCO's Base Gas projection is very similar to the EIA Reference case projections.

[18] Docket No. 47461, *Order* at 18 (Aug. 13, 2018).

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

A Yes. First, the 2019 Annual Energy Outlook (AEO) is now almost a year old. The EIA has stated that it will release the 2020 AEO later this month, and the record should reflect this more recently available information. Second and more importantly, EIA's Reference Case forecasts have consistently overstated future natural gas prices. This is demonstrated in **Exhibit JP-2**.

Q PLEASE EXPLAIN EXHIBIT JP-2

A **Exhibit JP-2** compares the EIA's Reference natural gas price forecasts published in its AEOs for the years 2013 through 2019 to actual spot gas prices for the years 2017 through 2019. All of EIA's Reference Case forecasts projected much higher natural gas prices than actually occurred. Further, since 2015, EIA has consistently lowered its gas forecasts. The 2019 AEO reveals the lowest natural gas price projections, by far. However, even that forecast is 11 months old as of the filing of this testimony.

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

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

Q WHAT IS THE IMPACT OF A CHANGE IN NATURAL GAS PRICES ON THE PROJECTED NET BENEFITS?

A One way to calculate the impact is to extrapolate between the different gas-price cases that SWEPCO has provided. Under the P95 Operating Level, relative to SWEPCO's Base Gas (Without Carbon) scenario, the projected production cost savings and congestion and loss costs are $110 million lower under SWEPCO's Low Gas (Without Carbon) scenario. The difference in the projected levelized natural gas price is $0.80/MMBtu ($5.30 - $4.50). Thus, a $1/MMBtu change in the projected levelized gas prices changes the net benefits by approximately $138 million NPV.[19] Applying the natural gas prices based on the NYMEX futures prices would reduce the NPV in the P95, no-carbon scenario to negative $150 million NPV. This does not fully include the other adjustments discussed below.

Locational Marginal Prices

Q HOW DID SWEPCO FORECAST LOCATIONAL MARGINAL PRICES?

A As previously stated, SWEPCO used the AURORA model to derive the forecasted LMPs. The projected LMPs determine how much revenue SWEPCO is paid for selling its generation into the SPP IM. The higher the revenues, the greater the production cost savings.

Among the many inputs into AURORA are the characteristics of existing and

[19] As a point of comparison, if you were to extrapolate between SWEPCO's Base and Low at the P50 Operating Level, a $1/MMBtu reduction in gas prices reduces the net benefits by $166 million NPV reduction. Similarly, based on the difference between SWEPCO's Low Gas case and SWEPCO's purported breakeven price, a $1/MMBtu reduction in gas prices reduces the net benefits by $283 million NPV.

planned generation resources, planned retirements, projected peak loads and load shapes, and projected commodity prices (*i.e.,* coal, natural gas, uranium). However, the AURORA model projects LMPs for the SPP Central Hub. Quantifying the production cost savings and congestion and loss costs requires projected hourly LMPs at the generator (*i.e.,* the proposed Wind Projects) nodes and at the AEP West load zone (i.e., where SWEPCO's load is located). SWEPCO used PROMOD to develop the basis differential between the SPP Central Hub LMPs, the generator LMPs, and the AEP West load zone LMPs.

Q WHAT PROMOD MODEL RUNS WERE USED TO DERIVE THE NODAL LMPS AT AEP'S GENERATOR AND LOAD ZONE NODES?

A SWEPCO used the PROMOD model runs developed by SPP in its 2019 Ten-Year Integrated Transmission Planning (ITP10) assessment report. As previously stated, the PROMOD model runs were for the years 2024 and 2029.

Q WHAT IS THE TEN-YEAR INTEGRATED TRANSMISSION PLANNING ASSESSMENT?

A The SPP ITP10 assessment is a regional transmission plan that is designed to provide for the reliable and economic delivery of energy, facilitate achievement of public policy objectives and maximize benefits to end-use customers. It contains an evaluation of SPP transmission system's reliability, public policy, operational, and economic needs and coordinates solutions with ongoing compliance, local planning, interregional planning, and tariff service processes.[20]

[20] SWEPCO Response to TIEC 3-3, Attachment 1 at 9.

Q HOW DID SWEPCO USE THE RESULTS OF THE 2019 TEN-YEAR INTEGRATED TRANSMISSION PLANNING PROMOD RUNS TO DERIVE THE NODAL LOCATIONAL MARGINAL PRICES?

A The 2019 ITP10 PROMOD runs derived hourly LMPs at each generator node for the years 2024 and 2029. SWEPCO calculated the PROMOD-derived LMPs at the SPP Central Hub and derived the average hourly basis differential between the SPP Central Hub and the various AEP generator nodes and AEP West load zones LMPs, including both PSO and SWEPCO. These basis differentials were expressed in percentage terms. SWEPCO then applied the percentage basis differentials to the SPP Central Hub LMPs projected in its AURORA model to calculate the hourly LMPs at the various generator nodes (including the nodes for each of the proposed Wind Projects) and load zone LMPs.

Q HOW WERE THE AEP GENERATOR NODE AND LOAD ZONE NODAL LOCATIONAL MARGINAL PRICES DERIVED FOR THE YEARS OTHER THAN 2024 AND 2029?

A SWEPCO extrapolated the 2024 and 2029-derived percentage basis differentials to calculate the nodal LMPs for the years 2021-2023 and 2025-2028. The 2029 percentage basis differentials were used to project the nodal LMPs after 2029.

Q WHAT ARE THE RESULTING PROJECTED LOCATIONAL MARGINAL PRICES?

A SWEPCO's AURORA-derived wind project nodal LMPs are summarized in **Exhibit JP-3**. Page 1 shows the LMPs with the carbon adder and page 2 shows the corresponding LMPs without the carbon adder. The impact of the carbon adder is the

reason for the "hockey stick" effect beginning in 2028 as shown in **Exhibit JP-3**, page 1. The corresponding levelized LMPs are summarized in Table 6. As Table 6 demonstrates, SWEPCO's assumed carbon adder alone inflates the projected levelized LMPs in the carbon cases by over $5 per megawatt-hour (MWh).

Table 6
Levelized Generation-Weighted LMPs
At the Proposed Wind Project Nodes
($/MWh)

Scenario	Levelized LMP*
SWEPCO Base With Carbon	$44.97
SWEPCO Low With Carbon	$38.95
SWEPCO Base Without Carbon	$39.51
SWEPCO Low Without Carbon	$33.77

Source: Updated Torpey Figure 1 (Errata) Workpaper.
* 7.09% Blended Discount Rate

Q HOW DID SWEPCO MODEL THE CARBON ADDER?

A SWEPCO witness, Mr. Bletzacker stated:

> The 2019 Fundamentals Forecast employed a CO_2 dispatch burden [allowance price] on all existing fossil fuel-fired generating units that escalates 3.5% per annum from $15 per ton commencing in 2028.
>
> The direct effect of a $10 per metric ton allowance price for a coal plant is an approximate $10 per MWh increase in plant operating costs. And likewise, the impact of a $10 per metric ton allowance price for a natural gas-fired combined cycle plant is an approximate $4 per MWh increase in plant operating costs. [21]

[21] Direct Testimony of Karl R. Bletzacker at 9 and 13.

Q ARE THERE OTHER WAYS TO ENCOURAGE A SHIFT AWAY FROM FOSSIL FUELS BESIDES IMPUTING A COST FOR CO_2 ALLOWANCES (A CARBON TAX)?

A Yes. It is not necessary to assume the adoption of an unprecedented carbon tax to address the potential for future government action on carbon. To the extent that Congress takes action on carbon, it is just as likely (if not more likely) that future carbon legislation will take the form of a continuation of policies that make non-emitting generation resources more cost-competitive rather than the form of a penalty on carbon emitting resources. That is what has always happened in the past, as the United States has never passed a carbon tax, but it has adopted incentives for renewable, non-emitting resources. Examples of such policies include PTCs and investment tax credits. These incentives for renewable generation, as opposed to a tax on fossil-fuel generation as SWEPCO assumes, would lower —rather than increase— future LMPs. Thus, whereas assuming a carbon tax improves the economics of the proposed Wind Projects, extension of the PTCs or other renewable subsidies would make the proposed Wind Projects less economic.

Q IS IT APPROPRIATE TO PROJECT A CARBON ADDER AT THIS TIME?

A No. It is unknown whether a carbon tax will be imposed and what form it might take if it were. Thus, it would be sheer speculation to assume that a carbon adder would be established in 2028 at a price of $15 per ton and escalate by 3.5% per year.

Q HAS THE COMMISSION PREVIOUSLY ASSESSED THE APPROPRIATENESS OF INCLUDING A CARBON TAX IN EVALUATING THE NET BENEFITS OF A PROPOSED RENEWABLE ENERGY PROJECT?

A Yes. The Commission previously rejected SWEPCO's proposed carbon tax in evaluating the net benefits from the Wind Catcher project. Specifically,

> 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.[22]

Q WHAT OTHER CONCERNS DO YOU HAVE WITH SWEPCO'S LOCATIONAL MARGINAL PRICE PROJECTIONS?

A In addition to applying a carbon adder to its "with carbon" cases, SWEPCO's projected LMPs for all cases are overstated because:

- They are based on inflated natural gas prices (as previously discussed); and
- The amount of additional renewable energy resources is understated.

The latter impact is shown in **Exhibit JP-4**.

Q PLEASE EXPLAIN EXHIBIT JP-4.

A **Exhibit JP-4** shows the implied heat rates derived from SWEPCO's Base and Low Gas scenarios without the carbon adder. The implied heat rate is the projected LMP

[22] Docket No. 47461, *Order* at 19 (Aug. 13, 2018).

divided by the corresponding projected natural gas price. As can be seen, the implied heat rates would remain relatively unchanged for most of the 30-year period of the economic analysis.

Q WHAT IS THE BASIS FOR YOUR ASSERTION THAT SWEPCO UNDERSTATED THE INFLUX OF RENEWABLE ENERGY RESOURCES IN THE SPP?

A SPP reported that 20.6 GW of wind and 0.2 GW (nameplate) of solar for a total of 20.8 GW was in commercial operation at the end of 2018.[23] This compares to a total installed renewable capacity of 27.2 gigawatts (GW) in 2024 and 29.6 GW in 2029 as reported in the draft 2019 ITP10 assessment.[24] In other words, the amount of renewable capacity assumed in the draft 2019 ITP10 assessment assumes that only 6.4 GW of additional renewable capacity would come online by 2024 and only 8.8 GW of additional renewable capacity would come online in 2029.

Q IS THERE A POSSIBILITY THAT SUBSTANTIALLY MORE RENEWABLE CAPACITY MAY BE ADDED TO SPP THAN IS CURRENTLY PROJECTED IN THE 2019 ITP10 ASSESSMENT?

A Yes. Currently, over 114,000 MW of renewable capacity is in the SPP's GIA queue. A summary of the recent GIA queue is provided in Table 7.

