

EXHIBIT

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REBUTTAL TESTIMONY

OF

GEOFF MARKE

Submitted on Behalf of the Office of the Public Counsel

EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EA-2019-0010

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Denotes Highly Confidential Information that has been Redacted

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CASE NO. EA-2019-0010

1 **I. INTRODUCTION**

2 **Q. Please state your name, title and business address.**

3 A. Geoffrey Marke, PhD, Chief Economist, Office of the Public Counsel ("OPC"), P.O. Box
4 2230, Jefferson City, Missouri 65102.

5 **Q. What are your qualifications and experience?**

6 A. I have been in my present position with OPC since 2014 where I am responsible for economic
7 analysis and policy research in electric, gas and water utility operations.

8 **Q. Have you testified previously before the Missouri Public Service Commission?**

9 A. Yes. A listing of the cases in which I have previously filed testimony and/or comments before
10 the Missouri Public Service Commission ("Commission") is attached as Schedule GM-1.

11 **Q. What is the purpose of your rebuttal testimony?**

12 A. I respond to the Empire District Electric Company's ("Empire" or "Company") request for
13 Certificates of Convenience and Necessity ("CCN") related to the Company's proposed three
14 wind farms (North Fork Ridge, Kings Point and Neosho Ridge also known collectively as the
15 "Customer Savings Plan," "projects" or "wind farms"). I specifically respond to the direct
16 testimonies of Empire witnesses: Todd Mooney, Timothy N. Wilson and Blake A. Mertens.

17 **Q. What is Empire proposing?**

18 A. Empire is seeking Commission CCN for the three wind generation projects that will be
19 constructed in or near Empire's service territory by Tenaska Matrix Holdings, LLC, Steelhead
20 Missouri Matrix Wind Holdings and Neosho Ridge Wind Joint LLC. Empire is not proposing
21 these wind farms to meet the electricity needs of its customers, but, rather, Empire advances
22 them as a means to profit from excess sales in the Southwest Power Pool ("SPP") energy
23 market. In this respect, the wind farms resemble a speculative merchant generation investment,

1 with the notable distinction that under Empire's proposal, its customers bear the risks normally
2 shouldered by a merchant developer and will pay the additional costs for an increased rate base
3 that ensures Empire's shareholders of recovering their investment plus a profit.

4 **Q. What is OPC's position on Empire's proposal?**

5 A. OPC recognizes that wind generation has many benefits in that it helps diversify Missouri's
6 energy generation mix, offers a renewable energy source, and provides economic benefits
7 in the form of property taxes, land lease payments, and jobs for local communities.
8 However, it is important to balance these benefits against the financial risks such large-scale
9 capital intensive projects impose on ratepayers and the local economy if the electricity the
10 wind generates is not needed to serve load, meet capacity reserves or mandated Renewable
11 Energy Standards ("RES"). OPC has significant concerns with Empire's proposal, and
12 believes Empire's modeling is flawed. OPC recommends that the Commission impose hold
13 harmless conditions to ratepayers upon the CCN that provide meaningful customer
14 protections.

15 OPC concerns are due to evidence indicating Empire's request to add approximately 600
16 MW of new generation does not meet the following four of the Commission's five Tartan
17 factors:

- 18 • There is no need for this additional generation;
- 19 • The assumptions surrounding the economic feasibility of the project are flawed;
- 20 • The applicant's financial ability to provide the proposed service are still unknown;
21 and
- 22 • The public interest is not furthered by forcing Empire's captive ratepayers to
23 finance and bear the risks of a speculative merchant generation investment.

24 There is no need for this additional generation

25 Empire has an excessive planning reserve margin of 33.2% as a member of the Southwest
26 Power Pool. This is 21% more than SPP requires Empire to have, even before adding 600 MW
27 of wind. If the requested CCNs in front of the Commission were for an equivalent amount of

1 coal, natural gas, solar or any other generation source, OPC would have these same concerns.
2 Those concerns include Empire's historic sunk generating resource costs, flat load growth,
3 excess capacity margins, the terms surrounding this project that Empire has put forward, the
4 continued uncertainty surrounding the financing of this project, and the expected wind-rich
5 SPP market conditions from which Empire hopes to obtain plentiful revenues from sales from
6 these wind farms. Ratepayers should not be *the* disproportionate risk taker in a three-party
7 financing agreement amongst Algonquin shareholders and some still yet unknown tax equity
8 partner(s). The requested CCN is not necessary to meet Empire's native load, meet statutorily
9 mandated RES, or necessary to provide service at just and reasonable rates.

10 There is no economically rational thesis to this application

11 The Company's Generation Fleet Savings Analysis ("GFSA") assumptions made in Empire's
12 initial Customer Savings Plan have not been updated and continue to not accurately reflect
13 SPP's evolving energy market. Empire's argument for its "Customer Savings Plan" is highly
14 speculative and predicated on a static future where ratepayers are forced to "play the market"
15 based on a dated and narrow set of assumptions that do not accurately model the copious
16 amounts of wind which are set to come online.

17 An essential part of the financial viability to provide the requested service is still no clearer
18 than it was a year ago

19 There are no tax equity partners to date, and therefore, the terms of the tax equity partnership
20 are unknown and unknowable.

21 The application is not in the public interest as proposed

22 Empire's application is a departure from sound regulation and abandons the very principles
23 historically espoused by the Missouri Public Service Commission:

24 The Commission's guiding purpose in setting rates is to protect the consumer against
25 the natural monopoly of the public utility, generally the sole provider of a public

1 necessity.¹ [T]he dominant thought and purpose of the policy is the protection of the
2 public . . . [and] the protection given the utility is merely incidental.’^{2,3}

3 This case is about profit through asymmetric risk transfer and needlessly increasing rate base.
4 That is, spending money we don’t have, for capital projects we don’t need, under market
5 conditions that are not reasonably supported and if proven to be incorrect will be borne
6 excessively by captive ratepayers who cannot afford that margin of error on a speculative
7 gamble. Simple math suggests that the approximately 150,000 customer accounts in Empire’s
8 service territory cannot absorb a billion dollar mistake as well as could an Ameren Missouri-
9 style utility with over 1 million accounts.

10 Despite these criticisms, OPC believes that Empire could move forward with these projects
11 without any Commission approval or oversight through a non-regulated affiliate. Pursuing
12 these projects through a non-regulated affiliate is the best option to ensure Empire’s
13 ratepayers are held harmless. If Algonquin wants to enter the merchant generation business
14 in SPP like it has recently in MISO, it can do so without Empire’s ratepayers bearing the
15 risk that the activity is uneconomic.⁴ OPC does not believe Empire’s regulated services
16 customers should shoulder the risks of Algonquin’s decision to enter the merchant
17 generation business.

18 If the Commission allows Empire to move forward with a Commission-approved CCN,
19 OPC recommends that the Commission require Empire to hold its customers harmless by
20 imposing the condition that Empire make its customers whole through rates for each year
21 during life of the wind farms when the wind farms do not generate net cash through the
22 Holdcos equal to or greater than the cost to the customers. This would include all costs
23 including: the return of and on the capital investment for these wind farms, all operations,
24 maintenance, administrative and general costs allocated to the wind farms.

¹ *May Dep’t Stores Co. v. Union Elec. Light & Power Co.*, 107 S.W.2d 41, 48 (Mo. App. 1937)

² *St. ex rel. Crown Coach Co. v. Pub. Serv. Comm’n*, 179 S.W. 2d 123, 126 (Mo. App. 1944).

³ ER-2007-004 Report and Order p. 7.

⁴ Renewables Now (2018) Atlantica, Algonquin to co-invest in 200-MW Illinois wind project. Dec. 14.

<https://renewablesnow.com/news/atlantica-algonquin-to-co-invest-in-200-mw-illinois-wind-project-636766/>

1 In the rest of this testimony I respond to Empire's application, articulate the basis for OPC's
2 position and finally state and explain the consumer protections that the Commission should
3 impose as a condition to any CCN it grants in this case to ensure Empire's "Customer
4 Savings Plan" does not harm its customers.

5 **II. OPC's POSITION ON RENEWABLE GENERATION**

6 **Q. Does OPC oppose renewable generation?**

7 A. No. OPC has supported or not opposed solar and wind projects for both Kansas City Power
8 and Light Company ("KCPL"), KCP&L Greater Missouri Operations Company ("GMO") and
9 Union Electric Company d/b/a Ameren Missouri.^{5,6,7} OPC has also filed Special Contemporary
10 Topics related to utilities' Integrated Resource Planning ("IRP") with recommendations to
11 specifically explore emerging battery technology.⁸ Finally, although not a renewable asset per
12 se, we also continue to be very active in supporting cost-effective demand-side management
13 programs when they create value for all of the utility's ratepayers.⁹

14 **Q. Despite OPC's past support or non-opposition to renewables, how has Empire framed
15 OPC's position?**

16 A. Less than a year ago, Algonquin Power and Utilities Corporation CEO Ian Robertson fielded
17 an earnings call question from Mark Jarvi a Director from the CIBC World Markets, the
18 investment banking subsidiary of the Canadian Imperial Bank of Commerce, on OPC's
19 objections in the Customer Savings Plan docket. The transcript of that exchange follows:

20 **Mark Jarvi**

21 Okay. Great. And then going back to Empire. The one, maybe the wrong word, but
22 the centering out the Office of the People's [sic] Counsel, you have a got a few

⁵ ER-2018-0145 (KCPL Green Tariff)

⁶ ER-2018-0146 (GMO Green Tariff)

⁷ EA-0216-0207 (Ameren Missouri Solar Subscriber) and ET-2018-0063 (Ameren Missouri Green Tariff)

⁸ EO-2019-0066 (Empire District Electric Special Contemporary Topics)

⁹ EW-2013-0519 (MEEIA State-Wide Advisory Collaborative Workshop Docket)

1 different objections whether it's the timing of when the savings come, exposure
2 to merchant pricing. I guess they are concerned around guaranteed returns.
3 Which one do you think is the biggest obstacle for them?

4 And views to whether or not there is concessions you guys have to make to what
5 you thought on the current stipulation to get them on board to get this plan moving?

6 **Ian Robertson**

7 Well, the observation I make, Mark, is that one of the interveners who obviously
8 testified in favor of this project was the major customer group. And so I think we
9 presented a pretty cogent argument that there are net customer saving for consumers,
10 right from the get-go. If you want to start kind of parsing what I think are
11 economically suboptimal assumptions into that, you want to start to create an
12 opportunity, say, well maybe it could cost more. I think you can do that.

13 But if you look at our initial filing and look at all the assumptions that we made
14 behind that, I am not sure I share the perspective that the higher costs are a practical
15 outcome from this. I think it is a reasonable thing.

16 And I will just make the observation that this is a difficult emotional transition
17 for a lot of people in the Midwest to transition away from coal to wind. And
18 that's a challenge politically. It's a challenge emotionally. And so I think we are
19 trying to ease that transition for people.

20 But I am not sure that we are actually concerned about the approach that OPC is
21 advocating as something that's going to necessitate further, I will use the word,
22 negotiation.¹⁰ (emphasis added)

¹⁰ Algonquin Power and Utilities' (AQN) CEO Ian Robertson on Q1 2018 Results—Earnings Call Transcript. (2018) May 11, *Seeking Alpha*. <https://seekingalpha.com/article/4173068-algonquin-power-utilities-aqn-ceo-ian-robertson-q1-2018-results-earnings-call-transcript?part=single>

1 Note that Mr. Robertson did not directly answer Mr. Jarvi's questions. Mr. Robertson did not
2 speak to the timing of the savings assumptions, the risk exposure to merchant generation or
3 expected guaranteed returns. In fact, he did not directly rebut any of the concerns OPC had
4 voiced. Instead, Mr. Robertson provided a false narrative about the emotional transition of the
5 Midwest coping with losing its identification with coal in favor of wind.

6 To be crystal clear, this isn't about OPC opposing renewable generation. Renewables are
7 coming online with or without this plan. The irony of this catch-22 policy situation should not
8 be lost.¹¹ This is because Empire's customers already benefit from increased wind additions in
9 SPP without them being Empire-owned, Commission-regulated assets. Empire's customer
10 already benefit from renewable wind generation by lower prices for energy in the SPP
11 wholesale market due to new wind-powered generation. But under the merchant generation
12 gamble, Empire's ratepayers are less likely to realize benefits from Empire's excessive bet if,
13 in fact, a lot of renewables *do* come online, because the abundant cheap supply of wind
14 generated electricity will surpass the flat demand in the SPP and, thus, depress SPP market
15 prices further.

16 **Q. How is this is a "catch-22" situation?**

17 **A.** To promote wind generation for Empire *and* for the wind generation to be financially
18 successful you have to hope others are not also promoting wind generation.

19 To fully understand the situation, consider that the Commission stated the following in the
20 Report and Order it issued in Case No. EO-2018-0092:

21 "Empire's proposed acquisition of 600 MW of additional wind generation assets is
22 clearly aligned with the public policy of the Commission and this state."¹²

¹¹ A catch-22 is a paradoxical situation from which an individual cannot escape because of contradictory rules. The term was coined in the Joseph Heller World War II novel, *Catch-22*, a "catch-22" was applied to a war pilot's problematic situation for which the only solution is denied by a circumstance inherent in the problem or by a rule. That is, if one is crazy, one does not have to fly mission; and one must be crazy to fly. But one has to apply to be excused, and applying demonstrates that one is not crazy. As a result, one must continue flying, either not applying to be excused, or applying and being refused.

¹² EO-2018-0092 Report and Order, p. 20.

1 In fact, Empire’s witness Mr. Mertens cites to that passage as essentially the sole reason for
2 why Empire views granting it CCNs for the wind farms is in the “public interest” and how the
3 CCNs fulfill a “need for the service,” when service is in fact not needed for native load, reserve
4 capacity requirements, or RES mandates.¹³

5 There are no doubt, many people who want to promote renewables in Missouri. Further, OPC
6 favors a diversified generating portfolio.¹⁴ Just last year Missouri IOU’s have become
7 considerably more creative in their tariff offerings to promote renewables—offerings which
8 OPC support. However, for Empire’s specific renewable application “to work” that is, to *both*
9 successfully promote wind generation *and* to cover the costs of the project, Empire’s ratepayers
10 and the Commission will have to hope that *only* Missouri, or better yet, *only* Empire will be
11 promoting wind generation. Because if Arkansas, KCPL, the City of Springfield, Missouri
12 Rural Electric Cooperatives, or wind rich utilities situated in Oklahoma or Kansas etc... all
13 bring on more wind generation, then the ability of these projects to realize the espoused benefits
14 (i.e., revenues generated by selling excess wind for large profits) will be impaired, which will
15 increase the likelihood of the much more predictable scenario of needlessly raising rates and
16 hurting the local economy.

17 **Q. Why would an increase in wind generation in SPP diminish Empire’s prospects of**
18 **successfully generating revenues for its ratepayer-funded merchant generation**
19 **proposal?**

20 **A.** Because of the law of diminishing returns as intermittent supply begins to exceed flat demand.
21 This problem of diminishing returns is well documented for both wind and solar power
22 generation. Here is how MIT’s *Future of Solar* study puts it:

23 [A]s a result of basic supply-and-demand dynamics, solar capacity systematically
24 reduces electricity prices during the very hours when solar generators produce the
25 most electricity. Beyond low levels of penetration, an increasing solar

¹³ EA-2019-0118 Direct Testimony of Blake A. Mertens p. 10; 15-23, p. 11, 1-10.

¹⁴ Of which Empire’s represents the most diverse of all of the electric IOUs.

1 contribution results in lower average revenues per kW of installed solar
2 capacity. For this reason, even if solar generation becomes profitable without
3 subsidies at low levels of penetration, there is a system-dependent threshold of
4 installed PV capacity beyond which adding further solar generators would no longer
5 be profitable.¹⁵ (emphasis added)

6 The same phenomenon is true for wind.¹⁶ This point cannot be over-emphasized. When
7 considering how an abundant supply suppresses demand, remember that Empire's wind
8 farms are not being proposed to meet the electricity needs of Empire's customers, but rather
9 Empire advances them as a means to profit from sales in the SPP energy market. For ratepayers
10 this is a business proposition whose success is predicated on nobody else (i.e., other market
11 actors) also seeing that same proposition. For shareholders this is a business proposition whose
12 success is predicated on merely getting Commission approval. The fact that not all of the terms
13 of this business proposition are even known yet (i.e., where are the tax equity partners?) only
14 increases the already high risk profile for ratepayers, and makes it more doubtful for success.

15 **Q. How do you respond to the comment that OPC's position is based on some irrational**
16 **emotional investment in the fossil fuel industry?**

17 A. OPC's vested interests in this case are in making sure Empire's ratepayers are held harmless
18 from unnecessary risks. Just as OPC does not have an emotional investment in the renewable
19 industry, it has no emotional investment in fossil fuels. Virtually no coal is mined in Missouri.
20 As the Missouri Division of Energy routinely notes in filings, we import our coal from
21 Wyoming.¹⁷ If anyone can be accused of somehow being heavily invested in coal it is the
22 previous management in charge of Empire. It was Empire's management alone who decided
23 to invest \$112.1 million to extend the useful life of Empire's Asbury coal plant and make it

¹⁵ MIT Interdisciplinary Studies (2015) Future of Solar. p. 189 <https://energy.mit.edu/wp-content/uploads/2015/05/MITEI-The-Future-of-Solar-Energy.pdf>

¹⁶ Wiser R. et al. (2017) Impacts of Variable Renewable Energy on Bulk Power System Assets, Pricing, and Costs
Berkeley & Argonne National Laboratories.

https://emp.lbl.gov/sites/default/files/lbnl_anl_impacts_of_variable_renewable_energy_final.pdf

¹⁷See also EA-2019-0021 the Rebuttal Testimony of Martin R. Hyman p. 4, 15 thru p. 5, 5.

1 more efficient. And it was Liberty utilities alone that assumed that managerial risk as well as
2 the very real possibility of no further, immediate generation investment opportunities into their
3 valuation of its acquisition of Empire when they elected to pay 21% over book value to acquire
4 it.

5 **III. LEVELIZED COST OF ENERGY**

6 **Q. Mr. Mooney speaks to the wind farms attractive Levelized Cost of Energy (“LCOE”).**
7 **What does he mean?**

8 A. The LCOE is a simple metric to capture the cost of energy produced at a supply-side generation
9 source. It attempts to do so not based on short-term costs but on lifetime costs, which is
10 important for providing a fair comparison between different sources of supply. In particular, it
11 provides a better comparison of different sources of supply with different cost structures. For
12 example, a utility-scale solar project will have higher up-front costs but no fuel cost and
13 minimal operating costs while a simple cycle combustion turbine that may be cheaper to build
14 but would have larger operating and fuel costs for the life of asset. The devil is in the details
15 though, as the assumptions surrounding any valuation matter.

16 **Q. If wind has a lower LCOE than another source of energy, does it makes sense to invest**
17 **in wind?**

18 A. To be clear, the first question an IOU should ask is whether an investment *is* needed to meet
19 its customer’s native load or reserve requirements. The answer to both of those questions in
20 this case is “No.” But as an exercise let’s assume the answer is “Yes.” Even then, the LCOE
21 as the foundational metric to inform investment decisions is a very limited tool which can
22 produce misleading results.

23 **Q. What do you mean by “misleading”?**

24 A. If the attributes of all generation sources were homogenous, decision-making by
25 regulators, utilities, and power plant investors would be simple: purchase from or invest in
26 the source with the lowest LCOE. However, power plants have widely varying technical
27 and economic characteristics, and therefore deliver different services, e.g. a natural gas

1 combustion turbine may operate only in the 5% of peak hours in a year, whereas a nuclear
2 plant may operate on a 24x7 basis for the majority of the year. The problem with the LCOE
3 metric is found in its name—the “levelized *cost*...” The cost of the energy, does not
4 necessarily say anything about the *value* of that same energy over the lifetime of the asset.
5 Value depends not solely on the cost of generating energy but the price for which that energy
6 can be sold. According to SPP CEO Nick Brown:

7 Wind is currently the least costly fuel source in our region, due in part to production
8 tax credits. Wind is also abundant in our part of the country. The SPP region has
9 been called the “Saudi Arabia of wind.” Our footprint boasts nearly 200 windfarms
10 and more than 10,000 turbines whose total output has neared 16,000 MW. SPP holds
11 the record among our North American peers for serving the highest percentage of
12 our load at a given time with wind power: 64 percent in the early morning hours of
13 April 30, 2018.

14 You might wonder, given wind’s low cost and abundance, why we haven’t seen
15 even higher levels. Why can’t we meet all of our region’s electrical demands
16 with wind? It’s because even with 10,000 turbines capable of producing 16,000
17 MW, we’ve seen total wind output for our entire region as low as 147 MW. That’s
18 enough to serve just half of one percent of our demand. Likewise, we’ve had swings
19 in wind output of 3700 MW in one hour, equivalent to about seven large natural gas
20 or coal plants simultaneously ramping up. . . .

21 Until battery storage is effective and affordable enough to operate at utility-scale,
22 electricity must be generated, distributed and used nearly simultaneously. When the
23 wind stops blowing or the sun goes down, or when unexpectedly rising or dropping
24 temperatures lead to unforeseen electricity use, we can’t just let the power to our
25 region lapse. It’s not enough to have sufficient wind to serve our load at a given

1 moment. We must have other generation ready to replace its loss instantaneously.¹⁸
2 (emphasis added)

3 Stated differently, despite what LCOE might lead you to believe, proper valuation and sound
4 investment is not limited to costs alone. LCOE, for example, fails to take into account the time
5 of day during which an asset can produce power, where it can be installed on the grid, its carbon
6 intensity, the associated transmission and distribution upgrades required to make the unit
7 operational, among other variables. Importantly, it also does not take into account the
8 associated resource mix in the area, which will impact the economic viability of a new
9 investment relative to its ability to displace existing resources. When prices vary continuously
10 in increments as small as five minutes, and by location, it's not appropriate to look solely at
11 the LCOE as the north star of supply-side generation metrics—at least not in the merchant
12 generation business where revenue margins are the only thing that matters. Value derives from
13 generating at the times of highest demand when people most need electricity.

14 Q. **

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17 A.

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¹⁸ Brown, N. (2018) How renewable energy, electricity markets and constant change affect our mission to keep the lights on. TB&P. <https://talkbusiness.net/2018/10/how-renewable-energy-electricity-markets-and-constant-change-affect-our-mission-to-keep-the-lights-on/>

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Q. Does the new overall project LCOE have any other impact on ratepayers or shareholders?

A. Yes. Accounting for adjustments made in reducing the capacity of the farms from 800 MW to 600 MW, ratepayers will be paying more in shareholder earnings for these wind projects, because operations expenses per MWh are reduced, but capital expenses per MW have increased.

Q. Are there any other cost factors the Commission should consider?

A. Yes, there is no doubt a cost concern surrounding the regulatory and opportunity expense associated with these wind farms. As Commissioner Hall said during the Case No. EO-2018-0092 evidentiary hearing:

CHAIRMAN HALL: And that actually segues right into my next question. Why isn't this a CCN proceeding? Why wouldn't that have been the most simple way to address this, just file for a CCN, and then we could have made a decisional prudence decision and you guys could be off and running? Why—this seems unduly complicated.¹⁹

Empire's proposed wind farms are more expensive today than they otherwise should be because of the Empire's hesitation to move forward without "preapproval" or "directional guidance" from the Commission. OPC witness John Robinett explains this point in his rebuttal testimony. And, again, even now, more than one year removed, Empire still has no tax equity partner(s) committed to any of these projects, as construction still waits to begin.

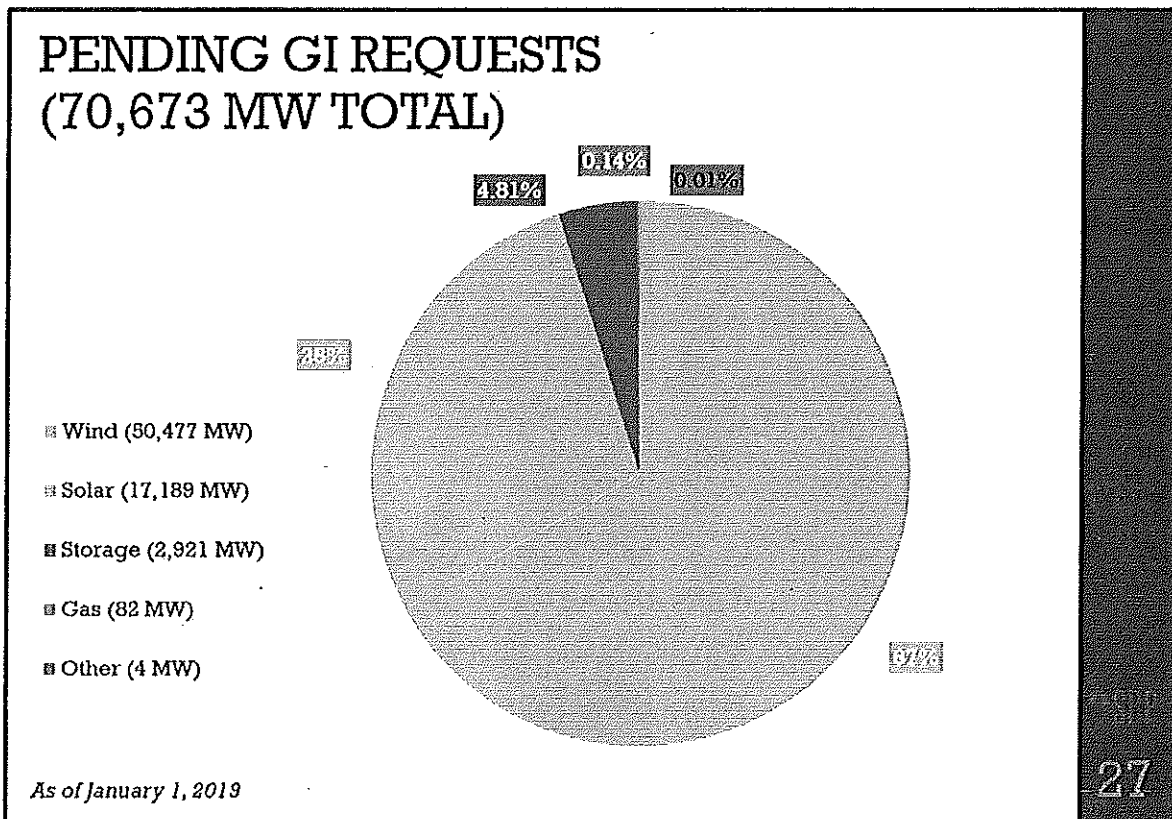
¹⁹ EO-2018-0092, Transcript-Volume 3 (Evidentiary Hearing 5-9-18) p. 61.

1 **IV. WIND IN THE SPP MARKET**

2 **Q. How much wind generation is currently installed in SPP's footprint and how much is**
3 **expected to come on line?**

4 **A.** According to SPP's, *SPP 101: An Introduction to Southwest Power Pool* uploaded to SPP's
5 website on January 9th, 2019 there are approximately 20 GW of wind online and approximately
6 10 GW of unbuilt wind with signed interconnection agreements.²⁰ Moreover, according to that
7 same document there are over 70 GW of pending generation interconnection ("GI") requests,
8 of which 50 GW (or 67%) are for future wind farms as reprinted here in Figure 1.

9 Figure 1: Pending GI Requests in SPP (January 1, 2019)²¹



10 ²⁰ SPP Documents and Filings (2019) Fast Facts, Annual Reports & Corporate Metrics, Introduction to SPP Slideshow, <https://www.spp.org/spp-documents-filings/?id=18171> January 9

²¹ Ibid.

1 **Q. How much wind did Empire model in its “high wind” scenario?**

2 A. The probability-weighted capacity assumed under Empire’s high wind or “worst case”
3 scenario accounted for 6.5 GW of additional wind coming online or 3.5 GW less than what has
4 already been sanctioned with interconnection agreements by SPP today.

5 **Q. What does that mean?**

6 A. Given that current wind farm interconnection agreements exceed Empire’s “high wind”
7 scenario by 54%, at a minimum, it means that Empire should have updated its sensitivity
8 analysis before moving forward with a billion dollar investment dependent on there actually
9 being a demand rich market into which it will sell its excess wind energy.

10 **Q. Did Empire update its sensitivity analysis to reflect this?**

11 A. No. OPC did attempt to get that answer by OPC DR-2001. That question and Empire’s
12 subsequent response are as follows:

13 Question:

14 Please provide the most recent update to Empire’s Generation Fleet Analysis that Blake
15 A. Mertens references in his direct testimony at page 4, lines 15-19. If no such update
16 has occurred since Case No. EO-2018-0092, please provide a narrative explanation of
17 why not.

18 Response:

19 The most recent modeling by ABB / Charles River Associates related to the GFSA /
20 CSP was completed as part of the settlement negotiations in Docket EO-2018-0092.
21 No update has been performed since then since the ultimately executed contracts
22 LCOE’s for the portfolio of wind projects (Kings Point, North Fork Ridge and Neosho
23 Ridge) were at or below the \$23.89 contemplated in that docket.

24 Responsible person(s): Todd Mooney²²

²² See GM-2.

1 Q. Do you agree with Empire that further sensitivity analysis was not warranted because
2 the LCOE bids came in at or under what Empire initially modeled?

3 A. No. Again, LCOE focuses on one input, cost, and ignores other pertinent variables that are
4 necessary for the benefits of this merchant generation gamble to materialize in savings for
5 ratepayers.

6 I think a good rule of thumb is that further sensitivity analysis should always be performed for
7 any speculative investment when any sufficient level of funds are at stake, but especially one
8 that involves investment in excess of a billion dollars.

9 Consider the example of an entrepreneur investing in a new pizza restaurant. If the entrepreneur
10 only looks at the overhead and supply costs relative to those same costs for a comparable
11 burrito restaurant, he is only capturing part of his risk exposure. If he is ignorant to the fact that
12 the number of available food options has tripled and the number of pizza options has doubled
13 in a city where the number of possible patrons has remained the same, then he will likely
14 struggle to cover his costs no matter the quality of his product. In a rapidly changing market, it
15 does not matter if it was immediately cheaper to build the pizza restaurant versus another type
16 of restaurant.

17 The difference between the pizza entrepreneur and Empire's investment opportunity is
18 ultimately who bears the risk if it is wrong.

19 Remember, Empire does not need this wind energy (or any additional energy) to meet its native
20 load. Empire's customers are being asked to finance three wind farms based on the premise
21 that the wind farms will not only pay for themselves but will result in excess revenues which
22 will collectively lower Empire's customers' bills from what they otherwise would be without
23 the wind farms. A low LCOE is good, but it is the *value* of that energy—specifically what price
24 that excessive wind energy can generate in revenues that is the only relevant output which can
25 make this project work. The fact that there are 54% more wind projects with secured generation
26 interconnection agreements from SPP than Empire modeled in its "worst case" scenario
27 suggests that Empire's ability to secure a low LCOE is not particularly unique at the moment,

1 and that its GFSA grossly overstates the benefits and understates the financial liability of
2 investing in these wind farms.

3 **Q.** To be clear, Empire's last generation market modeling was conducted over a year ago
4 with even older fuel and market data assumptions?

5 A. Yes.

6 **Q.** And the combined dollar amount of these wind farms approaches \$1.1 billion dollars,
7 correct?

8 A. Yes.

9 **Q.** And according to SPP there is more wind, potentially much more wind, coming online
10 than Empire ever contemplated in its modeling?

11 A. Yes.

12 **Q.** And if more wind comes online in SPP than Empire modeled, then Empire's modeled
13 savings begin to erode, or are even eliminated?

14 A. Yes

15 **Q.** Will shareholders be financially harmed if Empire's modeling proves to be incorrect?

16 A. No.

17 **Q.** Will Empire's tax equity partner(s) be financially harmed if Empire's modeling proves
18 to be incorrect?

19 A. Again, there are no tax equity partners yet, but the testimony put forward demonstrates that the
20 tax equity partners would be made whole and shielded from harm (i.e., "the hedge"). So, no
21 they would not be harmed.

22 **Q.** Will Empire's ratepayers be financially harmed if Empire's modeling proves to be
23 incorrect?

24 A. Most likely. It is Empire's captive ratepaying customers who bear *the* risks in this proposal. If
25 Empire's modeling is overoptimistic, it is they who are exposed to economic harm. Both
26 Empire and its tax equity partners are insulated from economic harm.

1 **Q. Could ratepayers and the Commission have benefitted from more modeling and more**
2 **recent data to confirm or refute such a large financial risk?**

3 A. Yes.

4 **Q. Is there anything else the Commission should know about the modeling?**

5 A. OPC has taken many issues with Empire's modeling. Rather than rewriting them, I have
6 included my rebuttal, surrebuttal and affidavit from Case Non. Eo-2018-0092 which are found
7 in attached Schedules GM-3, GM-4 and GM-5, respectively, which I hereby adopt as part of
8 my rebuttal testimony in this case, and where I discuss these issues in detail.

9 **Q. Do you have any final comments to make on Empire's decision to not update its models?**

10 A. I think it is clear why Empire elected to not update its models and I fear the negative impact
11 that not updating them will have on ratepayers if the Commission grants Empire the CNNs as
12 it request them these applications.

13 **V. UNCERTAINTY AND COST CONSIDERATIONS**

14 **Q. Are utility financial conditions and the macroeconomic environment stable, or are we**
15 **likely to experience substantial change?**

16 A. Anyone who follows the utility sector is aware that the technology required to provide service
17 is rapidly evolving. Costs are falling for renewables, as well as for natural gas and for coal.
18 Environmental and conservation regulations are in-flux, and the FERC is adapting RTO/ISO
19 market rules for battery storage and the FERC is struggling with how to properly value
20 capacity. Additional uncertainty is present at the distribution level where the smart grid, value-
21 added services, cyber security and equity concerns pose considerable dilemmas for utilities and
22 regulators alike. The very real threat of infusing large capital investments in a path dependent
23 resource comes with considerable risk that those managerial decisions will be incorrect,
24 imprudent and/or needlessly raise rates while tying up capital that could have gone to more
25 beneficial projects.

1 Additionally, utilities and regulators should be cognizant of risk exposure they place on captive
2 customers. What is the immediate and long-term impact on customers and the local economy
3 if utility managerial decisions induce rate shock? We are now more than ten years removed
4 from the last recession; to suggest that the economy is posed to experience another financial
5 shock is not out of the realm of reason.