[23] Southwest Power Pool Market Monitoring Unit, *State of the Market 2018* at 29, figure 2-11 (May 15, 2019).

[24] SWEPCO Response to TIEC 3-3, Attachment 1 (SPP, *Draft 2019 Integrated Transmission Planning Assessment Report*) at 14.

Table 7 SPP Generation Interconnection Queue Active Requests For Renewable Generation* As of December 23, 2019	
Scenario	**Nameplate Capacity (MW)**
Total Requests	114,141
GIA Fully Executed On Schedule	9,956
Facility Study Stage	11,073
DISIS Stage	70,754
Source: SPP, GI Active Request * Wind, Solar, Battery Storage.	

Of this amount, 10 GW of renewable resources have fully executed GIAs and are on schedule to enter commercial operation during the period 2019 through 2021. This is more than the projected 8.8 GW of renewable resource additions through 2029 as assumed in the draft ITP10 assessment report.

An additional 11.1 GW of renewable resources is currently in the Facility Study stage, and 70.8 GW is in the Definitive Interconnection System Impact Study (DISIS) stage. The Facility Study stage indicates a greater probability that a project will be completed.

If all of the capacity that has fully executed GIAs on schedule and only 50% of the capacity in the Facility Study stage were to materialize, renewable resource additions would exceed 15 GW. This is over 70% higher than the projected additions assumed in the draft 2019 ITP10 assessment report for the year 2029. If, in addition to the renewable resources with executed GIAs on schedule, only 5% of the projects that are either in the Facility Study or DISIS stage were to come to fruition, there would

be an additional 14 GW of renewable energy additions. This is nearly 60% more than the renewable resource additions assumed by SWEPCO.

Q DID THE AURORA MODEL RECOGNIZE THE POTENTIAL FOR ADDITIONAL RENEWABLE RESOURCE ADDITIONS BEYOND THE LEVELS ASSUMED IN THE 2019 ITP10 ASSESSMENT?

A No. The AURORA model assumed [redacted] GW of wind and solar resources were in commercial operation at the end of 2018 (versus 20.8 GW as reported by the SPP Market Monitor).[25] Wind and solar resource additions through 2029 were 8.6 GW (versus 8.8 GW assumed in the 2019 ITP10 assessment).[26] Thus, the AURORA model assumptions are similar to the 2019 ITP10 assessment.

Q DO YOU HAVE ANY FURTHER CONCERNS WITH THE PROJECTED LOCATIONAL MARGINAL PRICES?

A Yes. As previously stated, SWEPCO assumed that the percentage basis differentials between the SPP Central Hub and the various nodal LMPs would remain constant after 2029. However, because the AURORA model is not capable of measuring transmission congestion, it cannot quantify, for example, the impact of any additional transmission upgrades implemented by SPP after 2029 that would alleviate congestion, thereby reducing the basis differentials.

[25] SWEPCO Response to TIEC 11-4 CONFIDENTIAL.

[26] SWEPCO Response to TIEC 11-5.

Q PLEASE SUMMARIZE YOUR ASSESSMENT OF SWEPCO'S PROJECTED LOCATIONAL MARGINAL PRICES.

A SWEPCO's projected LMPs are overstated because they were based on inflated natural gas prices, and SWEPCO failed to consider the impact of a much greater influx of renewable resources than is currently under consideration. Hence, the production cost savings from the proposed Wind Projects are overstated.

Q WHAT IS THE IMPACT OF LOWER LOCATIONAL MARGINAL PRICES ON THE PROJECTED NET BENEFITS?

A The projected production cost savings and congestion and loss costs are $110 million lower under SWEPCO's Low Gas (Without Carbon) scenario. The difference in the projected levelized LMPs between SWEPCO's Base Gas and Low Gas scenarios is $5.74/MWh ($39.51 - $33.77). Thus, every $1/MWh change in the projected levelized LMPs would change the net benefits by approximately $19 million NPV.

Deferred Tax Asset

Q WHAT IS THE DEFERRED TAX ASSET?

A The deferred tax asset (DTA) represents the PTCs that SWEPCO is proposing to flow-through to customers each year that cannot be monetized (*i.e.*, to reduce SWEPCO's federal income tax liability) in this same year. For this same year, SWEPCO is seeking Commission approval to include the DTA in rate base in future base rate cases.[27]

[27] Direct Testimony of John O. Aaron at 6.

Q WHAT IMPACT WOULD THE DEFERRED TAX ASSET HAVE ON FUTURE BASE RATES?

A SWEPCO's proposed DTA ratemaking treatment would result in higher base rates because:

- The DTA would be included in rate base in future base rate proceedings;
- SWEPCO would owe a return, including a return on equity, on the rate based DTA balance; and
- The DTA would remain in base rates until and unless SWEPCO files a rate case using a test year after 2034 to remove the DTA from rate base.

Q DO YOU HAVE ANY CONCERNS ABOUT SWEPCO'S DTA RATEMAKING PROPOSAL?

A Yes. The proposed DTA ratemaking treatment would force customers to finance the PTCs generated by the proposed Wind Projects that SWEPCO cannot monetize. In effect, customers would be required to borrow money from SWEPCO and customers would pay financing costs (including a return on equity). The amount of the financing costs would increase rapidly as the DTA balance grows. Even after 2034, customers would continue to pay financing costs until and unless SWEPCO adjusts base rates in a future rate case with a test year ending after 2034. Such a lending scheme is not a proper business activity for a regulated utility.

Further, the DTA would be a financial obligation and not an asset that is used and useful in providing safe and reliable electricity service. Yet, SWEPCO's proposal would place the DTA balance in SWEPCO's invested capital or "rate base."

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

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

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

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

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

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

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

[28] *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).

4. RECOMMENDATION

Q WHAT DO YOU CONCLUDE ABOUT SWEPCO'S PROJECTED NATURAL GAS PRICES AND LOCATIONAL MARGINAL PRICES?

A Accurate natural gas and LMP projections are the keys to assessing the value of any production cost savings associated with the proposed Wind Projects. However, SWEPCO has overstated the projected natural gas prices. Further, it has overstated the projected LMPs because it ignored a substantial build-out of renewable resources that is occurring and is projected to occur in the SPP. Both of these fundamentals will act to suppress market prices thereby reducing the projected production cost savings. Further, SWEPCO's assumptions about a 30-year life for the initial capital and the application of the carbon adder directly on the cost of fossil-fuel generation are highly speculative. Finally, SWEPCO has included speculative capacity deferral cost savings in its analysis. For these reasons, the Commission should give little or no weight to SWEPCO's net benefit analysis in this proceeding.

Q HOW WOULD RECOGNIZING THE INFLUX OF RENEWABLE RESOURCES AFFECT SWEPCO'S NET BENEFITS ANALYSIS?

A The greater penetration of renewable resources in the SPP should result in a reduction in the implied heat rate. This would reduce SWEPCO's estimated production cost savings. At the P95 (P50) level, a 500 BTU/kWh decrease in the implied heat rate would reduce the production cost savings from the proposed Wind Projects by approximately $138 ($150) million NPV under SWEPCO's Low Gas scenario and $162

($176) million under its Base Gas scenario. If projected natural gas prices are lower than SWEPCO's Low Gas scenario, the benefits would be substantially eliminated.

Q BASED ON YOUR ECONOMIC ASSESSMENT, WHAT DO YOU RECOMMEND?

A The Commission should reject the proposed CCNs for the three proposed Wind Projects.

Q DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

A Yes.

APPENDIX A

Qualifications of Jeffry Pollock

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Jeffry Pollock. My business mailing address is 12647 Olive Blvd., Suite 585, St. Louis, Missouri 63141.

Q WHAT IS YOUR OCCUPATION AND BY WHOM ARE YOU EMPLOYED?

A I am an energy advisor and President of J. Pollock, Incorporated.

Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A I have a Bachelor of Science Degree in Electrical Engineering and a Master's Degree in Business Administration from Washington University. I have also completed a Utility Finance and Accounting course.

Upon graduation in June 1975, I joined Drazen-Brubaker & Associates, Inc. (DBA). DBA was incorporated in 1972 assuming the utility rate and economic consulting activities of Drazen Associates, Inc., active since 1937. From April 1995 to November 2004, I was a managing principal at Brubaker & Associates (BAI).

During my career, I have been engaged in a wide range of consulting assignments including energy and regulatory matters in both the United States and several Canadian provinces. This includes preparing financial and economic studies of investor-owned, cooperative and municipal utilities on revenue requirements, cost of service and rate design, conducting site evaluations, advising clients on electric restructuring issues, assisting clients to procure and manage electricity in both competitive and regulated markets, developing and issuing requests for proposals

(RFPs), evaluating RFP responses and contract negotiation and developing and presenting seminars on electricity issues.

I have worked on various projects in 28 states and several Canadian provinces, and have testified before the Federal Energy Regulatory Commission, the Ontario Energy Board, and the state regulatory commissions of Alabama, Arizona, Arkansas, Colorado, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, New Jersey, New Mexico, New York, Ohio, Pennsylvania, South Carolina, Texas, Virginia, Washington, and Wyoming. I have also appeared before the City of Austin Electric Utility Commission, the Board of Public Utilities of Kansas City, Kansas, the Board of Directors of the South Carolina Public Service Authority (a.k.a. Santee Cooper), the Bonneville Power Administration, Travis County (Texas) District Court, and the U.S. Federal District Court.

Q PLEASE DESCRIBE J. POLLOCK, INCORPORATED.

A J. Pollock assists clients to procure and manage energy in both regulated and competitive markets. The J. Pollock team also advises clients on energy and regulatory issues. Our clients include commercial, industrial and institutional energy consumers. J. Pollock is a registered Class I aggregator in the State of Texas.

Testimony Filed in Regulatory Proceedings
by Jeffry Pollock

UTILITY	ON BEHALF OF	DOCKET	TYPE	STATE / PROVINCE	SUBJECT	DATE
SOUTHWESTERN PUBLIC SERVICE COMPANY	Occidental Permian Ltd.	19-00170-UT	Rebuttal	NM	Class Cost-of-Service Study, Class Revenue Allocation	12/20/2019
ALABAMA POWER COMPANY	Alabama Industrial Energy Consumers	32953	Direct	AL	Certificate of Convenience and Necessity	12/4/2019
SOUTHWESTERN PUBLIC SERVICE COMPANY	Occidental Permian Ltd.	19-00170-UT	Direct	NM	Class Cost-of-Service Study, Class Revenue Allocation, Rate Design	11/22/2019
GEORGIA POWER COMPANY	Georgia Association of Manufacturers and Georgia Industrial Group	42516	Direct	GA	Return on Equity, Capital Structure, Coal Combustion Residuals Recovery, Class Revenue Allocation; Rate Design	10/17/2019
NEW YORK STATE ELECTRIC & GAS CORPORATION and ROCHESTER GAS AND ELECTRIC CORPORATION	Multiple Intervenors	19-E-0378 / 19-G-0379 19-E-0380 / 19-G-0381	Rebuttal	NY	Electric and Gas Embedded Cost of Service, Class Revenue Allocation, Rate Design	10/15/2019
NEW YORK STATE ELECTRIC & GAS CORPORATION and ROCHESTER GAS AND ELECTRIC CORPORATION	Multiple Intervenors	19-E-0378 / 19-G-0379 19-E-0380 / 19-G-0381	Direct	NY	Electric and Gas Embedded Cost of Service, Class Revenue Allocation, Rate Design, Amortization of Regulatory Liabilties, AMI Cost Allocation	9/20/2019
AEP TEXAS INC.	Texas Industrial Energy Consumers	49494	Cross-Rebuttal	TX	ERCOT 4CPs, Class Revenue Allocation; Customer Support Costs	8/13/2019
AEP TEXAS INC	Texas Industrial Energy Consumers	49494	Direct	TX	Class Cost-of-Service Study, Class Revenue Allocation, Rate Design; Transmission Line Extensions	7/25/2019
CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC	Texas Industrial Energy Consumers	49421	Cross-Rebuttal	TX	Class Cost-of-Service Study	6/19/2019
CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC	Texas Industrial Energy Consumers	49421	Direct	TX	Class Cost-of-Service Study; Rate Design; Transmission Service Facilities Extensions	6/6/2019
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	48973	Direct	TX	Prudence of Solar PPAs, Imputed Capacity, treatment of margins from Off-System Sales	5/21/2019
CONSUMERS ENERGY COMPANY	Association of Businesses Advocating Tariff Equity	20322	Rebuttal	MI	Classification of Distribution Mains; Allocation of Working Gas in Storage and Storage	4/29/2019
CONSUMERS ENERGY COMPANY	Association of Businesses Advocating Tariff Equity	20322	Direct	MI	Class Cost-of-Service Study, Transportation Rate Design	4/5/2019
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	49042	Cross-Rebuttal	TX	Transmsision Cost Recovery Factor	3/21/2019
ENTERGY TEXAS, INC	Texas Industrial Energy Consumers	49057	Direct	TX	Transmsision Cost Recovery Factor	3/18/2019
DUKE ENERGY PROGRESS, LLC	Nucor Steel - South Carolina	2018-318-E	Direct	SC	Class Cost-of-Service Study, Class Revenue Allocation, LGS Rate Design, Depreciation Expense	3/4/2019
ENTERGY ARKANSAS, LLC	Arkansas Electric Energy Consumers, Inc	18-037	Settlement	AR	Testimony in Support of Settlement	3/1/2019

Testimony Filed in Regulatory Proceedings
by Jeffry Pollock

UTILITY	ON BEHALF OF	DOCKET	TYPE	STATE / PROVINCE	SUBJECT	DATE
ENERGY+ INC.	Toyota Motor Manufacturing Canada	EB-2018-0028	Updated Evidence	ON	Class Cost-of-Service Study, Distribution and Standby Distribution Rate Design	2/15/2019
ENTERGY ARKANSAS, LLC	Arkansas Electric Energy Consumers, Inc	18-037	Surrebuttal	AR	Solar Energy Purchase Option Tariff	2/14/2019
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	48847	Direct	TX	Fuel Factor Formulas	1/11/2019
ENTERGY ARKANSAS, LLC	Arkansas Electric Energy Consumers, Inc	18-037	Direct	AR	Solar Energy Purchase Option Tariff	1/10/2019
CONSUMERS ENERGY COMPANY	Association of Businesses Advocating Tariff Equity	20165	Direct	MI	Integrated Resources Plan, Projected Rate Impact, Risk Assessment, Early Retirement of Coal Units, Financial Compensation Mechanism	10/15/2018
CONSUMERS ENERGY COMPANY	Association of Businesses Advocating Tariff Equity	20134	Rebuttal	MI	Class Cost-of-Service Study, Average Historical Profile, Distribution Cost Classification and Allocation, Rate Design	10/1/2018
ENERGY+ INC.	Toyota Motor Manufacturing Canada	EB-2018-0028	Initial Evidence	ON	Class Cost-of-Service Study, Distribution and Standby Distribution Rate Design	9/27/2018
CONSUMERS ENERGY COMPANY	Association of Businesses Advocating Tariff Equity	20134	Direct	MI	Investment Recovery Mechanism, Litigation surcharge, Class Cost-of-Service Study, Class Revenue Allocation, Rate Design	9/10/2018
KANSAS GAS AND ELECTRIC COMPANY	Occidental Chemical Corporation	18-KG&E-303-CON	Rebuttal	KS	Benefits of the Interruptible Load Provided in the Special Contract	8/29/2018
TEXAS-NEW MEXICO POWER COMPANY	Texas Industrial Energy Consumers	48401	Cross-Rebuttal	TX	4CP Moderation Adjustment	8/28/2018
ENTERGY TEXAS, INC	Texas Industrial Energy Consumers	48371	Cross-Rebuttal	TX	Class Cost-of-Service Study, Schedule FERC	8/16/2018
TEXAS-NEW MEXICO POWER COMPANY	Texas Industrial Energy Consumers	48401	Direct	TX	Tax Cuts and Jobs Act, Rider TCRF, 4CP Moderation Adjustment	8/13/2018
PECO ENERGY COMPANY	Philadelphia Area Industrial Energy Users Group	2018-3000164	Surrebuttal	PA	Post Test-Year Adjustment; Tax Cuts and Jobs Act, Class Cost-of-Service Study, Distribution System Improvement Charge	8/8/2018
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	48371	Direct	TX	Revenue Requirements, Tax Cuts and Jobs Act, Riders	8/1/2018
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	48371	Direct	TX	Class Cost-of-Service Study, Firm, Interruptible and Standby Rate Design	8/1/2018
PECO ENERGY COMPANY	Philadelphia Area Industrial Energy Users Group	2018-3000164	Rebuttal	PA	Class Cost-of-Service Study, Class Revenue Allocation	7/24/2018
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	48233	Cross-Rebuttal	TX	Allocation of TCJA reduction	7/19/2018
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	48233	Direct	TX	Allocation of TCJA reduction	7/5/2018

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PECO ENERGY COMPANY	Philadelphia Area Industrial Energy Users Group	2018-3000164	Direct	PA	Post Test-Year Adjustment; Tax Cuts and Jobs Act, Class Cost-of-Service Study, Class Revenue Allocation	6/26/2018
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	47527	Cross-Rebuttal	TX	Class Cost-of-Service Study, Revenue Allocation	5/22/2018
SOUTHWESTERN PUBLIC SERVICE COMPANY	Occidental Permian Ltd.	17-00255-UT	Rebuttal	NM	Class Cost-of-Service Study, Revenue Allocation	5/2/2018
ENTERGY ARKANSAS, INC.	Arkansas Electric Energy Consumers, Inc.	17-041	Stipulation	AR	Support of Stipulation	4/27/2018
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	47527	Direct	TX	Present Base Revenues Class Cost-of-Service Study, Class Revenue Allocation, Rate Design	4/25/2018
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	47527	Direct	TX	Tax Cuts and Jobs Act; SPP Transmission and Wheeling Costs; Depreciation Rate; LLPPAs, Imputed Capacity, Off-System Sales Margins	4/25/2018
SOUTHWESTERN PUBLIC SERVICE COMPANY	Occidental Permian Ltd.	17-00255-UT	Direct	NM	Class Cost-of-Service Study, Revenue Requirements, Revenue Allocation	4/13/2018
ENTERGY ARKANSAS, INC.	Arkansas Electric Energy Consumers, Inc.	17-041	Surrebuttal	AR	Certificate of Convenience and Necessity	4/6/2018
METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC COMPANY, PENNSYLVANIA POWER COMPANY AND WEST PENN POWER COMPANY	MEIUG, PICA and WPPII	2017-2637855 2017-2637857 2017-2637858 2017-2637866	Rebuttal	PA	Recovery of NITS Charges	3/22/2018
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	46936	2nd Supplemental Direct	TX	Support of Stipulation	3/2/2018
CONSUMERS ENERGY COMPANY	Association of Businesses Advocating Tariff Equity	18424	Direct	MI	Class Cost of Service	2/28/2018
ENTERGY ARKANSAS, INC.	Arkansas Electric Energy Consumers, Inc	17-041	Direct	AR	Certificate of Convenience and Necessity	2/23/2018
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	47553	Direct	TX	Off-System Sales Margins; Renewable Energy Credits	2/20/2018
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	47461	2nd Supplemental Direct	TX	Certificate of Convenience and Necessity	2/7/2018
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	47461	Supplemental Direct	TX	Certificate of Convenience and Necessity	1/4/2018
CENTRAL HUDSON GAS & ELECTRIC	Multiple Intervenors	17-E-0459/G-0460	Rebuttal	NY	Electric and Gas Embedded Class Cost of Service, Class Revenue Allocation, Gas Rate Design, Revenue Decoupling Mechanism	12/18/2017
SOUTHWESTERN PUBLIC SERVICE COMPANY	Occidental Permian Ltd.	17-00044-UT	Supplemental Direct	NM	Support of Unanimous Comprehensive Stipulation	12/11/2017

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SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	47461	Direct	TX	Certificate of Convenience and Necessity	12/4/2017
CENTRAL HUDSON GAS & ELECTRIC	Multiple Intervenors	17-E-0459/G-0460	Direct	NY	Electric and Gas Embedded Class Cost of Service, Class Revenue Allocation, Customer Charges, Revenue Decoupling Mechanism, Carbon Program and EAM	11/21/2017
SOUTHWESTERN PUBLIC SERVICE COMPANY	Occidental Permian Ltd	17-00044-UT	Direct	NM	Certificate of Convenience and Necessity	10/24/2017
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	46936	Cross-Rebuttal	TX	Certificate of Convenience and Necessity	10/23/2017
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	46936	Supplemental Direct	TX	Certificate of Convenience and Necessity	10/6/2017
KENTUCKY POWER COMPANY	Kentucky League of Cities	2017-00179	Direct	KY	Class Cost-of-Service Study; Class Revenue Allocation	10/3/2017
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	46936	Direct	TX	Certificate of Convenience and Necessity	10/2/2017
NIAGARA MOHAWK POWER CORP.	Multiple Intervenors	17-E-0238 / 17-G-0239	Rebuttal	NY	Electric/Gas Embedded Class Cost of Service, Class Revenue Allocation, Electric/Gas Rate Design	9/15/2017
CONSUMERS ENERGY COMPANY	Association of Businesses Advocating Tariff Equity	18322	Rebuttal	MI	Class Cost-of-Service Study, Rate Design	9/7/2017
PENNSYLVANIA-AMERICAN WATER COMPANY	Pennsylvania-American Water Large Users Group	R-2017-2595853	Rebuttal	PA	Rate Design	8/31/2017
NIAGARA MOHAWK POWER CORP.	Multiple Intervenors	17-E-0238 / 17-G-0239	Direct	NY	Electric/Gas Embedded Class Cost of Service, Class Revenue Allocation, Electric/Gas Rate Design, Electric/Gas Rate Modifiers, AMI Cost Allocation	8/25/2017
CONSUMERS ENERGY COMPANY	Association of Businesses Advocating Tariff Equity	18322	Direct	MI	Revenue Requirement, Class Cost-of-Service Study, Rate Design	8/10/2017
FLORIDA POWER & LIGHT COMPANY, DUKE ENERGY FLORIDA, LLC, AND TAMPA ELECTRIC COMPANY	Florida Industrial Power Users Group	170057	Direct	FL	Fuel Hedging Practices	8/10/2017
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	46449	Cross-Rebuttal	TX	Class Revenue Allocation and Rate Design	5/19/2017
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	46449	Direct	TX	Revenue Requirement, Class Cost-of-Service Study, Class Revenue Allocation and Rate Design	4/25/2017
KENTUCKY UTILITIES COMPANY	Kentucky League of Cities	2016-00370	Supplemental Direct	KY	Class Cost-of-Service Study, Class Revenue Allocation	4/14/2017
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	46416	Direct	TX	Certificate of Convenience and Necessity - Montgomery County Power Station	3/31/2017