6 **Q. Do you believe the next year presents the only near-term opportunity to take advantage**
7 **of cheap renewable energy because of the expiring production tax credits (“PTCs”)?**

8 A. No. The PTCs have clearly done their part in driving down the price of wind generation. The
9 numbers coming out of SPP are a testimony to that. But to suggest that this window of time is
10 the last chance to ever take advantage of federal subsidies or that technological advancements
11 in renewables have somehow hit its peak seems naïve. I think it is more than reasonable to
12 assume a scenario where there is some combination of new federal subsidies, greater
13 technological advancements, and/or continued drop in prices where the costs of a comparable
14 wind farm (or some other technology) is cheaper in six years than it is today.

15 Those are the risks merchant generators take when they decide to play the market. Creative
16 destruction is such that a new technology, such as cost-efficient storage could erase the
17 expected margins their investment hoped to make. If Empire goes forward with its plan,
18 Empire’s ratepayers will have to hope that the market will not be saturated with better, cheaper,
19 more efficient technological advancement over the thirty-year life of these investments.
20 Because, even under Empire’s optimistic modeling, financial benefits from these wind farms
21 are not to be realized until well into the future. Given these aforementioned impediments and
22 uncertainties, for ratepayers, it would seem a bad time to depart from traditional cost of service
23 regulation and put their dollars in the merchant generation business.

24 **Q. When was Empire last before this Commission in a general rate case?**

25 A. This Commission last determined Empire’s general rates for Empire in September of 2016.
26 From that case, and the ten years preceding it, Empire’s ratepayers have experienced a
27 compounded increased in their rates of 62.3% as shown in Table 1.

1 Table 1: Empire rate case history 2007-2016

| Case Number | Dollar Value | Percent Increase |
|---------------------------|---------------|------------------|
| ER-2006-0315 | \$29,300,000 | 9.96% |
| ER-2008-0093 | \$22,040,395 | 6.70% |
| ER-2010-0130 | \$46,800,000 | 13.90% |
| ER-2011-0004 | \$18,685,000 | 4.70% |
| ER-2012-0345 | \$27,500,000 | 6.85% |
| ER-2014-0351 | \$17,125,000 | 3.88% |
| ER-2016-0023 | \$20,400,000 | 4.46% |
| Total Dollars | \$181,850,395 | |
| Total Compounded Increase | | 62.23% |

2
3 Moving forward, Empire will likely be filing a rate case this year to continue its Fuel
4 Adjustment Clause ("FAC"), and will then have to file a rate case immediately following that
5 the conclusion of that case to capture its wind farm investments if the Commission grants it
6 CCNs for them in this case. **

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1 **Q. Have any large customers left since the Liberty acquisition of Empire?**

2 A. Yes, the cities of Mount Vernon and Monett plan to sever their wholesale power contracts with
3 Empire on June 1, 2020 and join the Missouri Association of Municipal Utilities. The loss of
4 these two customers will free up approximately 77MW of load.²³ Of course, that loss of load
5 further negates the argument for Empire to invest further in excess supply-side resources.

6 **Q. Who are Empire's most economically challenged customers and how do they compare to**
7 **the rest of Missouri?**

8 A. On a whole, Empire's service territory has a lower median household incomes and higher rates
9 of poverty then the rest of Missouri as seen in Table 2. If a county scores above the Missouri
10 average I italicized the data to emphasize that.

²³ Matyi, B. (2017) Public power cities move forward with new Missouri power pool.
<https://www.publicpower.org/periodical/article/public-power-cities-move-forward-with-new-missouri-power-pool>

1 Table 2: Empire District Electric Economic Characteristics relative to the rest of Missouri

| Area | Median Household Income ²⁴ | Poverty Level ²⁵ | Childhood Poverty Level ²⁶ | No Insurance ²⁷ | Food Insecurity ²⁸ |
|-----------|---------------------------------------|-----------------------------|---------------------------------------|----------------------------|-------------------------------|
| Missouri | \$51,700 | 14.0% | 19.2% | 12.0% | 16.0% |
| Barry | \$38,100 | 21.4% | 31.3% | 14.0% | 18.0% |
| Barton | \$40,300 | 16.1% | 24.4% | 16.0% | 15.0% |
| Cedar | \$36,000 | 19.8% | 19.6% | 14.0% | 15.0% |
| Christian | \$44,200 | 10.7% | 14.4% | 10.0% | 11.0% |
| Dade | \$37,900 | 17.5% | 28.7% | 15.0% | 15.0% |
| Dallas | \$36,200 | 18.6% | 29.3% | 16.0% | 17.0% |
| Greene | \$42,800 | 16.5% | 18.1% | 16.0% | 13.0% |
| Hickory | \$33,600 | 19.3% | 33.4% | 17.0% | 17.0% |
| Jasper | \$44,700 | 17.5% | 22.2% | 14.0% | 15.0% |
| Lawrence | \$41,900 | 14.9% | 23.3% | 14.0% | 15.0% |
| McDonald | \$37,600 | 21.4% | 32.3% | 14.0% | 21.0% |
| Newton | \$46,200 | 14.3% | 21.4% | 13.0% | 14.0% |
| Polk | \$44,400 | 14.0% | 24.8% | 16.0% | 14.0% |
| St. Clair | \$35,700 | 20.7% | 32.7% | 17.0% | 17.0% |
| Stone | \$43,100 | 12.9% | 26.0% | 15.0% | 16.0% |
| Taney | \$38,300 | 17.0% | 27.3% | 17.0% | 18.0% |

²⁴Median Household Income is the income where half of households in a county earn more and half of households earn less. County Health Rankings. Missouri (2016) Median household income <http://www.countyhealthrankings.org/app/missouri/2015/measure/factors/63/description>

²⁵2018 Missouri Poverty Report (2018) Missouri Community Action Agency <http://www.communityaction.org/poverty-reports/>

²⁶Number of related children under age 18 who live in families with incomes below the U.S. poverty threshold, as defined by the Bureau of the Census. The 2011 poverty threshold was \$22,350 for a family of four. For counties with a population of less than 20,000, an estimate based on county-PUMA ratio is reported. Children in poverty in Missouri (2016) Annie E. Casey Foundation <https://datacenter.kidscount.org/data/tables/1989-children-in-poverty?loc=27&loct=2#detailed/5/4149-4263/false/870/any/4182,17337>

²⁷ Uninsured is the percentage of the population under age 65 that has no health insurance coverage. County Health Rankings. Missouri (2015) <http://www.countyhealthrankings.org/app/missouri/2014/measure/factors/85/data>

²⁸ Food insecurity: Is the percentage of the population who did not have access to a reliable source of food during the past year. This measure was modeled using information from the Community Population Survey, Bureau of Labor Statistics, and American Community Survey. County Health Rankings. Missouri (2015) <http://www.countyhealthrankings.org/app/missouri/2018/measure/factors/139/data>

1 **VI. HOLD HARMLESS CONDITION**

2 **Q. Is OPC making any recommendations that would allow OPC to support CCNs for these**
3 **wind farms?**

4 A. Yes, if the Commission grants Empire one or more of the CCNs it requests, then OPC
5 recommends that the Commission require Empire to hold its customers harmless by
6 imposing the condition on each CCN that Empire make its customers whole through rates
7 for each year during life of the wind farms when the wind farms do not generate net cash
8 through the Holdcos equal to or greater than the cost to the customers. This includes all
9 costs including, but not limited to, the return of and on the capital investment for these wind
10 farms and all operations and maintenance costs and administrative and general costs
11 allocated to the wind farms. If the Commission grants Empire one or more CCNs in this
12 case, including this condition is imperative to protect customers because the potential risk
13 of the "savings" Empire touts not materializing is so significant, without this condition the
14 harmful impact on customers and Southwest Missouri could be substantial.

15 **Q. Do you have any final comments?**

16 A. Life is filled with risks, and most of them skew to the downside: losing a job or getting hit by
17 a car is much more likely than winning the lottery. As the state agency charged with protecting
18 the interests of captive ratepayers and minimizing their utility-related financial risks, the OPC
19 believes the risk to ratepayers is skewed dangerously towards the downside. The Commission
20 should not lightly depart from traditional cost of service regulation by excessively and
21 needlessly increasing rate base on the shaky premise that in a decade these merchant generation
22 units will produce a windfall of revenue, when overwhelming empirical evidence suggest
23 otherwise. The financial and economic risks in these applications outweigh the probability of
24 the espoused benefits, especially as more clean generation comes online and market prices fall
25 even further.

26 **Q. Does this conclude your testimony?**

27 A. Yes.

CASE PARTICPATION OF
GEOFF MARKE, PH.D.

| Company Name | Employed Agency | Case Number | Issues |
|--|--------------------------------|--|---|
| Empire District Electric Company | Office of Public Counsel (OPC) | EA-2019-0010 | Rebuttal: Levelized Cost of Energy, Wind in the Southwest Power Pool |
| Empire District Electric Company /Kansas City Power & Light & KCP&L Greater Missouri Operations Company/Union Electric Company d/b/a Ameren Missouri | OPC | EO-2019-0066 EO-2019-0065 EO-2019-0064 EO-2019-0063 | Memorandum: Additive Manufacturing and Cement Block Battery Storage (IRP: Special Contemporary Topics) |
| Rule Making Workshop | OPC | AW-2018-0393 | Memorandum: Supplemental Response to Staff Questions pertaining to Rules Governing the Use of Customer Information |
| Union Electric Company d/b/a Ameren Missouri | OPC | ET-2018-0132 | Rebuttal: Line Extension / Charge Ahead – Business Solutions / Charge Ahead – Electric Vehicle Infrastructure Supplemental Rebuttal: EV Adoption Performance Base Metric |
| Union Electric Company d/b/a Ameren Missouri | OPC | EO-2018-0211 | Rebuttal: MEEIA Cycle III Application Surrebuttal: Cost Effectiveness Tests / Equitable Energy Efficiency Baseline |
| Union Electric Company d/b/a Ameren Missouri | OPC | EA-2018-0202 | Rebuttal: Renewable Energy Standard Rate Adjustment Mechanism/Conservation Surrebuttal: Endangered and Protected Species |
| Kansas City Power & Light & KCP&L Greater Missouri Operations Company | OPC | ER-2018-0145 ER-2018-0146 | Direct: Smart Grid Data Privacy Protections Rebuttal: Clean Charge Network / Community Solar / Low Income Community Solar / PAYS/ Weatherization/Economic Relief Pilot Program/Economic Development Rider/Customer Information System and Billing Rebuttal: TOU Rates / IBR Rates / Customer Charge / Restoration Charge Surrebuttal: KCPL-GMO Consolidation / Demand Response / |

| | | | |
|--|-----|------------------------------|--|
| | | | Clean Charge Network / One CIS: Privacy, TOU Rates, Billing & Customer Experience |
| Union Electric Company d/b/a Ameren Missouri | OPC | ET-2018-0063 | Rebuttal: Green Tariff |
| Liberty Utilities | OPC | GR-2018-0013 | Surrebuttal: Decoupling |
| Empire District Electric Company | OPC | EO-2018-0092 | Rebuttal: Overview of proposal/ MO PSC regulatory activity / Federal Regulatory Activity / SPP Activity and Modeling / Ancillary Considerations Surrebuttal Response to parties Affidavit in opposition to the non- unanimous stipulation and agreement |
| Great Plains Energy Incorporated, Kansas City Power & Light Company, KCP&L Greater Missouri Operations Company, and Westar Energy, Inc. | OPC | EM-2018-0012 | Rebuttal: Merger Commitments and Conditions / Outstanding Concerns |
| Missouri American Water | OPC | WR-2017-0285 | Direct: Future Test Year/ Cost Allocation Manual and Affiliate Transaction Rules for Large Water Utilities / Lead Line Replacement Direct: Rate Design / Cost Allocation of Lead Line Replacement Rebuttal: Lead Line Replacement / Future Test Year/ Decoupling / Residential Usage / Public-Private Coordination Rebuttal: Rate Design Surrebuttal: affiliate Transaction Rules / Decoupling / Inclining Block Rates / Future Test Year / Single Tariff Pricing / Lead Line Replacement |
| Missouri Gas Energy / Laclede Gas Company | OPC | GR-2017-0216 GR-2017-0215 | Rebuttal: Decoupling / Rate Design / Customer Confidentiality / Line Extension in Unserved and Underserved Areas / Economic Development Rider & Special Contracts Surrebuttal: Pay for Performance / Alagasco & EnergySouth Savings / Decoupling / Rate Design / Energy |

| | | | |
|---|-----|-----------------------------|---|
| | | | Efficiency / Economic Development Rider: Combined Heat & Power |
| Indian Hills Utility | OPC | WR-2017-0259 | Direct: Rate Design |
| Rule Making | OPC | EW-2018-0078 | Memorandum: on cogeneration and net metering - Disclaimer Language regarding rooftop solar |
| Empire District Electric Company | OPC | EO-2018-0048 | Memorandum: Integrated Resource Planning: Special Contemporary Topics Comments |
| Kansas City Power & Light | OPC | EO-2018-0046 | Memorandum: Integrated Resource Planning: Special Contemporary Topics Comments |
| KCP&L Greater Missouri Operations Company | OPC | EO-2018-0045 | Memorandum: Integrated Resource Planning: Special Contemporary Topics Comments |
| Missouri American Water | OPC | WU-2017-0296 | Direct: Lead line replacement pilot program Rebuttal: Lead line replacement pilot program Surrebuttal: Lead line replacement pilot program |
| KCP&L Greater Missouri Operations Company | OPC | EO-2017-0230 | Memorandum on Integrated Resource Plan, preferred plan update |
| Working Case: Emerging Issues in Utility Regulation | OPC | EW-2017-0245 | Memorandum on Emerging Issues in Utility Regulation / Presentation: Inclining Block Rate Design Considerations Presentation: Missouri Integrated Resource Planning: And the search for the "preferred plan." Memorandum: Draft Rule 4 CSR 240-22.055 DER Resource Planning |
| Rule Making | OPC | EX-2016-0334 | Memorandum on Missouri Energy Efficiency Investment Act Rule Revisions |
| Great Plains Energy Incorporated, Kansas City Power & Light Company, KCP&L Greater Missouri Operations Company, and Westar Energy, Inc. | OPC | EE-2017-0113 / EM-2017-0226 | Direct: Employment within Missouri / Independent Third Party Management Audits / Corporate Social Responsibility |

| | | | |
|---|-----|--------------|--|
| Union Electric Company d/b/a Ameren Missouri | OPC | ET-2016-0246 | Rebuttal: EV Charging Station Policy Surrebuttal: EV Charging Station Policy |
| Kansas City Power & Light | | ER-2016-0156 | Direct: Consumer Disclaimer Direct: Response to Commission Directed Questions Rebuttal: Customer Experience / Greenwood Solar Facility / Dues and Donations / Electric Vehicle Charging Stations Rebuttal: Class Cost of Service / Rate Design Surrebuttal: Clean Charge Network / Economic Relief Pilot Program / EEI Dues / EPRI Dues |
| Union Electric Company d/b/a Ameren Missouri | OPC | ER-2016-0179 | Direct: Consumer Disclaimer / Transparent Billing Practices / MEEIA Low-Income Exemption Direct: Rate Design Rebuttal: Low-Income Programs / Advertising / EEI Dues Rebuttal: Grid-Access Charge / Inclining Block Rates / Economic Development Riders |
| KCP&L Greater Missouri Operations Company | OPC | ER-2016-0156 | Direct: Consumer Disclaimer Rebuttal: Regulatory Policy / Customer Experience / Historical & Projected Customer Usage / Rate Design / Low-Income Programs Surrebuttal: Rate Design / MEEIA Annualization / Customer Disclaimer / Greenwood Solar Facility / RESRAM / Low-Income Programs |
| Empire District Electric Company, Empire District Gas Company, Liberty Utilities (Central) Company, Liberty Sub-Corp. | OPC | EM-2016-0213 | Rebuttal: Response to Merger Impact Surrebuttal: Resource Portfolio / Transition Plan |
| Working Case: Polices to Improve Electric Regulation | OPC | EW-2016-0313 | Memorandum on Performance-Based and Formula Rate Design |
| Working Case: Electric Vehicle Charging Facilities | OPC | EW-2016-0123 | Memorandum on Policy Considerations of EV stations in rate base |
| Empire District Electric Company | OPC | ER-2016-0023 | Rebuttal: Rate Design, Demand-Side Management, Low-Income |

| | | | |
|--|-----|--------------|---|
| | | | Weatherization Surrebuttal: Demand-Side Management, Low-Income Weatherization, Monthly Bill Average |
| Missouri American Water | OPC | WR-2015-0301 | Direct: Consolidated Tariff Pricing / Rate Design Study Rebuttal: District Consolidation/Rate Design/Residential Usage/Decoupling Rebuttal: Demand-Side Management (DSM)/ Supply-Side Management (SSM) Surrebuttal: District Consolidation/Decoupling Mechanism/Residential Usage/SSM/DSM/Special Contracts |
| Working Case: Decoupling Mechanism | OPC | AW-2015-0282 | Memorandum: Response to Comments |
| Rule Making | OPC | EW-2015-0105 | Missouri Energy Efficiency Investment Act Rule Revisions, Comments |
| Union Electric Company d/b/a Ameren Missouri | OPC | EO-2015-0084 | Triennial Integrated Resource Planning Comments |
| Union Electric Company d/b/a Ameren Missouri | OPC | EO-2015-0055 | Rebuttal: Demand-Side Investment Mechanism / MEEIA Cycle II Application Surrebuttal: Potential Study / Overearnings / Program Design Supplemental Direct: Third-party mediator (Delphi Panel) / Performance Incentive Supplemental Rebuttal: Select Differences between Stipulations Rebuttal: Pre-Pay Billing |
| The Empire District Electric Company | OPC | EO-2015-0042 | Integrated Resource Planning: Special Contemporary Topics Comments |
| KCP&L Greater Missouri Operations Company | OPC | EO-2015-0041 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Kansas City Power & Light | OPC | EO-2015-0040 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Union Electric Company d/b/a Ameren Missouri | OPC | EO-2015-0039 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Union Electric Company d/b/a Ameren Missouri | OPC | EO-2015-0029 | Ameren MEEIA Cycle I Prudence Review Comments |

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|--|--|--------------|--|
| Kansas City Power & Light | OPC | ER-2014-0370 | Direct (Revenue Requirement): Solar Rebates Rebuttal: Rate Design / Low-Income Weatherization / Solar Rebates Surrebuttal: Economic Considerations / Rate Design / Cyber Security Tracker |
| Rule Making | OPC | EX-2014-0352 | Memorandum Net Metering and Renewable Energy Standard Rule Revisions, |
| The Empire District Electric Company | OPC | ER-2014-0351 | Rebuttal: Rate Design/Energy Efficiency and Low-Income Considerations |
| Rule Making | OPC | AW-2014-0329 | Utility Pay Stations and Loan Companies, Rule Drafting, Comments |
| Union Electric Company d/b/a Ameren Missouri | OPC | ER-2014-0258 | Direct: Rate Design/Cost of Service Study/Economic Development Rider Rebuttal: Rate Design/ Cost of Service/ Low Income Considerations Surrebuttal: Rate Design/ Cost-of-Service/ Economic Development Rider |
| KCP&L Greater Missouri Operations Company | OPC | EO-2014-0189 | Rebuttal: Sufficiency of Filing Surrebuttal: Sufficiency of Filing |
| KCP&L Greater Missouri Operations Company | OPC | EO-2014-0151 | Renewable Energy Standard Rate Adjustment Mechanism (RESRAM) Comments |
| Liberty Natural Gas | OPC | GR-2014-0152 | Surrebuttal: Energy Efficiency |
| Summit Natural Gas | OPC | GR-2014-0086 | Rebuttal: Energy Efficiency Surrebuttal: Energy Efficiency |
| Union Electric Company d/b/a Ameren Missouri | OPC | ER-2012-0142 | Direct: PY2013 EM&V results / Rebound Effect Rebuttal: PY2013 EM&V results Surrebuttal: PY2013 EM&V results Direct: Cycle I Performance Incentive Rebuttal: Cycle I Performance Incentive |
| Kansas City Power & Light | Missouri Public Service Commission Staff | EO-2014-0095 | Rebuttal: MEEIA Cycle I Application testimony adopted |
| KCP&L Greater Missouri Operations Company | Missouri Division of Energy (DE) | EO-2014-0065 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Kansas City Power & Light | DE | EO-2014-0064 | Integrated Resource Planning: Special Contemporary Topics Comments |

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|---|-----|---------------------------------|---|
| The Empire District Electric Company | DE | EO-2014-0063 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Union Electric Company d/b/a Ameren Missouri | DE | EO-2014-0062 | Integrated Resource Planning: Special Contemporary Topics Comments |
| The Empire District Electric Company | DE | EO-2013-0547 | Triennial Integrated Resource Planning Comments |
| Working Case: State-Wide Advisory Collaborative | OPC | EW-2013-0519 | Presentation: Does Better Information Lead to Better Choices? Evidence from Energy-Efficiency Labels Presentation: Customer Education & Demand-Side Management |
| Independence-Missouri | OPC | Indy Energy Forum 2014 | Presentation: Energy Efficiency |
| Independence-Missouri | OPC | Indy Energy Forum 2015 | Presentation: Rate Design |
| NARUC – 2017 Winter, Washington D.C. | OPC | Committee on Consumer Affairs | Presentation: PAYS Tariff On-Bill Financing |
| NASUCA – 2017 Mid-Year, Denver | OPC | Committee on Water Regulation | Presentation: Regulatory Issues Related to Lead-Line Replacement of Water Systems |
| NASUCA – 2017 Annual Baltimore, | OPC | Committee on Utility Accounting | Presentation: Lead Line Replacement Accounting and Cost Allocation |
| NARUC – 2018 Annual, Orlando | OPC | Committee on Consumer Affairs | Presentation: PAYS Tariff On-Bill Financing Opportunities & Challenges |

The Empire District Electric Company
Missouri Public Service Commission
Case No. EA-2019-0010
Response to Office of Public Counsel's Data Request 2001-2014

Response provided by: Todd Mooney

Title: Vice President, Finance and Administration

Company Response Number: OPC 2001

Date of Response: November 20, 2018

Question:

Please provide the most recent update to Empire's Generation Fleet Analysis that Blake A. Mertens references in his direct testimony at page 4, lines 15-19. If no such update has occurred since Case No. EO-2018-0092, please provide a narrative explanation of why not.

Response:

The most recent modeling by ABB / Charles River Associates related to the GFSA / CSP was completed as part of the settlement negotiations in Docket EO-2018-0092. No update has been performed since then since the ultimately executed contracts LCOE's for the portfolio of wind projects (Kings Point, North Fork Ridge and Neosho Ridge) were at or below the \$23.89 contemplated in that docket.

Responsible person(s): Todd Mooney

Exhibit No.:

Issue(s):

Overview of Proposal/
MO PSC Regulatory Activity/
Federal Regulatory Activity/
SPP Activity and Modeling/
Ancillary Considerations

Witness/Type of Exhibit:

Marke/Rebuttal

Sponsoring Party:

Public Counsel

Case No.:

EO-2018-0092

REBUTTAL TESTIMONY

OF

GEOFF MARKE

Submitted on Behalf of the Office of the Public Counsel

EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EO-2018-0092

February 7, 2018

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REBUTTAL TESTIMONY
OF
GEOFF MARKE
EMPIRE DISTRICT ELECTRIC COMPANY
CASE NO. EO-2018-0092

I. INTRODUCTION

Q. Please state your name, title and business address.

A. Geoffrey Marke, PhD, Chief Economist, Office of the Public Counsel (“OPC” or “Public Counsel”), P.O. Box 2230, Jefferson City, Missouri 65102.

Q. What are your qualifications and experience?

A. I have been in my present position with OPC since April of 2014 where I am responsible for economic analysis and policy research in electric, gas and water utility operations. Prior to joining OPC, I was employed by the Missouri Public Service Commission and before that the Missouri Department of Natural Resources (later transferred to the Department of Economic Development). I have also worked in the private sector as the Lead Researcher for Funston Advisory based out of Detroit, Michigan. My experience with Funston involved a variety of specialized consulting engagements with both private and public entities. I have a PhD in Public Policy Analysis and Administration from Saint Louis University.

Q. Have you testified previously before the Missouri Public Service Commission?

A. Yes. A listing of the cases in which I have previously filed testimony and/or comments before the Commission is attached in GM-1.

Q. What is the purpose of your rebuttal testimony?

A. I respond to The Empire District Electric Company’s (“Empire” or “Company”) “Customer Savings Plan” proposal, as well as to the direct testimonies of Empire witnesses: David R. Swain, Christopher D. Krygier, Todd Mooney and James McMahon.

1 I provide a general overview of Empire’s proposal as well as background regarding Empire’s
2 recent regulatory activity in Missouri (e.g., pre and post-acquisition by Liberty Utilities). I also
3 provide contextual background on the macro-level changes that have occurred in the past two
4 years at the federal level regarding policy related to energy reliability, environmental
5 compliance, and corporate and renewable tax policy. Finally, I will discuss the ongoing market
6 transformation of the Southwest Power Pool (“SPP”) and outstanding ancillary concern OPC
7 has with Empire’s proposal.

8 **Q. What is OPC’s position on Empire’s plan?**

9 A. Based on our review of the Company’s proposal, OPC recommends that the Commission reject
10 the “Customer’s Savings Plan” due to the heightened risk to ratepayers and the uncertainty
11 regarding the terms of the transaction. The espoused benefits to ratepayers appear both
12 overstated and are dependent on modeling assumptions that do not fully reflect the changing
13 regulatory and market landscape even since the initial filing.

14 This is a complicated case with many moving pieces made all the more worrisome because of
15 the limited amount of time that has been afforded regulatory review. As such, OPC reserves
16 the right to provide additional information and amended analysis in surrebuttal testimony based
17 on our on-going review of the Company’s proposal and responses to OPC’s outstanding
18 discovery requests.

19 **II. OVERVIEW OF EMPIRE’S PROPOSAL**

20 **Q. Would you please provide some context for Empire’s proposal?**

21 A. Today, The Empire District Electric Company can claim to be both the cleanest *and* most
22 expensive investor-owned utility (“IOU”) in Missouri. The economic and regulatory
23 imperative for the “Greening of Empire” that made it an attractive asset for Liberty Utilities to
24 pay a 21% premium back in early 2016 has diminished considerably due to a combination of
25 variables largely outside of its control. Those variables include the rejection of the Clean Power

1 Plan, the approval of the Tax Cuts and Jobs Act of 2017, a market-run on wind generation in
2 the Southwest Power Pool (“SPP”), and flat load growth coupled with excessive sunk
3 environmental costs all of which reduce the window of opportunity that should otherwise exist
4 with the ability to acquire inexpensive intermittent wind generation due to the expiration of the
5 production and investment tax credits (“PTC” and “ITC”) and potential capital offset from a
6 tax equity partnership.

7 Make no mistake of it, what Empire is requesting here is unprecedented. The Commission
8 would be well advised to keep in mind the urgency (or scarcity) principle and have a healthy
9 degree of skepticism when it comes to regulatory requests that apply an “act now, limited time
10 only pressured sales pitch.”¹ Because of past managerial decisions, Empire cannot afford to
11 shift risk onto its ratepayers by locking them into a scenario where they would increasingly be
12 exposed to the uncertainty of excessive costs on the SPP market with an excessive amount of
13 generation capacity.

14 The decision in front of the Commission is not to build a coal *or* wind farm. The coal plant is
15 built. Nor does OPC believe this is merely a decision to retire Asbury and replace it with wind.
16 Instead, what is at stake is a complete departure from how Empire has operated to date—
17 namely, to provide safe and adequate service to meet its native load. Figures 1-3 provides a
18 breakdown of the stated and unstated investment and operational decisions for the
19 Commission’s consideration.

¹ See also Cialdini, R.B. (2006) *Influence: The Psychology of Persuasion*. Harvard Business.

Figure 1: Graphical illustration of Asbury generation to serve load (current state)

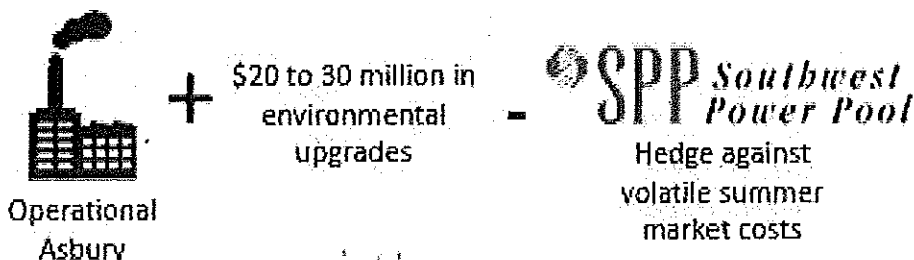


Figure 2: Graphical illustration of Company's proposed application

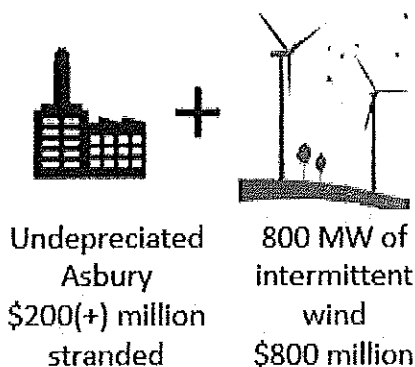


Figure 3: Graphical illustration of OPC's interpretation of Company's proposed application



The ratepayer “benefits” hoped to be obtained in this transaction are based on projecting assumptions far out into the future based on narrowly defined parameters. In contrast, the “benefits” to shareholders are guaranteed, at least in the short-term. OPC’s greatest fear in this proposal is locking-in Empire’s largely rural southwest Missouri ratepayers into volatile, excessive rates into the future.

1 There is also an opportunity cost in this proposal. Exposing Empire's ratepayers to volatile rate
2 increases based on speculative managerial decisions that are dependent, in part, on an SPP
3 market that is increasingly shedding its base load generation will make every future, necessary
4 regulatory cost required to provide safe and reliable service all the more difficult, which will
5 in turn, impact Empire's shareholders as well. The Commission should also consider the
6 regulatory credibility to Empire's customers that is on the line in relation to the magnitude of
7 the proposal compared to this fast-tracked procedural schedule.

8 **Q. Would you provide context for the magnitude of Empire's proposal?**

9 **A.**Empire proposes to spend, in conjunction with tax equity partner(s) (with the tax equity partner
10 typically covering 50 to 60 percent of the capital costs), \$1.5 billion to produce 800 MW of
11 nameplate capacity wind generation. Under the Company's Oct. 31, 2017 filing, the best-case
12 scenario (which includes annual rate cases) would yield up to \$325 million in cost savings to
13 Empire's retail customers over a 20-year period and \$607 million in savings on a 30-year
14 present-value revenue requirement ("PVR") basis.² Empire is requesting to treat its capital
15 investment in wind in its rate base and recover the operating expenses related to it.

16 To accomplish the espoused savings, Empire requires the premature retirement of its Asbury
17 Generation facility. Empire is asking to recover the full undepreciated net book value of the
18 Asbury facility, or approximately \$200 million dollars. That excessive amount exists, in large
19 part, because Empire recently sought and was granted \$112.1 million in environmental retrofits
20 (excluding allowance for funds used during construction or "AFUDC") that would allow it to
21 remain operational for at least twenty more years. By retiring the Asbury facility prematurely,
22 Empire's retail customers would avoid having to pay expected environmental costs of up to

² Stated differently, Empire estimates that this will result in Missouri average residential customer savings of \$9.33 per month for the twenty year period. See Direct Testimony of Christopher D. Krygier p. 5, 1.

1 \$20 to \$30 million dollars related to proper disposal of residuals from coal combustion.³
2 However, recent US EPA draft rule proposals may temper these expected costs.⁴

3 Perhaps most importantly, Empire is seeking from the Commission a decisional prudence
4 determination (or “pre-approval” in a non-pre-approval state) for the entirety of its application
5 outside of rate case where all relevant factors can be considered and before the asset is proven
6 to be used and useful. OPC sent DR-2007 to clarify Empire’s position on this matter. The
7 question and subsequent response follows:

8 **Question:**

9 In his direct testimony Empire witness David. R. Swain, at p. 6, lines 18-22 states:

10 *The Company is seeking approval of the fundamental concepts of the Customer Savings*
11 *Plan given the magnitude of the investments involved. As the Commission and parties*
12 *will understand, the Company would not embark on such a significant proposal*
13 *without first obtaining approval of this blue print from its regulators.*

- 14 • Is Empire seeking Missouri Public Service Commission pre-approval of its Plan?
15 If not, what is Empire seeking?
- 16 • If Empire is not seeking Missouri Public Service Commission preapproval for its
17 plan, then may stakeholders raise prudency issues regarding the plan in future
18 Empire rate cases?

19 **Response:**

20 **Empire is not requesting pre-approval of the Customer Savings Plan per se, but**
21 **rather is seeking regulatory support and validation for its proposed framework.**
22 (emphasis added) Specific authorizations from the Commission that the Company seeks
23 are:

- 24 a) Authorization to record its investment in, and the costs to operate, the Wind
25 Projects as described in Empire Witness Mooney’s Direct Testimony,
26 including a finding that Empire’s investment related to the Customer Savings
27 Plan should not be excluded from Empire’s rate base on the ground that that
28 the decision to proceed with the Plan was not prudent;

³ OPC witness John A. Robinett provides testimony regarding Empire’s varying estimates of the cost of meeting the disposal requirements.

⁴ US EPA (2018) Oklahoma: Approval of state coal combustion residuals state permit program. Proposed rule <https://www.federalregister.gov/documents/2018/01/16/2018-00474/oklahoma-approval-of-state-coal-combustion-residuals-state-permit-program>

- 1
2 b) Authorization to create a regulatory asset for the undepreciated balance of the
3 Asbury facility, as described in Empire Witness Sager’s Direct Testimony, so
4 that it may be considered for rate base treatment in subsequent rate cases;
5
6 c) Approval of depreciation rates as described in Empire Witness Watson’s
7 testimony, so that depreciation can begin as soon as the assets are placed in
8 service;
9
10 d) Approval of the arrangements between Empire and affiliates necessary to
11 implement the Customer Savings Plan, to the extent necessary;
12
13 e) Issuance of an order that is effective by June 30, 2018, so that Empire can take
14 advantage of a limited window of opportunity to bring these savings to
15 customers; and
16
17 f) For such other and further relief as may be appropriate.

18 **In essence, these approvals will provide a framework against which Empire**
19 **could be judged for prudence in a later case.**

20 Responsible person(s): Christopher D. Krygier⁵ (emphasis added)

21 Missouri is not a pre-approval state and neither Empire nor this Commission can bind
22 future Commissions on the prudence of Empire’s past managerial decisions.

23 Masquerading this request as merely “regulatory support and validation” or a
24 “framework” does not nullify what Empire is ultimately seeking from this Commission—
25 pre-approval.