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SHARYLAND UTILITIES, L.P.	Texas Industrial Energy Consumers	45414	Cross-Rebuttal	TX	Cost Allocation Issues, Class Revenue Allocation	3/16/2017
ENTERGY LOUISIANA, LLC	Occidental Chemical Corporation	U-34283	Direct*	LA	Approval to Construct Lake Charles Power Station	3/13/2017
LOUISVILLE GAS AND ELECTRIC COMPANY	Louisville/Jefferson Metro Government	2016-00371	Direct	KY	Revenue Requirement Issues, Class Cost-of-Service Study Electric/Gas, Class Revenue Allocation Electric/Gas	3/3/2017
KENTUCKY UTILITIES COMPANY	Kentucky League of Cities	2016-00370	Direct	KY	Revenue Requirement Issues, Class Cost-of-Service Study, Class Revenue Allocation	3/3/2017
SHARYLAND UTILITIES, L.P.	Texas Industrial Energy Consumers	45414	Direct	TX	Class Cost-of-Service Study, Class Revenue Allocation, Rate Design, TCRF Allocation Factors, McAllen Division Deferrals	2/28/2017
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	46025	Direct	TX	Long-Term Purchased Power Agreements	12/12/2016
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	15-826	Surrebuttal	MN	Settlement, Cost-of-Service Study, Class Revenue Allocation, Interruptible Rates, Renew-A-Source	10/18/2016
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	15-826	Rebutal	MN	Class Cost-of-Service Study, Class Revenue Allocation	9/23/2016
VICTORY ELECTRIC COOPERATION ASSOCIATION, INC.	Westerm Kansas Industrial Electric Consumers	16-VICE-494-TAR	Surrebuttal	KS	Formula-Based Rate Plan	9/22/2016
NATIONAL FUEL GAS DISTRIBUTION CORPORATION	Multiple Intervenors	16-G-0257	Rebuttal	NY	Embedded Class Cost of Service, Class Revenue Allocation, Rate Design	9/16/2016
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	45524	Cross-Rebuttal	TX	Class Cost-of-Service Study,	9/7/2016
METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC COMPANY AND WEST PENN POWER	MEIUG, PICA and WPPII	2016-2537349 2016-2537352 2016-2537359	Surrebuttal	PA	Post-Test Year Sales Adjustment, Class Cost-of-Service Study, Class Revenue Allocation, Rate Design	8/31/2016
VICTORY ELECTRIC COOPERATION ASSOCIATION, INC.	Westerm Kansas Industrial Electric Consumers	16-VICE-494-TAR	Direct	KS	Formula-Based Rate Plan	8/30/2016
WESTERN COOPERATIVE ELECTRIC ASSOCIATION, INC.	Westerm Kansas Industrial Electric Consumers	16-WSTE-496-TAR	Direct	KS	Formula-Based Rate Plan and Debt Service Payments	8/30/2016
NATIONAL FUEL GAS DISTRIBUTION CORPORATION	Multiple Intervenors	16-G-0257	Direct	NY	Embedded Class Cost of Service; Class Revenue Allocation, Rate Design	8/26/2016
METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC COMPANY AND WEST PENN POWER	MEIUG, PICA and WPPII	2016-2537349 2016-2537352 2016-2537359	Rebuttal	PA	Class Cost-of-Service, Class Revenue Allocation	8/17/2016

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SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	45524	Direct	TX	Revenue Requirement, Class Cost-of-Service, Revenue Allocation; Rate Design	8/16/2016
METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC COMPANY AND WEST PENN POWER	MEIUG, PICA and WPPII	2016-2537349 2016-2537352 2016-2537359	Direct	PA	Post-Test Year Sales Adjustment, Class Cost-of-Service Study, Class Revenue Allocation, Rate Design	7/22/2016
FLORIDA POWER & LIGHT COMPANY	Florida Industrial Power Users Group	160021	Direct	FL	Multi-Year Rate Plan, Construction Work in Progress, Cost of Capital, Class Revenue Allocation, Class Cost-of-Service Study; Rate Design	7/7/2016
CENTERPOINT ENERGY ARKANSAS GAS	Arkansas Gas Consumers, Inc.	15-098-U	Supplemental	AR	Support for Settlement Stipulation	7/1/2016
MIDAMERICAN ENERGY COMPANY	Tech Customers	RPU-2016-0001	Direct	IA	Application of Advanced Ratemaking Principles to Wind XI	6/21/2016
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	15-826	Direct	MN	Class Cost-of-Service Study, Class Revenue Allocation, Multi-Year Rate Plan, Rate Design	6/14/2016
CENTERPOINT ENERGY ARKANSAS GAS	Arkansas Gas Consumers, Inc	15-098-U	Surrebuttal	AR	Incentive Compensation, Class Cost-of-Service Study, Class Revenue Allocation, LCS-1 Rate Design	6/7/2016
SOUTHWESTERN PUBLIC SERVICE COMPANY	Occidental Permian Ltd.	15-00296-UT	Direct	NM	Support of Stipulation	5/13/2016
CHEYENNE LIGHT, FUEL AND POWER COMPANY	Dyno Nobel, Inc. and HollyFrontier Cheyenne Refining LLC	20003-146-ET-15	Cross	WY	Large Power Contract Service Tariff	4/15/2016
CENTERPOINT ENERGY ARKANSAS GAS	Arkansas Gas Consumers, Inc.	15-098-U	Direct	AR	Incentive Compensation, Class Cost-of-Service Study, Class Revenue Allocation, Act 725, Formula Rate Plan	4/14/2016
CHEYENNE LIGHT, FUEL AND POWER COMPANY	Dyno Nobel, Inc. and HollyFrontier Cheyenne Refining LLC	20003-146-ET-15	Direct	WY	Large Power Contract Service Tariff	3/18/2016
ENTERGY LOUISIANA, LLC, ENTERGY GULF STATES LOUISIANA, L.L.C , AND ENTERGY LOUISIANA POWER, LLC	Occidental Chemical Corporation	U-33770	Cross-Answering	LA	Approval to Construct St. Charles Power Station	2/26/2016
NORTHERN INDIANA PUBLIC SERVICE COMPANY	NLMK-Indiana	44688	Cross-Answering	IN	Cost-of-Service Study, Rider 775	2/16/2016
ENTERGY LOUISIANA, LLC, ENTERGY GULF STATES LOUISIANA, L.L.C., AND ENTERGY LOUISIANA POWER, LLC	Occidental Chemical Corporation	U-33770	Direct	LA	Approval to Construct St. Charles Power Station	1/21/2016
EL PASO ELECTRIC COMPANY	Freeport-McMoRan Copper & Gold, Inc.	44941	Cross-Rebuttal	TX	Class Cost-of-Service Study, Class Revenue Allocation, Rate Design	1/15/2016
ENTERGY ARKANSAS, INC.	Arkansas Electric Energy Consumers, Inc.	15-015	Supplemental	AR	Support for Settlement Stipulation	12/31/2015
EL PASO ELECTRIC COMPANY	Freeport-McMoRan Copper & Gold, Inc.	44941	Direct	TX	Class Cost-of-Service Study, Class Revenue Allocation, Rate Design	12/11/2015

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ENTERGY ARKANSAS, INC.	Arkansas Electric Energy Consumers, Inc	15-015	Surrebuttal	AR	Post-Test-Year Additions, Class Cost-of-Service Study, Class Revenue Allocation, Rate Design, Riders, Formula Rate Plan	11/24/2015
MID-KANSAS ELECTRIC COMPANY, LLC, PRAIRIE LAND ELECTRIC COOPERATIVE, INC., SOUTHERN PIONEER ELECTRIC COMPANY, THE VICTORY ELECTRIC COOPERATIVE ASSOCIATION, INC , AND WESTERN COOPERATIVE ELECTRIC ASSOCIATION, INC.	Western Kansas Industrial Electric Consumers	16-MKEE-023	Direct	KS	Formula Rate Plan for Distribution Utility	11/17/2015
ENTERGY TEXAS, INC	Texas Industrial Energy Consumers	45084	Direct	TX	Transmission Cost Recovery Factor Revenue Increase.	11/17/2015
GEORGIA POWER COMPANY	Georgia Industrial Group and Georgia Assocation of Manufacturers	39638	Direct	GA	Natural Gas Price Assumptions, IFR Mechanism, Seasonal FCR-24 Rates, Imputed Capacity	11/4/2015
NEW YORK STATE ELECTRIC & GAS CORPORATION and ROCHESTER GAS AND ELECTRIC CORPORATION	Multiple Intervenors	15-E-0283 15-G-0284 15-E-0285 15-G-0286	Rebuttal	NY	Electric and Gas Embedded Class Cost-of-Service Studies, Class Revenue Allocation	10/13/2015
ENTERGY ARKANSAS, INC.	Arkansas Electric Energy Consumers, Inc.	15-015	Direct	AR	Post-Test-Year Additions, Class Cost-of-Service Study, Class Revenue Allocation, Rate Design, Riders, Formula Rate Plan	9/29/2015
NEW YORK STATE ELECTRIC & GAS CORPORATION and ROCHESTER GAS AND ELECTRIC CORPORATION	Multiple Intervenors	15-E-0283 15-G-0284 15-E-0285 15-G-0286	Direct	NY	Electric and Gas Embedded Class Cost-of-Service Studies, Class Revenue Allocation, Electric Rate Design	9/15/2015
SHARYLAND UTILITIES	Texas Industrial Energy Consumers	44620	Cross-Rebuttal	TX	Transmission Cost Recovery Factor Class Allocation Factors	9/8/2015
ENTERGY ARKANSAS, INC.	Arkansas Electric Energy Consumers, Inc.	14-118	Surrebuttal	AR	Proposed Acquisition of Union Power Station Power Block 2 and Cost Recovery	8/21/2015
SHARYLAND UTILITIES	Texas Industrial Energy Consumers	44620	Direct	TX	Transmission Cost Recovery Factor Class Allocation Factors	8/7/2015
PECO ENERGY COMPANY	Philadelphia Area Industrial Energy Users Group	2015-2468981	Surrebuttal	PA	Class Cost-of-Service, Capacity Reservation Rider	8/4/2015
WESTAR ENERGY INC. and KANSAS GAS & ELECTRIC CO.	Occidental Chemical Corporation	15-WSEE-115-RTS	Cross-Answering	KS	Class Cost-of-Service Study, Revenue Allocation	7/22/2015
PECO ENERGY COMPANY	Philadelphia Area Industrial Energy Users Group	2015-2468981	Rebuttal	PA	Class Cost-of-Service, Class Revenue Allocation, Rate Design, Capacity Reservation Rider, Revenue Decoupling	7/21/2015
SOUTHWEST ERN PUBLIC SERVICE COMPANY	Occidental Penman Ltd	15-00083	Direct	NM	Long-Term Purchased Power Agreements	7/10/2015

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ENTERGY ARKANSAS, INC.	Arkansas Electnc Energy Consumers, Inc.	15-014	Surrebuttal	AR	Solar Power Purchase Agreement	7/10/2015
WESTAR ENERGY INC. and KANSAS GAS & ELECTRIC CO.	Occidental Chemical Corporation	15-WSEE-115-RTS	Direct	KS	Class Cost-of-Service and Electnc Distrbution Grid Resiliency Program	7/9/2015
ENTERGY TEXAS, INC.	Texas Industnal Energy Consumers	43958	Supplemental Direct	TX	Certificate of Need for Union Power Station Power Block 1	7/7/2015
ENTERGY ARKANSAS, INC.	Arkansas Electnc Energy Consumers, Inc	14-118	Direct	AR	Proposed Acquisition of Union Power Station Power Block 2 and Cost Recovery	7/2/2015
PECO ENERGY COMPANY	Philadelphia Area Industnal Energy Users Group	2015-2468981	Direct	PA	Class Cost-of-Service, Class Revenue Allocation, Rate Design, Capacity Reservation Rider	6/23/2015
ENTERGY ARKANSAS, INC.	Arkansas Electnc Energy Consumers, Inc	15-014-U	Direct	AR	Solar Power Purchase Agreement	6/19/2015
FLORIDA POWER & LIGHT COMPANY	Florida Industnal Power Users Group	150075	Direct	FL	Cedar Bay Power Purchase Agreement	6/8/2015
SOUTHWEST ERN PUBLIC SERVICE COMPANY	Texas Industnal Energy Consumers	43695	Cross-Rebuttal	TX	Class Cost of Service Study, Class Revenue Allocation	6/8/2015
FLORIDA POWER AND LIGHT COMPANY, DUKE ENERGY FLORIDA, GULF POWER COMPANY, TAMPA ELECTRIC COMPANY	Florida Industnal Power Users Group	140226	Surrebuttal	FL	Opt-Out Provision	5/20/2015
SOUTHWEST ERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	43695	Direct	TX	Post-Test Year Adjustments, Weather Normalization	5/15/2015
SOUTHWEST ERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	43695	Direct	TX	Class Cost of Service Study; Class Revenue Allocation	5/15/2015
ENTERGY TEXAS, INC	Texas Industnal Energy Consumers	43958	Direct	TX	Certificate of Need for Union Power Station Power Block 1	4/29/2015
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industnal Energy Consumers	42370	Cross-Rebuttal	TX	Allocation and recovery of Municipal Rate Case Expenses and the proposed Rate-Case-Expense Surcharge Tariff.	1/27/2015
WEST PENN POWER COMPANY	West Penn Power Industnal Intervenors	2014-2428742	Surrebuttal	PA	Class Cost-of-Service Study, Class Revenue Allocation, Large Commercial and Industrial Rate Design, Storm Damage Charge Rider	1/6/2015
PENNSYLVANIA ELECTRIC COMPANY	Penelec Industnal Customer Alliance	2014-2428743	Surrebuttal	PA	Class Cost-of-Service Study, Class Revenue Allocation, Large Commercial and Industrial Rate Design, Storm Damage Charge Rider	1/6/2015
METROPOLITAN EDISON COMPANY	Med-Ed Industnal Users Group	2014-2428745	Surrebuttal	PA	Class Cost-of-Service Study, Class Revenue Allocation, Large Commercial and Industrial Rate Design; Storm Damage Charge Rider	1/6/2015

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WEST PENN POWER COMPANY	West Penn Power Industrial Intervenors	2014-2428742	Rebuttal	PA	Class Cost-of-Service Study, Class Revenue Allocation, Large Commercial and Industrial Rate Design, Storm Damage Charge Rider	12/18/2014
PENNSYLVANIA ELECTRIC COMPANY	Penelec Industrial Customer Alliance	2014-2428743	Rebuttal	PA	Class Cost-of-Service Study; Class Revenue Allocation, Large Commercial and Industrial Rate Design, Storm Damage Charge Rider	12/18/2014
METROPOLITAN EDISON COMPANY	Med-Ed Industrial Users Group	2014-2428745	Rebuttal	PA	Class Cost-of-Service Study, Class Revenue Allocation, Large Commercial and Industrial Rate Design, Storm Damage Charge Rider	12/18/2014
PUBLIC SERVICE COMPANY OF COLORADO	Colorado Healthcare Electric Coordinating Council	14AL-0660E	Cross	CO	Clean Air Clean Jobs Act Rider, Transmission Cost Adjustment	12/17/2014
WEST PENN POWER COMPANY	West Penn Power Industrial Intervenors	2014-2428742	Direct	PA	Class Cost-of-Service Study, Class Revenue Allocation, Rate Design, Partial Services Rider, Storm Damage Rider	11/24/2014
PENNSYLVANIA ELECTRIC COMPANY	Penelec Industrial Customer Alliance	2014-2428743	Direct	PA	Class Cost-of-Service Study, Class Revenue Allocation, Rate Design, Partial Services Rider, Storm Damage Rider	11/24/2014
METROPOLITAN EDISON COMPANY	Med-Ed Industrial Users Group	2014-2428745	Direct	PA	Class Cost-of-Service Study, Class Revenue Allocation, Rate Design, Partial Services Rider, Storm Damage Rider	11/24/2014
CENTRAL HUDSON GAS & ELECTRIC	Multiple Intervenors	14-E-0318 / 14-G-0319	Direct	NY	Class Cost-of-Service Study, Class Revenue Allocation (Electric)	11/21/2014
PUBLIC SERVICE COMPANY OF COLORADO	Colorado Healthcare Electric Coordinating Council	14AL-0660E	Direct	CO	Clean Air Clean Jobs Act Rider, Electric Commodity Adjustment Incentive Mechanism	11/7/2014
FLORIDA POWER AND LIGHT COMPANY	Florida Industrial Power Users Group	140001-E	Direct	FL	Cost-Effectiveness and Policy Issues Surrounding the Investment in Working Gas Production Facilities	9/22/2014
ROCKY MOUNTAIN POWER	Wyoming Industrial Energy Consumers	20000-446-ER14	Surrebuttal	WY	Class Cost-of-Service, Rule 12 (Line Extension Policy)	9/19/2014
INDIANA MICHIGAN POWER COMPANY	I&M Industrial Group	44511	Direct	IN	Clean Energy Solar Pilot Project, Solar Power Rider and Green Power Rider	9/17/2014
ROCKY MOUNTAIN POWER	Wyoming Industrial Energy Consumers	20000-446-ER14	Cross	WY	Class Cost-of-Service Study; Rule 12 Line Extension	9/5/2014
VARIOUS UTILITIES	Florida Industrial Power Users Group	140002-EI	Direct	FL	Energy Efficiency Cost Recovery Opt-Out Provision	9/5/2014

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NORTHERN STATES POWER COMPANY	Xcel Large Industrials	E-002/GR-13-868	Surrebuttal	MN	Nuclear Depreciation Expense, Monticello EPU/LCM Project, Class Cost-of-Service Study, Class Revenue Allocation, Fuel Clause Rider Reform, Rate Design	8/4/2014
ROCKY MOUNTAIN POWER	Wyoming Industrial Energy Consumers	20000-446-ER14	Direct	WY	Class Cost-of-Service Study, Rule 12 Line Extension	7/25/2014
DUKE ENERGY FLORIDA	NRG Florida, LP	140111 and 140110	Direct	FL	Cost-Effectiveness of Proposed Self Build Generating Projects	7/14/2014
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	E-002/GR-13-868	Rebuttal	MN	Class Cost-of-Service Study, Class Revenue Allocation	7/7/2014
PPL ELECTRIC UTILITIES CORPORATION	PP&L Industrial Customer Alliance	2013-2398440	Rebuttal	PA	Energy Efficiency Cost Recovery	7/1/2014
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	E-002/GR-13-868	Direct	MN	Revenue Requirements, Fuel Clause Rider, Class Cost-of-Service Study, Rate Design and Revenue Allocation	6/5/2014
PPL ELECTRIC UTILITIES CORPORATION	PP&L Industrial Customer Alliance	2013-2398440	Direct	PA	Energy Efficiency Cost Recovery	5/23/2014
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	42042	Direct	TX	Transmission Cost Recovery Factor	4/24/2014
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	41791	Cross	TX	Class Cost-of-Service Study and Rate Design	1/31/2014
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	41791	Direct	TX	Revenue Requirements, Fuel Reconciliation, Cost Allocation Issues, Rate Design Issues	1/10/2014
DUQUESNE LIGHT COMPANY	Duquesne Industrial Intervenors	R-2013-2372129	Supplemental Surrebuttal	PA	Class Cost-of-Sevice Study	12/13/2013
DUQUESNE LIGHT COMPANY	Duquesne Industrial Intervenors	R-2013-2372129	Surrebuttal	PA	Class Cost-of-Service Study, Cash Working Capital, Miscellaneous General Expense, Uncollectable Expense, Class Revenue Allocation	12/9/2013
DUQUESNE LIGHT COMPANY	Duquesne Industrial Intervenors	R-2013-2372129	Rebuttal	PA	Rate L Transmission Service, Class Revenue Allocation	11/26/2013
ENTERGY TEXAS, INC. ITC HOLDINGS CORP	Texas Industrial Energy Consumers	41850	Direct	TX	Rate Mitigation Plan, Conditions re Transfer of Control of Ownership	11/6/2013
SHARYLAND UTILITIES	Texas Inustrial Energy Consumers and Atlas Pipeline Mid-Continent WestTex, LLC	41474	Cross-Rebuttal	TX	Customer Class Definitions, Class Revenue Allocation, Allocation of TTC costs	11/4/2013
MIDAMERICAN ENERGY COMPANY	Deere & Company	RPU-2013-0004	Surrebuttal	IA	Class Cost-of-Service Study, Class Revenue Allocation, Depreciation Surplus	11/4/2013
DUQUESNE LIGHT COMPANY	Duquesne Industrial Intervenors	R-2013-2372129	Direct	PA	Class Cost-of-Service, Class Revenue Allocations	11/1/2013