26 **Q. How long has Empire given regulators and OPC to review and analyze its proposal**
27 **before filing rebuttal testimony?**

28 **A.**Empire filed its case in chief on October 31, 2017. Exactly ninety-nine days later, spanning
29 two major holidays (Thanksgiving and Christmas) and in the middle of an unusually large
30 volume of regulatory filings, regulators and advocates are charged with filing their

⁵ See also GM-2

1 recommendations on Empire's proposal to the Commission in their rebuttal testimony. The
2 slashed regulatory procedural schedule coupled with the magnitude of costs at stake by itself
3 should give the Commission pause. But it is also important to keep in mind that during that
4 same approximate 3-month timespan a number of key assumptions to the initial proposal have
5 become increasingly less certain. Most notably, the passage of the Tax Cuts and Jobs Act of
6 2017 which includes a corporate tax rate reduction from 35% to 21% and a base erosion anti-
7 abuse tax ("BEAT") provision for multinational corporations, both of which will impact the
8 terms and/or potential number of available tax equity partners with which to enter into a tax
9 equity partnership agreement. This testimony will address these and other key variables the
10 Commission should take into consideration when assessing Empire's proposal. In short, the
11 proposal and espoused benefits have already been diminished in the brief time that has elapsed
12 since Empire filed its proposal less than a hundred days ago which calls into question the
13 validity of projected "benefit" assumptions twenty or thirty years out into the future.

14 **III. RECENT REGULATORY ACTIONS: 2013 - PRESENT**

15 **Q. Were you involved in regulatory proceedings in Missouri surrounding Empire's**
16 **environmental retrofits to the Asbury Power Plant?**

17 **A.** Yes. I participated in Empire's triennial integrated resource planning ("IRP") filing in Case
18 No. EO-2013-0547 as well as the Company's subsequent rate cases where those costs were
19 recovered in rates, Case Nos. ER-2014-0351 and ER-2016-0023.

20 **Q. Was Empire's decision to invest in the environmental retrofits at Asbury prudent?**

21 **A.** I believe so. The environmental retrofits were a necessary addition to ensure Empire could
22 provide safe and reliable energy for twenty or more years. For a variety of reasons, but
23 mostly due to the cost impact to ratepayers, Empire did not select alternative plans that
24 included renewable generation and/or demand-side management options.⁶

⁶ Empire's plan would also include the \$168 million dollar investment for the Unit 12 Combined Cycle project at its Riverton Power Plant. Both investments were made as part of Empire's least-cost resource plan to meet the Environmental Protection Agency ("EPA") mandates related to mercury, sulfur dioxide, and particulate matter.

1 Q. When it was made would Empire's decision to invest in environmental retrofits been
2 prudent if Asbury was only going to be in service for another five years?

3 A. No.

4 Q. Did Empire's electric rates increase over the past decade before Liberty acquired it?

5 A. Yes. Ratepayers have experienced a compounded increase in rates of 62.23% over the past
6 ten years before Liberty acquired Empire in 2016 as shown in Table 1.

7 Table 1: Empire rate case history 2007-2016

| Case Number | Dollar Value | Percent Increase |
|---------------------------|---------------|------------------|
| ER-2006-0315 | \$29,300,000 | 9.96% |
| ER-2008-0093 | \$22,040,395 | 6.70% |
| ER-2010-0130 | \$46,800,000 | 13.90% |
| ER-2011-0004 | \$18,685,000 | 4.70% |
| ER-2012-0345 | \$27,500,000 | 6.85% |
| ER-2014-0351 | \$17,125,000 | 3.88% |
| ER-2016-0023 | \$20,400,000 | 4.46% |
| Total Dollars | \$181,850,395 | |
| Total Compounded Increase | | 62.23% |

8
9 Q. Were you involved in the Missouri case where Liberty sought Commission authority to
10 acquire Empire?

11 A. Yes. I filed rebuttal and surrebuttal testimony on behalf of Public Counsel in Case No. EM-
12 2016-0213.

13 Q. Did Liberty Utilities file testimony to support that the acquisition would not negatively
14 impact Empire's rates?

15 A. Yes. For example, regarding the impact on Empire's customer's rates, the following assertions
16 were made by the joint applicants in their direct testimony.

- 1 • President and Chief Executive Officer of Empire, Brad Beecher⁷
- 2 ▪ *Empire's customers will see no change in their . . . rates.*⁸
- 3 • President of Liberty Utilities (Canada) Corp. David Pasieka
- 4 ▪ *We are confident that . . . the current operations will continue as they exist*
- 5 *today and only the ownership of Empire's shares will change hands.*⁹
- 6 • Director of Regulatory and Government Affairs for Liberty Service Corp., Christopher
- 7 D. Krygier
- 8 ▪ *The proposed transaction will not result in any change in the rates currently*
- 9 *charged to Empire's retail customers.*¹⁰

10 **Q. Did Liberty Utilities make any claims about "greening" Empire's generation profile in**
11 **Case No. EM-2016-0213?**

12 **A.** Neither Liberty nor Empire made any statements supporting that narrative in their filing.
13 However, certain interveners supported the acquisition, in part, because of Liberty's,
14 "experience" with renewables. For example, the Missouri Division of Energy ("DE") witness
15 Martin R. Hyman provided the following Q & A in his rebuttal testimony:

16 Q. What does DE recommend based on these observations?

17 A. DE agrees with Mr. Pasieka and Mr. Krygier that the Applicants appear well-
18 positioned to use Algonquin's renewable energy resource development expertise to the
19 benefit of EDE. To solidify these benefits, DE supports a commitment by the
20 Applicants **to consider** the development of renewable energy resources for EDE in
21 Missouri. (emphasis in original)¹¹

22 **Q. What was OPC's response to DE's assertion in that case?**

23 **A.** I responded to Mr. Hyman in my surrebuttal testimony as follows:

⁷ Mr. Beecher, along with many of Empire's pre-acquisition leadership, is no longer employed with Empire.

⁸ EM-2016-0213 Direct Testimony of Brad Beecher, p. 7, 4.

⁹ EM-2016-0213 Direct Testimony of David Pasieka, p. 14, 16-18.

¹⁰ EM-2016-0213 Direct Testimony of Christopher D. Krygier p. 9, 6-7.

¹¹ EM-2016-0213 Rebuttal Testimony of Martin R. Hyman p. 11, 3-6.

1 No. This observation is grossly misleading and entirely speculative at best. Mr. Hyman
2 offers no definition of “renewable energy resource development expertise,” assumes
3 renewable energy is a “benefit” to ratepayers, and makes no attempt to address the
4 regulatory, market, and resource-constrained realities in which Empire currently
5 operates. In short, Mr. Hyman’s proclamation is without context. For example,
6 approval of the merger would not change the fact Empire has just added an
7 additional 100MW in capacity in its Riverton 12 combined cycle unit. Moreover,
8 according to Empire’s recently filed triennial IRP, there will be no need for a MEEIA¹²
9 and no need for future capacity until 2029¹³ . . . Even if Empire needed to build
10 additional capacity (which they do not), there is no guarantee that renewable capacity
11 would be the preferred generation, the prudent choice, or the least cost option. It is
12 OPC’s position ratepayers should not have to pay for any additional capacity in
13 the near future. This is especially true considering ratepayers have experienced a
14 compounded increase in rates of 62.23% over the past ten years.¹⁴(emphasis not in
15 original cited testimony)

16 **Q. Did Liberty Utilities parent, Algonquin, make any claims about “greening” Empire’s**
17 **generation profile outside the context of Case No. EM-2016-0213?**

18 **A.** Yes. Before this Commission approved acquisition, Algonquin/Liberty had clearly identified
19 Empire as an opportunity for significant capital investment in renewable generation, driven in
20 large part by pending federal regulatory compliance in the form of the Clean Power Plan
21 (“CPP”). During Algonquin Power & Utilities Q1 2016 Results – Earnings Call, CEO Ian
22 Robertson had the following exchanges with analysts on the investment opportunities present
23 in Empire:

¹² EO-2016-0223 The Empire District Electric Company Triennial Compliance Filing. Volume 7 Resource Acquisition Strategy Selection 7-8: “Empire’s decision makers have selected Plan 5 as the Preferred Plan. Plan 5 contains no Missouri DSM portfolio and supply-side resources are not added until the latter part of the study period.”

¹³ EO-2016-0223. The Empire District Electric Company Triennial Compliance Filing. Volume 7 Resource Acquisition Strategy Selection 7-9.

¹⁴ EM-2016-0213 Surrebuttal Testimony of Geoff Marke p. 4, 11-19 and p. 5, 3-8.

1 May 13th, 2016 10:00AM ET

2 **Rupert Merer [analyst]**

3 So with the IPP [independent power producer or non-utility generator] business, you
4 talked a little in your comments about potential for growth there. Do you see that
5 growing from 25% of the business to something bigger again? How do you view the
6 future opportunities, thinking maybe a little more long-term?

7 **Ian Robertson [Chief Executive Officer, Algonquin Power & Utilities Corp.]**

8 And as I've often articulated, one of the huge benefits of bringing Empire into the
9 Algonquin portfolio is that, we will call it the headroom. It's occasioned by that
10 in terms of being able to grow the IPP business. (emphasis added)

11 We obviously love the opportunity where our entrepreneurial spirit can be brought to
12 surface opportunities in the IPP business. So you should definitely expect us to be sort
13 of continually aggressive on finding IPP opportunities. As I mentioned earlier, I think
14 the tailwinds for the sector are quite strong, with the extension of the PTCs and the
15 ITCs.

16 I think the continued environmental pressures, and maybe most importantly, the
17 continued economic trends that make wind, certainly today, and solar, hopefully
18 tomorrow, just the economic choice for providing new energy.

19 So Rupert, the foot is not coming off the gas pedal at all on the IPP side of the business,
20 and we're certainly, you would expect to see that pendulum quite happily swing back
21 toward the 50/50, unless of course we can keep growing the utility business and keep
22 it there. But no way are we taking our foot off the gas on the IPP side. . . .

23 **Eric Tang [analyst]**

24 That answers it fair enough. Just going back to the Empire acquisition. What is your
25 long-term accretion, I guess target budgeted for beyond three years? Do you have a target
26 in mind at the moment?

1 **Ian Robertson**

2 From an accretion point of view, three years out, obviously we are hoping to bring
3 more to the investment opportunity that was clearly in the portfolio of CapEx that was
4 reflected in our acquisition numbers.

5 Those were numbers that were frankly cribbed from the existing Empire management
6 team. This gets back to the comment earlier where our real objective is to make sure
7 that one plus one equals more than two in terms of being able to find growth
8 opportunities. We've talked about them in the past, this idea of greening the
9 Empire portfolio. The idea of bringing more natural gas and renewables to the Empire
10 mix. Those are all part of the longer-term thesis associated with this opportunity.
11 (emphasis added)¹⁵

12 **Q. Did Algonquin/Liberty express similar public sentiment after the Missouri Commission**
13 **approved the acquisition of Empire?**

14 **A.** Yes. As shown in Figure 4 and Figure 5 from the Algonquin Power & Utilities Corp.
15 Investor Presentation on November 8, 2016 at the 51st EEI (“Edison Electric
16 Institute”) Financial Conference in Phoenix, Arizona.

¹⁵ Seeking Alpha (2016) Algonquin Power & Utilities (AQUNF) CEO Ian Robertson on Q1 2016 Results—Earnings Call Transcript. <https://seekingalpha.com/article/3974966-algonquin-power-and-utilities-aqunf-ceo-ian-robertson-q1-2016-results-earnings-call>

1 Figure 4: Greening of Empire Portfolio (Nov. 8th, 2016)

Algonquin & Empire – Better Together 

Strategic Rationale

- ✓ **Accretive transaction** for per share earnings and cash flows. Consistent with Algonquin's targeted 10% dividend CAGR
- ✓ **Scale:** Operational and financial efficacies of scale across regulated business
- ✓ **Greening of EDE Portfolio:** Pursuit of investment in coal replacement/ displacement with renewables and natural gas
- ✓ **Draws on our renewables expertise** for potential replacement of market sourced energy with development of rate based renewable generation
- ✓ **Facilitation of Growth:** Creates opportunities for further mid-west investment



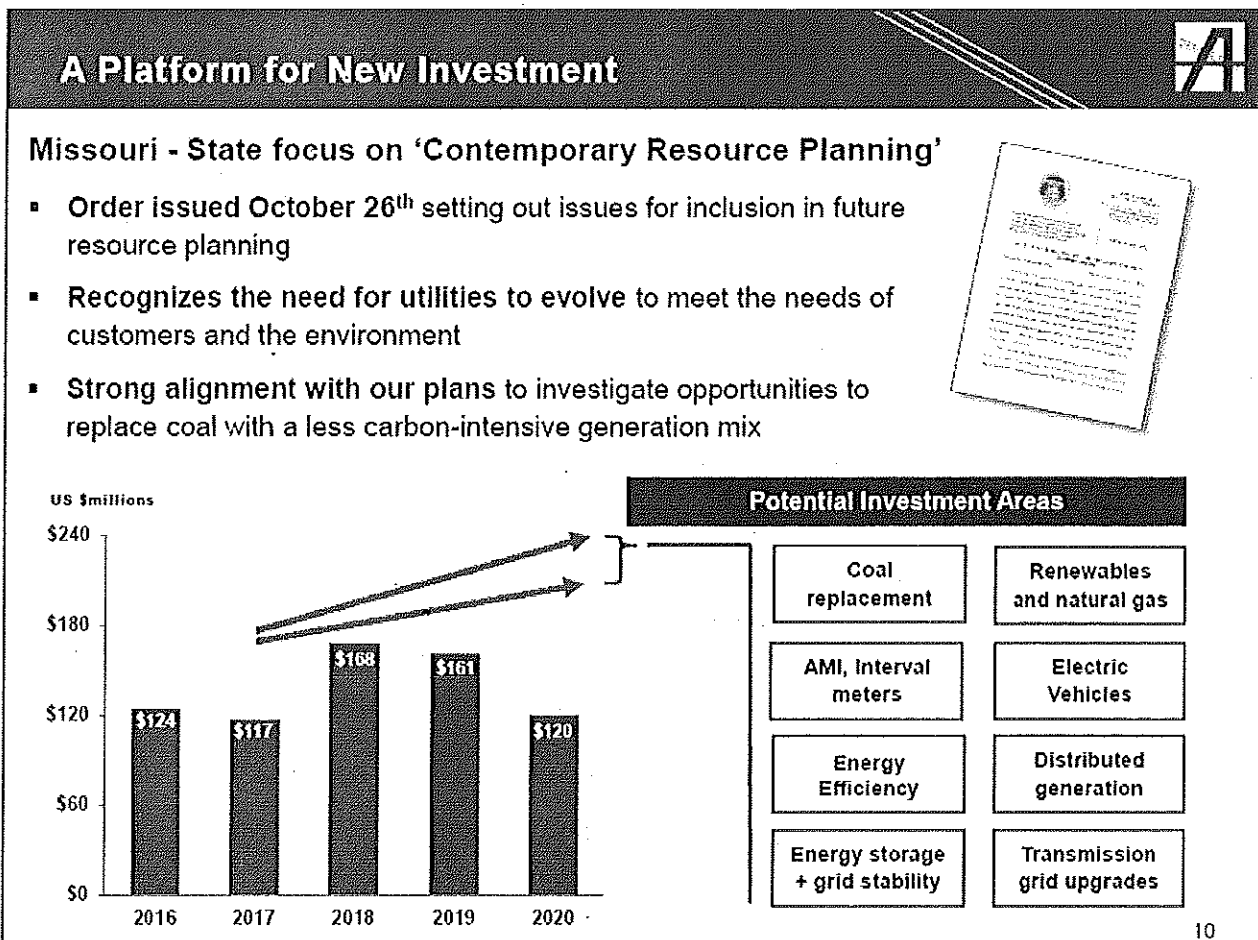
| Transaction Announced | Regulatory approval process | Transaction Close |
|-----------------------|---|-------------------|
| | ✓ FERC – Approval received | |
| | ✓ Oklahoma – Approval received | |
| | ✓ Empire Shareholders – Approval received (95.5% in favour) | |
| | ✓ Missouri – PSC approval received, Order effective Oct. 7 | |
| | ✓ Arkansas – PUC Stipulation Agreement filed | |
| | ☐ Kansas – Final approval no later than January 10 th , 2017 | |

Kansas is our final required approval

2

9

Figure 5: A Platform for New Investment (Nov. 8th, 2016)



Q. Has Empire made any public statements regarding whether or not its Customer Savings Plan is the result of Algonquin/Liberty acquiring it?

A. Yes. Empire's homepage contains a section titled "Local Wind Energy: A Path to Customer Savings" and includes a link to a FAQ sheet.¹⁶ On the sheet appears the following:

Is this project the result of the acquisition by Algonquin/Liberty Utilities?

No. The Integrated Resource Plan prepared and filed by Empire prior to the acquisition considered the addition of low-cost wind in the near term. This is an example of how

¹⁶ Empire District Electric (2018). Local Wind: A Path to Customer Savings. <https://www.empiredistrict.com/Wind>

1 we regularly evaluate opportunities to improve efficiency and proactively respond to
2 market and technology changes.¹⁷

3 **Q. Does OPC agree with this Empire FAQ sheet statement?**

4 A. No. Based on comments by Algonquin CEO Ian Robertson and shareholder presentations
5 pre- and post-acquisition it appears as though the Liberty/Algonquin acquisition of Empire
6 was always predicated on the ability to strand Empire's historical investments in reliable
7 generation to meet its native load and to build up Empire's rate base with intermittent
8 generation.

9 **Q. Please summarize OPC's concern as it relates to your summary of Empire's regulatory
10 activity and environment over the last few years.**

11 A. The Canadian utility Algonquin/Liberty paid a 21% premium to acquire a small investor-
12 owned electric utility in southwest Missouri whose customers were weathering frequent and
13 costly rate increases, but were assured that Empire would not need additional large capital
14 additions to meet their needs for a time. With that acquisition, Algonquin/Liberty obtained a
15 utility that was both long on capacity and already heavily invested in meeting future
16 environmental compliance regulations. In short, there was very little "headroom" for additional
17 investment or growth.

18 In early 2016, the Clean Power Plan seemed like a regulatory inevitability and made Empire
19 an attractive asset to obtain. By the end 2016, the federal government had all but abandoned
20 the sweeping regulatory reform. Today, Empire is still the cleanest *and* most expensive IOU
21 ("investor-owned utility") in Missouri, but the regulatory imperative to shift a greater cost
22 uncertainty onto its ratepayers in exchange for renewables has declined.

23 Empire is also the smallest electric IOU (with approximately 150,000 customers in Missouri)
24 and consequently the most susceptible to price volatility if managerial decisions prove to be
25 inaccurate. Cooler heads should prevail and recognize all of the variables at play here. Simply

¹⁷ Ibid.

1 put, Empire's customers cannot afford a billion dollar mistake. More importantly, they should
2 not be forced to take on a billion dollar gamble when they have no need to.

3 Similar sentiment has been echoed in the public comments by former Empire employees, for
4 example:

5 Public Comment No. P201800823

6 Yesterday, it was made public knowledge that Empire District Electric Company, now
7 under the control of Algonquin Power & Utilities Corporation intends to shut down or
8 divest their interests in the Asbury Generating station in Asbury, MO. Having worked
9 for the utility, I have been aware of their desire to close this plant shortly after the deal
10 was announced to sell to Algonquin. Roughly two years ago, Empire spent
11 approximately \$110 million to perform an environmental retrofit of this facility to
12 add/expand an Air Quality Control System (AQCS). In shutting down this facility, this
13 constitutes gross misconduct on behalf of the utility in the rate making process. Empire,
14 due to two recent and costly capital projects enjoys the highest rates in Missouri.

15 Empire now desires, and has desired, to construct all renewable energy and move away
16 from a carbon footprint altogether which will likely result in future closures. It is
17 distressing to see a utility place such a high emphasis on unreliable and costly sources
18 of energy.

19 I strongly encourage the commission to file an involuntary rate case/intervene in this
20 matter against Empire and seek reduction to their previously awarded rate increase in
21 an effort to better serve the citizens and rate payers the commission is designed to
22 protect from such unethical business practices.

23 Spencer Harding, Joplin, MO.

1 **IV. FEDERAL REGULATORY UNCERTAINTY AND EMPIRE'S PLAN**

2 **Environmental Regulation**

3 **Q. What has recently occurred with regard to federal environmental regulations that are**
4 **relevant to this case?**

5 **A.** There have been a number of federal environmental regulations relevant to Asbury that have
6 either been withdrawn or are actively under review in the first year of the Trump
7 administration, including (but not limited to):

- 8 • Lifting a freeze on new coal leases on public lands;¹⁸
- 9 • Withdrew guidance for federal agencies to include greenhouse gas emissions in
10 environmental reviews;¹⁹
- 11 • Reversed a proposed rule that mines prove they can pay for cleanup;²⁰
- 12 • Proposed repeal of the Clean Power Plan;²¹
- 13 • Announced intent to withdraw the United States from the Paris climate agreement;²²
- 14 • Reviewing limits on toxic discharge from power plants into public waterways;²³
- 15 • Reviewing rules regulating coal ash waste from power plants;²⁴ and

¹⁸Henry, D. (2017) Trump administration ends Obama's coal-leasing freeze. *The Hill*

<http://thehill.com/policy/energy-environment/326375-interior-department-ends-obamas-coal-leasing-freeze>

¹⁹ Trump, D.J. (2017) Presidential executive order on promoting energy independence and economic growth.

<https://www.whitehouse.gov/presidential-actions/presidential-executive-order-promoting-energy-independence-economic-growth/>

²⁰ Brown, M. (2017) US officials drop mining cleanup rule after industry objects. *US News*

<https://www.usnews.com/news/best-states/montana/articles/2017-12-01/us-officials-drop-mining-cleanup-rule-after-industry-objects>

²¹ US EPA (2018) Electric utility generating units: Repealing the Clean Power Plan <https://www.epa.gov/stationary-sources-air-pollution/electric-utility-generating-units-repealing-clean-power-plan>

²² Reuters (2017) US submits formal notice of withdrawal from Paris climate pact.

<https://www.reuters.com/article/us-un-climate-usa-paris/u-s-submits-formal-notice-of-withdrawal-from-paris-climate-pact-idUSKBN1AK2FM>

²³ US EPA (2017) EPA finalizes rule to postpone steam electric power plant effluent guidelines rule.

<https://www.epa.gov/newsreleases/epa-finalizes-rule-postpone-steam-electric-power-plant-effluent-guidelines-rule>

²⁴ Dennis B. & J. Eilperin (2017) EPA will reconsider Obama-era safeguards on coal waste. *The Washington Post*

https://www.washingtonpost.com/news/energy-environment/wp/2017/09/14/epa-will-reconsider-obama-era-safeguards-on-coal-waste/?utm_term=.e0ac64874ca3

- Reviewing emissions standards for new, modified and reconstructed power plants.²⁵

Based on recent precedence, it would not be an unreasonable assumption that further repeal of environmental regulations related to electric generating units in the future are likely. It should be noted that *all* of the aforementioned actions have been undertaken since Liberty's acquisition of Empire. More to the point, it is now, not entirely clear if Asbury's upcoming \$20-30 million in coal ash waste costs should be adjusted in light of pending EPA rule proposals.²⁶

Corporate Tax Reform

Q. Generally, what is the Tax Cuts and Jobs Act of 2007 and how may it impact potential tax equity partners?

A. On December 22, 2017, President Trump signed the Tax Cuts and Jobs Act of 2017, the first major reform of the United States tax code since 1986. Beginning in 2018, the federal corporate income tax rate has been reduced from 35% to 21%. This rate reduction means that US corporations will pay significantly less federal income tax; consequently, the supply of viable tax equity partners "appetite" to enter into projects will decline. Importantly, the rate reduction means sponsors of wind projects will be able to raise less tax equity as depreciation deductions are worth only \$.21 per dollar of deduction rather than \$.35 per dollar.²⁷

Additionally, the Base Erosion Anti-Avoidance Tax ("BEAT") provision targets "earning stripping deals" between US corporations and related parties in foreign jurisdictions. This is relevant to the tax equity industry because some tax equity investors are banks or insurance companies with foreign parents or significant foreign operations. In sum, the market for tax

²⁵ US EPA (2017) Review of the standards of performance for greenhouse gas emissions from new, modified, and reconstructed stationary sources: electric generating units.

<https://www.federalregister.gov/documents/2017/04/04/2017-06519/review-of-the-standards-of-performance-for-greenhouse-gas-emissions-from-new-modified-and>

²⁶ US EPA (2018) Oklahoma: Approval of state coal combustion residuals state permit program. Proposed rule <https://www.federalregister.gov/documents/2018/01/16/2018-00474/oklahoma-approval-of-state-coal-combustion-residuals-state-permit-program>

²⁷ Nixon Peabody. (2018) Tax Cuts and Jobs Act of 2017: effect on tax equity transactions.

<https://www.nixonpeabody.com/-/media/Files/Alerts/2018-January/tax-reform-tax-equity-05jan18.ashx>

1 equity partners and projects has tightened as potential partners now have fewer liabilities and
2 therefore less need to find ways to reduce their tax bills.

3 OPC is concerned with the uncertainty of Empire's Customer Savings Plan, in part because
4 both Empire's assumptions for the plan and the discussions to date with potential partners
5 occurred pre-tax reform. A question the Commission should consider is not just whether or
6 not Empire can attract viable partners, *but* under what terms moving forward? At face value,
7 it would appear that Empire has lost some degree of negotiating leverage by a constricted
8 market which would have an impact on the purported benefits that could be achieved.²⁸

9 **V. SOUTHWEST POWER POOL MARKET ACTIVITY AND EMPIRE'S**
10 **MODELING**

11 **Q. Has SPP experienced an increase in negative price intervals?**

12 **A. Yes. According to the State of the Market Fall 2017 (January 22, 2018) Special Issues**
13 **section:**

14 **Negative Prices**

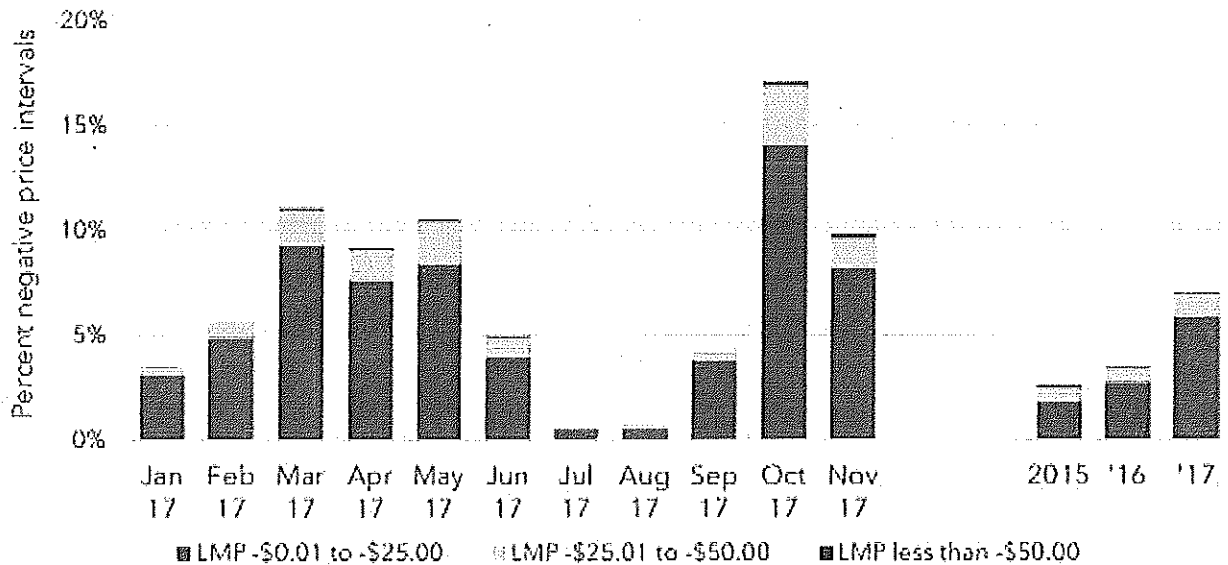
15 With the prolific growth of wind generation in the SPP market, the number of
16 intervals with negative prices continues to increase. In October 2017, 17 percent of all
17 market participants intervals in the real-time market had prices below zero, as shown
18 in Figure 6-1 below. On a year-to-year basis, the total percentage of negative
19 price intervals in the real time market has increased from 2.6 percent in 2015, to
20 3.5 percent in 2016, and to 7.0 percent in 2017 (through November).²⁹ (emphasis
21 added)

²⁸ OPC witness John Riley discusses tax equity concerns in greater detail in his testimony.

²⁹ Southwest Power Pool (2018) State of the Market: Fall 2017 P. 42.

https://www.spp.org/documents/56353/spp_mmu_quarterly_fall_2017_v2.pdf

Figure 6-1 Negative price intervals, real-time, monthly



1
 2 Negative prices can occur when renewable resources need to be backed down in order for
 3 traditional resources to meet their scheduled generation. According to SPP’s Market Monitor,
 4 unit commitment differences, the significant increase in the level of renewable generation, and
 5 the abundance of capacity will likely lead to changes in market rules to address self-committing
 6 of resources in the day-ahead market.³⁰ It is not clear how market rule changes would impact
 7 Empire’s Customer Savings Plan assumptions.

8 **Q. Is there reason to believe negative prices will continue in the near future?**

9 **A.** I believe so. And this underscores one of OPC’s primary concerns with Empire’s modeling
 10 efforts to date. Namely, that Empire has understated the amount of wind generation likely to
 11 come on line in SPP in the near future and failed to properly model for the influx (or virtually
 12 any) of negative prices accompanying that wind generation.

³⁰ Ibid. p. 45-46.

1 **Q Did Empire model a high wind, low coal scenario?**

2 A. Not in its initial re-analysis of its 2016 IRP or in what is reflected in its Customer Savings Plan
3 expected benefits results that it filed in this case. It did, however, model such a scenario based
4 on a request in discovery conferences with OPC since that filing.

5 **Q What were the results?**

6 A. OPC has only recently received the Charles Rivers and Associates (“CRA”) model in response
7 to our request, and we are still in the process of analyzing the results. That being said, we do
8 not believe the model’s “high wind” or “low coal” scenarios are unrealistically conservative
9 assumptions.

10 **Q. Please explain.**

11 A. The amount of wind coming on line or expected to come on line in SPP’s footprint is being
12 announced quicker than CRA’s modeling accounts for. To provide an illustrative example,
13 Kansas City Power and Light (“KCPL”) recently announced it had executed power purchase
14 agreements for 100% of the output from two new wind facilities totaling 444MW of nameplate
15 capacity including:

- 16 • Pratt Wind, 244 MW, located in Pratt County, KS, with an expected online date by
17 December 31, 2018; and
- 18 • Prairie Queen, 200 MW, located in Allen County, KS, with an expected online date by
19 June 1, 2019.³¹

20 Contrast this announcement with Empire’s modeling of “Wind Farm Probabilities” which lists
21 the following “potential” wind projects located in Kansas shown in Table 2 below.

³¹ See EO-2017-0230 and EO-2017-0229

1 Table 2: Expected, weighted wind projects in Kansas per Empire’s modeling scenarios

| Plant Name | State | Phase Status | Date | Nameplate capacity | Last reference date | Weighted probability |
|-----------------------|--------|--------------|------------|--------------------|---------------------|----------------------|
| Cimarron Bend Wind | Kansas | Proposed | 12/31/18 | 200 MW | 8/30/2016 | 10% |
| Jayhawk Wind | Kansas | Proposed | 12/31/18 | 300 MW | 4/14/2017 | 30% |
| Neosho Ridge Wind | Kansas | Proposed | 12/31/18 | 300 MW | 7/1/2017 | 30% |
| Reading Wind Project | Kansas | Proposed | 12/1/18 | 130.5MW | 4/1/2017 | 30% |
| Ringneck Prairie Wind | Kansas | Permitted | 12/31/20 | 70MW | 4/14/2017 | 50% |
| Rush County | Kansas | Proposed | 11/30/2018 | 99MW | 6/7/2017 | 10% |
| Salt Springs | Kansas | Proposed | 1/31/2020 | 200MW | 3/24/2017 | 50% |

2 The Commission should note several items from this list. First, the 444MW of expected wind
 3 generation for which KCPL has executed contracts on is not considered in Empire’s modeling.
 4 Second, of the seven listed Kansas wind projects, only two of them are weighted with a 50%
 5 chance of actually being completed. Third, the last reference date to confirm the status of a
 6 Kansas wind project is July 1, 2017.

7 **Q. Can you provide additional illustrative examples?**

8 **A.** Yes. The two largest “potential” wind projects in Empire’s modeling assumptions include the
 9 following shown in Table 3:

10 Table 3: Two largest wind projects listed in Empire’s modeling scenarios

| Plant Name | State | Phase Status | Date | Nameplate capacity | Last reference date | Weighted probability |
|--------------------------------|--------------|--------------|----------|--------------------|---------------------|----------------------|
| Dakota Community Wind | South Dakota | Proposed | 12/31/18 | 1000 MW | 3/5/2015 | 10% |
| Wind Catcher Energy Connection | Oklahoma | App pending | 10/30/20 | 2000 MW | 10/16/2017 | 50% |

11
 12 These two projects combine for potentially 3GW of wind energy in the SPP footprint.
 13 However, Empire’s model assumes only 1.1GW of wind per its weighted probability.

1 Q. Do you disagree with Empire's assumptions?

2 A. Not necessarily. Instead I am merely presenting this to illustrate that the potential margin for
3 error in the range of wind generation addition assumptions is both quite large and not
4 particularly up-to-date. The second largest wind project in Empire's modeling assumption is
5 given a weighted probability of 10% and was last referenced on March 15, 2015.

6 Q. Do you have any concerns with Empire's modeling inputs?

7 A. Consider two additional inputs that are currently absent in Empire's modeling. Neither the
8 retirement of Asbury nor the expected 800 MW of wind associated with its Customer
9 Savings Plan are factored into the modeling. To understand why, consider that CRA is
10 relying on the best known announced coal retirements since September 15, 2017.³²
11 Empire did not publicly announce its plans to retire Asbury until October 31st. And, since
12 then other coal plants within the SPP footprint have made formal announcements to retire,
13 such as Centennial Hardin Generating Station in Big Horn Montana.³³

14 As the Renewable Electricity PTC and ITC phase down continues it is likely much more
15 wind generation will come on line in the near-term (assuming additional transmission
16 lines and upgrades to existing infrastructure are approved). The inundation of inexpensive
17 wind and SPP's lowering of its planning reserve margin, combined with flat load growth
18 have created a perfect storm of opportunity to strongly consider accelerating and
19 expanding the retirement of inexpensive, inefficient generating units. This is true not just
20 for Empire, but for every SPP member. OPC's concern regarding the Customer Savings
21 Plan and the dynamic SPP market centers on the likely reactions from other market
22 participants from these very same price signals.