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PUBLIC SERVICE ENERGY AND GAS	New Jersey Large Energy Users Coalition	EO13020155 and GO13020156	Direct	NJ	Energy Strong	10/28/2013
GEORGIA POWER COMPANY	Georgia Industrial Group and Georgia Association of Manufacturers	36989	Direct	GA	Depreciation Expense, Alternate Rate Plan, Return on Equity, Class Cost-of-Service Study, Class Revenue Allocation, Rate Design	10/18/2013
SHARYLAND UTILITIES	Texas Industrial Energy Consumers and Atlas Pipeline Mid-Continent WestTex, LLC	41474	Direct	TX	Regulatory Asset Cost Recovery, Class Cost-of-Service Study, Class Revenue Allocation, Rate Design	10/18/2013
MIDAMERICAN ENERGY COMPANY	Deere & Company	RPU-2013-0004	Rebutal	IA	Class Cost-of-Service Study	10/1/2013
FLORIDA POWER AND LIGHT COMPANY	Florida Industrial Power Users Group	130007	Direct	FL	Environmental Cost Recovery Clause	9/13/2013
MIDAMERICAN ENERGY COMPANY	Deere & Company	RPU-2013-0004	Direct	IA	Class Cost-of-Service Study, Class Revenue Allocation, Depreciation, Cost Recovery Clauses, Revenue Sharing, Revenue True-up	9/10/2013
SOUTHWESTERN PUBLIC SERVICE COMPANY	Occidental Permian Ltd.	12-00350-UT	Rebuttal	NM	RPS Cost Rider	9/9/2013
WESTAR ENERGY INC. and KANSAS GAS & ELECTRIC CO.	Occidental Chemical Corporation	13-WSEE-629-RTS	Cross-Answering	KS	Cost Allocation Methodology	9/5/2013
SOUTHWESTERN PUBLIC SERVICE COMPANY	Occidental Permian Ltd.	12-00350-UT	Direct	NM	Class Cost-of-Service Study	8/22/2013
WESTAR ENERGY INC. and KANSAS GAS & ELECTRIC CO.	Occidental Chemical Corporation	13-WSEE-629-RTS	Direct	KS	Class Revenue Allocation.	8/21/2013
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	41437	Direct	TX	Avoided Cost, Standby Rate Design	8/14/2013
MID-KANSAS ELECTRIC COMPANY, LLC	Western Kansas Industrial Electric Consumers	13-MKEE-699	Direct	KS	Class Revenue Allocation	8/12/2013
MID-KANSAS ELECTRIC COMPANY, LLC	Western Kansas Industrial Electric Consumers	13-MKEE-447	Supplemental	KS	Testimony in Support of Settlement	8/9/2013
MID-KANSAS ELECTRIC COMPANY, LLC	Western Kansas Industrial Electric Consumers	13-MKEE-447	Supplemental	KS	Modification Agreement	7/24/2013
TAMPA ELECTRIC COMPANY	Florida Industrial Power Users Group	130040	Direct	FL	GSD-IS Consolidation, GSD and IS Rate Design, Class Cost-of-Service Study, Planned Outage Expense, Storm Damage Expense	7/15/2013
MID-KANSAS ELECTRIC COMPANY, LLC	Western Kansas Industrial Electric Consumers	13-MKEE-452	Supplemental	KS	Testimony in Support of Nonunanimous Settlement	6/28/2013
JERSEY CENTRAL POWER & LIGHT COMPANY	Gerdau Ameristeel Sayreville, Inc.	ER12111052	Direct	NJ	Cost of Service Study for GT-230 KV Customers; AREP Rider	6/14/2013
MID-KANSAS ELECTRIC COMPANY, LLC	Western Kansas Industrial Electric Consumers	13-MKEE-447	Direct	KS	Wholesale Requirements Agreement, Process for Exemption From Regulation, Conditions Required for Public Interest Finding on CCN spin-down	5/14/2013

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UTILITY	ON BEHALF OF	DOCKET	TYPE	STATE / PROVINCE	SUBJECT	DATE
MID-KANSAS ELECTRIC COMPANY, LLC	Western Kansas Industrial Electric Consumers	13-MKEE-452	Cross	KS	Formula Rate Plan for Distribution Utility	5/10/2013
MID-KANSAS ELECTRIC COMPANY, LLC	Western Kansas Industrial Electric Consumers	13-MKEE-452	Direct	KS	Formula Rate Plan for Distribution Utility	5/3/2013
ENTERGY TEXAS, INC. ITC HOLDINGS CORP.	Texas Industrial Energy Consumers	41223	Direct	TX	Public Interest of Proposed Divestiture of ETI's Transmission Business to an ITC Holdings Subsidiary	4/30/2013
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	12-961	Surrebuttal	MN	Depreciation, Used and Useful; Cost Allocation, Revenue Allocation	4/12/2013
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	12-961	Rebuttal	MN	Class Revenue Allocation.	3/25/2013
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	12-961	Direct	MN	Depreciation, Used and Useful, Property Tax, Cost Allocation; Revenue Allocation, Competitive Rate & Property Tax Riders	2/28/2013
ENTERGY TEXAS, INC	Texas Industrial Energy Consumers	38951	Second Supplemental Rebuttal	TX	Competitive Generation Service Tariff	2/1/2013
ENTERGY TEXAS, INC	Texas Industrial Energy Consumers	38951	Second Supplemental Direct	TX	Competitive Generation Service Tariff	1/11/2013
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	40443	Cross Rebuttal	TX	Cost Allocation and Rate Design	1/10/2013
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	40443	Direct	TX	Application of the Turk Plant Cost-Cap; Revenue Requirements, Class Cost-of-Service Study, Class Revenue Allocation, Industrial Rate Design	12/10/2012
FLORIDA POWER AND LIGHT COMPANY	Florida Industrial Power Users Group	120015	Corrected Supplemental Rebuttal	FL	Support for Non-Unanimous Settlement	11/13/2012
FLORIDA POWER AND LIGHT COMPANY	Florida Industrial Power Users Group	120015	Corrected Supplemental Direct	FL	Support for Non-Unanimous Settlement	11/13/2012
NIAGARA MOHAWK POWER CORP.	Multiple Intervenors	12-E-0201/12-G-0202	Rebuttal	NY	Electric and Gas Class Cost-of-Service Studies.	9/25/2012
NIAGARA MOHAWK POWER CORP.	Multiple Intervenors	12-E-0201/12-G-0202	Direct	NY	Electric and Gas Class Cost-of-Service Study, Revenue Allocation; Rate Design; Historic Demand	8/31/2012
MID-KANSAS ELECTRIC COMPANY, LLC	Western Kansas Industrial Electric Consumers	12-MKEE-650-TAR	Direct	KS	Transmission Formula Rate Plan	7/31/2012
WESTAR ENERGY INC. and KANSAS GAS & ELECTRIC CO.	Occidental Chemical Corporation	12-WSEE-651-TAR	Direct	KS	TDC Tariff	7/30/2012
FLORIDA POWER AND LIGHT COMPANY	Florida Industrial Power Users Group	120015	Direct	FL	Class Cost-of-Service Study, Revenue Allocation, and Rate Design	7/2/2012
LONE STAR TRANSMISSION, LLC	Texas Industrial Energy Consumers	40020	Direct	TX	Revenue Requirement, Rider AVT	6/21/2012
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	39896	Cross	TX	Class Cost-of-Service Study, Revenue Allocation, and Rate Design	4/13/2012

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ENTERGY TEXAS, INC	Texas Industrial Energy Consumers	39896	Direct	TX	Revenue Requirements, Class Cost-of-Service Study, Revenue Allocation, and Rate Design	3/27/2012
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	38951	Supplemental Rebuttal	TX	Competitive Generation Service Issues	2/24/2012
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	38951	Supplemental Direct	TX	Competitive Generation Service Issues	2/10/2012
AEP TEXAS CENTRAL COMPANY	Texas Industrial Energy Consumers	39722	Direct	TX	Carrying Charge Rate Applicable to the Additional True-Up Balance and Tax Balances	11/4/2011
GULF POWER COMPANY	Florida Industrial Power Users Group	110138-EI	Direct	FL	Cost Allocation and Storm Reserve	10/14/2011
CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC	Texas Industrial Energy Consumers	39504	Direct	TX	Carrying Charge Rate Applicable to the Additional True-Up Balance and Taxes	9/12/2011
AEP TEXAS NORTH COMPANY	Texas Industrial Energy Consumers	39361	Cross-Rebuttal	TX	Energy Efficiency Cost Recovery Factor	8/10/2011
AEP TEXAS CENTRAL COMPANY	Texas Industrial Energy Consumers	39360	Cross-Rebuttal	TX	Energy Efficiency Cost Recovery Factor	8/10/2011
ONCOR ELECTRIC DELIVERY COMPANY, LLC	Texas Industrial Energy Consumers	39375	Direct	TX	Energy Efficiency Cost Recovery Factor	8/2/2011
ALABAMA POWER COMPANY	Alabama Industrial Energy Consumers	31653	Direct	AL	Renewable Purchased Power Agreement	7/28/2011
AEP TEXAS NORTH COMPANY	Texas Industrial Energy Consumers	39361	Direct	TX	Energy Efficiency Cost Recovery Factor	7/26/2011
AEP TEXAS CENTRAL COMPANY	Texas Industrial Energy Consumers	36360	Direct	TX	Energy Efficiency Cost Recovery Factor	7/20/2011
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	39366	Direct	TX	Energy Efficiency Cost Recovery Factor	7/19/2011
CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC	Texas Industrial Energy Consumers	39363	Direct	TX	Energy Efficiency Cost Recovery Factor	7/15/2011
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	E002/GR-10-971	Surrebuttal	MN	Depreciation, Non-Asset Margin Sharing, Step-In Increase, Class Cost-of-Service Study; Class Revenue Allocation, Rate Design	5/26/2011
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	E002/GR-10-971	Rebuttal	MN	Classification of Wind Investment	5/4/2011
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	E002/GR-10-971	Direct	MN	Surplus Depreciation Reserve, Incentive Compensation, Non-Asset Trading Margin Sharing, Cost Allocation, Class Revenue Allocation, Rate Design	4/5/2011
ROCKY MOUNTAIN POWER	Wyoming Industrial Energy Consumers	20000-381-EA-10	Direct	WY	2010 Protocols	2/11/2011

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UTILITY	ON BEHALF OF	DOCKET	TYPE	STATE / PROVINCE	SUBJECT	DATE
TEXAS-NEW MEXICO POWER COMPANY	Texas Industrial Energy Consumers	38480	Direct	TX	Cost Allocation, TCRF	11/8/2010
GEORGIA POWER COMPANY	Georgia Industrial Group/Georgia Traditional Manufacturers Group	31958	Direct	GA	Alternate Rate Plan, Return on Equity, Riders, Cost-of-Service Study, Revenue Allocation, Economic Development	10/22/2010
CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC	Texas Industrial Energy Consumers	38339	Cross-Rebuttal	TX	Cost Allocation, Class Revenue Allocation	9/24/2010
CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC	Texas Industrial Energy Consumers	38339	Direct	TX	Pension Expense, Surplus Depreciation Reserve, Cost Allocation, Rate Design, Riders	9/10/2010
NIAGARA MOHAWK POWER CORP.	Multiple Intervenors	10-E-0050	Rebuttal	NY	Multi-Year Rate Plan, Cost Allocation, Revenue Allocation, Reconciliation Mechanisms, Rate Design	8/6/2010
NIAGARA MOHAWK POWER CORP.	Multiple Intervenors	10-E-0050	Direct	NY	Multi-Year Rate Plan, Cost Allocation, Revenue Allocation, Reconciliation Mechanisms, Rate Design	7/14/2010
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	37744	Cross Rebuttal	TX	Cost Allocation, Revenue Allocation, CGS Rate Design, Interruptible Service	6/30/2010
ENTERGY TEXAS, INC	Texas Industrial Energy Consumers	37744	Direct	TX	Class Cost of Service Study, Revenue Allocation, Rate Design, Competitive Generation Services, Line Extension Policy	6/9/2010
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	37482	Cross Rebuttal	TX	Allocation of Purchased Power Capacity Costs	2/3/2010
GEORGIA POWER COMPANY	Georgia Industrial Group/Georgia Traditional Manufacturers Group	28945	Direct	GA	Fuel Cost Recovery	1/29/2010
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	37482	Direct	TX	Purchased Power Capacity Cost Factor	1/22/2010
VIRGINIA ELECTRIC AND POWER COMPANY	MeadWestvaco Corporation	PUE-2009-00081	Direct	VA	Allocation of DSM Costs	1/13/2010
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	37580	Direct	TX	Fuel refund	12/4/2009
VIRGINIA ELECTRIC AND POWER COMPANY	MeadWestvaco Corporation	PUE-2009-00019	Direct	VA	Standby rate design, dynamic pricing	11/9/2009
VIRGINIA ELECTRIC AND POWER COMPANY	MWV	PUE-2009-00019	Direct	VA	Base Rate Case	11/9/2009
SOUTHWESTERN PUBLIC SERVICE COMPANY	Texas Industrial Energy Consumers	37135	Direct	TX	Transmission cost recovery factor	10/22/2009
MID-KANSAS ELECTRIC COMPANY, LLC	Western Kansas Industrial Electric Consumers	09-MKEE-969-RTS	Direct	KS	Revenue requirements, TIER, rate design	10/19/2009
VARIOUS UTILITIES	Florida Industrial Power Users Group	090002-EG	Direct	FL	Interruptible Credits	10/2/2009
ONCOR ELECTRIC DELIVERY COMPANY	Texas Industrial Energy Consumers	36958	Cross Rebuttal	TX	2010 Energy efficiency cost recovery factor	8/18/2009

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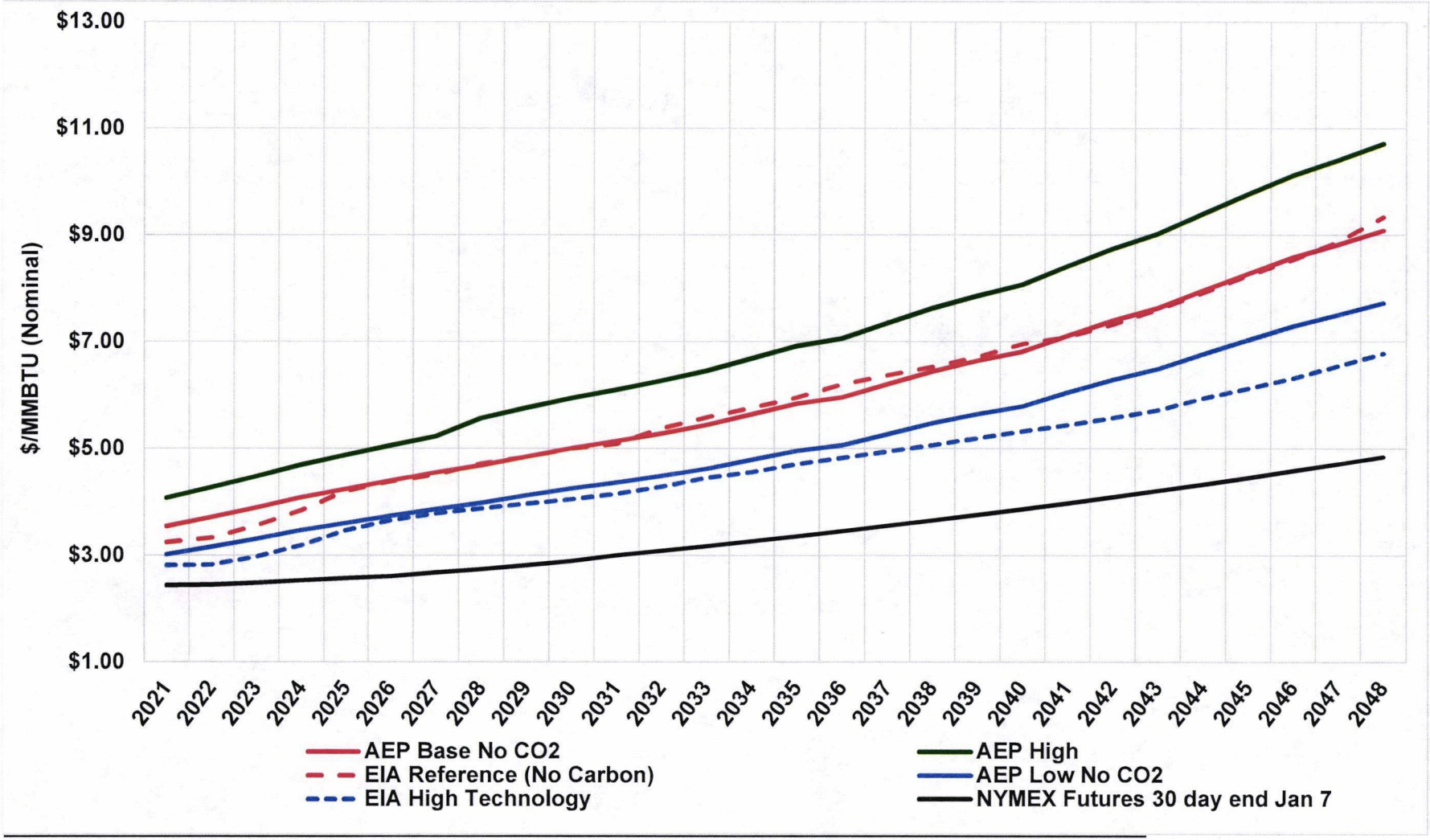
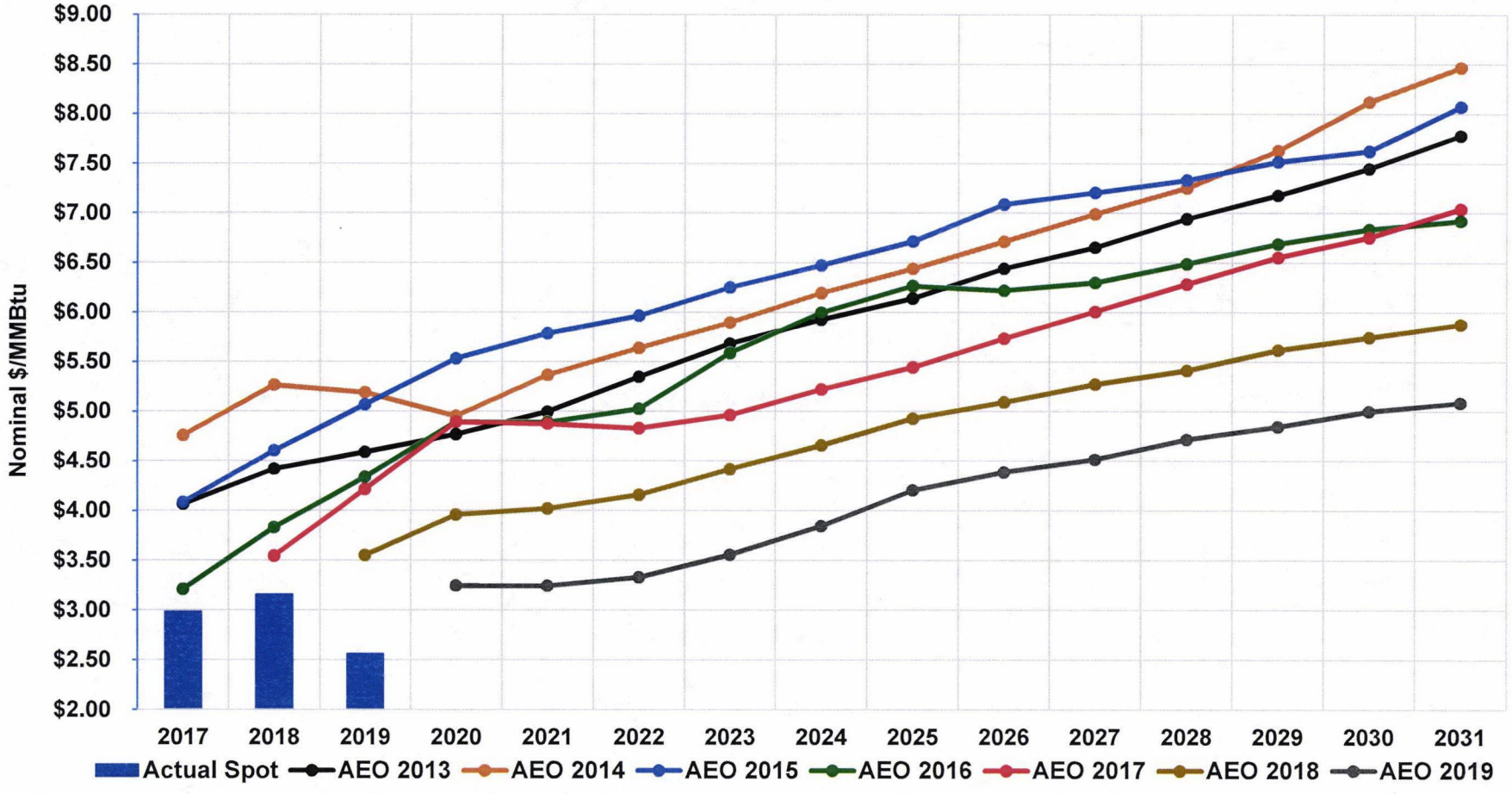
PROGRESS ENERGY FLORIDA	Florida Industrial Power Users Group	90079	Direct	FL	Cost-of-service study, revenue allocation, rate design, depreciation expense, capital structure	8/10/2009
CENTERPOINT	Texas Industrial Energy Consumers	36918	Cross Rebuttal	TX	Allocation of System Restoration Costs	7/17/2009
FLORIDA POWER AND LIGHT COMPANY	Florida Industrial Power Users Group	080677	Direct	FL	Depreciation, class revenue allocation, rate design, cost allocation, and capital structure	7/16/2009
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	36956	Direct	TX	Approval to revise energy efficiency cost recovery factor	7/16/2009
VARIOUS UTILITIES	Florida Industrial Power Users Group	VARIOUS DOCKETS	Direct	FL	Conservation goals	7/6/2009
ENTERGY TEXAS, INC.	Texas Industrial Energy Consumers	36931	Direct	TX	System restoration costs under Senate Bill 769	6/30/2009
SOUTHWESTERN ELECTRIC POWER COMPANY	Texas Industrial Energy Consumers	36966	Direct	TX	Authority to revise fixed fuel factors	6/18/2009
TEXAS-NEW MEXICO POWER COMPANY	Texas Industrial Energy Consumers	36025	Cross-Rebuttal	TX	Cost allocation, revenue allocation and rate design	6/10/2009
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	08-1065	Surrebuttal	MN	Cost allocation, revenue allocation, rate design	5/27/2009
TEXAS-NEW MEXICO POWER COMPANY	Texas Industrial Energy Consumers	36025	Direct	TX	Cost allocation, revenue allocation, rate design	5/27/2009
VIRGINIA ELECTRIC AND POWER COMPANY	MeadWestvaco Corporation	PUE-2009-00018	Direct	VA	Transmission cost allocation and rate design	5/20/2009
NORTHERN INDIANA PUBLIC SERVICE COMPANY	Beta Steel Corporation	43526	Direct	IN	Cost allocation and rate design	5/8/2009
ENTERGY SERVICES, INC	Texas Industrial Energy Consumers	ER008-1056	Rebuttal	FERC	Rough Production Cost Equalization payments	5/7/2009
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	08-1065	Rebuttal	MN	Class revenue allocation and the classification of renewable energy costs	5/5/2009
NORTHERN STATES POWER COMPANY	Xcel Large Industrials	08-1065	Direct	MN	Cost-of-service study, class revenue allocation, and rate design	4/7/2009
ENTERGY SERVICES, INC	Texas Industrial Energy Consumers	ER08-1056	Answer	FERC	Rough Production Cost Equalization payments	3/6/2009
ROCKY MOUNTAIN POWER	Wyoming Industrial Energy Consumers	20000-333-ER-08	Direct	WY	Cost of service study, revenue allocation, inverted rates, revenue requirements	1/30/2009
ENTERGY SERVICES	Texas Industrial Energy Consumers	ER08-1056	Direct	FERC	Entergy's proposal seeking Commission approval to allocate Rough Production Cost Equalization payments	1/9/2009