23 In short, if Empire's modeling suggests retiring significant amounts of base load
24 generation prematurely is prudent, then other SPP members modeling will show similar

³² The last date in which they obtained data on coal and wind generating units in the SPP footprint.

³³ Hudson, M. (2017) Owners of Hardin coal-fired power plant announce exit in 2018. *Billings Gazette*.
http://billingsgazette.com/news/state-and-regional/montana/owners-of-hardin-coal-fired-power-plant-announce-exit-in/article_d7361054-cbfa-5d3b-81df-f9cff8e87a3c.html

1 results. Under these circumstances, a near-term future where excess SPP reserve margins
2 are erased entirely appears plausible, which would mean that during high demand hours
3 (in the summer when it is not windy) there will likely be significant residual effects—
4 namely higher cost generating units coming online than what would be predicted in a
5 modeling exercise that does not account for other market actors' reactions.

6 **Q. What would happen if the amount of wind on SPP's system doubled or even tripled?**

7 **A.** According to a recent Department of Energy report from Berkeley and Argonne National
8 Laboratories:

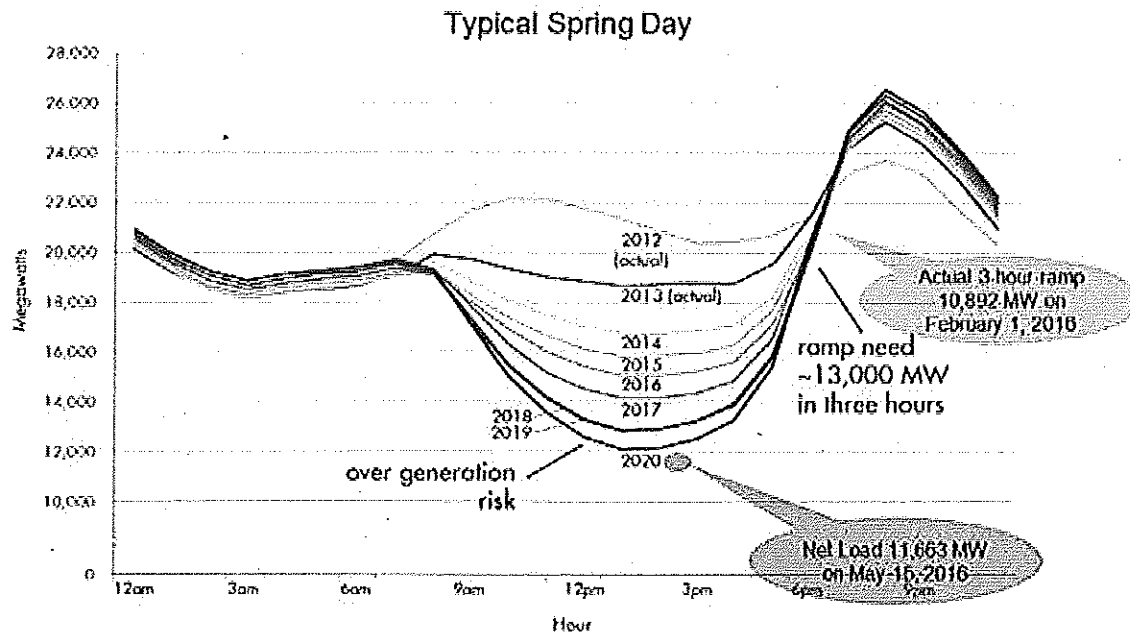
9 **The system value of wind is lower than PV [photovoltaic or solar] at low**
10 **penetrations.** The temporal patterns of wind production lead to system values that
11 tends to be relatively similar to, though often somewhat lower than that of, a flat
12 baseload block at low penetrations: a value factor of ~90% is not uncommon. This
13 system value is well below that for PV in summer-peaking energy systems.

14 **As penetrations increase, the system value of wind declines, but at a relatively**
15 **slower rate than PV.**³⁴ (emphasis in original)

16 Stated differently, absent strong interconnection, transmission and battery storage (amongst
17 other likely complementary investments), at a certain threshold, excessive wind generation
18 results in diminishing returns in terms of system value. One need look no further than
19 California to see what happens when there is excessive variable renewable energy online. The
20 intermittent nature of the non-dispatchable resource enhances prices volatility as seen after the
21 influx of solar was placed on California's grid and illustrated in the now infamous "duck curve"
22 as seen in Figure 7.

³⁴ Wisser, et al. (2017) Impacts of variable renewable energy on bulk power system assets, pricing, and costs. Electricity Markets & Policy Group. Berkeley Lab. p. 74 <https://emp.lbl.gov/publications/impacts-variable-renewable-energy>

1 Figure 7: California's "duck curve" shows steep ramping needs and over-generation risk³⁵



2

3 **Q. Does OPC oppose wind generation?**

4 **A.** Absolutely not. OPC supports an "all of the above" portfolio of generation to meet customers'
5 load and insulate ratepayers as much as possible from price volatility. Wind generation is an
6 essential component to that diverse portfolio, and will no doubt continue to play an increasingly
7 greater role for all of our utilities in the future.

8 **V. ANCILLARY CONSIDERATIONS**

9 **Conservation Impact**

10 **Q. Does wind generation have a negative impact on the environment?**

11 **A.** Not relative to fossil fuel power plants. That being said, wind generation has directly resulted
12 in millions of fatalities of bird and bat populations every year. The data behind these

³⁵California ISO (2016) Fast Facts: What the duck curve tells us about managing a green grid.
https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf

1 estimates has become a source of some controversy.³⁶ In at least one case, wind developers
2 sued to prevent the mortality data from being released to the public.³⁷

3 **Q. Why are birds and bats important?**

4 A. For many reasons that are beyond the scope of this testimony. OPC merely advances that
5 both birds and bats play an integral part in Missouri's ecosystem and economy. Their role in
6 this decision should also be considered in assessing the full range of impacts over the full
7 life-cycle of this \$1.5 billion capital investment.³⁸

8 **Q. Does OPC have a position on the bird and bat populations in relation to Empire's**
9 **proposal?**

10 A. Not at the moment. OPC just received responses to discovery from the Company regarding
11 bird and bat prevailing wind studies, migratory impact surveys, feasibility in siting locations
12 and mortality data disclosure. OPC is also actively seeking out feedback from experts in this
13 field to better inform our position. We reserve the right to file recommendations in surrebuttal
14 testimony if need be.

15 **Customer Savings Plan Alternative**

16 **Q. Do you have any final comments?**

17 A. Empire has chosen to title its proposal the "Customer Savings Plan" and requested expedited
18 approval outside of a rate case. OPC has articulated our many concerns regarding this proposal
19 and the equally relevant risks associated with its purported benefits. We are also wholly
20 confident that shareholders will most certainly profit from this endeavor whether or not
21 customer savings are ever realized. OPC would like to remind the Commission that a second
22 opportunity for a "customer savings plan" has emerged since Empire's October 31st filing.

³⁶ Erickson, W.P. et al.(2014) A comprehensive analysis of small-passerine fatalities from collision with turbines at wind energy facilities *Plos One*. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0107491>

³⁷ Jackson, T. (2016) Wind farm sues to block bird death data releases. *Sandusky Register*
<http://www.sanduskyregister.com/story/201606240028>

³⁸ Amos, A.M. (2016) Bat killings by wind energy turbines continues. *Scientific American*.
<https://www.scientificamerican.com/article/bat-killings-by-wind-energy-turbines-continue/>

1 Better yet, *this* customer savings plan would guarantee customer savings immediately upon
2 approval. OPC is speaking of course to the financial savings from the reduction in corporate
3 federal income tax from 35% to 21% in the Tax Cuts and Jobs Act of 2017 that should
4 rightfully be flowed back to ratepayers. As the Commission is well aware, with the passage of
5 the sweeping federal tax reform, Empire's rates can no longer be considered just and
6 reasonable.

7 OPC finds it both perplexing and disappointing that Empire's response to the Commission and
8 its customers in Case No. AW-2018-0174 is that they intend to keep these financial savings
9 until they are forced to give them back either through a rate case or a complaint case.³⁹

10 Q. Does this conclude your testimony?

11 A. Yes.

³⁹ If a rate case is initiated through the file and suspend method, rates can go into effect within 30 days if the Commission does not suspend the tariff filing or even sooner if the Commission finds good cause to order them into effect in less than thirty days.

CASE PARTICPATION OF
GEOFF MARKE, PH.D.

| Company Name | Employed Agency | Case Number | Issues |
|---|--------------------------------|------------------------------|---|
| Empire District Electric Company | Office of Public Counsel (OPC) | EO-2018-0092 | Rebuttal: Overview of proposal/ MO PSC regulatory activity / Federal Regulatory Activity / SPP Activity and Modeling / Ancillary Considerations |
| Great Plains Energy Incorporated, Kansas City Power & Light Company, KCP&L Greater Missouri Operations Company, and Westar Energy, Inc. | OPC | EM-2018-0012 | Rebuttal: Merger Commitments and Conditions / Outstanding Concerns |
| Missouri American Water | OPC | WR-2017-0285 | Direct: Future Test Year/ Cost Allocation Manual and Affiliate Transaction Rules for Large Water Utilities / Lead Line Replacement Direct: Rate Design / Cost Allocation of Lead Line Replacement Rebuttal: Lead Line Replacement / Future Test Year/ Decoupling / Residential Usage / Public-Private Coordination Rebuttal: Rate Design |
| Missouri Gas Energy / Laclede Gas Company | OPC | GR-2017-0216 GR-2017-0215 | Rebuttal: Decoupling / Rate Design / Customer Confidentiality / Line Extension in Unserved and Underserved Areas / Economic Development Rider & Special Contracts Surrebuttal: Pay for Performance / Alagasco & EnergySouth Savings / Decoupling / Rate Design / Energy Efficiency / Economic Development Rider: Combined Heat & Power |
| Indian Hills Utility | OPC | WR-2017-0259 | Direct: Rate Design |
| Rule Making | OPC | EW-2018-0078 | Comments on cogeneration and net metering |
| Empire District Electric Company | OPC | EO-2018-0048 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Kansas City Power & Light | OPC | EO-2018-0046 | Integrated Resource Planning: Special Contemporary Topics Comments |

| | | | |
|---|-----|-----------------------------|--|
| KCP&L Greater Missouri Operations Company | OPC | EO-2018-0045 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Missouri American Water | OPC | WU-2017-0296 | Direct: Lead line replacement pilot program Rebuttal: Lead line replacement pilot program Surrebuttal: Lead line replacement pilot program |
| KCP&L Greater Missouri Operations Company | OPC | EO-2017-0230 | Comments on Integrated Resource Plan, preferred plan update |
| Working Case: Emerging Issues in Utility Regulation | OPC | EW-2017-0245 | Comments on Emerging Issues in Utility Regulation / Presentation: Inclining Block Rate Design Considerations Presentation: Missouri Integrated Resource Planning; And the search for the "preferred plan." |
| Rule Making | OPC | EX-2016-0334 | Comments on Missouri Energy Efficiency Investment Act Rule Revisions |
| Great Plains Energy Incorporated, Kansas City Power & Light Company, KCP&L Greater Missouri Operations Company, and Westar Energy, Inc. | OPC | EE-2017-0113 / EM-2017-0226 | Direct: Employment within Missouri / Independent Third Party Management Audits / Corporate Social Responsibility |
| Union Electric Company d/b/a Ameren Missouri | OPC | ET-2016-0246 | Rebuttal: EV Charging Station Policy Surrebuttal: EV Charging Station Policy |
| Kansas City Power & Light | | ER-2016-0156 | Direct: Consumer Disclaimer Direct: Response to Commission Directed Questions Rebuttal: Customer Experience / Greenwood Solar Facility / Dues and Donations / Electric Vehicle Charging Stations Rebuttal: Class Cost of Service / Rate Design Surrebuttal: Clean Charge Network / Economic Relief Pilot Program / EEI Dues / EPRI Dues |

| | | | |
|---|-----|--------------|--|
| Union Electric Company d/b/a Ameren Missouri | OPC | ER-2016-0179 | Direct: Consumer Disclaimer / Transparent Billing Practices / MEEIA Low-Income Exemption Direct: Rate Design Rebuttal: Low-Income Programs / Advertising / EEI Dues Rebuttal: Grid-Access Charge / Inclining Block Rates /Economic Development Riders |
| KCP&L Greater Missouri Operations Company | OPC | ER-2016-0156 | Direct: Consumer Disclaimer Rebuttal: Regulatory Policy / Customer Experience / Historical & Projected Customer Usage / Rate Design / Low-Income Programs Surrebuttal: Rate Design / MEEIA Annualization / Customer Disclaimer / Greenwood Solar Facility / RESRAM / Low-Income Programs |
| Empire District Electric Company, Empire District Gas Company, Liberty Utilities (Central) Company, Liberty Sub-Corp. | OPC | EM-2016-0213 | Rebuttal: Response to Merger Impact Surrebuttal: Resource Portfolio / Transition Plan |
| Working Case: Polices to Improve Electric Regulation | OPC | EW-2016-0313 | Comments on Performance-Based and Formula Rate Design |
| Working Case: Electric Vehicle Charging Facilities | OPC | EW-2016-0123 | Comments on Policy Considerations of EV stations in rate base |
| Empire District Electric Company | OPC | ER-2016-0023 | Rebuttal: Rate Design, Demand-Side Management, Low-Income Weatherization Surrebuttal: Demand-Side Management, Low-Income Weatherization, Monthly Bill Average |
| Missouri American Water | OPC | WR-2015-0301 | Direct: Consolidated Tariff Pricing / Rate Design Study Rebuttal: District Consolidation/Rate Design/Residential Usage/Decoupling Rebuttal: Demand-Side Management (DSM)/ Supply-Side Management (SSM) Surrebuttal: District Consolidation/Decoupling Mechanism/Residential Usage/SSM/DSM/Special Contracts |

| | | | |
|--|-----|--------------|---|
| Working Case: Decoupling Mechanism | OPC | AW-2015-0282 | Memorandum: Response to Comments |
| Rule Making | OPC | EW-2015-0105 | Missouri Energy Efficiency Investment Act Rule Revisions, Comments |
| Union Electric Company d/b/a Ameren Missouri | OPC | EO-2015-0084 | Triennial Integrated Resource Planning Comments |
| Union Electric Company d/b/a Ameren Missouri | OPC | EO-2015-0055 | Rebuttal: Demand-Side Investment Mechanism / MEEIA Cycle II Application Surrebuttal: Potential Study / Overearnings / Program Design Supplemental Direct: Third-party mediator (Delphi Panel) / Performance Incentive Supplemental Rebuttal: Select Differences between Stipulations Rebuttal: Pre-Pay Billing |
| The Empire District Electric Company | OPC | EO-2015-0042 | Integrated Resource Planning: Special Contemporary Topics Comments |
| KCP&L Greater Missouri Operations Company | OPC | EO-2015-0041 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Kansas City Power & Light | OPC | EO-2015-0040 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Union Electric Company d/b/a Ameren Missouri | OPC | EO-2015-0039 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Union Electric Company d/b/a Ameren Missouri | OPC | EO-2015-0029 | Ameren MEEIA Cycle I Prudence Review Comments |
| Kansas City Power & Light | OPC | ER-2014-0370 | Direct (Revenue Requirement): Solar Rebates Rebuttal: Rate Design / Low-Income Weatherization / Solar Rebates Surrebuttal: Economic Considerations / Rate Design / Cyber Security Tracker |
| Rule Making | OPC | EX-2014-0352 | Net Metering and Renewable Energy Standard Rule Revisions, Comments |
| The Empire District Electric Company | OPC | ER-2014-0351 | Rebuttal: Rate Design/Energy Efficiency and Low-Income Considerations |
| Rule Making | OPC | AW-2014-0329 | Utility Pay Stations and Loan Companies, Rule Drafting, Comments |

| | | | |
|---|--|------------------------|--|
| Union Electric Company d/b/a Ameren Missouri | OPC | ER-2014-0258 | Direct: Rate Design/Cost of Service Study/Economic Development Rider Rebuttal: Rate Design/ Cost of Service/ Low Income Considerations Surrebuttal: Rate Design/ Cost-of-Service/ Economic Development Rider |
| KCP&L Greater Missouri Operations Company | OPC | EO-2014-0189 | Rebuttal: Sufficiency of Filing Surrebuttal: Sufficiency of Filing |
| KCP&L Greater Missouri Operations Company | OPC | EO-2014-0151 | Renewable Energy Standard Rate Adjustment Mechanism (RESRAM) Comments |
| Liberty Natural Gas | OPC | GR-2014-0152 | Surrebuttal: Energy Efficiency |
| Summit Natural Gas | OPC | GR-2014-0086 | Rebuttal: Energy Efficiency Surrebuttal: Energy Efficiency |
| Union Electric Company d/b/a Ameren Missouri | OPC | ER-2012-0142 | Direct: PY2013 EM&V results / Rebound Effect Rebuttal: PY2013 EM&V results Surrebuttal: PY2013 EM&V results Direct: Cycle I Performance Incentive Rebuttal: Cycle I Performance Incentive |
| Kansas City Power & Light | Missouri Public Service Commission Staff | EO-2014-0095 | Rebuttal: MEEIA Cycle I Application testimony adopted |
| KCP&L Greater Missouri Operations Company | Missouri Division of Energy (DE) | EO-2014-0065 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Kansas City Power & Light | DE | EO-2014-0064 | Integrated Resource Planning: Special Contemporary Topics Comments |
| The Empire District Electric Company | DE | EO-2014-0063 | Integrated Resource Planning: Special Contemporary Topics Comments |
| Union Electric Company d/b/a Ameren Missouri | DE | EO-2014-0062 | Integrated Resource Planning: Special Contemporary Topics Comments |
| The Empire District Electric Company | DE | EO-2013-0547 | Triennial Integrated Resource Planning Comments |
| Working Case: State-Wide Advisory Collaborative | OPC | EW-2013-0519 | Presentation: Does Better Information Lead to Better Choices? Evidence from Energy-Efficiency Labels |
| Independence-Missouri | OPC | Indy Energy Forum 2014 | Presentation: Energy Efficiency |
| Independence-Missouri | OPC | Indy Energy Forum2015 | Presentation: Rate Design |

| | | | |
|----------------------|-----|---------------------------------|--|
| NARUC – 2017 Winter | OPC | Committee on Consumer Affairs | NARUC – 2017 Winter Presentation: PAYS Tariff On-Bill Financing |
| NASUCA – 2017 Summer | OPC | Committee on Water Regulation | NASUCA – 2017 Summer Presentation: Regulatory Issues Related to Lead-Line Replacement of Water Systems |
| NASUCA – 2017 winter | OPC | Committee on Utility Accounting | NASUCA – 2017 Winter Presentation: Lead Line Replacement Accounting and Cost Allocation |

The Empire District Electric Company
Response to Office of Public Counsel's Data Requests 2001-2020
Case No. EO-2018-0092

Response provided by: Christopher D. Krygier
Title: Director, Rates and Regulatory Affairs
Company Response Number: 2007
Date of Response: January 5, 2018

Question:

In his direct testimony Empire witness David R. Swain, at p. 6, lines 18-22, states:

The Company is seeking approval of the fundamental concepts of the Customer Savings Plan given the magnitude of the investments involved. As the Commission and parties will understand, the Company would not embark on such a significant proposal without first obtaining approval of this blueprint from its regulators.

- Is Empire seeking Missouri Public Service Commission pre-approval of its Plan? If not, what is Empire seeking.
- If Empire is not seeking Missouri Public Service Commission preapproval for its plan, then may stakeholders can raise prudence issues regarding the plan in future Empire rate cases?

Response:

Empire is not requesting pre-approval of the Customer Savings Plan per se, but rather is seeking regulatory support and validation for its proposed framework. Specific authorizations from the Commission that the Company seeks are:

- a. Authorization to record its investment in, and the costs to operate, the Wind Projects as described in Empire Witness Mooney's Direct Testimony, including a finding that Empire's investment related to the Customer Savings Plan should not be excluded from Empire's rate base on the ground that that the decision to proceed with the Plan was not prudent;
- b. Authorization to create a regulatory asset for the undepreciated balance of the Asbury facility, as described in Empire Witness Sager's Direct Testimony, so that it may be considered for rate base treatment in subsequent rate cases;

- c. Approval of depreciation rates as described in Empire Witness Watson's testimony, so that depreciation can begin as soon as the assets are placed in service;
- d. Approval of the arrangements between Empire and affiliates necessary to implement the Customer Savings Plan, to the extent necessary;
- e. Issuance of an order that is effective by June 30, 2018, so that Empire can take advantage of a limited window of opportunity to bring these savings to customers; and
- f. For such other and further relief as may be appropriate.

In essence, these approvals will provide a framework against which Empire could be judged for prudence in a later case.

Responsible person(s): Christopher D. Krygier

Exhibit No.:

Issue(s):

Witness/Type of Exhibit:

Sponsoring Party:

Case No.:

Response to
Rebuttal Testimonies
Marke/Surrebuttal
Public Counsel
EO-2018-0092

SURREBUTTAL TESTIMONY

OF

GEOFF MARKE

Submitted on Behalf of the Office of the Public Counsel

EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EO-2018-0092

March 13, 2018

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SURREBUTTAL TESTIMONY
OF
GEOFF MARKE
EMPIRE DISTRICT ELECTRIC COMPANY
CASE NO. EO-2018-0092

1 **I. INTRODUCTION**

2 **Q. Please state your name, title and business address.**

3 **A.** Geoffrey Marke, PhD, Chief Economist, Office of the Public Counsel (“OPC or “Public
4 Counsel”), P.O. Box 2230, Jefferson City, Missouri 65102.

5 **Q. Are you the same Dr. Marke that filed rebuttal testimony in this Case No. EO-2018-**
6 **0092?**

7 **A.** I am.

8 **Q. What is the purpose of your testimony?**

9 **A.** The purpose of my surrebuttal testimony is to respond to the rebuttal testimonies of:

- 10 • The Missouri Division of Energy (“DE”) witness Martin R. Hyman;
- 11 • The Midwest Energy Consumers Group (“MECG”) witness Greg R. Meyer;
- 12 • Renew Missouri’s witness James Owen; and
- 13 • OPC’s updated concerns regarding the ancillary considerations I raised in my rebuttal
14 testimony.

15 **Q. What is OPC’s recommendation?**

16 **A.** OPC is expanding its recommendation that was filed in rebuttal testimony that the Commission
17 reject the “Customer’s Savings Plan” due to the heightened risk to ratepayers and the
18 uncertainty regarding the terms of the transaction to also recommend the Commission find the
19 plan imprudent. The espoused benefits continue to be overstated and are dependent on
20 modeling assumptions that have eroded even further since the parties filed rebuttal testimony
21 on February 7, 2018.

1 **II. RESPONSE TO THE MISSOURI DIVISION OF ENERGY**

2 **Q. What is DE's position?**

3 A. DE generally supports The Empire District Electric Company's ("Empire") proposed
4 Customer Savings Plan with three notable exceptions: 1.) DE takes no formal position on
5 Empire's requested accounting treatment regarding the Asbury plant or on the use of tax equity
6 financing; 2.) Empire's modeling involving demand-side management ("DSM") programs is
7 improperly accounted for; and 3.) Five "economic development" provisions DE recommends
8 be put in place including a one-time cash infusion for local/county/state tax revenue from the
9 Asbury plant along with various worker "re-education/location" provisions for the Asbury
10 employees. I respond to DE's endorsement as well as the three previously stated exceptions in
11 turn.

12 **Q. What is OPC's response to DE's general endorsement of Empire's proposal?**

13 A. OPC notes DE's lack of independent analysis in arriving at its recommendation. Mr. Hyman's
14 testimony appears to want to have it both ways. He restates the savings assumptions Empire
15 espouses and thus implies they are correct and above reproach (e.g., "This modeling showed
16 savings...", "according to the Company...", "Empire has stated..."), but then he takes issue
17 the specific modeling associated with Empire's DSM. More importantly, Mr. Hyman's
18 analysis takes no position on the accounting treatment of Asbury or the terms surrounding the
19 tax equity partnership.¹ This begs the question of whether or not Mr. Hyman's testimony could
20 properly be described as an unbiased, thorough analysis of the proposal if it is void of key
21 inputs in reaching those favorable outcomes. Putting those large caveats aside (at least as it
22 pertains to Asbury and the tax equity partnership), Mr. Hyman then takes as a given, that
23 Empire's proposal is the least-cost option for its customers.

¹ OPC witness John S. Riley explains in his surrebuttal testimony how the accounting and tax equity partnership are directly tied to Empire's purported benefits to its customers and therefore, the claimed customer benefits should not be accepted without a careful review of these aspects of Empire's plan.

1 It is not clear how this selective conclusion can objectively be relied on. Other general
2 statements populated in Mr. Hyman’s testimony require further commentary. For example, in
3 describing the SPP Integrated Market, Mr. Hyman states:

4 In fact, the Southwest Power Pool has demonstrated the capability to reliably
5 adjust to large amounts of wind energy on its system.²

6 This statement is true, but his citation of SPP’s ability to reliably adjust large amounts of wind
7 (52.1%) omits that this demonstration was achieved at 4:30 AM on February 12, 2017. That
8 is, during an hour of the day and time of year when demand is very low and wind is plentiful.
9 Stated differently, a single hour that is not subject to sweeping price volatility and technology
10 constraints to meet peak demand.

11 Another troubling statement Mr. Hyman puts forward is his belief that previous capital
12 investments are irrelevant considerations to moving forward with Empire’s plan,

13 Such previous investments in environmental compliance [for Asbury]
14 represent “sunk costs” in economic terms, meaning that they are not relevant
15 to future decision-making about the Asbury plant’s operations.³

16 This is a very dangerous line of thinking. First, it is technically wrong. In addition to the
17 environmental upgrades, Asbury’s steam turbine was retrofitted and upgraded resulting in
18 Asbury being more efficient moving forward. Although it is true that Empire has recently
19 invested approximately \$124 million dollars in retrofits to Asbury, per, Empire’s Customer
20 Savings Plan, Empire ratepayers will still be paying for the environmental compliance and
21 turbine upgrade costs for the next thirty years. For ratepayers, this investment was not a one-
22 time expense that is no longer relevant (i.e., “a sunk cost”) but an on-going expense to be
23 present in rate base for another generation. Stated differently, whether or not Mr. Hyman wants
24 to acknowledge it, the accounting treatment, prudence and cost allocation of Asbury matters—
25 especially if the decision to adopt Empire’s proposed customer savings plan is predicated on

² EO-2018-0092 Rebuttal Testimony of Martin R. Hyman p. 4, 7-9.

³ Ibid., p. 6, 13-15.

1 prematurely retiring Asbury, and forcing it to become a stranded asset that Empire's customers
2 are required to pay for.

3 Second, this line of thinking is also be at odds with previous testimony Mr. Hyman has put
4 forward when he has argued in favor of the economic considerations associated with "sunk
5 costs" related to the promotion of ratepayer-funded energy efficiency programs; specifically,
6 citing to costs related to program administration, design, and marketing of energy efficiency
7 programs, most notably in the recent Spire general rate cases (Case No. GR-2017-0216 and
8 GR-2017-0217). That is, energy efficiency programs should be approved, in part, because the
9 sunk costs in administrative overhead would be lost if the utility ceased program activity.

10 **Q. Does Mr. Hyman make any statements that OPC can agree with that the Commission**
11 **should be aware of?**

12 **A.** Yes. Mr. Hyman does make a passing statement that OPC agrees with but this statement also
13 merits further elaboration. It follows:

14 This transition will also support future local decisions to increase the use of
15 renewable energy.⁴

16 This declarative statement will most likely be correct if Empire's plan is adopted. Based on
17 OPC's analysis of the Empire's proposal, Commission approval of the plan would shift risk
18 from shareholders to ratepayers. Empire's cost-of-service would include both a return on and
19 return of the stranded asset (Asbury), some, as yet undetermined cost associated with the new
20 wind generation, as well as increased volatility in market prices, and/or future complementary
21 generation. Restated, Empire's ratepayer's bills will likely increase if the Commission
22 approves Empire's proposed plan in future rate case more than they would otherwise. Those
23 increased bills will no doubt encourage some customers to elect to invest in rooftop solar,
24 which will further increase bills for those customers who cannot take advantage of that
25 alternative. Inequities and cost/risk shifting will be accelerated, and will also likely result in
26 future rate increases which will only further exacerbate that trend.

⁴ Ibid. p. 9, 7-8.

1 **Q. What is OPC’s response to DE’s failure to address Empire’s accounting treatment of**
2 **Asbury and use of tax equity financing?**

3 A. DE’s recommendation is based upon selectively choosing the inputs associated with the
4 modeling outcome and ignoring major costs to achieve its desired results. It is inappropriate
5 and misleading of Mr. Hyman to make the following comment:

6 These economic benefits will result from the reduced revenue requirement
7 (and rates) paid by Empire’s customers, as well from the construction and
8 operation of wind facilities in Missouri (if such facilities are, in fact,
9 constructed in Missouri).⁵

10 Today, there is/are no tax equity partner(s), there is/are no defined wind farm location(s), there
11 are no agreements with wind generation contractors, no terms have been negotiated and the
12 SPP market is increasingly becoming saturated with intermittent wind generation. Consider for
13 a moment, that no one to this case can definitively answer this question: “How much this will
14 cost?” At best, Empire’s savings model can put forward a range of expected benefits—benefits
15 that can only be achieved if everything conforms to the model’s assumptions.

16 The Commission should be mindful that models are contain simplifications and assumptions
17 about the real world. Some aspects are discounted as insignificant while others are
18 emphasized. Perhaps the most important element in any model outcome is the ability to
19 validate and verify those assumptions based on what is observed in the real world. If the model
20 doesn’t comport with what is actually happening then the model needs to be refined. It remains
21 to be seen whether Empire will make categorical changes to its model based on what was filed
22 (or observed) by parties in their rebuttal testimony. It bears repeating that Empire’s “savings
23 assumptions” are far out into the future and are predicated on a stable, static policies and market
24 reality moving forward.

25 Perhaps DE will file surrebuttal testimony that fully attempts to analyze all relevant factors that
26 includes taking a formal position on the accounting treatment of Asbury and the uncertainty

⁵ Ibid. p. 7, 7-10.

1 surrounding Empire's plan as it pertains to its impact on its customers. No doubt, all parties,
2 including DE, have been constrained by the accelerated nature and limited amount of time to
3 properly vet Empire's proposal.

4 **Q. Does OPC agree with DE's position on Empire's DSM modeling?**

5 A. Yes, but OPC's conclusions are different.

6 **Q. How?**

7 A. Mr. Hyman correctly points out that Empire's characterization of the realistically achievable
8 potential ("RAP") demand-side programs is not modeled appropriately as a proxy for a
9 Commission-approved Missouri Energy Efficiency Investment Act ("MEEIA") programs, but
10 instead, as the "business-as-usual" DSM programs that are currently in place, and set from
11 Empire's last rate case.

12 The difference is not trivial. If Empire were to cease its "business-as-usual" presently approved
13 DSM programs then costs would decrease and savings would increase for all customers. If, on
14 the other hand, Empire includes a MEEIA-like RAP estimate into its modeling, then the costs
15 would increase for all customers and the savings from this modeling exercise would decrease.

16 **Q. Why?**

17 A. Because Empire's customers do not need to add generation under its current preferred resource
18 plan, and they do not need the additional generation put forward in this plan. The economic
19 argument for DSM is predicated on deferring future investment, not adding more generation
20 when load is not increasing or supply-side units are not at the end of their useful life.

21 There are additional concerns surrounding Empire's ability to effectively implement DSM
22 programs at an appropriate scale which were addressed at length in Empire's filed resource
23 plan. That analysis showed a MEEIA-approved program for Empire would not be cost
24 effective due in part to the unique circumstances surrounding the customers it serves (both
25 largely rural and void of commercial/industrial-eligible customers) and the large amount of
26 capital Empire invested into its existing supply-side units to make them more efficient (see also
27 the aforementioned Asbury retrofits and the Riverton 12 conversion).

1 **Q. Does OPC support DE's five "economic development" provisions?**

2 A. OPC does not support Empire's proposal, and the addition of DE's economic development
3 provisions does not alter our position. That being said, further details on these provisions are
4 necessary before OPC could opine on the appropriateness of these recommendations. For
5 example, how much money is DE's one-time cash infusion for local schools? Between
6 Empire's shareholders and customers who will bear the costs associated with these provisions?
7 Does DE's position change if the wind generation is not sited in Missouri? As presently put
8 forward, DE's proposal lacks the necessary detail for OPC to form an opinion.

9 **III. RESPONSE TO THE MISSOURI ENERGY CONSUMER GROUP**

10 **Q. What is MECG's position?**

11 A. MECG recommends that the Commission not approve Empire's Customer Savings Plan.
12 MECG witness Meyer's testimony centers, in part, on his concern:

13 About the growth of wind generation is SPP and its effects on market prices
14 included as a revenue requirement offset in the CSP [Customer Savings
15 Plan].⁶

16 **Q. Does OPC share Mr. Meyer's concern?**

17 A. Yes. Mr. Meyer's analysis is consistent with OPC's position throughout this case. In my
18 rebuttal testimony I called into question Empire's insufficient, conservative modeling of the
19 high wind, low coal scenario and expressed concern that if Empire's modeling suggests retiring
20 significant amounts of base load generation is prudent, then the modeling of other SPP
21 members would show similar results; and, if acted upon, would minimize the hoped-to-be
22 gained benefits from Empire's plan.

23 To illustrate that point, I cited the omission of recently entered into power purchase agreements
24 for wind generating units for Kansas City Power & Light Company and KCP&L Greater
25 Missouri Operations Company, the omission of Empire's planned retirement of Asbury in its

⁶ EO-2018-0092 Rebuttal Testimony of Greg R. Meyer p. 30, 6-7.

1 own modeling and other illustrative examples, including the weighted probability Empire used
2 for specific projects.

3 **Q. Do you have any updates to that analysis?**

4 A. Yes. Since the parties filed rebuttal testimony, American Electric Power's ("AEP") two GW
5 Oklahoma sited, "Wind Catcher" wind farm has entered into an agreement with the parties to
6 its application for preapproval in Arkansas, but an Oklahoma administrative judge has rejected
7 preapproval and casted doubt on the ultimate outcome of what would be the largest wind farm
8 in the U.S. The full inclusion of the two GW Wind Catcher farm in SPP alone would account
9 for 30% of the probability-weighted capacity assumed in Empire's "high wind" scenario and
10 would no doubt impact Empire's proposal if built.⁷

11 **Q. Did anyone in any of the Wind Catcher case express concern regarding the validity of
12 the savings assumptions of that proposal with the subsequent announcement of Empire's
13 Customer Savings Plan?**

14 A. Yes. The Oklahoma Corporation Commission Public Utility Division Staff's witness, Frank
15 Mossburg (Managing Director with Bates White Economic Consulting) arrived at a conclusion
16 similar to OPC's. In his responsive testimony in the Wind Catcher case (Oklahoma Cause No.
17 PUD 201700267) filed on December 4, 2017, Mr. Mossburg states:

18 Another topic could be "scenarios" or potential combinations of events that
19 add up to a given future. For example, take the risk of price collapse driven
20 by new entry. If all utilities have the same outlook as PSO [Public Service
21 Company of Oklahoma, an affiliate of AEP] then they, too will try and
22 acquire as much PTC qualified wind as possible, leading to a steep drop
23 in prices. This risk ties to PSO's assumptions about new entry, which I discuss
24 later in this testimony. For example Empire Electric District Company,

⁷ Windcatcher represents 2,000 MW while, Empire's "high wind" weighted-probability scenario assumed 6,537 MW of wind coming online in SPP. There are 95 other "potential" project sites of various sizes listed with different weighted probabilities assigned. As stated in my rebuttal testimony, OPC believes the number of "potential" project sites are grossly understated.

1 which serves electricity customers in Oklahoma, Kansas, Arkansas, and
2 Missouri, announced on November 1, 2017 that it plans to expand its wind
3 portfolio by 800 MW by the end of 2020, with projected savings between \$150
4 million and \$300 million over a twenty-year period. . . . Even if just a portion
5 of these projects in Oklahoma and other SPP states come on-line the likely
6 result is far more than 3,170 MW of new wind in 2025. This is particularly
7 true if, as discussed earlier, other utilities are looking at analysis similar
8 to PSO and coming to the same conclusion that they must up their
9 purchases of wind-based power prior to PTC expiration. The resulting
10 rush to lock in low-priced wind deals would bring about a wave of new
11 entry and, presumably, have the effect of depressing market prices and
12 lowering the benefits of additional development.⁸(emphasis added)

13 Q. Are there important differences between the two GW Wind Catcher farm and Empire's
14 800MW Customer Savings Plan that this Commission should consider?

15 A. Yes. Despite being more than double Empire's planned generation (2,000 MW vs Empire's
16 800 MW), Wind Catcher differs from Empire's proposal in several meaningful ways. For
17 example, AEP is not seeking a tax equity partnership to offset capital costs. AEP knows exactly
18 where the location will be sited. AEP has presented the associated costs for construction and
19 transmission and expected capacity factor to be obtained for the wind farm. In contrast,
20 Empire's proposal is void of these relevant details and may likely remain that way well after
21 the Commission rules on this case.

22 The lack of details associated with Empire's proposal makes it difficult, if not impossible to
23 design appropriate consumer protections, such as those parties entered into in the Arkansas
24 Wind Catcher case. To illustrate, one of the consumer protections the parties agreed to and the
25 Arkansas Commission imposed in the Arkansas AEP Wind Catcher case is a cost cap, but,
26 because associated costs are unknown in this case, OPC cannot propose a suitable cost cap to

⁸ Oklahoma PUD 201700267 Responsive Testimony of Frank Mossburg, p. 15, 7-15 & p. 29, 8-14.

1 protect ratepayers if Empire's cost estimates are overrun.⁹ In fact, the lack of such details
2 provides Empire with a perverse incentive to increase construction costs if the Commission
3 does grant its request in this case; thereby increasing rate base and, therefore, rates for cost
4 recovered from its customers. This outcomes ensures a greater return on Empire's investment
5 and a higher earnings per share for Empire's shareholders.

6 To illustrate the reasonableness of OPC's cost uncertainty concerns, consider that Ameren
7 Missouri has publicly announced that it plans to build out 700MW of wind for approximately
8 \$1 billion dollars.¹⁰ Empire, in contrast, has put forward cost estimates of approximately \$1.5
9 billion for 800MW of wind; however, both Empire and Ameren Missouri's costs, locations,
10 and generating unit's efficiencies (capacity factors) are all subject to change based on the
11 contracts they can ultimately secure. That being said, a half-a-billion dollar cost differential
12 between these two utilities of vastly different sizes should give all parties and the Commission
13 pause.

14 **IV. RESPONSE TO RENEW MISSOURI**

15 **Q. What is Renew Missouri's recommendation regarding the treatment of cost savings to**
16 **Empire's customers due to the passage of the federal Tax Cuts and Jobs Act of 2017?**

17 **A. Mr. Owen recommends that Empire:**

18 amend its application to include a request for an accounting authority order to
19 record and defer the dollars associated with changes to the federal tax law until
20 the effective date of rates for its next rate case.¹¹

⁹ See also Arkansas PSC Docket No. 17-038-U

¹⁰ Gray, B. (2017) Ameren Missouri to spend \$1 billion on wind generation projects. *St. Louis Post Dispatch*.
http://www.stltoday.com/business/local/ameren-missouri-to-spend-billion-on-wind-generation-projects/article_08660e51-31e1-5ba3-a156-fb26769b75d6.html

¹¹ EO-2018-0092 Rebuttal Testimony of James Owen p. 9, 6-8.

1 **Q. What is OPC's response?**

2 A. OPC is generally supportive of the spirit of this idea, but not as a condition for support of
3 Empire's unsuitable proposal. In my rebuttal testimony I articulated OPC's disappointment in
4 Empire's response to the Commission regarding the flow-back of customer savings rightfully
5 due to ratepayers as a result of this historic drop in federal taxes.

6 The message from Empire appears to be clear, when it comes to saving its ratepayers money,
7 Empire claims it is not possible outside of a rate case; however, when it comes to generating
8 money for Empire shareholders, anything is possible, especially on an accelerated schedule.
9 Empire's rates continue to appear to no longer be just and reasonable, and OPC's limited
10 resources continue to be tied up in the wrong Customer Savings Plan.

11 **V. REVISED ANCILLARY CONSIDERATIONS**

12 **Q. Has OPC reviewed Empire's bird and bat impact studies?**

13 A. We have reviewed Empire's RFP's, but have not seen the results of the studies. Presumably,
14 these studies are still taking place.

15 **Q. Does Missouri support robust conservation efforts?**

16 A. Yes. Support might be an understatement. The Missouri Department of Conservation is
17 arguably one of the most securely funded state departments, yet receives no general revenue
18 funds. The Department of Conservation's budget is funded entirely from the State's
19 Conservation Commission Fund. That fund includes revenue from hunting and fishing
20 permits, commercial permits, nonresident permits, federal assistance and the Conservation
21 Sales Tax. The Conservation Sales Tax, part of ballot initiative that led to a 1976
22 constitutional amendment, allows the Department of Conservation to receive a 1/8-cent sales
23 tax that has flowed more than \$2 billion in Department of Conservation funding since its

1 inception and led to the repopulation of the State's deer and turkey species as well as to stock
2 lakes and streams with millions of fish each year from 11 hatcheries.¹²

3 **Q. Please provide some context for Missouri's bat population?**

4 **A.** It is estimated that there are 14 species of bats in Missouri. Of those 14 species, 8 are
5 considered either vulnerable extirpation or endangered to extinction. They including the
6 following:

- 7 1. Little brown myotis (*Myotis lucifugus*) vulnerable to extirpation from Missouri and to
8 extinction globally;
- 9 2. Gray myotis (*Myotis grisescens*) endangered;
- 10 3. Southeastern myotis (*Myotis austroriparius*) critically imperiled in Missouri,
11 vulnerable/apparently secure globally;
- 12 4. Northern long-eared myotis (*Myotis septentrionalis*) endangered in Missouri,
13 threatened federally;
- 14 5. Indiana myotis (*Myotis sodalists*) endangered;
- 15 6. Eastern small-footed myotis (*Myotis leibii*) imperiled in Missouri, critically
16 imperiled/vulnerable to extinction globally;
- 17 7. Silver-haired bat (*Lasiurus noctivagans*) vulnerable to extirpation in Missouri;
- 18 8. Rafinesque's big-eared bat (*Corynorhinus rafinesquii*) critically imperiled in
19 Missouri, vulnerable/apparently secure globally;
- 20 9. Tri-colored bat (*Perimyotis subflavus*);
- 21 10. Big brown bat (*Eptesicus fuscus*);
- 22 11. Eastern red bat (*Lasiurus borealis*);
- 23 12. Hoary bat (*Lasiurus cinereus*)
- 24 13. Evening bat (*Nycticeius humeralis*); and
- 25 14. Townsend's big-eared bat (*Corynorhinus townsendii*);

26 Additionally, there are three species of possible occurrence in Missouri including:

¹²Missouri Department of Conservation (2016) 2015-2016 Budget Request with Governor's Recommendations.
https://oa.mo.gov/sites/default/files/FY_2016_Conservation_Budget_Request_Gov_Rec.pdf

- 1 1. The Brazilian free-tailed bat (*Tadarida brasiliensis*);
- 2 2. The big free-tailed bat (*Nyctinomops macrotis*); and
- 3 3. The Seminole bat (*Lasiurus seminolus*)¹³

4 Referencing “new” threats facing Missouri’s bat population, the Missouri Department of
5 Conservation states:

6 Current threats to bats in North America include habitat loss and degradation,
7 cave disturbance, and the use of pesticides, all of which have been threats to our
8 bat populations for many years; however, **two new threats are causing**
9 **noticeable declines: wind power** and white-nose syndrome.

10 **Wind turbines cause mortality to bats** and birds. **The prominent causes for**
11 **bat mortality have been identified as direct collision resulting in bone**
12 **fractures and barotrauma, the damage to body tissue due to the abrupt**
13 **change in pressure close to wind turbines.**^{14 15}(emphasis added)

14 Q. What does the Missouri Department of Conservation mean by saying wind turbines
15 cause barotrauma in bats?

16 A. That means that most bat fatalities were caused by internal hemorrhaging from rapid or
17 excessive pressure change on the lungs. Stated differently, most bat fatalities at wind turbines
18 occurred without any direct contact with turbine blades.¹⁶

19 Q. Please provide some context for Missouri’s bald eagle population?

20 A. From 1981 to 1990, the Missouri Department of Conservation (“MDC”), in cooperation
21 with United States Fish Wildlife Service (“USFWS”) and the Dickerson Park Zoo in
22 Springfield, released 74 young bald eagles in Missouri to reestablish them as nesters. Prior

¹³ Missouri Department of Conservation (2018) Field Guide: Bats <https://nature.mdc.mo.gov/discover-nature/field-guide/bats>

¹⁴ Ibid.

¹⁵ https://ac.els-cdn.com/S0960982208007513/1-s2.0-S0960982208007513-main.pdf?_tid=dc058694-0a37-11e8-adcf-00000aabb0f26&acdnat=1517809746_dd8e8d93e2b840253f01b0d2ec88b0f7

¹⁶ Baerwald, E.F. et al. (2008) Barotrauma is a significant cause of bat fatalities at wind turbines. *Current Biology* 18:16.

1 to that initiative, bald eagles were not present in Missouri. The eaglets (“baby eagles”)
2 were obtained from captive breeding facilities or healthy wild populations and released in
3 nesting habitat at Mingo National Wildlife Refuge (close to Poplar Bluff, Missouri) and
4 Schell-Osage Conservation Area (approximately 88 miles from Joplin) in Missouri. As a
5 result of similar efforts done nationwide, the bald eagle was removed from the endangered
6 species list on June 28, 2007, but still remains protected under the Migratory Bird Treaty
7 and the Bald and Golden Eagle Protection Acts.¹⁷ Table 1 includes a wind risk assessment
8 and key habitat area map of bald eagles in Missouri according to the American Bird
9 Conservancy.

¹⁷ Missouri Department of Conservation (2016) Monitoring Bald Eagles in Missouri.
<https://mdc.mo.gov/conmag/2016-12/monitoring-bald-eagles-missouri>

1 Table 1: Wind Risk Assessment Map and Key Habitat Areas of Bald Eagles in Missouri¹⁸



AMERICAN BIRD
CONSERVANCY WWW.ABCBIRDS.ORG

KEY HABITAT AREA

Bald Eagle: Steve Hildebrand – USFWS

Global Population: 300,000

Trend: Increasing

Threats: Bald Eagles are hunters and scavengers that are closely associated with wetlands and tend to congregate in large numbers at key sites, especially outside the nesting season. They feed mostly on fish and carrion but will opportunistically capture birds and other prey. They are less dependent on aerial hunting than Golden Eagles and so may generally be less prone to wind turbine collisions. However, during their display season they engage in elaborate aerial courtship rituals that may leave them oblivious to spinning turbine blades. The display season varies with region but is typically very late or early in the year—much earlier than the nesting period of most other birds.

Conservation Issues: A huge and successful effort has been made to restore the Bald Eagle population in the lower 48 states. The species is the National Bird of the U.S. It was delisted from protection under the Endangered Species Act on August 8, 2007.

Actions: Place turbines away from eagle nesting and winter concentration areas. Consider turbine shut-downs during the display season.

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¹⁸ American Bird Conservancy (2018) Wind Risk Assessment Map. <https://abcbirds.org/program/wind-energy-and-birds/wind-risk-assessment-map/>

1 **Q. Are other birds at risk from wind generation?**

2 A. Yes. Both birds (especially migratory songbirds)¹⁹ and bat fatalities can increase significantly
3 as a result of improperly sited wind farms.²⁰ As more wind generation is brought online this
4 will no doubt become a greater public policy issue moving forward.

5 **Q. Does OPC have any suggestions?**

6 A. Robust pre-development site selection and possibly curtailment during high risk migratory
7 periods are generally considered best practices but are not always adhered to. The former
8 should be a requirement, the latter may be an inevitability. OPC recommends that utilities
9 also contract with one or more independent pre and post-construction third-party consultant
10 to monitor and verify mortality data for birds and bats from wind generation sites. Ideally,
11 this data would be made understandable and available to the public to encourage full
12 transparency. At a minimum, OPC suggests this data be made available to the Missouri
13 Department of Conservation, the United States Fish and Wildlife Service, the Missouri
14 Public Service Commission Staff and the Missouri Office of the Public Counsel.

15 As it stands, mortality data on birds and bats from wind turbines is difficult to obtain, often
16 opaque or entirely absent for appropriate analysis.²¹ Moving forward, OPC recommends that
17 the site selections for wind farms adhere to conservation best practices, record and report
18 mortality data, and provide annual reports to the Commission for review.

19 OPC believes that Missouri's bird and bat populations are an integral part of our State's
20 ecosystem and their role in appropriate site selections as well as the full range of impacts
21 over the course of the wind farms life cycle needs to be considered.²²

¹⁹ National Wind Coordinating Collaborative (20120) Wind Turbine Interactions with Birds, Bats, and their Habitats.
https://www1.eere.energy.gov/wind/pdfs/birds_and_bats_fact_sheet.pdf

²⁰ Slayton, M. (2016) Conservation department serves notice to wind farm. St. Joseph News-Press
http://www.newspressnow.com/news/local_news/conservation-department-serves-notice-to-wind-farm/article_d0ef5b0b-3188-5158-8cc8-7074fc62430b.html

²¹ Loss, S.R. et al. (2013) Estimates of bird collision mortality at wind facilities in the contiguous United States.
Biological Conservation. <https://www.fws.gov/migratorybirds/pdf/management/lossetal2013windfacilities.pdf>

²² Amos, A.M. (2016) Bat killings by wind energy turbines continues. *Scientific American*.
<https://www.scientificamerican.com/article/bat-killings-by-wind-energy-turbines-continue/>

1 Q. Does this conclude your testimony?

2 A. Yes

Issue(s): Non-Unanimous Stipulation
and Agreement
Witness/Type of Exhibit: Marke/Affidavit
Sponsoring Party: Public Counsel
Case No.: EO-2018-0092

**AFFIDAVIT OF GEOFF MARKE
IN OPPOSITION OF THE
NON-UNANIMOUS STIPULATION AND AGREEMENT**

Submitted on Behalf of the Office of the Public Counsel

EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EO-2018-0092

**

**

*Denotes Confidential Information
that has been redacted*

May 9, 2018

Public Version

I am the same Geoff Marke who previously submitted Rebuttal and Surrebuttal testimony in this docket on behalf of the Office of Public Counsel (“OPC”).

The Empire District Electric Company (“Empire”), Midwest Energy Consumers Group (“MECG”), Staff of the Missouri Public Service Commission (“Staff”), Renew Missouri Advocates (“Renew Missouri”), and Missouri Department of Economic Development – Division of Energy (“DE”) executed and filed a Non-Unanimous Stipulation and Agreement (“S&A”) in this case on April 24, 2018.

Empire, MECG, and Staff witnesses filed affidavits in support of the S&A on April 24, 2018.

Empire Witness Chris D. Krygier put forward in his affidavit that the S&A is both reasonable and in the public interest based on five details, paraphrased as follows:

- 1.) Empire’s modeling suggests that acquiring 600MW of wind generation in or near its service territory will result in an optimal cost-saving outcome;
- 2.) The inclusion of a \$35 million market price protection provision and rate case one-year rate case moratorium;
- 3.) Agreement to reduce customer rates as a result of recent tax reform legislation;
- 4.) **
**; and finally
- 5.) For the near term, the Asbury plant will remain in operation.

This affidavit is filed in opposition to the S&A, in response to the supporting affidavits of the signatories, and, more specifically, to Mr. Krygier’s five arguments in favor of Commission preapproval of an unnecessary capital investment.

Historically, economic regulation has been enacted when an industry showed itself to be a natural monopoly, one in which the economies of scale and scope were such that to have competing providers was uneconomical. Since monopoly providers of essential services are in a position to charge excessive prices while restricting output, regulation is needed to protect the consumer. Economic regulation of utilities acts as a stand-in for competition. Regulators in state public service commissions see the goal of rate of return regulation as protecting the captive ratepayer against the potential for monopoly abuses, while still allowing the monopoly to cover

its costs and earn a fair return for its owners. Empire's Customer Savings Plan is a categorical departure from this paradigm.

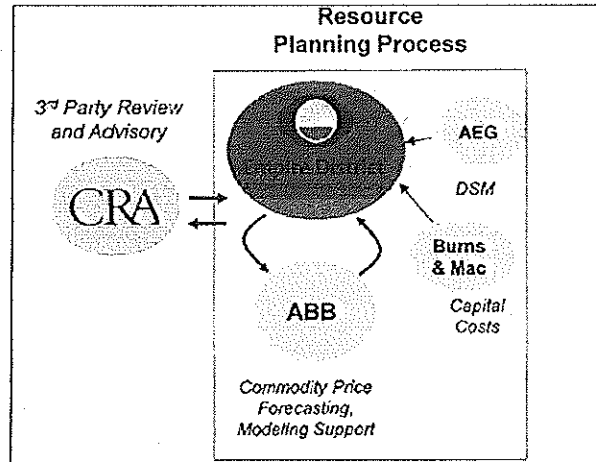
It is OPC's position that Empire's "Customer Savings Plan" is actually a request for the Company to become an insulated Independent Power Producer ("IPP"). The plan is designed to enrich shareholders. Whether or not it will result in customer savings is highly speculative and predicated on a static future. The Customer Savings Plan is surrounded by uncertainty and risk with only limited exposure for shareholders. Unlike other high-profile Wind projects coming online in SPP, there are no customer guarantees. Empire customers do not need additional supply side generation and clearly should not be forced to take on the financial risks associated with "playing the market."

The Non-Unanimous Stipulation and Agreement is not in the interest of Empire's customers, and is premised on terms that are aspirational, inappropriate and only provide token ratepayer protections for the exponentially greater risk they bear. The Commission should reject the application and the non-unanimous stipulation and agreement in total. I will now address Mr. Krygier's "reasonable assertions" point-by-point.

KRYGIER "REASONABLE ASSERTION" #1: EMPIRE'S MODELING SUPPORTS IT

As the basis for the S&A, parties have relied on Empire's analysis of the "economics of acquiring wind generation" in or near its service territory through its Generational Fleet Savings Analysis ("GFSA") and previous Integrated Resource Planning ("IRP") filings. Multiple different third-party consultants contributed to this analysis over several years. Charles Rivers and Associates was procured for purposes of reviewing the various modeling results and tradeoffs between plans. Figure 1 shows a visual interplay of the various consultants involved in Empire's modeling.

Figure 1: Empire’s resource planning and GFSA process



Empire’s modeling is opaque and flawed. To provide an illustrative example of the challenges that OPC has encountered consider Figure 2 which is reprinted from Company witness McMahon’s affidavit.

Figure 2: Reprint of Empire Witness McMahon’s “Figure 3: 20 Year Build Schedule Stipulation v Customer Savings Plan”

| | Stipulation | Customer Savings Plan | 2016 IRP Preferred Plan |
|------|-------------------|-----------------------|-------------------------|
| 2018 | Update Asbury | Retire Asbury | |
| 2019 | | 800 MW Wind | |
| 2020 | 800 MW Wind | | |
| 2021 | | | |
| 2022 | | | |
| 2023 | | Retire EC1 | |
| 2024 | | | |
| 2025 | | 100 MW CC | |
| 2026 | | Retire EC2 | |
| 2027 | | | |
| 2028 | | | |
| 2029 | | | 100 MW CC, 100 MW Wind |
| 2030 | | | |
| 2031 | | 100 MW Solar | 150 MW Wind |
| 2032 | | 100 MW CC | |
| 2033 | | Retire Riv 10&11 | |
| 2034 | | | |
| 2035 | 214 MW F Class CT | | 200 MW CC |
| 2036 | | | |
| 2037 | | | |

Mr. McMahon’s scenarios above are effective in continuing to frame the Customer Savings Plan in a particular light by selectively including and excluding key inputs. Taken at face value, The Customer Savings Plan above is the only plan that includes retirements of fossil fuel: Asbury, Energy Center 1, Energy Center 2, and Riverton 10 & 11. It is also the only scenario with a 100MW of Solar. At best, this is “misleading” or simply careless work. Table 3 provides a narrative description of the various omitted inputs in Mr. McMahon’s figure as well as areas of which the Commission should be aware.

Table 3: Empire Witness McMahon’s “Figure 3: 20 Year Build Schedule Stipulation v Customer Savings Plan” with OPC notes

| | Stipulation | Customer Savings Plan | 2016 IRP Preferred Plan |
|--|-------------------|-----------------------|-------------------------|
| | Update Asbury | Retire Asbury | |
| | | 800 MW Wind | |
| | 600 MW Wind | | |
| | | | |
| | | Retire EC1 | |
| | | | |
| | | 100 MW CC | |
| | | Retire EC2 | |
| | | | |
| | | | 100 MW CC, 100 MW Wind |
| | | | |
| | | 100 MW Solar | 150 MW Wind |
| | | 100 MW CC | |
| | | Retire Riv 10&11 | |
| | | | |
| | 214 MW F Class CT | | 200 MW CC |
| | | | |
| | | | |

Demand-Side Management is not considered cost-effective in any scenario

Elk River Wind PPA expires in 2026 in all three scenarios.

Meridan Way Wind PPA expires in 2029 in all three scenarios.

The inputs into this “Customer Savings Plan” are misleading. Retirements listed should also be included in other rows. It is not clear why a 100 MW CC is needed in seven years.

Should include “Update Asbury;” or \$19 million in environmental costs.

Note that there are “at least” 10 years of no planned supply side investment needed. This represents 10 years of future “opportunity costs” to be directed at other utility cost-of-service need...including uncertainty

Solar addition is misleading. Every scenario will include additional solar in the future.

Asbury retires in 2035 in the 2016 IRP Preferred Plan

Empire’s modeling is also flawed in that the market data informing the analysis is based on short-term assumptions used to project long-term benefits. The analysis has not properly

accounted for increased wind saturation in the Southwest Power Pool Integrated Market (“SPP IM” or “SPP”) in the near or long-term.

As SPP has grown more saturated with wind, power prices have declined significantly. Increasing renewable penetration levels expand nodal versus zonal power basis differentials, which raises the risk associated with future new wind build investment. When local renewable generation exceeds local load, it can expand a project’s power basis differentials, as measured by the difference in price at a given renewable generator’s node (where the off-taker sells power into the wholesale market to offset its PPA costs) and the zonal price (the regional price of wholesale power). With financial hedges typically struck at the zonal price, increasing basis reduces the ability to effectively hedge a project’s actual energy revenues (which are driven by prices at the node), thereby increasing the risk (and effectively the cost) of a given project.

The relationship between supply and demand is an important factor in all markets. Southwest Power Pool has already set at least a couple of new wind generation records this year, and more projects are queued up to come online. This raises the concern that there may not be enough demand for that energy, absent new markets or consumers. Increases in negative prices in the real-time market will depress prices in the day-ahead market, which in turn places doubt in Empire’s revenue projections. Potential market rule changes to require non-dispatchable variable energy resources (“NDVERs” or wind and solar) to register as dispatchable variable energy resources (“DYVERs”) (which would allow SPP to curtail their output) was just narrowly voted down at the most recent SPP Markets and Operations Policy Committee last week, with expected appeals and subsequent revote to likely occur this July.¹

On February 7th, I filed rebuttal testimony in this case illustrating the potential margin for error in Empire’s modeling of its high wind, low coal scenario. The probability-weighted capacity assumed under Empire’s high wind scenario accounted for 6.5GW of additional wind from 94 potential projects. Consider that “high wind” scenario against the following inputs:

- 244 MW Pratt Wind (KCPL PPA not included in Empire’s analysis);
- 200 MW Prairie Queen (KCPL PPA not included in Empire’s analysis);

¹ Kleckner, T. (2018) Vote to make variable resources dispatchable falls short at MOPC. RTO Insider. <https://www.rtoinsider.com/spp-mopc-ndvers-non-dispatchable-variable-energy-resources-90513/>

- 600 MW Empire (not included in Empire’s analysis); and
- 2 GW AEP Windcatcher

If just these four projects come online it would represent 3GW of wind energy or approximately 47% of the probable wind under Empire’s “high wind” scenario.

Equally troubling is the fact that Empire did not consider additional wind generation in SPP after 2020 in any model. This is particularly troubling as benefits are not projected to exist until well into the future. Again, short-term assumptions informing long-term benefits. It is worth noting that despite OPC raising these concerns in early February, Empire has not modeled for the possibility that more wind could be coming online in SPP.

As the Renewable Electricity PTC and ITC phase down continues it is likely much more wind generation will come on line in the near-term (assuming additional transmission lines and upgrades to existing infrastructure occur). The inundation of inexpensive wind and SPP’s lowering of its planning reserve margin, combined with flat load growth have created a perfect storm of opportunity to strongly consider accelerating and expanding the retirement of inexpensive, inefficient generating units. This is true not just for Empire, but for every SPP member. OPC’s concern regarding the Customer Savings Plan and the dynamic SPP market centers on the likely reactions from other market participants from these very same price signals.

Stated differently, citing a quote attributed to British Economist John Maynard Keynes:

Successful investing is anticipating the anticipation of others.^{2,3}

If Empire’s modeling suggests retiring significant amounts of base load generation prematurely is prudent, then other SPP members modeling must show similar results. Under these circumstances, a near-term future where excess SPP reserve margins are erased entirely appears plausible, which would mean that during high demand hours (in the summer when it is not windy) there will likely be significant residual effects—namely higher cost generating units coming online than what would be predicted in a modeling exercise that does not account for other market actors’ reactions.

² Kanyes, J.M. qtd in. Bergman, G. (2006) *Isms—an Irreverent Reference*. Adams Media. p. 109.

³ The irony of quoting an economist made famous for the idea that governments should spend money they don’t have is not lost on the author. However, Empire Electric District is not a governmental entity (or a “free market” independent power producer) but a regulated natural monopoly.

Given the market signals apparent to OPC, Empire's Customer Savings Plan does not appear to be a sound investment for Empire's ratepayers.

KRYGIER "REASONABLE ASSERTION" #2: THE MARKET PRICE PROTECTION MECHANISM

As part of the S&A, the signatories have agreed to a market price protection mechanism that seeks to provide for the sharing of risk between customers and shareholders associated with the possibility of reduced market prices and wind production. Empire's shareholder risk exposure is capped at -\$35 million over a ten-year period. No such cap exists for Empire's ratepayers.

It is OPC's position that the S&A's "market price protection mechanism" can more accurately be described as a short-term, "net detriment sharing mechanism." Given the universe of potentially bad outcomes, this mitigating provision appears wholly inadequate. To be clear, Empire ratepayers are disproportionately bearing the risks associated with being an investor in an IPP-scheme and Empire shareholders are disproportionately receiving the rewards associated from those ratepayers shouldering those unnecessary risks. If Empire's modeling assumptions prove to be incorrect, the piecemeal mechanisms in place surrounding this incomplete application create the setting for textbook monopoly abuse. It is now more than seven months since Empire filed its application and no one in this case can definitively state how much this project will cost, where it will go, or what the market will look like when it begins to generate revenue. Those are generally not attributes used when describing "sound investments."

The S&A's customer protections stand in glaring contrast with the customer protections the Public Service Company of Oklahoma ("PSO") and the Oklahoma Industrial Energy Consumers ("OIEC") recently agreed to regarding the construction of the 2GW Windcatcher facility and 756 kV dedicated Generation Tie Line in Cause No. PUD 201700267 before the Oklahoma Corporation Commission. According to the Supplemental Testimony of Steven L. Fate of the PSO, the customer guarantees are summarized as follows:

- Caps on Investment Costs. Parties agreed that investment costs above a fixed cap shall not be recoverable in rates and costs below the cap had no presumption of prudence.⁴
- Assurances that Customers Benefit from Federal PTC. Parties also agreed that customers should benefit from the federal production tax credits. The Oklahoma wind project will be eligible to receive 100% of the value of the production tax credits for the actual output from the wind facility, and “will only be excused from this guarantee by a change in federal law pertaining to the production tax credits, including changes to the Internal Revenue Code. Importantly, in the unlikely event that there is a change in federal law affecting the actual value of PTCs, customers are protected through the calculation of Net Benefits Guarantee described later.”⁵
- Net Capacity Factor Guarantee. Parties agreed to provide a net capacity factor guarantee for the project with a “minimum net average capacity factor guarantee at the western bus-bar of 46% over the full 25 year life of the project in five consecutive five-year periods.”⁶
- Guarantee Project Net Benefits. The parties agree to a mechanism determines project net benefits for customers during the initial ten years of project commercial operation. The methodology to demonstrate a net benefit calculation includes: “Project Revenue Requirement, Fuel Savings, PTC value, Carbon Savings, deferred capacity value, and Renewable Energy Credit value. The calculation is performed in year eleven of the Project. *If a benefit is not demonstrated, the Company will create a regulatory liability in the amount owed customers and amortize the liability in retail rates over the remaining period of commercial operation (years 11-25).*”⁷
- Off-System Energy Sales Margin Assurances. The parties agreed to credit customers 100% of the off-system energy sales margins that would not have

⁴ Id. at Pg. 4

⁵ Id at Pgs. 4-5.

⁶ Id. at 5.

⁷ Id. at 5-6 (emphasis added).

occurred but for the Project, as well as the net proceeds from the sale of RECs associated with the Project.”⁸

- Most Favored Nation Provision. The agreement provided for a most favored nations provision to provide further protection to customers to incorporate beneficial terms agreed in other jurisdictions.⁹
- Protection from Extra-Jurisdictional Denial. The parties agreed that, in the event other jurisdictions do not agree to the wind project, Oklahoma jurisdictional customers’ share of the project would not be increased.¹⁰
- Limited Return on Deferred Tax Asset Balance. The parties agreed to limit the company’s ability to earn a return on any deferred tax asset balance to a cumulative annual average balance of two hundred forty million dollars or 30% of the project cumulative deferred tax asset balance over the first thirteen years of the project. There were also additional limits by applying a return on of the weighted average cost of capital on 60% of the asset and a cost of debt on the remaining 40% of the deferred tax asset balance.¹¹
- Development Costs Recovery Restrictions. The Company agreed not to seek recovery of the development costs unless the commission approves the settlement agreement.¹²
- Timing of Base Rate Case Provision. The parties agree to address the timing of a base rate case subsequent to the start of the project’s commercial operation.¹³
- Reporting Requirements. The parties agree to semi-annual reporting requirements.¹⁴
- Special terms Related to Nomination of Purchase of RECs. The parties agree to special terms to allow some customers to be able to nominate their purchase of renewable energy creds from the project. “The addition of a Special Term and Condition to PSO’s current Green Energy Choice Tariff contained in Attachment

⁸ Id. at Pg. 6.

⁹ Id. at Pg. 6.

¹⁰ Id. at Pg. 7.

¹¹ Id. at Pg. 7

¹² Id. at Pg. 8.

¹³ Id. at Pg. 8

¹⁴ Id. at Pg. 8

6 of the Settlement Agreement, sets forth the ability of Service Levels 1, 2, and 3 customer to select a purchase of RECs from the Project and receive attestations that certify the RECs thereby allowing participating customers to use the RECs for internal and external compliance purposes.”¹⁵¹⁶

It is important to note that the aforementioned protections/concessions have only been agreed to by certain Oklahoma industrial and commercial customers. Whether or not other parties will sign on or if further protections are solidified remains to be seen. Even so, the OIEC / PSO stipulation guarantees net benefits to PSO ratepayers over the first ten years. In contrast, the Missouri S&A guarantees that Empire shareholders will only be exposed to \$35 million in losses over the first ten years.

KRYGIER “REASONABLE ASSERTION” #3: TAX REFORM RELIEF

As part of the S&A, Empire agrees to file revised retail rate schedule tariff sheets in an appropriate timeframe that would allow such tariff sheets to take effect October 1, 2018.

It is OPC’s position that Empire’s rates are no longer just and reasonable. Shoehorning the tax reform relief as an Empire concession is offensive and, sets a dangerous precedent for all future regulatory actions related to the Tax Cuts and Jobs Act of 2017. To be clear, it appears as though Empire’s ratepayers will only receive the reduced rates that they are entitled to in five months, if they take on exponentially more risk. To clarify this assumption, OPC sent DR-2031 which ask and Empire answers as follows:

Question:

Will Empire continue its “voluntary filing of revised tariffs” in ER-2018-0228 if the Commission rejects its application in Case No. EO-2018-0092? If not, please explain in detail why it will not?