SOUTHWESTERN ELECTRIC POWER COMPANY
Natural Gas Forecasts at the Henry Hub



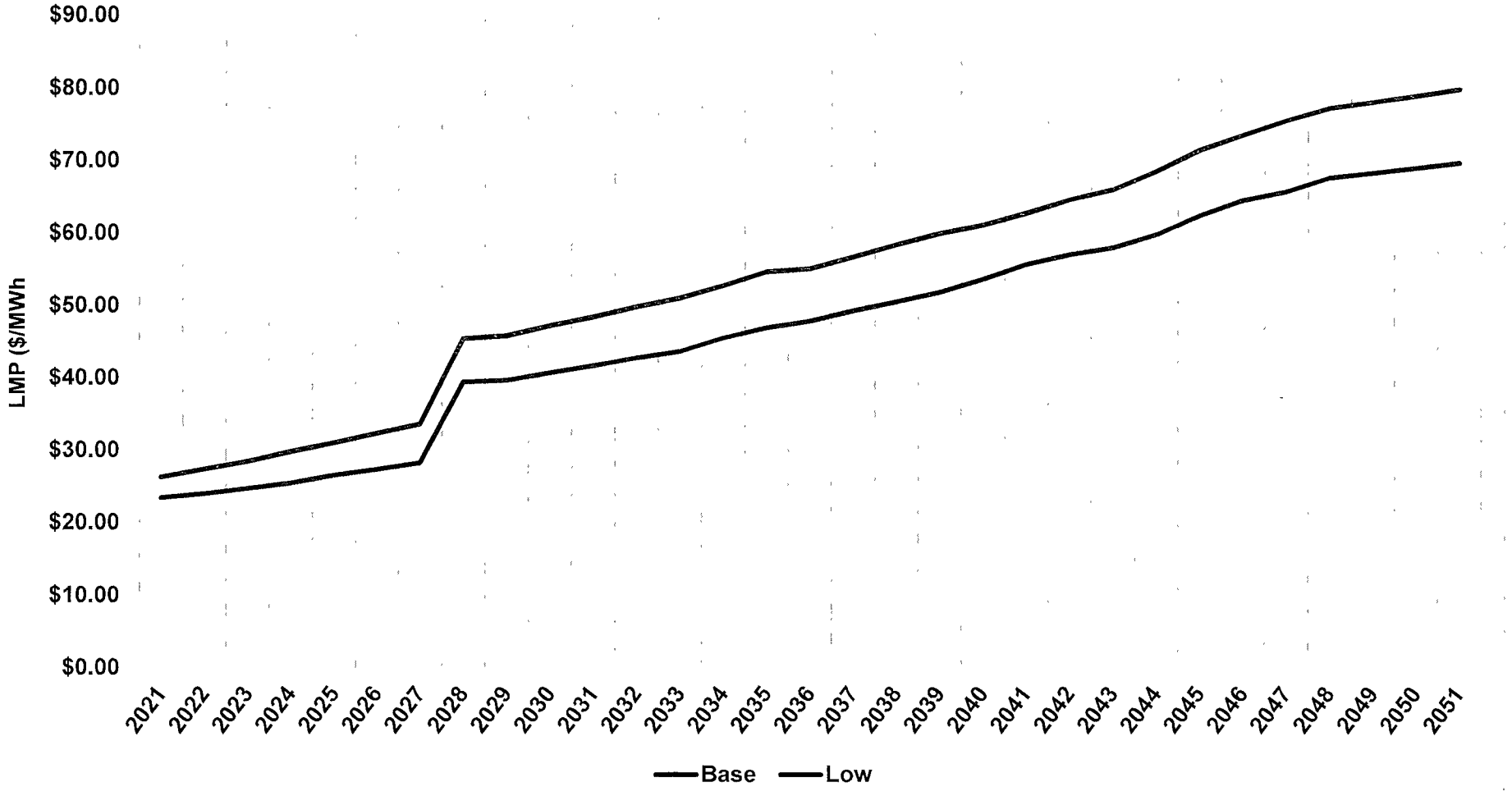
Outlook,
S&P Global Market Intelligence.

Comparison of EIA Reference Case Henry Hub
Natural Gas Price Forecasts



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

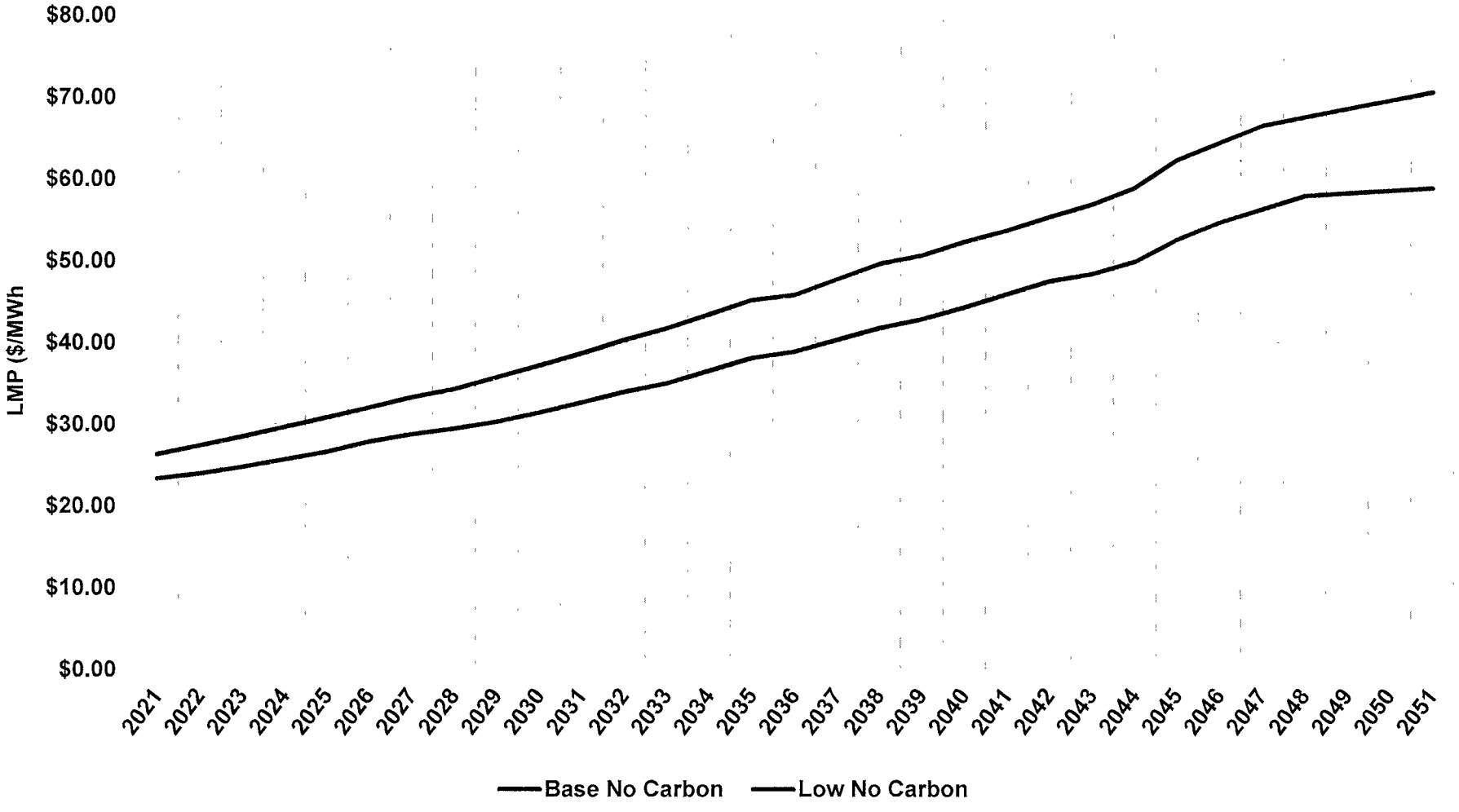
SOUTHWESTERN ELECTRIC POWER COMPANY
Modeled Locational Marginal Prices With Carbon



Source: Updated Torpey Figure 1 ERRATA Workpaper

SOUTHWESTERN ELECTRIC POWER COMPANY

Modeled Locational Marginal Prices Without Carbon



Source: Updated Torpey Figure 1 ERRATA Workpaper

SOUTHWESTERN ELECTRIC POWER COMPANY

Implied Market Heat Rates