Response:

The commitment to the filing of tariffs reflected in the Non-Unanimous Stipulation and Agreement is linked to the package of items reflected therein (see

¹⁵ Id. at Pg. 8-9.

¹⁶ See GM-1 and GM-2.

paragraph 2 of the Non-Unanimous Stipulation and Agreement). **If Empire's application in EO-2018-0092 is rejected, Empire will need to examine the circumstances existing at that point in time before it will be in a position to decide what actions it will take in Case No. ER-2018-0228.** (emphasis added)

Responsible person(s): Christopher D. Krygier¹⁷

Empire should revise its tariffs to reflect the tax reform changes regardless of this case and it should do so immediately. The inclusion of this provision in the S&A and the subsequent data request response from Empire is disappointing, but not surprising.

KRYGIER "REASONABLE ASSERTION" #4:

¹⁷ See GM-3

¹⁸ Irfan, U. and J. Zarracina (2018) The stunningly lopsided growth of wind power in the US, in 4 maps. Vox. <https://www.vox.com/energy-and-environment/2018/5/2/17290880/wind-power-renewable-energy-maps>

¹⁹ Ibid.

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Conservation Impact

OPC has also raised concerns as it relates to potential conservation impacts on protected bird and bat populations in Missouri. As such, OPC has sent a number of data requests inquiring into Empire's project guidelines as it pertains to US Fish and Wildlife approval. For example, OPC DR-2028 includes the following question and answer:

Question:

Regarding OPC DR-2027, please provide a narrative explanation as to what the Company intends to do to remediate any concerns raised by either the Missouri Department of Conservation and/or the U.S. Fish and Wildlife regarding specific site locations for the Company's proposed wind farm(s) in Missouri.

Response:

Attached as "Attachment OPC 2028 - MO OPC Recommendations.xlsx" is a table indicating recommendations from the Missouri OPC, and Empire's Project Guidelines that indicate our intentions to follow the USFWS Land-based Wind Energy Guidelines. These guidelines are not final as we will also continue working with the individual counties as we progress forward in developing our sites. We are following the Bird & Bat Work Plan developed with USF&W and MDC agreement. Any items of concern will be addressed in the final design of the wind farm, using determinations from the ongoing studies.

Post Construction Mortality Monitoring will be approached using Eagle Conservation Plan/Habitat Conservation Plans or Bird Bat Conservation Strategies.

Responsible person(s): Timothy N. Wilson²¹

²¹ See GM-4

OPC is cognizant that more wind projects will likely begin in Missouri moving forward. As such, OPC believes it is good policy to consider all relevant factors in properly siting wind farms. A considerable amount of time and taxpayer money has been spent to preserve Missouri's conservation heritage. If wind farms are sited too quickly or result in fatalities of vulnerable or protected animal populations Empire can be liable for financial penalties and potential enforced curtailment of generation which in turn could raise future prudency concerns.

OPC makes the following general "best practice" pre-site selection and post-construction mortality monitoring policy recommendations for all future wind projects:

Pre-Site Selection:

- At least a 1,000 foot buffer, between the wind farm and any woodland or forest;
- Confirmation from USF&W that wind farm has appropriate buffer between the wind facility and known eagle or vulnerable raptor nests;
- Pre-construction survey and monitoring analysis to assess risk of wind facility/project to wildlife (following USF&W Eagle Conservation Plan Guidance V2);
- Pre-construction survey and monitoring analysis to assess risk of wind facility/project to wildlife (following most recent Range-Wide Indiana Bat Summer Survey Guidance);
and
- All documents (monitoring plan, site selection, pre and post construction monitoring) shall be developed with USF&W protocols.

Post Construction Mortality Monitoring:

- Follow post-construction mortality monitoring of birds and bats following "Evidence of Absence" approach (Evidence of absence V2 software user guide);
- Provide annual mortality data to MDC, USF&W, MoPSC, OPC;
- In order to handle specimens, obtain Missouri Wildlife Collector's permit;
- Report carcass of a Species of Conservation Concern within 48 hrs. to MDC;
- Report carcass of Federally Threatened or Endangered Species within 24 hrs. to USF&W;
- Report bald or golden eagle carcass to USF&W within 24 hrs; and

- All roadkill or livestock carcasses within project area will be removed to avoid attracting eagles or other birds of prey to the wind facility at least every 3 days.²²

The recent introduction of House Bill No. 2634 which would prohibit the issuance of any certificate of convenience and necessity for the construction of wind energy turbines and other facilities until the Wind Energy Task Force issues a report to the General Assembly on the impacts of wind energy generation further supports OPC's recommendations moving forward.²³

KRYGIER "REASONABLE ASSERTION" #5: ASBURY REMAINS OPEN

As part of the S&A, Empire has agreed that Asbury shall not be retired at this time.

It is OPC's position that, consistent with Empire's 2016 depreciation study, Asbury should not be retired before 2035. The uncertainties surrounding the SPP markets reinforces this present position. OPC also supports the approximate \$19 million Ash Landfill and Ash Conveyance System costs scheduled for 2018 as a reasonable cost for the benefit of a 200 MW dispatchable generation unit with at least 17 years of useful operating life.

OPC notes that the pending Asbury costs have been continuously overstated by Empire witnesses²⁴ and will likely be less than the \$19 million based on pending the U.S. Environmental Protection Agency's ("EPA") coal ash rule revisions that are set to give State's more discretion in approving compliance plans.^{25,26} Figure 1 shows the environmental coal ash expected costs, scope and implementation dates.

²² See GM-5.

²³ See GM-6.

²⁴ "This provision is important to Empire given that it will be required to make an immediate investment in the range of \$20-\$30 million dollars, and was only willing to do so if it could be sure that it would be fully recoverable in the future." Case No: EO-2018-0092 Affidavit of Christopher D. Krygier See p. 7, paragraph 15

²⁵ Patel, S. (2018) EPA sets schedule for potential ELG rule revision. POWER. <http://www.powermag.com/epa-sets-schedule-for-potential-elg-rule-revision/>

²⁶ Watson, B. (2018) House Energy Committee endorses coal ash bill. News Tribune. <http://www.newstribune.com/news/news/story/2018/apr/19/house-energy-committee-endorses-coal-ash-bill/722624/>

Table 1: Empire Response to Sierra Club data request 1-03

| <u>Budget</u> | <u>Scope</u> | <u>2018</u> | <u>2019</u> | <u>2020</u> | <u>2021</u> |
|---------------|--|-------------|-------------|-------------|-------------|
| PA0034 | Ash Landfill | 5,783,000 | | | |
| PA0035 | Ash Conveyance System | 13,018,000 | | | |
| PA0038R | Ash Impoundment Closure (Retirement Dollars) | 5,102,000 | | | 12,810,000 |

The costs related to “Ash Impoundment Closure (Retirement Dollars)” are sunk costs. That is, these are costs that will need to be paid regardless of when Asbury is closed. Including it as a “cost savings input” in the modeling and in the testimony of Empire’s witnesses overstates the benefits that would actually be realized by ratepayers if this proposal were to move forward.

OTHER “PUBLIC INTEREST” PROVISIONS

Rate Case Moratorium

As part of the S&A, Empire has agreed that it shall not file tariffs seeking to implement a general rate case prior to April 1, 2019.

It is OPC’s position that this is a non-commitment. The question and response in OPC DR-8048 confirms this:

Question:

Reference Krygier affidavit para. 13 – If this agreement is not approved by the Commission, when does Empire estimate that it would seek a change in rates, what would be the driver of this change in rates, and what is the estimated impact on rates that Empire would seek? Would the need for this change in rates be removed if this agreement is approved by the Commission?

Response:

Empire continues to make investments in its system that will drive a rate case at some point. However, the Company is still determining the timing of its next general rate case and the potential impact on rates.

Regardless of whether or not the Stipulation is approved, Empire is required by statute to file a general rate case by October 2019 (approximately) for rates effective September 2020. Additionally, Empire will have semi-annual changes in its Fuel Adjustment Clause.

Approval of the Stipulation is not anticipated to remove any need for a rate increase. The Company has instead agreed to delay any such rate case in accordance with the terms of the Stipulation. (emphasis added)

Responsible person(s): Christopher D. Krygier²⁷

Future proposal for non-residential access to renewable energy (aka “Green Tariff”)

As part of the S&A, Empire has agreed, as part of its next rate case, to propose a green tariff option to corporations that wish to demonstrate compliance with self-imposed sustainability commitments. Interested non-residential customers could elect to pay an additional premium in exchange for a portion of the Renewable Energy Credits (“RECs”) received from the Wind Projects.

It is OPC’s position that this commitment is only aspirational and will likely not result in the intended outcome—convincing corporate entities to shoulder some of the associated costs (risk) in exchange for RECs.

To illustrate this, consider these two excerpts regarding renewable energy procurement policy from two of the largest corporate renewable energy buyers:

Walmart:

Renewable Energy Certificates (RECs) or other non-power instruments

We want to do more than just shift around ownership (and marketing rights) of existing renewable energy, so we have made a decision that under normal circumstances, we prefer not to simply offset our non-renewable power by purchasing standalone renewable energy credits (RECs) or other certificates. While REC purchasing may allow us to more quickly say we are supplied by 100% renewable energy, it provides less certainty about the change we’re making in the world.

Walmart’s preference is not to purchase standalone RECs to offset our nonrenewable power consumption for a number of reasons.²⁸ (emphasis added)

²⁷ GM-7

²⁸ Walmart’s Approach to Renewable Energy.

<https://cdn.corporate.walmart.com/eb/80/4c32210b44ccbae634dadedd18a27/walmarts-approach-to-renewable-energy.pdf>

Google:

Meeting our principles

Given the background above, let's recall what Google seeks to accomplish with renewable energy purchases. There are two important goals:

- **Our purchases should be additional. This means they should actually help to create more renewable power.**
- Our investments should have the highest possible positive impact on the industry that they can.

Additionality is a tricky concept. Perhaps it is easiest to give an example of what's not additional. Imagine a power company built a wind farm many years ago. They built it because they thought it was good business at the time, but the fact that it was a renewable resource was not important to their decision. They currently sell the power into the grid, and they're happy with their investment. Moreover, this power company has no plans to build any more wind farms. One day, they learn that Google is looking to purchase renewable electricity. The power company figures it could sell Google the output of their wind farm; for their existing customers they would just make up the difference by buying some other source of energy, perhaps from the coal plant down the street.

In our view, this is not additional. We'd be handing money over for green electricity, but in the grand scheme of things, nothing would change. The carbon output of the whole system would be the same and no new renewable generation would get built.²⁹ (emphasis added)

Stated differently, the wind farm will already be built and operational irrespective of the corporate buyers. As seen above, entering into standalone REC agreements or contracts that do not result in additional renewable power is not the preferred outcome of at least two of the corporate renewable energy buyers in the United States. This sentiment is also consistent with the 4th Corporate Renewable Energy Buyers³⁰ Principle:

4. Access to new projects that reduce emissions **beyond business as usual,**

We would like our efforts to result in new renewable power generation. Pursuant to our desire to promote new projects, ensure our purchases add new capacity to the system, and that we buy the most cost-competitive renewable energy products, we seek the following . . . ³¹ (emphasis added)

²⁹ Google's Green PPAs: What, How, and Why (2013)

<http://static.googleusercontent.com/media/www.google.com/en//green/pdfs/renewable-energy.pdf>

³⁰ As of January 2018, 72 companies have signed on to these principles, representing over 54 million MWh of annual demand. See also: <https://buyersprinciples.org/about-us/>

³¹ Corporate Renewable Energy Buyers' Principles (2018) The Principles. <https://buyersprinciples.org/principles/>

For this provision to be substantively relevant, the germane green corporate buyers would already be committed to bearing these future costs.

Most Favored Nations Clause

The signatories to the S&A have agreed that they may request the Commission to extend to Empire's Missouri customers any concessions and/or conditions, or comparable value to such concessions and/or conditions obtained in Kansas or Arkansas. However, concessions shall not extend to:

- Conditions surrounding location preferences of proposed wind farms;
- Treatment of benefits associated with the Tax Cuts and Jobs Act of 2017
- Length of rate moratorium; and
- The magnitude of possible exposure to Empire's shareholder's under the Market Protection Provision.

It is OPC's position that the aforementioned carve-outs to the most favored nation clause render it largely hollow. The inclusion of such language does raise questions as to how such a clause would be interpreted if the Kansas or Arkansas Commission rejected Empire's proposal but Empire still continued to move forward. Such a "what-if" scenario is not unforeseeable. For example, the Kansas Corporation Commission ("KCC") has never allowed Empire to include hedging costs in its electric utility cost of service charged to Kansas ratepayers. The KCC, on February 4, 2008, in Docket No. 06-EPDE-1048-HED, issued its Order Denying Application stating:

III. FINDINGS AND CONCLUSIONS

1. The Commission concurs with Staff's Memorandum filed in this matter and its determination that Empire's gas hedging program is incompatible with hedging programs currently approved and in place with respect to other public utilities regulated by the Commission. Therefore, the Commission finds that Empire's Application should be dismissed.

The Commission further concurs with Staff's additional recommendations that: (1) Empire will pass no gains, losses, or costs related to its financial hedging activities to Kansas ratepayers through its Energy Cost Adjustment (ECA) mechanism; and (2) **No costs related to Empire's financial hedging activities will be included for rate determination in future proceedings before the Commission.** (emphasis added)

Kansas ratepayers have benefited from that order. Missouri ratepayers have borne unnecessary costs. More to the point, as it stands, no party to the corresponding Arkansas or Kansas Empire case have supported Empire's proposal or modeling assumptions with only the Arkansas Staff taking the neutral (and measured) position that it is premature to recommend anything until Empire has actual proposals for consideration.³²

The Commission should be aware that, at least for Arkansas ratepayers, Empire has already publically committed to the following guarantees:

- Capital investment cost cap;
- Guarantee of eligibility for the Production Tax Credits ("PTCs");
- Guarantee of the capacity factor;
- Commitment on off-system energy sales margins and Renewable Energy Credit ("RECs) sales revenues; and
- A Most Favored Nations clause.³³

At least four of the five provisions stated above are not explicitly included in the Missouri S&A including a:

- Capital investment cost cap;
- Guarantee of the capacity factor;
- Commitment on off-system energy sales margins and Renewable Energy Credit ("RECs) sales revenues; and
- Most Favored Nations clause that is not predicated on explicit exemptions.

Of course, one could reasonably argue that the "capital investment cap" is not really a cap and the "guarantee of the capacity factor" is not really a guarantee if no numbers are attached to these "customer protections." No doubt, the lack of partners and contracts in hand have stalled settlement talk, at least in Arkansas.

³² Arkansas Public Service Commission Docket No. 17-061-U Surrebuttal of John G. Athas p. 12, 11-20.

³³ Arkansas Public Service Commission Docket No. 17-061-U Rebuttal Testimony of Christopher D. Krygier p. 10, 2-10.

The Commission should also be aware that Oklahoma has entered into a S&A. The Commission should also be aware that the a hand-written statement is included in the signature block under the Oklahoma Public Utility Division for attorney Nastasha Scott as can be seen in figure 1 below.

Figure 1: Hand-written clause by the Oklahoma Public Utility Division Staff³⁴

Dated: 4/2/18

THE PUBLIC UTILITY DIVISION
By: Natasha M Scott

Natasha Scott
The Public Utility Division stipulates with the exception of a return on the Asbury facility as stated in the third sentence of the third paragraph of paragraph H.

THE ATTORNEY GENERAL

The hand-written statements says:

The Public Utility Division stipulates with the exception of a return on the Asbury facility as stated in the third sentence on the third paragraph of paragraph H.³⁵

The referenced sentence in the stipulation is as follows:

The Stipulating Parties further agree that the return on that regulatory asset shall be the Company's weighted average cost of capital and such return on that regulatory asset shall take effect beginning in the next general rate proceeding.³⁶

Based on this filed document, it appears as though if Asbury were to be prematurely retired, the parties to the Oklahoma S&A, including Empire, have agreed that Empire will not receive a return "on" the Asbury plant moving forward. OPC shares this position.

All of this is brought to the Commission's attention to underscore the uncertainty surrounding the terms in this case. This has been made all the more complicated by Empire providing "Most Favored Nation Clauses" with different terms to Missouri, Oklahoma and Arkansas (presumably, Kansas' most favored nation clause is forthcoming). Which begs a more philosophical question, "if every state is most favored, is any state?" At least insofar as what has been put forward to date, it does appear as though Arkansas is "more favored."

³⁴ See GM-8.

³⁵ Ibid.

³⁶ Ibid.

BEFORE THE CORPORATION COMMISSION OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE)
COMPANY OF OKLAHOMA ("PSO") FOR)
APPROVAL OF THE COST RECOVERY OF)
THE WIND CATCHER ENERGY)
CONNECTION PROJECT; A)
DETERMINATION THERE IS A NEED FOR)
THE PROJECT; APPROVAL FOR FUTURE)
INCLUSION IN BASE RATES COST)
RECOVERY OF PRUDENT COSTS)
INCURRED BY PSO FOR THE PROJECT;)
APPROVAL OF A TEMPORARY COST)
RECOVERY RIDER; APPROVAL OF)
CERTAIN ACCOUNTING PROCEDURES)
REGARDING FEDERAL PRODUCTION)
TAX CREDITS; WAIVER OF OAC 165:35-)
38-5(e); AND SUCH OTHER RELIEF THE)
COMMISSION DEEMS PSO IS ENTITLED)

FILED
APR 24 2018

COURT CLERK'S OFFICE - OKC
CORPORATION COMMISSION
OF OKLAHOMA

CAUSE NO. PUD 201700267

JOINT STIPULATION AND SETTLEMENT AGREEMENT

COME NOW Public Service Company of Oklahoma ("PSO" or the "Company") and the undersigned parties to the above entitled cause and present the following Joint Stipulation and Settlement Agreement ("Joint Stipulation") for Oklahoma Corporation Commission ("Commission") review and approval as their compromise and settlement of all issues in this proceeding between the parties to this Joint Stipulation ("Stipulating Parties"). The Stipulating Parties represent to the Commission that this Joint Stipulation represents a fair, just and reasonable settlement of these issues, that the terms and conditions of the Joint Stipulation are in the public interest, and the Stipulating Parties urge the Commission to issue an Order in this Cause adopting and approving this Joint Stipulation.

It is hereby stipulated and agreed by and between the Stipulating Parties as follows:

TERMS OF THE JOINT STIPULATION AND SETTLEMENT AGREEMENT

Effective with the Commission's order approving of all elements of this Joint Stipulation, the Stipulating Parties request that the Commission issue an order finding that the Company's 30% ownership share of the Wind Catcher Energy Connection Project which, on a total Project basis consists of a 2000 MW wind generation facility located in the Oklahoma panhandle and an approximately 350-mile generation interconnection tie-line to deliver the wind energy to the grid near Tulsa, reasonably meets the Company's need for a low-cost, diverse source of energy. The Stipulating Parties further request that the Commission approve the Company's request to include any PTCs deferred for ratemaking purposes in a regulatory liability that is included in rate base, or earns interest at the Company's pre-tax Weighted Average Cost of Capital (WACC) from when

the Project commences commercial operation. The Stipulating Parties further request that the Commission approve the Company's request to include any unrealized PTCs in a deferred tax asset included in rate base in the event the PTCs cannot be fully utilized in a given year.

The Stipulating Parties request that the Commission defer any decision on final cost recovery to a cause opened by an application filed by the company pursuant to Chapter 70 of the Commission's rules or otherwise subsequent to the incurrence of such costs of the Project. In the foregoing application, the Company should submit amounts subject to recovery for Commission audit and review.

1. **Terms**

- (a) Cost Cap. The Company commits to a total Company cost cap on capital investment for the Wind Facility, the Gen-Tie and all SPP-assigned generation interconnection costs (collectively the "Project") which shall be the lesser of (i) 103% of estimated cost, which is \$1.399 billion, including AFUDC, and (ii) \$2,331/kW (the "Cost Cap"). Costs above the Cost Cap shall not be recoverable in rates and costs below the Cost Cap shall have no presumption of prudence.
- (b) PTC Guarantee. The Company will provide a guarantee, for cost recovery purposes, that the Project will be eligible to receive 100% of the value of the Federal Production Tax Credits ("PTCs") for the actual output from the Wind Facility. Except as provided in Attachment 2, the Stipulating Parties agree that the Company will be excused from this PTC Guarantee to the extent that it is prevented by any change in law which shall be defined as changes in federal law pertaining to PTC's, including changes to the Internal Revenue Code.
- (c) Net Capacity Factor Guarantee. The Company shall guarantee, for rate making purposes, a minimum net average capacity factor at the western bus-bar of 46% for each of the five consecutive five-year periods during the twenty five-year period of Project commercial operation. This means that, subject to ratable adjustment pursuant to the micro-siting process set forth below, the minimum net average capacity factor (46%) for PTCs measured at the western bus-bar is 12,105 GWh during each such five-year period and this amount will be adjusted downward to account for actual line losses for energy delivery at the eastern bus-bar.

Any make whole payment due from the Company at the end of each of the five consecutive five-year periods during the twenty-five year period of Project commercial operation will include incremental replacement energy costs and PTCs which will flow to customers through the Fuel Cost Adjustment Rider, and the calculation for determining amounts due to customers under this guarantee shall be as set out in Attachment 1 hereto.

If the number of turbines comprising the completed Wind Farm is reduced as a result of the micro-siting process, the Stipulating Parties agree that the number of turbines comprising the Wind Farm will not decline by more than twenty turbines

and that the nameplate capacity of the completed Wind Farm will not decline by more than fifty megawatts.

- (d) Net Benefits Guarantee. The Company will provide a net benefits guaranty as set forth in Attachment 2 hereto.
- (e) Incremental Off-System Energy Sales Margins. One hundred percent of the incremental off-system energy sales margins that would not have occurred but for the Project and net proceeds from the sale of RECs associated with the Project will flow to customers through the Company's Fuel Cost Adjustment Rider, notwithstanding any provision of the Company's Fuel Cost Adjustment Rider that would otherwise allocate a portion of such incremental off-system energy sales to the Company. The calculation for determining incremental off-system energy margins from the Project shall be as set out in Attachment 3 hereto.
- (f) Most Favored Nations. The Company shall notify the Stipulating Parties if terms more favorable to all customer classes related to (i) the Net Capacity Factor Guarantee, (ii) the PTC Guarantee, (iii) the Cost Cap percentage, (iv) the Net Benefits Guaranty, (v) the Company's share of any cumulative annual deferred tax asset balance cap for the Project or (vi) such other terms, not described above, that are agreed to by Southwestern Electric Power Company ("SWEPCO") in any of its regulatory proceedings in Arkansas, Louisiana or Texas seeking approval of the Project, whether through settlement or order issued by any such jurisdiction under which SWEPCO will proceed to construct the Project, and the respective terms of this Joint Stipulation shall be deemed to be modified to incorporate those more favorable terms to the extent that they are not unique to SWEPCO jurisdictions. With respect to this Most Favored Nations provision as it applies to any Net Benefits Guarantee, it will be limited to the formulas used to calculate net customer benefits and not to any inputs. The Company's notice to the Stipulating Parties as set forth above will include a copy of the terms that SWEPCO agreed to in the other jurisdictions and, if applicable, a copy of any regulatory orders issued in the other jurisdictions under which SWEPCO is proceeding construct the Project, and a discussion by the Company of their applicability to this Joint Stipulation.
- (g) Retail Customers. This Joint Stipulation is applicable only to the Company's retail customers and all references to "customers" herein shall mean the Company's retail customers.
- (h) Allocation of Revenue Requirement to Customer Classes. The revenue requirement of the Project will be allocated among the Company's customer classes based on demand. For demand metered customer classes, the class revenue requirement will be billed to customers on a kW demand basis.
- (i) Oklahoma Allocation. The Stipulating Parties agree that the Oklahoma jurisdictional share of the costs of the Project will not increase if any jurisdictions in which SWEPCO operates do not participate in the Project.

- (j) Deferred Tax Asset Balance Cap. The Company may earn a return on any deferred tax asset balance related to the Project over the first thirteen calendar years. The Company will earn a return on the deferred tax asset balance using a combination of (i) its then approved weighted average cost of capital on sixty percent of any deferred tax asset balance and (ii) its then applicable cost of long term debt on forty percent of any deferred tax asset balance. The deferred tax asset balance shall not exceed a cumulative annual average of two hundred forty million dollars in any calendar year which is 30% of the Project cumulative deferred tax asset balance cap. The Company shall not earn a return on any deferred tax asset balance after the thirteenth calendar year. The Stipulating Parties acknowledge that the Company does not earn a return of any deferred tax asset balance.
- (k) Development Costs. The Company agrees that it will not seek recovery of development costs associated with the Project unless the Commission approves this Joint Stipulation.

2. Additional Regulatory Provisions.

The Stipulating Parties agree to the additional regulatory provisions set forth in Attachments 4, 5, 6 and 7 hereto.

3. Discovery.

As between and among the Stipulating Parties, all requests for discovery are deemed satisfied.

4. General Reservations.

The Stipulating Parties represent and agree that, except as specifically otherwise provided herein:

- (a) This Joint Stipulation represents a negotiated settlement for the purpose of compromising and settling all issues which were raised relating to this proceeding.
- (b) Each of the undersigned counsel of record affirmatively represents that he or she has full authority to execute this Joint Stipulation on behalf of his or her client(s).
- (c) None of the signatories hereto shall be prejudiced or bound by the terms of this Joint Stipulation in the event the Commission does not approve this Joint Stipulation.
- (d) Nothing contained herein shall constitute an admission by any party that any allegation or contention in these proceedings as to any of the foregoing matters is true or valid and shall not in any respect constitute a determination by the Commission as to the merits of any allegations or contentions made in this proceeding.

- (e) The Stipulating Parties agree that the provisions of this Joint Stipulation are the result of extensive negotiations, and the terms and conditions of this Joint Stipulation are interdependent. The Stipulating Parties agree that settling the issues in this Joint Stipulation is in the public interest and, for that reason, they have entered into this Joint Stipulation to settle among themselves the issues in this Joint Stipulation. This Joint Stipulation shall not constitute nor be cited as a precedent nor deemed an admission by any Stipulating Party in any other proceeding except as necessary to enforce its terms before the Commission or any state court of competent jurisdiction. The Commission's decision, if it enters an order consistent with this Joint Stipulation, will be binding as to the matters decided regarding the issues described in this Joint Stipulation, but the decision will not be binding with respect to similar issues that might arise in other proceedings. A Stipulating Party's support of this Joint Stipulation may differ from its position or testimony in other causes. To the extent there is a difference, the Stipulating Parties are not waiving their positions in other causes. Because this is a stipulated agreement, the Stipulating Parties are under no obligation to take the same position as set out in this Joint Stipulation in other dockets.
- (f) The Company, Wal-Mart Stores East, LP and Sam's East, LP agree that the Joint Stipulation and Settlement Agreement entered into by them and dated March 5, 2018 is hereby terminated and of no further force and effect.

4. Non Severability.

The Stipulating Parties stipulate and agree that the agreements contained in this Joint Stipulation have resulted from negotiations among the Stipulating Parties and are interrelated and interdependent. The Stipulating Parties hereto specifically state and recognize that this Joint Stipulation represents a balancing of positions of each of the Stipulating Parties in consideration for the agreements and commitments made by the other Stipulating Parties in connection therewith. Therefore, in the event that the Commission does not approve and adopt the terms of this Joint Stipulation in total and without modification or condition (provided, however, that the affected party or parties may consent to such modification or condition), this Joint Stipulation shall be void and of no force and effect, and no Stipulating Party shall be bound by the agreements or provisions contained herein. The Stipulating Parties agree that neither this Joint Stipulation nor any of the provisions hereof shall become effective unless and until the Commission shall have entered an Order approving all of the terms and provisions as agreed by the parties to this Joint Stipulation and such order becomes final and non-appealable.

Signatures appear on the following page

WHEREFORE, on this 20th day of April, 2018, the Stipulating Parties hereby agree to this Joint Stipulation and Settlement Agreement as their negotiated settlement of this proceeding with respect to all issues which were raised with respect to this Application, and respectfully request the Commission to issue an Order approving this Joint Stipulation and Settlement Agreement.

**PUBLIC UTILITY DIVISION
OKLAHOMA CORPORATION COMMISSION**

By: _____
Brandy Wreath, Director of Public Utility Division

PUBLIC SERVICE COMPANY OF OKLAHOMA

By: Jack P. Fite
Jack P. Fite
Joann S. Worthington
Attorney for Public Service Company of Oklahoma

**Michael Hunter
ATTORNEY GENERAL OF THE
STATE OF OKLAHOMA**

By: _____
Dara Derryberry
Assistant Attorney General

OKLAHOMA INDUSTRIAL ENERGY CONSUMERS

By: Thomas P. Schroedter
Thomas P. Schroedter
Hall, Estill, Hardwick, Gable, Golden & Nelson

**WAL-MART STORES EAST, LP and SAM'S EAST,
INC.**

By: Rick D. Chamberlain
Rick D. Chamberlain

ONETA POWER, LLC

By: _____
Cheryl Vaught

**PLAINS AND EASTERN CLEAN LINE
OKLAHOMA, LLC**

By: _____
James A. Roth

OKLAHOMA MUNICIPAL POWER AUTHORITY

By: _____
Randall Elliott

WINDFALL COALITION, LLC

By: _____
David E. Keglovits

NOVUS WINDPOWER, LLC

By: _____
Patrice Douglas

KIOWA POWER PARTNERS, LLC

By: _____
Kenneth H. Blakely

TRI-COUNTY ELECTRIC COOPERATIVE, INC.

By: _____
James R. Fletcher

**GOLDEN SPREAD ELECTRIC COOPERATIVE,
INC.**

By: _____
J. Eric Turner

SOUTH CENTRAL MCN L.L.C.

By: _____
Deborah Thompson

ATTACHMENT 1

Details for Determining the Net Capacity Factor Guarantee

Following the fifth, tenth, fifteenth, twentieth and twenty-fifth years after the Project reaches commercial operation, the Company will sum the total energy output from the Wind Facility for the previous five years.

- If the Company's 30% share of that energy equals or exceeds a minimum net average capacity factor at the Project's western bus-bar of 46% ("Minimum Net Average Capacity Factor"), no other calculations are made and no net capacity factor guarantee payment is necessary.
- If the Company's 30% share of that energy is less than the Minimum Net Average Capacity Factor, the following ratio will be taken: (the Company's 30% share of the energy equivalent of the output of the Project at the Minimum Net Average Capacity Factor – the Company's 30% share of the actual energy output at the Project's western bus-bar)/the Company's 30% share of the actual energy output at the Project's western bus-bar. This ratio will be rounded to 5 decimal places. The Company's 30% share of the hourly actual MWh energy output of the Wind Facility, as measured at the eastern bus-bar of the Gen-Tie after accounting for actual line losses for each hour of the five-year period, will be multiplied by this ratio to determine the additional energy for the customer credit. These hourly MWh energy values will be individually multiplied by the hourly, day-ahead Locational Marginal Price (LMP) at this location. The hourly dollar amounts will then be summed for the total five-year period to arrive at the energy value portion of the customer credit. In addition, the five-year total GWh shortfall energy at the western bus-bar of the Gen-Tie will be multiplied by the average, grossed up, PTC credit, provided, however, that the PTCs will be grossed up only for the first ten Calendar Years that the Project is in commercial operation when it is producing PTCs, and not for subsequent periods.

ATTACHMENT 2

Details for Determining Project Net Benefit for Customers During the Initial Ten Years of Project Commercial Operation

To perform an evaluation of the Project's net benefits during the initial ten years of commercial operation, the Company will perform the calculation set forth below annually until the Project has been in base rates for ten years. The ten-year period starts on the date the Project is placed in base rates and ends exactly ten years after that date.

$$\text{Net Benefit for Customers} = \text{Fuel Savings} + \text{Project Capacity Value} + \text{PTCs} + \text{Minimum Net Capacity Factor Guarantee Payments} + \text{RECs Value} + \text{Carbon Savings} - \text{Project Revenue Requirement}$$

Net Benefits for Customers: If the net benefit for customers at the end of the ten-year period is positive, that means that customers have received net savings and, therefore, the Company does not owe customers any compensation under this customer net benefit guarantee. If the net benefit for customers at the end of the ten-year period is negative due to any reason or combination of reasons including but not limited to low market energy prices or changes in law that result in a reduction to or elimination of the value of the PTCs, that means that customers have incurred a net cost and, therefore, the Company will compensate customers for such net cost under this customer net benefit guarantee. A regulatory liability will be established if customers are owed a credit under this calculation. The regulatory liability will be amortized in retail rates over the remaining period of commercial operation (years 11-25).

Fuel Savings: The Oklahoma retail portion of the fuel and energy savings achieved by the Project during the first ten years based upon a comparison of a Base Case to a Modified Base Case for each hour of the period. The Base Case shall represent the thermal and non-thermal generating units set forth on Table 1 hereto, which represents for purposes hereof the thermal and non-thermal generating units that the Company currently owns or controls under power purchase agreements, or is projected to own and control (collectively, the Company's Existing and Forecasted Generation"), and including the Company's share of energy from the Project. In the Modified Base Case, the Company will remove the Project and re-dispatch the Company's Existing and Forecasted Generation to replace the removed Project generation. The difference in costs (including all variable unit production costs) between the Base Case and Modified Base Case will be used to determine the fuel savings attributable to the Project. Both the Base Case and the Modified Base Case will incorporate the following assumptions:

- Unit operating characteristics, constraints and limits including such inputs as heat rate coefficients, unit availability, start-up costs, tolling fees, non-fuel operating and maintenance costs, and fuel prices. The inputs used in this analysis will be the same type of inputs that the Company uses in its generation market offers submitted to the SPP Integrated Marketplace.
- Actual integrated hourly operating reserve requirements.

- To the extent that the Company's Existing and Forecasted Generation in the Modified Base Case is insufficient to replace the Project generation, the Company will assume in its calculations that the marginal unit is used to serve the insufficiency.

Project Capacity Value: \$4.3 million annually over the ten-year period, as filed.

PTCs: The Company's portion of the PTCs grossed up for taxes, either passed through or held in a regulatory liability and determined annually, and any credits to customers resulting from the Company's PTC guarantee.

Net Capacity Factor Guarantee: Any payments made by the Company for the net capacity factor guarantee for each of the two five-year periods of commercial operation during the period of PTC eligibility.

RECs Value: Any Company renewable energy credit value received, or inventory value at the prevailing market price, resulting from the Project.

Carbon Savings: Any costs on the production of carbon that actually would have been incurred by the Company's fossil generation fleet as a result of a Federal mandate imposing a cost on the production of carbon from fossil generation but for the Project.

Project Revenue Requirement: The Company's Revenue Requirement of the Project, including both the Wind Farm and Gen-Tie line that are in rates.

Table 1 – Company's Existing and Forecasted Generation

| Unit Name ^(B) | State | Fuel Type | Capacity MW | 2021-2030 Period | |
|--------------------------|-------|-----------|----------------|------------------|----------------------------|
| | | | | Additions | Retirements ^(A) |
| 458 CC PSO 1 | OK | CC-Gas | 375 | 1/1/2022 | |
| 458 CC PSO 2 | OK | CC-Gas | 375 | 1/1/2025 | |
| 458 CC PSO 3 | OK | CC-Gas | 375 | 1/1/2027 | |
| Comanche 1 | OK | CC-Gas | 260 | | |
| Northeastern 1 | OK | CC-Gas | 472 | | |
| Northeastern 2 | OK | ST-Gas | 440 | | |
| Northeastern 3 | OK | Coal | 462 | | 12/31/2026 |
| Oklahoma 1 | TX | Coal | 105 | | |
| Riverside 1 | OK | ST-Gas | 453 | | |
| Riverside 2 | OK | ST-Gas | 454 | | |
| Riverside 3 | OK | CT-Gas | 80 | | |
| Riverside 4 | OK | CT-Gas | 80 | | |
| Southwestern 1 | OK | ST-Gas | 75 | | 12/31/2021 |
| Southwestern 2 | OK | ST-Gas | 79 | | 12/31/2023 |
| Southwestern 3 | OK | ST-Gas | 311 | | |
| Southwestern 4 | OK | CT-Gas | 85 | | |
| Southwestern 5 | OK | CT-Gas | 85 | | |
| Tulsa 2 | OK | ST-Gas | 162 | | |
| Tulsa 4 | OK | ST-Gas | 157 | | |

| | | | | |
|---------------|----|----------|-------|------------|
| Weleetka 4 | OK | CT-Gas | 65 | 12/31/2022 |
| Weleetka 5 | OK | CT-Gas | 60 | 12/31/2022 |
| Weleetka 6 | OK | CT-Gas | 60 | 12/31/2022 |
| Calpine 1 | OK | PPA | 260 | |
| Exelon 1 | OK | PPA | 519 | 2/28/2022 |
| Exelon 2 | OK | PPA | 261 | 2/28/2022 |
| Balko | OK | Wind PPA | 199.8 | |
| Blue Canyon V | OK | Wind PPA | 99 | 10/31/2029 |
| Elk City | OK | Wind PPA | 98.9 | 1/31/2030 |
| Goodwell | OK | Wind PPA | 200 | |
| Minco | OK | Wind PPA | 99.2 | 12/31/2030 |
| Seiling | OK | Wind PPA | 198.9 | |
| Sleeping Bear | OK | Wind PPA | 94.5 | |
| Weatherford | OK | Wind PPA | 147 | 12/31/2025 |
| Wind Catcher | OK | Wind PPA | 570 | |

Notes:

- A. Units without retirement dates indicated are assumed on-line through the 2021-2030 period.
- B. Units listed will be utilized independent of future modifications to retirement dates of existing units or commercial operation dates of new units.

ATTACHMENT 3

Incremental Off-System Energy Sales Margins

Incremental off-system energy sales margins should be determined as follows:

- When total off-system energy sales are less than or equal to the Project generation in any given hour, the total off-system energy sales margins will be 100% to the benefit of customers.
- When off-system energy sales are greater than the Project generation in any given hour the off-system energy sales margins for the MWh equivalent to the Project generation in an hour will be 100% to the benefit of customers and the incremental off-system energy sales margins above that level will be treated as existing off-system energy sales with margin sharing at the then current allocation.

ATTACHMENT 4

Oklahoma Regulatory Provisions

- A. WCECA Rider. The Stipulating Parties request that the WCECA Rider attached hereto as Attachment 7 be adopted and become effective with a Commission Order approving this Stipulation, which Rider shall include the following provisions:
1. As set forth in the Company's application, the Stipulating Parties agree to include any PTCs deferred for rate-making purposes in a regulatory liability that is included in rate base and which earns a return at the company's pre-tax weighted average cost of capital (WACC), including during the period the Rider is in effect after the Project commences commercial operation.
 2. The revenue requirement for Rider WCECA will not include ARO costs. Recovery of ARO costs shall be addressed in the Company's next general rate case.
 3. The depreciation rate for the Wind Facility shall be 3.815% until such time that it is modified in the Company's next general rate case.
 4. The depreciation rate for the Gen-Tie Line shall be 2% until such time that it is modified in the Company's next general rate case.
 5. The Company shall submit a depreciation study to support any depreciation rate change requests related to the Project in the Company's next general rate case, and shall submit a comprehensive dismantlement study to justify any requested dismantlement costs, whether related to an ARO or included in any such changed depreciation rates for the Wind Facility, Gen-Tie or any other account.
 6. Amounts collected through the Rider WCECA are subject to refund based upon the Commission's final determination of prudence.
- B. Reporting Provisions.
1. The Company shall report semi-annually to the Stipulating Parties on the status of Project construction and on any anticipated delay in the Project commencing commercial operation.
 2. The Company shall notify the Stipulating Parties when the Project commences commercial operation.
 3. The Company shall report to PUD during the construction phase on the Project's impact on employment in Oklahoma.
- C. Base Rate Case. The Company shall file a base rate case within one-hundred eighty days of the Project reaching commercial operation.
- D. Renewable Energy Credits. The Stipulating Parties agree with the modifications to the Green Energy Choice Tariff set forth in Attachment 6.

ATTACHMENT 5

[Reserved]

ATTACHMENT 6
Revised Green Energy Choice Tariff

AVAILABILITY

This Green Energy Choice Tariff (GECT) (or WindChoice) is available to customers taking service under the Company's standard rate schedules who wish to support the Company's procurement of beneficial environmental attributes also known as Renewable Energy Certificates (RECs) derived from Oklahoma-based renewable wind energy resources. Participation in this program is limited by the availability of RECs from renewable resources currently available to the Company. If the total kWh under contract under this tariff equals or exceeds the availability of RECs from existing resources available to the Company, the Company may suspend the availability of this tariff to new participants. Subscribing customers pay for the value of RECs, and related administrative, advertising, education and participant recruitment costs. All other provisions of the standard pricing schedules shall apply.

CONDITIONS OF SERVICE

Customers choosing to support the generation of electricity from Oklahoma-based renewable wind energy resources may purchase REC's equivalent to a percentage of total monthly billed usage (kWh). Customers may only purchase in whole percentages up to 100 percent of their monthly load.

A REC or beneficial environmental attribute shall be defined as a unit of non-power attribute related to the environment benefit of an offset of emissions or pollutants to the air associated with one MWh of renewable electrical generation.

Green energy kWh subscriptions shall be determined at the time the customer enters service under this Tariff and can be updated for each contract year, or twice within the contract period.

Customers may apply for this schedule at any time. In the event of over subscription, the Company will maintain a waiting list of customers requesting subscription. Customers on the waiting list will only be provided service under this schedule if and when additional GECT kWh are made available through the discontinuation of a current subscriber, or an increase in available kWh under the tariff.

Customers may not enroll if they have a time-payment agreement in effect, have received two or more final disconnect notices, or have been disconnected for non-payment within the last 12 months. The Company may terminate service under this tariff to participating customers who become delinquent in any amount owed to the Company with a 30 day notice.

MONTHLY RATE

Monthly charges for energy and demand to serve the customer's total load shall be determined according to the Company's standard rate schedule under which the customer would otherwise be served. In addition to the monthly charges under the applicable standard rate schedule under which the customer takes service, the customer shall also pay the following rate for each kWh under contract. Over subscription in any month does not carry over.

Rate per Subscribed kWh

\$0.0038

The rate will be updated on an annual basis in an administrative approval process to be effective with the first billing cycle of the January billing month. The REC price in the annual GECT rate calculation will be the most recent 12-month weighted average, REC transactional market price. The Company will provide customers at least 30-days' advance notice of any change in the rate. At such time, the customer may modify or cancel their automatic monthly purchase agreement. Any cancellation will be effective at the end of the current billing period when notice is provided.

BILLING ADJUSTMENTS

Fuel Cost Adjustment:

All kWh shall be subject to the monthly FA Rider.

Tax Adjustment:

The additional monthly charges computed under this tariff shall be subject to adjustment under the provisions of the Company's Tax Adjustment Rider.

TERM AND CONTRACT

The term for all subscribers is a minimum of one year. Subscription to this tariff shall be automatically renewed at the end of each term unless termination from the program is specifically requested with at least 30 days' notice to the customer. If for any reason the subscriber is no longer eligible to subscribe or cancels the subscription during the term of the contract, they will not be eligible to reapply for subscription for one year.

The Company may terminate service under this tariff to participating customers who become delinquent in any amount owed to the Company with a 30 day notice of termination.

SPECIAL TERMS AND CONDITIONS

This tariff is subject to the Company's Terms and Conditions of Service and all provisions of the standard rate schedule under which the customer takes service, including all payment provisions.

Service under this tariff provides for the purchase of renewable attributes of renewable energy currently available to the Company. Subscribers have the sole right to make claim to the renewable attributes they purchase under this tariff. The Company will retire all renewable attributes purchased under this tariff on behalf of Subscribers.

Effective with commercial operation of the Wind Catcher Energy Connection Project ("Project") customers in Service Levels 1 through 3 may elect to receive RECs generated specifically from the Project, up to the Project prorated allocation for these service levels, at a rate equivalent to the most recent 12-month weighted average, REC transactional market price. Upon request, the Company will provide an attestation setting forth that the RECs provided under this special term are not double-counted and are retired internally by the Company.

ATTACHMENT 7

Rider WCECA

PURPOSE

The Wind Catcher Energy Connection Asset (WCECA) Rider is designed to recover return on and of the wind asset facility and operation and maintenance expenditures after the facility commences commercial operation as approved in Cause No. PUD 201700XXX.

This schedule is applicable to and becomes part of each PSO jurisdictional rate schedule. This schedule is applicable to energy consumption of retail customers and to facilities, premises and loads of such retail customers.

The WCECA Factors will include the Oklahoma jurisdictional portion of the project once it is placed in commercial operation and will be determined using the most recently approved production allocation factors for PSO. The WCECA Factors will be calculated in accordance with the following methodology and will be applied to each kWh sold.

ANNUAL DETERMINATION

The initial period for the WCECA Factors shall be the forecasted initial 12 months of operation after the commercial operation date of the wind project.

A True-up Adjustment shall be calculated and reflected in the following year's WCECA Factor calculation. The True-up Adjustment shall be defined as the difference between the actual WCECA costs for the prior year and the revenue received from the WCECA Factors.

WCECA Factors shall be submitted to the Director of the PUD and shall be accompanied by a set of workpapers sufficient to fully document the calculations of the WCECA Factors including any potential True-up Adjustment.

Amounts collected through the Rider WCECA are subject to refund based upon the Commission's final determination of prudence.

The WCECA Factors shall be calculated as shown below:

| | | |
|---------|---|--|
| WCECARR | = | $((WCAP - ADEP) * ROR + DEPX + O\&M) * RBAF - (PTC * RBAF) + TU / \text{Forecasted Base Revenues or kWh Sales by Major Rate Class, as appropriate.}$ |
| WCAP | = | Average project plant in service balance for the forecasted calendar year |
| ADEP | = | Average accumulated depreciation balance for the forecasted calendar year based on the depreciation rates in effect for PSO |
| DEPX | = | Depreciation expense for the forecast period based on the depreciation rates PURPOSE |

- O&M = Operations and Maintenance expense for the forecasted period
- ROR = Return on plant in service which includes interest on debt, shareholder return and related income taxes based on a pre-tax rate of return specific to the WCECA Rider of X.XX%, with the weighted equity component rate grossed-up by the gross conversion factor specific to income taxes currently in effect
- RBAF = Production Demand Allocation Factor for each major rate class from the Company's cost allocation study provided in the most recent rate case. The allocators are as follows:

| <u>Major Rate Class</u> | <u>Production Allocators</u> |
|-------------------------|------------------------------|
| Residential - Secondary | XX.XX% |
| Commercial -Secondary * | XX.XX% |
| SL 3 - Primary | XX.XX% |
| SL 2 - Primary Sub | X.XX% |
| SL 1 - Transmission | X.XX% |
| *Includes Lighting | |

- PTC = Federal Production Tax Credits
- TU = The true-up amount to correct for any variance between the actual WCECA costs for the prior year and the revenue received from the WCECA Factors. The calculation will be done on an annual basis, and will determine the true-up for the following year.

ANNUAL REVIEW

The Company will submit to the Director of the PUD the requested WCECA Annual Factors approximately 90 days preceding the requested effective date. The requested WCECA Factors will become effective, upon PUD approval, with the first billing cycle of the requested billing month.

TERM

The WCECA Factors will be determined on an annual basis until the generating facility is included in retail base rates of the Company in effect PSO.

BEFORE THE CORPORATION COMMISSION OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE)
COMPANY OF OKLAHOMA ("PSO") FOR)
APPROVAL OF THE COST RECOVERY OF)
THE WIND CATCHER ENERGY)
CONNECTION WIND FACILITY AND THE)
WIND CATCHER ENERGY CONNECTION)
GENERATION TIE-LINE; APPROVAL OF A)
TEMPORARY COST RECOVERY RIDER;)
APPROVAL OF CERTAIN ACCOUNTING)
PROCEDURES REGARDING FEDERAL)
PRODUCTION TAX CREDITS; WAIVER OF)
OAC 165:35-34-1(a) AND 35-38-5(e); AND)
SUCH OTHER RELIEF THE COMMISSION)
DEEMS PSO IS ENTITLED)

CAUSE NO. PUD 20100267

FILED
APR 24 2018

COURT CLERK'S OFFICE - OKC
CORPORATION COMMISSION
OF OKLAHOMA

SUPPLEMENT TESTIMONY IN SUPPORT OF

JOINT STIPULATION AND SETTLEMENT

STEVEN L. FATE

FOR

PUBLIC SERVICE COMPANY OF OKLAHOMA

TESTIMONY INDEX

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EXHIBITS

| EXHIBIT | DESCRIPTION |
|----------------|--|
| EXHIBIT SLF-1S | Joint Stipulation and Settlement between the Oklahoma Industrial Energy Consumers, Wal-Mart Stores East, LP and Sam's East, Inc., and the Public Service Company of Oklahoma |

1 I. INTRODUCTION

2 Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

3 A. My name is Steven L. Fate. I am Vice President, Regulatory and Finance for the Public
4 Service Company of Oklahoma ("PSO" or "Company"). My business address is 212
5 East 6th Street, Tulsa, Oklahoma 74119.

6 Q. DID YOU PREVIOUSLY SUBMIT TESTIMONY IN THIS PROCEEDING?

7 A. Yes. I previously filed Direct Testimony on July 31, 2017, and Rebuttal Testimony on
8 December 22, 2017.

9
10 II. PURPOSE OF TESTIMONY

11 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

12 A. The purpose of my testimony is to present, explain, and support the non-unanimous Joint
13 Stipulation and Settlement Agreement ("Settlement Agreement") between Wal-Mart
14 Stores East, LP and Sam's East Inc. ("Wal-Mart"), Oklahoma Industrial Energy
15 Consumers ("OIEC"), and PSO ("Stipulating Parties") (Exhibit SLF-S1) as being a fair,
16 just, and reasonable settlement of the customer and cost recovery issues in this cause, and
17 that the Commission should issue an approval of the Settlement Agreement under 17 O.S.
18 § 286(C).

19
20 III. DETERMINATION OF NEED

21 Q. PLEASE DESCRIBE THE WIND CATCHER ENERGY CONNECTION PROJECT
22 ("PROJECT").

1 A. The Project is a combination of a 2,000 MW nameplate wind generation facility (“Wind
2 Facility”) constructed in the Oklahoma Panhandle and an associate 756 kV dedicated
3 Generation Tie Line (“Gen-Tie”) that allows the energy to be delivered directly to PSO’s
4 load zone thereby significantly reducing congestion over the life of the Project and
5 securing significant benefits for PSO’s customers. The Project is scheduled to begin
6 operation in December 2020. PSO’s ownership share of the Project is 30%.

7 Q. WHAT NEED HAS THE COMPANY IDENTIFIED AND HOW DOES THE PROJECT
8 MEET THE NEED?

9 A. The Company identified a need to provide customers low cost, congestion- and
10 curtailment-free, renewable energy to lower customers’ rates, diversify the energy supply
11 portfolio serving customers, and reduce the future need for generation capacity additions.
12 In 2021, with the addition of the Project, PSO’s energy supply mix is expected to be
13 approximately 40% wind. The Project is expected to save PSO’s customers over \$2
14 billion nominal over its 25 year service life.

15 Q. DOES PSO’S INTEGRATED RESOURCE PLAN (“IRP”) SUPPORT THE NEED FOR
16 NEW WIND RESOURCES WHICH ARE MET BY THE PROJECT?

17 A. Yes. The update to PSO’s 2015 IRP that resulted in part from the extension of the federal
18 Production Tax Credits (“PTCs”) indicates that the acceleration of 600 MW of wind
19 generation to an in service date of 2021 to take advantage of the phasing out of federal
20 production tax credits would provide the lowest reasonable cost of service to customers.¹

¹ PSO 2017 Integrated Resource Plan dated October 2017, at page 6.

1 Q. WHAT STEPS HAS THE COMPANY TAKEN TO ASSURE CUSTOMER
2 BENEFITS?

3 A. The contractual protections in the fixed cost Membership Interests Purchase Agreement
4 ("MIPA") for the Wind Facility and the Engineering, Procurement and Construction
5 ("EPC") agreement for the Gen-Tie, when combined with the Project guarantees outlined
6 in the Settlement Agreement, result in a significant reduction of risks relative to
7 traditional generation projects and provides substantial assurances that customers will
8 benefit from the Project throughout its life.

9

10 IV. CUSTOMER ASSURANCES

11 Q. PLEASE DESCRIBE THE GENERAL TERMS OF THE SETTLEMENT
12 AGREEMENT.

13 A. The Settlement Agreement is a comprehensive settlement that fully settles and resolves
14 all issues raised in this docket by the Stipulating Parties. With two of the signatories
15 representing PSO customer interests, it further confirms that the settlement benefits
16 customers, is a fair, just and reasonable settlement and that the terms and conditions are
17 in the public interest and should be approved by the Commission.

18 Q. PLEASE SUMMARIZE THE CUSTOMER GUARANTEES AND ASSURANCES
19 CONTAINED IN THE SETTLEMENT AGREEMENT.

20 A. The major terms in the Settlement Agreement fall into the following categories: (1) cost
21 caps and savings assurances, (2) project performance, and (3) other regulatory
22 assurances.

1 Q. DOES THE SETTLEMENT AGREEMENT PROVIDE A COST CAP ON THE
2 PROJECT?

3 A. Yes. Under Section 1(a) the Stipulating Parties have agreed that the investment cost for
4 the Wind Facility, Gen-Tie, and all SPP-assigned generation interconnection costs will
5 not exceed 103% of the initial estimated cost, the lesser of \$1.399 billion or \$2,331/kW
6 including AFUDC. Investment costs above the cap will not be recoverable in rates.
7 Costs below the cap have no presumption of prudence, meaning the Company will have
8 to request a determination of prudence in a future docket after the project becomes
9 commercial and the final costs are submitted for review and audit.

10 The level of the cap is substantially lower than the 110% (excluding AFUDC)
11 contained in the Company's rebuttal testimony or the 107.5% (excluding AFUDC)
12 contained in the Joint Stipulation and Settlement dated March 5, 2017, between the
13 Company and Wal-Mart. It also includes AFUDC, which specifically addresses the issue
14 of the potential cost impact of a significant Gen-Tie delay as raised by PUD witness
15 Mossburg. The Cost Cap also addresses concerns expressed in the testimonies of
16 Attorney General ("AG") witness Bohrmann, Public Utility Division ("PUD") witness
17 Mossburg, and OIEC witness Norwood.

18 Q. DOES THE SETTLEMENT AGREEMENT ENSURE CUSTOMERS WILL BENEFIT
19 FROM FEDERAL PRODUCTION TAX CREDITS?

20 A. Yes. In Section 1(b) the Company has agreed to provide a guarantee, for cost recovery
21 purposes, that the Project will be eligible to receive 100% of the value of the PTCs for the
22 actual output from the Wind Facility, and will only be excused from this guarantee by a
23 change in federal law pertaining to the PTCs, including changes to the Internal Revenue

1 Code. Importantly, in the unlikely event that there is a change in federal law affecting the
2 actual value of PTCs, customers are protected through the calculation of the Net Benefits
3 Guarantee described later. The PTC Guarantee in combination with the Net Benefit
4 Guarantee address concerns expressed in the testimonies of OIEC witness Norwood and
5 PUD witness Mossburg.

6 Q. DOES THE SETTLEMENT AGREEMENT PROVIDE A NET CAPACITY FACTOR
7 GUARANTEE FOR THE PROJECT?

8 A. Yes. Section 1(c) provides for a minimum net average capacity factor guarantee at the
9 western bus-bar of 46% over the full 25 year life of the Project, in five consecutive five-
10 year periods. This equates to a minimum of 12,105 GWH during each five-year period.
11 Further, the Company provides assurance of a similar delivery commitment at the eastern
12 end point to address any concern of the availability of the Gen-Tie. The Net Capacity
13 Factor Guarantee responds to the concerns of PUD witness Mossburg, OIEC witness
14 Norwood, and AG witness Bohrmann.

15 Q. DOES THE SETTLEMENT AGREEMENT PROVIDE A MECHANISM TO
16 DETERMINE PROJECT NET BENEFITS FOR CUSTOMERS DURING THE
17 INITIAL TEN YEARS OF PROJECT COMMERCIAL OPERATION?

18 A. Yes. Attachment 2 sets forth in detail the methodology to demonstrate whether customers
19 have received a net benefit over the first 10 years of the Project. To determine whether
20 customers received a net benefit, the net benefit calculation includes: Project Revenue
21 Requirement, Fuel Savings, PTC value, Carbon Savings, deferred capacity value, and
22 Renewable Energy Credit value. The calculation is performed in year eleven of the
23 Project. If a benefit is not demonstrated, the Company will create a regulatory liability in

1 the amount owed customers and amortize the liability in retail rates over the remaining
2 period of commercial operation (years 11-25).

3 This provision is a significant guarantee that addresses many concerns of risks to
4 customers that have been expressed by the parties to this case. Importantly, if for some
5 reason the completion of the Gen-Tie line is delayed, or if natural gas prices are
6 extraordinarily low, or PTC savings do not materialize as forecasted, or savings from
7 avoided carbon costs are not realized, this guarantee takes all these factors, among others,
8 into account to ensure customers benefit from the Project.

9 Q. DOES THE SETTLEMENT AGREEMENT PROVIDE FOR OFF-SYSTEMS SALES
10 MARGINS FOR THE BENEFIT OF PSO CUSTOMERS?

11 A. Yes. In Section 1(e) the Stipulating Parties have agreed to credit customers 100% of the
12 off-system energy sales margins that would not have occurred but for the Project, as well
13 as the net proceeds from the sale of RECs associated with the Project. This guarantee is
14 consistent with the Company's proposal made in rebuttal testimony and addresses a
15 recommendation made in testimony by OIEC witness Norwood.

16 Q. DOES THE SETTLEMENT AGREEMENT PROVIDE A MOST FAVORED
17 NATIONS PROVISION TO PROVIDE FURTHER PROTECTION TO PSO
18 CUSTOMERS?

19 A. Yes. Section 1(f) sets forth additional protections by agreeing to incorporate any term
20 that is agreed to by Southwestern Electric Power Company ("SWEPCO") in any of its
21 regulatory proceedings in Arkansas, Louisiana, or Texas, whether through settlement or
22 order, into the respective terms of the Settlement Agreement to the extent that the agreed
23 to term is beneficial to PSO customers. The only limitation to this provision is that the

1 more favorable terms are not unique to SWEPCO jurisdictions. This assurance effectively
2 responds to the testimony and recommendations of AG witness Bohrmann and PUD
3 witness Mossburg.

4 Q. DOES THE SETTLEMENT AGREEMENT PROVIDE ANY PROTECTION TO PSO'S
5 CUSTOMERS IN THE EVENT OTHER SWEPCO JURISDICTIONS DO NOT
6 APPROVE THE PROJECT?

7 A. Yes. Section 1(i) assures that in the event other jurisdictions in which SWEPCO is
8 seeking Project approval do not participate in the Project, that the Oklahoma
9 jurisdictional share of the Project will not be increased.

10 Q. DOES THE SETTLEMENT AGREEMENT PROVIDE FOR A CAP FOR THE
11 BALANCE OF A DEFERRED TAX ASSET?

12 A. Yes. Section 1(j) limits the Company's ability to earn a return on any deferred tax asset
13 balance to a cumulative annual average balance of two hundred forty million dollars
14 (which is 30% of the Project cumulative deferred tax asset balance cap) over the first
15 thirteen years of the Project. Because the Company will pass the full benefit of the PTCs
16 to customers as they are generated, a deferred tax asset may be created in any given year
17 if the Company does not have the tax appetite to fully utilize the PTCs in the same year
18 they are generated. The cap further limits the return on the deferred tax asset to the then
19 approved weighted average cost of capital on 60% of the asset and the then applicable
20 cost of debt on the remaining 40% of the asset balance. This provision is consistent with
21 the prior Joint Stipulation and Settlement entered into with Wal-Mart.

1 Q. DOES THE SETTLEMENT AGREEMENT ASSURE CUSTOMERS WILL NOT
2 HAVE TO BEAR THE PROJECT DEVELOPMENT COSTS IF THE COMMISSION
3 DOES NOT APPROVE THE SETTLEMENT AGREEMENT?

4 A. Yes. Consistent with PSO's prior testimony, Section 1(k) states that the Company is
5 agreeing through this provision to not seek recovery of Project development costs unless
6 the Commission approves the Settlement Agreement.

7 Q. DOES THE SETTLEMENT AGREEMENT ADDRESS THE TIMING OF A BASE
8 RATE CASE SUBSEQUENT TO THE START OF THE PROJECT'S COMMERCIAL
9 OPERATION?

10 A. Yes. To address concerns that the Company is not sufficiently incentivized to eliminate
11 the Wind Catcher Energy Connection Asset ("WCECA") Rider in a timely manner, in
12 Attachment 4, Section C, the Stipulating Parties have agreed that the Company will file a
13 base rate case within 180 days of the Project reaching commercial operation.

14 Q. ARE THERE REPORTING REQUIREMENTS IN THE SETTLEMENT
15 AGREEMENT?

16 A. Yes. Attachment 4, Section B provides for semi-annual reporting on the status of the
17 Project construction and the impact on employment in Oklahoma.

18 Q. DOES THE SETTLEMENT AGREEMENT ADDRESS THE NEEDS OF SOME
19 CUSTOMERS TO BE ABLE TO NOMINATE THEIR PURCHASE OF RENEWABLE
20 ENERGY CREDITS ("REC'S") FROM THE PROJECT?

21 A. Yes. The addition of a Special Term and Condition to PSO's current Green Energy
22 Choice Tariff contained in Attachment 6 of the Settlement Agreement, sets forth the
23 ability of Service Levels 1, 2, and 3 customers to select a purchase of RECs from the

1 Project and receive attestations that certify the RECs thereby allowing participating
2 customers to use the RECs for internal and external compliance purposes.

3 Q. PLEASE SUMMARIZE THE EFFECT OF THESE KEY CUSTOMER PROTECTION
4 PROVISIONS IN THE SETTLEMENT AGREEMENT.

5 A. This unprecedented suite of enhanced guarantees represents a secure deal for customers
6 and ensures customers will benefit for decades from an Oklahoma-based, low-cost,
7 congestion- and curtailment-free, diversified resource.

8 Q. IN ADDITION TO THE SUBSTANTIAL CUSTOMER BENEFITS IS THERE A
9 BROADER ECONOMIC BENEFIT EXPECTED FROM THE PROJECT?

10 A. Yes. While the Commission should base its decision on the substantial projected benefits
11 for PSO's customers, it is also important to note that the \$4.5 billion Project is expected
12 to create over \$2 billion in economic stimulus to the State during construction, generate
13 over \$300 million in property tax revenues and create approximately 300 full-time
14 equivalent jobs in Oklahoma during the life of the Project.²

15
16 V. COST RECOVERY

17 Q. DOES THE SETTLEMENT AGREEMENT PROVIDE A MECHANISM FOR COST
18 RECOVERY?

19 A. Yes. The Settlement Agreement provides for the creation of the temporary WCECA
20 Rider and the contemporaneous recovery of the Project costs. Importantly, as reflected in

² Hearing Exhibit 14, "Employment and Economic-Stimulus Benefits of the Wind Catcher Energy Connection Project," prepared by The Brattle Group, page 2.

1 Attachment 4, Section A, costs recovered through the WCECA Rider are subject to
2 refund based upon the Commission's future final determination of prudencey.

3 Q. UNDER THE SETTLEMENT AGREEMENT WHEN WILL A FINAL
4 DETERMINATION OF COST RECOVERY OCCUR?

5 A. Under the terms of the Settlement Agreement the Stipulating Parties have requested the
6 Commission defer any decision on final cost recovery to a cause opened by the Company
7 subsequent to the start of the Project's commercial operation.
8

9 VI. CONCLUSION

10 Q. DO YOU BELIEVE THE SETTLEMENT AGREEMENT IS IN THE BEST INTEREST
11 OF PSO'S CUSTOMERS?

12 A. Yes. The Stipulating Parties engaged in extensive due diligence and negotiations to reach
13 this resolution which provides both customer savings and customer protections through
14 securing a reliable low cost renewable energy resource. The Project is expected to
15 provide over \$2 billion nominal net benefits to customers, lowering the cost to service
16 customers as well as further diversifying PSO's energy supply. Reliable delivery of the
17 low cost energy is also assured due to the construction of a dedicated Gen-Tie line, which
18 reduces congestion and curtailment costs for the benefit of customers.

19 The Commission should find that the Settlement Agreement is in the public
20 interest because it ensures customer savings, resolves disputed issues in this case, is fair
21 and reasonable to customers, and represents substantial and material guarantees by the
22 Company that further protect customers.

23 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

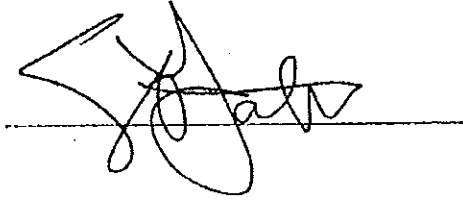
1 A. Yes, it does.

AFFIDAVIT OF STEVEN L. FATE

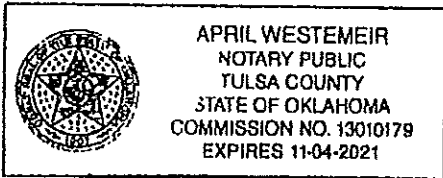
STATE OF OKLAHOMA)

COUNTY OF TULSA)

On the 24 day of April, 2018, before me appeared Steven L. Fate, to me personally known, who, being by me first duly sworn, states that he is the Vice President, Regulatory and Finance of the Public Service Company of Oklahoma and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.



Subscribed and sworn to before me this 24 day of April, 2018.



My commission expires: 11/04/2021

EXHIBIT SLF-1S

BEFORE THE CORPORATION COMMISSION OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE)
COMPANY OF OKLAHOMA ("PSO") FOR)
APPROVAL OF THE COST RECOVERY OF)
THE WIND CATCHER ENERGY)
CONNECTION PROJECT; A)
DETERMINATION THERE IS A NEED FOR)
THE PROJECT; APPROVAL FOR FUTURE)
INCLUSION IN BASE RATES COST)
RECOVERY OF PRUDENT COSTS) CAUSE NO. PUD 201700267
INCURRED BY PSO FOR THE PROJECT;)
APPROVAL OF A TEMPORARY COST)
RECOVERY RIDER; APPROVAL OF)
CERTAIN ACCOUNTING PROCEDURES)
REGARDING FEDERAL PRODUCTION)
TAX CREDITS; WAIVER OF OAC 165:35-)
38-5(e); AND SUCH OTHER RELIEF THE)
COMMISSION DEEMS PSO IS ENTITLED)

JOINT STIPULATION AND SETTLEMENT AGREEMENT

COME NOW Public Service Company of Oklahoma ("PSO" or the "Company") and the undersigned parties to the above entitled cause and present the following Joint Stipulation and Settlement Agreement ("Joint Stipulation") for Oklahoma Corporation Commission ("Commission") review and approval as their compromise and settlement of all issues in this proceeding between the parties to this Joint Stipulation ("Stipulating Parties"). The Stipulating Parties represent to the Commission that this Joint Stipulation represents a fair, just and reasonable settlement of these issues, that the terms and conditions of the Joint Stipulation are in the public interest, and the Stipulating Parties urge the Commission to issue an Order in this Cause adopting and approving this Joint Stipulation.

It is hereby stipulated and agreed by and between the Stipulating Parties as follows:

TERMS OF THE JOINT STIPULATION AND SETTLEMENT AGREEMENT

Effective with the Commission's order approving of all elements of this Joint Stipulation, the Stipulating Parties request that the Commission issue an order finding that the Company's 30% ownership share of the Wind Catcher Energy Connection Project which, on a total Project basis consists of a 2000 MW wind generation facility located in the Oklahoma panhandle and an approximately 350-mile generation interconnection tie-line to deliver the wind energy to the grid near Tulsa, reasonably meets the Company's need for a low-cost, diverse source of energy. The Stipulating Parties further request that the Commission approve the Company's request to include any PTCs deferred for ratemaking purposes in a regulatory liability that is included in rate base, or earns interest at the Company's pre-tax Weighted Average Cost of Capital (WACC) from when

EXHIBIT SLF-1S

the Project commences commercial operation. The Stipulating Parties further request that the Commission approve the Company's request to include any unrealized PTCs in a deferred tax asset included in rate base in the event the PTCs cannot be fully utilized in a given year.

The Stipulating Parties request that the Commission defer any decision on final cost recovery to a cause opened by an application filed by the company pursuant to Chapter 70 of the Commission's rules or otherwise subsequent to the incurrence of such costs of the Project. In the foregoing application, the Company should submit amounts subject to recovery for Commission audit and review.

1. Terms

- (a) Cost Cap. The Company commits to a total Company cost cap on capital investment for the Wind Facility, the Gen-Tie and all SPP-assigned generation interconnection costs (collectively the "Project") which shall be the lesser of (i) 103% of estimated cost, which is \$1.399 billion, including AFUDC, and (ii) \$2,331/kW (the "Cost Cap"). Costs above the Cost Cap shall not be recoverable in rates and costs below the Cost Cap shall have no presumption of prudence.
- (b) PTC Guarantee. The Company will provide a guarantee, for cost recovery purposes, that the Project will be eligible to receive 100% of the value of the Federal Production Tax Credits ("PTCs") for the actual output from the Wind Facility. Except as provided in Attachment 2, the Stipulating Parties agree that the Company will be excused from this PTC Guarantee to the extent that it is prevented by any change in law which shall be defined as changes in federal law pertaining to PTC's, including changes to the Internal Revenue Code.
- (c) Net Capacity Factor Guarantee. The Company shall guarantee, for rate making purposes, a minimum net average capacity factor at the western bus-bar of 46% for each of the five consecutive five-year periods during the twenty five-year period of Project commercial operation. This means that, subject to ratable adjustment pursuant to the micro-siting process set forth below, the minimum net average capacity factor (46%) for PTCs measured at the western bus-bar is 12,105 GWh during each such five-year period and this amount will be adjusted downward to account for actual line losses for energy delivery at the eastern bus-bar.

Any make whole payment due from the Company at the end of each of the five consecutive five-year periods during the twenty-five year period of Project commercial operation will include incremental replacement energy costs and PTCs which will flow to customers through the Fuel Cost Adjustment Rider, and the calculation for determining amounts due to customers under this guarantee shall be as set out in Attachment 1 hereto.

If the number of turbines comprising the completed Wind Farm is reduced as a result of the micro-siting process, the Stipulating Parties agree that the number of turbines comprising the Wind Farm will not decline by more than twenty turbines

EXHIBIT SLF-1S

and that the nameplate capacity of the completed Wind Farm will not decline by more than fifty megawatts.

- (d) Net Benefits Guarantee. The Company will provide a net benefits guaranty as set forth in Attachment 2 hereto.
- (e) Incremental Off-System Energy Sales Margins. One hundred percent of the incremental off-system energy sales margins that would not have occurred but for the Project and net proceeds from the sale of RECs associated with the Project will flow to customers through the Company's Fuel Cost Adjustment Rider, notwithstanding any provision of the Company's Fuel Cost Adjustment Rider that would otherwise allocate a portion of such incremental off-system energy sales to the Company. The calculation for determining incremental off-system energy margins from the Project shall be as set out in Attachment 3 hereto.
- (f) Most Favored Nations. The Company shall notify the Stipulating Parties if terms more favorable to all customer classes related to (i) the Net Capacity Factor Guarantee, (ii) the PTC Guarantee, (iii) the Cost Cap percentage, (iv) the Net Benefits Guaranty, (v) the Company's share of any cumulative annual deferred tax asset balance cap for the Project or (vi) such other terms, not described above, that are agreed to by Southwestern Electric Power Company ("SWEPCO") in any of its regulatory proceedings in Arkansas, Louisiana or Texas seeking approval of the Project, whether through settlement or order issued by any such jurisdiction under which SWEPCO will proceed to construct the Project, and the respective terms of this Joint Stipulation shall be deemed to be modified to incorporate those more favorable terms to the extent that they are not unique to SWEPCO jurisdictions. With respect to this Most Favored Nations provision as it applies to any Net Benefits Guarantee, it will be limited to the formulas used to calculate net customer benefits and not to any inputs. The Company's notice to the Stipulating Parties as set forth above will include a copy of the terms that SWEPCO agreed to in the other jurisdictions and, if applicable, a copy of any regulatory orders issued in the other jurisdictions under which SWEPCO is proceeding construct the Project, and a discussion by the Company of their applicability to this Joint Stipulation.
- (g) Retail Customers. This Joint Stipulation is applicable only to the Company's retail customers and all references to "customers" herein shall mean the Company's retail customers.
- (h) Allocation of Revenue Requirement to Customer Classes. The revenue requirement of the Project will be allocated among the Company's customer classes based on demand. For demand metered customer classes, the class revenue requirement will be billed to customers on a kW demand basis.
- (i) Oklahoma Allocation. The Stipulating Parties agree that the Oklahoma jurisdictional share of the costs of the Project will not increase if any jurisdictions in which SWEPCO operates do not participate in the Project.

EXHIBIT SLF-1S

- (j) Deferred Tax Asset Balance Cap. The Company may earn a return on any deferred tax asset balance related to the Project over the first thirteen calendar years. The Company will earn a return on the deferred tax asset balance using a combination of (i) its then approved weighted average cost of capital on sixty percent of any deferred tax asset balance and (ii) its then applicable cost of long term debt on forty percent of any deferred tax asset balance. The deferred tax asset balance shall not exceed a cumulative annual average of two hundred forty million dollars in any calendar year which is 30% of the Project cumulative deferred tax asset balance cap. The Company shall not earn a return on any deferred tax asset balance after the thirteenth calendar year. The Stipulating Parties acknowledge that the Company does not earn a return of any deferred tax asset balance.
- (k) Development Costs. The Company agrees that it will not seek recovery of development costs associated with the Project unless the Commission approves this Joint Stipulation.

2. Additional Regulatory Provisions.

The Stipulating Parties agree to the additional regulatory provisions set forth in Attachments 4, 5, 6 and 7 hereto.

3. Discovery.

As between and among the Stipulating Parties, all requests for discovery are deemed satisfied.

4. General Reservations.

The Stipulating Parties represent and agree that, except as specifically otherwise provided herein:

- (a) This Joint Stipulation represents a negotiated settlement for the purpose of compromising and settling all issues which were raised relating to this proceeding.
- (b) Each of the undersigned counsel of record affirmatively represents that he or she has full authority to execute this Joint Stipulation on behalf of his or her client(s).
- (c) None of the signatories hereto shall be prejudiced or bound by the terms of this Joint Stipulation in the event the Commission does not approve this Joint Stipulation.
- (d) Nothing contained herein shall constitute an admission by any party that any allegation or contention in these proceedings as to any of the foregoing matters is true or valid and shall not in any respect constitute a determination by the Commission as to the merits of any allegations or contentions made in this proceeding.

EXHIBIT SLF-1S

- (e) The Stipulating Parties agree that the provisions of this Joint Stipulation are the result of extensive negotiations, and the terms and conditions of this Joint Stipulation are interdependent. The Stipulating Parties agree that settling the issues in this Joint Stipulation is in the public interest and, for that reason, they have entered into this Joint Stipulation to settle among themselves the issues in this Joint Stipulation. This Joint Stipulation shall not constitute nor be cited as a precedent nor deemed an admission by any Stipulating Party in any other proceeding except as necessary to enforce its terms before the Commission or any state court of competent jurisdiction. The Commission's decision, if it enters an order consistent with this Joint Stipulation, will be binding as to the matters decided regarding the issues described in this Joint Stipulation, but the decision will not be binding with respect to similar issues that might arise in other proceedings. A Stipulating Party's support of this Joint Stipulation may differ from its position or testimony in other causes. To the extent there is a difference, the Stipulating Parties are not waiving their positions in other causes. Because this is a stipulated agreement, the Stipulating Parties are under no obligation to take the same position as set out in this Joint Stipulation in other dockets.
- (f) The Company, Wal-Mart Stores East, LP and Sam's East, LP agree that the Joint Stipulation and Settlement Agreement entered into by them and dated March 5, 2018 is hereby terminated and of no further force and effect.

4. Non Severability.

The Stipulating Parties stipulate and agree that the agreements contained in this Joint Stipulation have resulted from negotiations among the Stipulating Parties and are interrelated and interdependent. The Stipulating Parties hereto specifically state and recognize that this Joint Stipulation represents a balancing of positions of each of the Stipulating Parties in consideration for the agreements and commitments made by the other Stipulating Parties in connection therewith. Therefore, in the event that the Commission does not approve and adopt the terms of this Joint Stipulation in total and without modification or condition (provided, however, that the affected party or parties may consent to such modification or condition), this Joint Stipulation shall be void and of no force and effect, and no Stipulating Party shall be bound by the agreements or provisions contained herein. The Stipulating Parties agree that neither this Joint Stipulation nor any of the provisions hereof shall become effective unless and until the Commission shall have entered an Order approving all of the terms and provisions as agreed by the parties to this Joint Stipulation and such order becomes final and non-appealable.

Signatures appear on the following page

EXHIBIT SLF-1S

WHEREFORE, on this 20th day of April, 2018, the Stipulating Parties hereby agree to this Joint Stipulation and Settlement Agreement as their negotiated settlement of this proceeding with respect to all issues which were raised with respect to this Application, and respectfully request the Commission to issue an Order approving this Joint Stipulation and Settlement Agreement.

**PUBLIC UTILITY DIVISION
OKLAHOMA CORPORATION COMMISSION**

By: _____
Brandy Wreath, Director of Public Utility Division

PUBLIC SERVICE COMPANY OF OKLAHOMA

By: Jack P. Fite
Jack P. Fite
Joann S. Worthington
Attorney for Public Service Company of Oklahoma

**Michael Hunter
ATTORNEY GENERAL OF THE
STATE OF OKLAHOMA**

By: _____
Dara Derryberry
Assistant Attorney General

OKLAHOMA INDUSTRIAL ENERGY CONSUMERS

By: Thomas P. Schroedter
Thomas P. Schroedter
Hall, Estill, Hardwick, Gable, Golden & Nelson

**WAL-MART STORES EAST, LP and SAM'S EAST,
INC.**

By: Rick D. Chamberlain
Rick D. Chamberlain

EXHIBIT SLF-1S

ONETA POWER, LLC

By: _____
Cheryl Vaught

**PLAINS AND EASTERN CLEAN LINE
OKLAHOMA, LLC**

By: _____
James A. Roth

OKLAHOMA MUNICIPAL POWER AUTHORITY

By: _____
Randall Elliott

WINDFALL COALITION, LLC

By: _____
David E. Keglovits

NOVUS WINDPOWER, LLC

By: _____
Patrice Douglas

KIOWA POWER PARTNERS, LLC

By: _____
Kenneth H. Blakely

EXHIBIT SLF-1S

TRI-COUNTY ELECTRIC COOPERATIVE, INC.

By: _____
James R. Fletcher

**GOLDEN SPREAD ELECTRIC COOPERATIVE,
INC.**

By: _____
J. Eric Turner

SOUTH CENTRAL MCN L.L.C.

By: _____
Deborah Thompson

ATTACHMENT 1

Details for Determining the Net Capacity Factor Guarantee

Following the fifth, tenth, fifteenth, twentieth and twenty-fifth years after the Project reaches commercial operation, the Company will sum the total energy output from the Wind Facility for the previous five years.

- If the Company's 30% share of that energy equals or exceeds a minimum net average capacity factor at the Project's western bus-bar of 46% ("Minimum Net Average Capacity Factor"), no other calculations are made and no net capacity factor guarantee payment is necessary.
- If the Company's 30% share of that energy is less than the Minimum Net Average Capacity Factor, the following ratio will be taken: (the Company's 30% share of the energy equivalent of the output of the Project at the Minimum Net Average Capacity Factor – the Company's 30% share of the actual energy output at the Project's western bus-bar)/the Company's 30% share of the actual energy output at the Project's western bus-bar. This ratio will be rounded to 5 decimal places. The Company's 30% share of the hourly actual MWh energy output of the Wind Facility, as measured at the eastern bus-bar of the Gen-Tie after accounting for actual line losses for each hour of the five-year period, will be multiplied by this ratio to determine the additional energy for the customer credit. These hourly MWh energy values will be individually multiplied by the hourly, day-ahead Locational Marginal Price (LMP) at this location. The hourly dollar amounts will then be summed for the total five-year period to arrive at the energy value portion of the customer credit. In addition, the five-year total GWh shortfall energy at the western bus-bar of the Gen-Tie will be multiplied by the average, grossed up, PTC credit, provided, however, that the PTCs will be grossed up only for the first ten Calendar Years that the Project is in commercial operation when it is producing PTCs, and not for subsequent periods.

ATTACHMENT 2

**Details for Determining Project Net Benefit for Customers
During the Initial Ten Years of Project Commercial Operation**

To perform an evaluation of the Project's net benefits during the initial ten years of commercial operation, the Company will perform the calculation set forth below annually until the Project has been in base rates for ten years. The ten-year period starts on the date the Project is placed in base rates and ends exactly ten years after that date.

$$\text{Net Benefit for Customers} = \text{Fuel Savings} + \text{Project Capacity Value} + \text{PTCs} + \text{Minimum Net Capacity Factor Guarantee Payments} + \text{RECs Value} + \text{Carbon Savings} - \text{Project Revenue Requirement}$$

Net Benefits for Customers: If the net benefit for customers at the end of the ten-year period is positive, that means that customers have received net savings and, therefore, the Company does not owe customers any compensation under this customer net benefit guarantee. If the net benefit for customers at the end of the ten-year period is negative due to any reason or combination of reasons including but not limited to low market energy prices or changes in law that result in a reduction to or elimination of the value of the PTCs, that means that customers have incurred a net cost and, therefore, the Company will compensate customers for such net cost under this customer net benefit guarantee. A regulatory liability will be established if customers are owed a credit under this calculation. The regulatory liability will be amortized in retail rates over the remaining period of commercial operation (years 11-25).

Fuel Savings: The Oklahoma retail portion of the fuel and energy savings achieved by the Project during the first ten years based upon a comparison of a Base Case to a Modified Base Case for each hour of the period. The Base Case shall represent the thermal and non-thermal generating units set forth on Table 1 hereto, which represents for purposes hereof the thermal and non-thermal generating units that the Company currently owns or controls under power purchase agreements, or is projected to own and control (collectively, the Company's Existing and Forecasted Generation"), and including the Company's share of energy from the Project. In the Modified Base Case, the Company will remove the Project and re-dispatch the Company's Existing and Forecasted Generation to replace the removed Project generation. The difference in costs (including all variable unit production costs) between the Base Case and Modified Base Case will be used to determine the fuel savings attributable to the Project. Both the Base Case and the Modified Base Case will incorporate the following assumptions:

- Unit operating characteristics, constraints and limits including such inputs as heat rate coefficients, unit availability, start-up costs, tolling fees, non-fuel operating and maintenance costs, and fuel prices. The inputs used in this analysis will be the same type of inputs that the Company uses in its generation market offers submitted to the SPP Integrated Marketplace.
- Actual integrated hourly operating reserve requirements.

EXHIBIT SLF-1S

- To the extent that the Company's Existing and Forecasted Generation in the Modified Base Case is insufficient to replace the Project generation, the Company will assume in its calculations that the marginal unit is used to serve the insufficiency.

Project Capacity Value: \$4.3 million annually over the ten-year period, as filed.

PTCs: The Company's portion of the PTCs grossed up for taxes, either passed through or held in a regulatory liability and determined annually, and any credits to customers resulting from the Company's PTC guarantee.

Net Capacity Factor Guarantee: Any payments made by the Company for the net capacity factor guarantee for each of the two five-year periods of commercial operation during the period of PTC eligibility.

RECs Value: Any Company renewable energy credit value received, or inventory value at the prevailing market price, resulting from the Project.

Carbon Savings: Any costs on the production of carbon that actually would have been incurred by the Company's fossil generation fleet as a result of a Federal mandate imposing a cost on the production of carbon from fossil generation but for the Project.

Project Revenue Requirement: The Company's Revenue Requirement of the Project, including both the Wind Farm and Gen-Tie line that are in rates.

Table 1 – Company's Existing and Forecasted Generation

| Unit Name ^[B] | State | Fuel Type | Capacity MW | 2021-2030 Period | |
|--------------------------|-------|-----------|----------------|------------------|----------------------------|
| | | | | Additions | Retirements ^[A] |
| 458 CC PSO 1 | OK | CC-Gas | 375 | 1/1/2022 | |
| 458 CC PSO 2 | OK | CC-Gas | 375 | 1/1/2025 | |
| 458 CC PSO 3 | OK | CC-Gas | 375 | 1/1/2027 | |
| Comanche 1 | OK | CC-Gas | 260 | | |
| Northeastern 1 | OK | CC-Gas | 472 | | |
| Northeastern 2 | OK | ST-Gas | 440 | | |
| Northeastern 3 | OK | Coal | 462 | | 12/31/2026 |
| Oklaunion 1 | TX | Coal | 105 | | |
| Riverside 1 | OK | ST-Gas | 453 | | |
| Riverside 2 | OK | ST-Gas | 454 | | |
| Riverside 3 | OK | CT-Gas | 80 | | |
| Riverside 4 | OK | CT-Gas | 80 | | |
| Southwestern 1 | OK | ST-Gas | 75 | | 12/31/2021 |
| Southwestern 2 | OK | ST-Gas | 79 | | 12/31/2023 |
| Southwestern 3 | OK | ST-Gas | 311 | | |
| Southwestern 4 | OK | CT-Gas | 85 | | |
| Southwestern 5 | OK | CT-Gas | 85 | | |
| Tulsa 2 | OK | ST-Gas | 162 | | |
| Tulsa 4 | OK | ST-Gas | 157 | | |

EXHIBIT SLF-1S

| | | | | |
|---------------------|-----------|-----------------|------------|------------|
| Weleetka 4 | OK | CT-Gas | 65 | 12/31/2022 |
| Weleetka 5 | OK | CT-Gas | 60 | 12/31/2022 |
| Weleetka 6 | OK | CT-Gas | 60 | 12/31/2022 |
| Calpine 1 | OK | PPA | 260 | |
| Exelon 1 | OK | PPA | 519 | 2/28/2022 |
| Exelon 2 | OK | PPA | 261 | 2/28/2022 |
| Balko | OK | Wind PPA | 199.8 | |
| Blue Canyon V | OK | Wind PPA | 99 | 10/31/2029 |
| Elk City | OK | Wind PPA | 98.9 | 1/31/2030 |
| Goodwell | OK | Wind PPA | 200 | |
| Minco | OK | Wind PPA | 99.2 | 12/31/2030 |
| Seiling | OK | Wind PPA | 198.9 | |
| Sleeping Bear | OK | Wind PPA | 94.5 | |
| Weatherford | OK | Wind PPA | 147 | 12/31/2025 |
| Wind Catcher | OK | Wind PPA | 570 | |

Notes:

- A. Units without retirement dates indicated are assumed on-line through the 2021-2030 period.
- B. Units listed will be utilized independent of future modifications to retirement dates of existing units or commercial operation dates of new units.

ATTACHMENT 3

Incremental Off-System Energy Sales Margins

Incremental off-system energy sales margins should be determined as follows:

- When total off-system energy sales are less than or equal to the Project generation in any given hour, the total off-system energy sales margins will be 100% to the benefit of customers.
- When off-system energy sales are greater than the Project generation in any given hour the off-system energy sales margins for the MWh equivalent to the Project generation in an hour will be 100% to the benefit of customers and the incremental off-system energy sales margins above that level will be treated as existing off-system energy sales with margin sharing at the then current allocation.

ATTACHMENT 4

Oklahoma Regulatory Provisions

- A. WCECA Rider. The Stipulating Parties request that the WCECA Rider attached hereto as Attachment 7 be adopted and become effective with a Commission Order approving this Stipulation, which Rider shall include the following provisions:
1. As set forth in the Company's application, the Stipulating Parties agree to include any PTCs deferred for rate-making purposes in a regulatory liability that is included in rate base and which earns a return at the company's pre-tax weighted average cost of capital (WACC), including during the period the Rider is in effect after the Project commences commercial operation.
 2. The revenue requirement for Rider WCECA will not include ARO costs. Recovery of ARO costs shall be addressed in the Company's next general rate case.
 3. The depreciation rate for the Wind Facility shall be 3.815% until such time that it is modified in the Company's next general rate case.
 4. The depreciation rate for the Gen-Tie Line shall be 2% until such time that it is modified in the Company's next general rate case.
 5. The Company shall submit a depreciation study to support any depreciation rate change requests related to the Project in the Company's next general rate case, and shall submit a comprehensive dismantlement study to justify any requested dismantlement costs, whether related to an ARO or included in any such changed depreciation rates for the Wind Facility, Gen-Tie or any other account.
 6. Amounts collected through the Rider WCECA are subject to refund based upon the Commission's final determination of prudence.
- B. Reporting Provisions.
1. The Company shall report semi-annually to the Stipulating Parties on the status of Project construction and on any anticipated delay in the Project commencing commercial operation.
 2. The Company shall notify the Stipulating Parties when the Project commences commercial operation.
 3. The Company shall report to PUD during the construction phase on the Project's impact on employment in Oklahoma.
- C. Base Rate Case. The Company shall file a base rate case within one-hundred eighty days of the Project reaching commercial operation.
- D. Renewable Energy Credits. The Stipulating Parties agree with the modifications to the Green Energy Choice Tariff set forth in Attachment 6.

EXHIBIT SLF-1S

ATTACHMENT 5

[Reserved]

EXHIBIT SLF-1S

ATTACHMENT 6

Revised Green Energy Choice Tariff

AVAILABILITY

This Green Energy Choice Tariff (GECT) (or WindChoice) is available to customers taking service under the Company's standard rate schedules who wish to support the Company's procurement of beneficial environmental attributes also known as Renewable Energy Certificates (RECs) derived from Oklahoma-based renewable wind energy resources. Participation in this program is limited by the availability of RECs from renewable resources currently available to the Company. If the total kWh under contract under this tariff equals or exceeds the availability of RECs from existing resources available to the Company, the Company may suspend the availability of this tariff to new participants. Subscribing customers pay for the value of RECs, and related administrative, advertising, education and participant recruitment costs. All other provisions of the standard pricing schedules shall apply.

CONDITIONS OF SERVICE

Customers choosing to support the generation of electricity from Oklahoma-based renewable wind energy resources may purchase REC's equivalent to a percentage of total monthly billed usage (kWh). Customers may only purchase in whole percentages up to 100 percent of their monthly load.

A REC or beneficial environmental attribute shall be defined as a unit of non-power attribute related to the environment benefit of an offset of emissions or pollutants to the air associated with one MWh of renewable electrical generation.

Green energy kWh subscriptions shall be determined at the time the customer enters service under this Tariff and can be updated for each contract year, or twice within the contract period.

Customers may apply for this schedule at any time. In the event of over subscription, the Company will maintain a waiting list of customers requesting subscription. Customers on the waiting list will only be provided service under this schedule if and when additional GECT kWh are made available through the discontinuation of a current subscriber, or an increase in available kWh under the tariff.

Customers may not enroll if they have a time-payment agreement in effect, have received two or more final disconnect notices, or have been disconnected for non-payment within the last 12 months. The Company may terminate service under this tariff to participating customers who become delinquent in any amount owed to the Company with a 30 day notice.

MONTHLY RATE

Monthly charges for energy and demand to serve the customer's total load shall be determined according to the Company's standard rate schedule under which the customer would otherwise be served. In addition to the monthly charges under the applicable standard rate schedule under which the customer takes service, the customer shall also pay the following rate for each kWh under contract. Over subscription in any month does not carry over.

EXHIBIT SLF-1S

Rate per Subscribed kWh

\$0.0038

The rate will be updated on an annual basis in an administrative approval process to be effective with the first billing cycle of the January billing month. The REC price in the annual GECT rate calculation will be the most recent 12-month weighted average, REC transactional market price. The Company will provide customers at least 30-days' advance notice of any change in the rate. At such time, the customer may modify or cancel their automatic monthly purchase agreement. Any cancellation will be effective at the end of the current billing period when notice is provided.

BILLING ADJUSTMENTS

Fuel Cost Adjustment:

All kWh shall be subject to the monthly FA Rider.

Tax Adjustment:

The additional monthly charges computed under this tariff shall be subject to adjustment under the provisions of the Company's Tax Adjustment Rider.

TERM AND CONTRACT

The term for all subscribers is a minimum of one year. Subscription to this tariff shall be automatically renewed at the end of each term unless termination from the program is specifically requested with at least 30 days' notice to the customer. If for any reason the subscriber is no longer eligible to subscribe or cancels the subscription during the term of the contract, they will not be eligible to reapply for subscription for one year.

The Company may terminate service under this tariff to participating customers who become delinquent in any amount owed to the Company with a 30 day notice of termination.

SPECIAL TERMS AND CONDITIONS

This tariff is subject to the Company's Terms and Conditions of Service and all provisions of the standard rate schedule under which the customer takes service, including all payment provisions.

Service under this tariff provides for the purchase of renewable attributes of renewable energy currently available to the Company. Subscribers have the sole right to make claim to the renewable attributes they purchase under this tariff. The Company will retire all renewable attributes purchased under this tariff on behalf of Subscribers.

Effective with commercial operation of the Wind Catcher Energy Connection Project ("Project") customers in Service Levels 1 through 3 may elect to receive RECs generated specifically from the Project, up to the Project prorated allocation for these service levels, at a rate equivalent to the most recent 12-month weighted average, REC transactional market price. Upon request, the Company will provide an attestation setting forth that the RECs provided under this special term are not double-counted and are retired internally by the Company.

EXHIBIT SLF-IS

ATTACHMENT 7

Rider WCECA

PURPOSE

The Wind Catcher Energy Connection Asset (WCECA) Rider is designed to recover return on and of the wind asset facility and operation and maintenance expenditures after the facility commences commercial operation as approved in Cause No. PUD 201700XXX.

This schedule is applicable to and becomes part of each PSO jurisdictional rate schedule. This schedule is applicable to energy consumption of retail customers and to facilities, premises and loads of such retail customers.

The WCECA Factors will include the Oklahoma jurisdictional portion of the project once it is placed in commercial operation and will be determined using the most recently approved production allocation factors for PSO. The WCECA Factors will be calculated in accordance with the following methodology and will be applied to each kWh sold.

ANNUAL DETERMINATION

The initial period for the WCECA Factors shall be the forecasted initial 12 months of operation after the commercial operation date of the wind project.

A True-up Adjustment shall be calculated and reflected in the following year's WCECA Factor calculation. The True-up Adjustment shall be defined as the difference between the actual WCECA costs for the prior year and the revenue received from the WCECA Factors.

WCECA Factors shall be submitted to the Director of the PUD and shall be accompanied by a set of workpapers sufficient to fully document the calculations of the WCECA Factors including any potential True-up Adjustment.

Amounts collected through the Rider WCECA are subject to refund based upon the Commission's final determination of prudence

The WCECA Factors shall be calculated as shown below:

- WCECARR = $((WCAP - ADEP) * ROR + DEPX + O\&M) * RBAF - (PTC * RBAF) + TU / \text{Forecasted Base Revenues or kWh Sales by Major Rate Class, as appropriate.}$
- WCAP = Average project plant in service balance for the forecasted calendar year
- ADEP = Average accumulated depreciation balance for the forecasted calendar year based on the depreciation rates in effect for PSO
- DEPX = Depreciation expense for the forecast period based on the depreciation rates PURPOSE

EXHIBIT SLF-1S

- O&M = Operations and Maintenance expense for the forecasted period
- ROR = Return on plant in service which includes interest on debt, shareholder return and related income taxes based on a pre-tax rate of return specific to the WCECA Rider of X.XX%, with the weighted equity component rate grossed-up by the gross conversion factor specific to income taxes currently in effect
- RBAF = Production Demand Allocation Factor for each major rate class from the Company's cost allocation study provided in the most recent rate case. The allocators are as follows:

| <u>Major Rate Class</u> | <u>Production Allocators</u> |
|-------------------------|------------------------------|
| Residential - Secondary | XX.XX% |
| Commercial -Secondary * | XX.XX% |
| SL 3 - Primary | XX.XX% |
| SL 2 - Primary Sub | X.XX% |
| SL 1 - Transmission | X.XX% |
| *Includes Lighting | |

- PTC = Federal Production Tax Credits
- TU = The true-up amount to correct for any variance between the actual WCECA costs for the prior year and the revenue received from the WCECA Factors. The calculation will be done on an annual basis, and will determine the true-up for the following year.

ANNUAL REVIEW

The Company will submit to the Director of the PUD the requested WCECA Annual Factors approximately 90 days preceding the requested effective date. The requested WCECA Factors will become effective, upon PUD approval, with the first billing cycle of the requested billing month.

TERM

The WCECA Factors will be determined on an annual basis until the generating facility is included in retail base rates of the Company, in effect PSO.

The Empire District Electric Company
Response to Office of Public Counsel's Data Requests 2026-2032
Case No. EO-2018-0092

Response provided by: Christopher D. Krygier
Title: Director, Rates and Regulatory Affairs
Company Response Number: 2031
Date of Response: May 1, 2018

Question:

Will Empire continue its "voluntary filing of revised tariffs" in ER-2018-0228 if the Commission rejects its application in Case No. EO-2018-0092? If not, please explain in detail why it will not?

Response:

The commitment to the filing of tariffs reflected in the Non-Unanimous Stipulation and Agreement is linked to the package of items reflected therein (see paragraph 2 of the Non-Unanimous Stipulation and Agreement). If Empire's application in EO-2018-0092 is rejected, Empire will need to examine the circumstances existing at that point in time before it will be in a position to decide what actions it will take in Case No. ER-2018-0228.

Responsible person(s): Christopher D. Krygier

The Empire District Electric Company
Response to Office of Public Counsel's Data Requests 2026-2032
Case No. EO-2018-0092

Response provided by: Timothy N. Wilson
Title: Central Region Director of Electric Operations – Services
Company Response Number: 2028
Date of Response: May 1, 2018

Question:

Regarding OPC DR-2027, please provide a narrative explanation as to what the Company intends to do to remediate any concerns raised by either the Missouri Department of Conservation and/or the U.S. Fish and Wildlife regarding specific site locations for the Company's proposed wind farm(s) in Missouri.

Response:

Attached as "Attachment OPC 2028 - MO OPC Recommendations.xlsx" is a table indicating recommendations from the Missouri OPC, and Empire's Project Guidelines that indicate our intentions to follow the USFWS Land-based Wind Energy Guidelines. These guidelines are not final as we will also continue working with the individual counties as we progress forward in developing our sites. We are following the Bird & Bat Work Plan developed with USF&W and MDC agreement. Any items of concern will be addressed in the final design of the wind farm, using determinations from the ongoing studies.

Post Construction Mortality Monitoring will be approached using Eagle Conservation Plan/Habitat Conservation Plans or Bird Bat Conservation Strategies.

Responsible person(s): Timothy N. Wilson

| Missouri OPC Recommendation | Empire Project Guidelines |
|--|---|
| <p>Pre-Site Selection</p> <p>1,000 Ft. buffer, between the wind farm and any woodland or forest</p> <p>Confirmation from USF&W that wind farm has appropriate buffer between the wind facility and known eagle nests.</p> <p>Pre-construction survey and monitoring analysis to assess risk of wind facility/project to wildlife (following USF&W Eagle Conservation Plan Guidance V2)</p> <p>Pre-construction survey and monitoring analysis to assess risk of wind facility/project to wildlife (following most recent Range-Wide Indiana Bat Summer Survey Guidance).</p> <p>All documents (monitoring plan, site selection, pre and post construction monitoring) shall be developed with USF&W protocols.</p> | <p>Empire is following the USFWS Land-based Wind Energy Guidelines (2012). Final Design is required to ensure infrastructure is outside 1000 ft buffer. This is a recommended Best Management Practice (BMP) or may be an Incidental Take Permit condition based on agency consultation for bats if issued by USFWS. This is dependent on our presence surveys.</p> <p>Empire is following the USFWS Eagle Conservation Plan Guidance (2013). Final Design is required. This is a recommended Best Management Practice (BMP) or requirement if a Take Permit for eagles is issued by USFWS. Preliminary survey results indicate possible risk for eagles and consideration for a permit is recommended.</p> <p>Empire is following the USF&W Voluntary Wind Energy Siting Guidelines. The project is also following the Bird and Bat Work Plan developed with USF&W and MDC agreement, which refers to the Eagle Conservation Plan. We are using Eagle Conservation Plan Guidance to conduct eagle-use and aerial nest surveys (currently ongoing).</p> <p>Empire is following the USF&W Voluntary Wind Energy Siting Guidelines. The Bird and Bat Work Plan developed with USF&W and MDC agreement, includes bat response subject to ongoing bat studies. We are also following the USF&W 2017 Rangewide Summer Survey Guidance to conduct current and upcoming acoustic/mist-net surveys.</p> <p>All documents are being developed according to USF&W protocols. Specific documents include: Eagle Conservation Plan as part of potential Eagle Take Permits; Habitat Conservation Plan as part of Incidental Take Permit; if no Take Permits are required then this would be part of a (voluntary) Bird and Bat Conservation Strategy. Per recommendations in the Land-based Wind Energy Guidelines 2012</p> |
| <p>Post Construction Mortality Monitoring</p> <p>Follow post-construction mortality monitoring of birds and bats following "Evidence of Absence" approach (Evidence of absence V2 software user guide: USGS Data Series 1055)</p> <p>Provide annual mortality data to MDC, USF&W, MPSC, MOPC</p> <p>In order to handle specimens, obtain Missouri Wildlife Collector's permit.</p> <p>Report carcass of a Species of Conservation Concern within 48 hrs. to MDC.</p> <p>Report carcass of Federally Threatened or Endangered Species within 24 hrs. to USF&W</p> <p>Report bald or golden eagle carcass to USF&W within 6 hrs.</p> <p>All roadkill or livestock carcasses within project area will be removed to avoid attracting eagles or other birds of prey to the wind facility at least every 3 days.</p> | <p>Habitat Conservation Plans or Bird Bat Conservation Strategy would be used to detail monitoring plans (which would encompass "Evidence of Absence"). Service may recommend a third-party entity that conducts post-construction monitoring.</p> <p>Habitat Conservation Plans or Bird Bat Conservation Strategy would be used to detail monitoring plans. Service may recommend a third-party entity that conducts post-construction monitoring.</p> <p>Habitat Conservation Plans or Bird Bat Conservation Strategy would be used to detail monitoring plans. Service may recommend a third-party entity that conducts post-construction monitoring, which would be responsible for holding permit.</p> <p>Habitat Conservation Plans or Bird Bat Conservation Strategy would be used to detail monitoring plans. Details would include a biologist confirm identifications of species.</p> <p>Habitat Conservation Plans or Bird Bat Conservation Strategy would be used to detail monitoring plans. Details would include a biologist confirm identifications of species.</p> <p>Eagle Conservation Plan/Habitat Conservation Plan or Bird Bat Conservation Strategy would be used to detail monitoring plans. Details would include a biologist confirm identifications of species.</p> <p>Eagle Conservation Plan/Habitat Conservation Plan or Bird Bat Conservation Strategy would be used to detail monitoring plans.</p> |

The Empire District Electric Company
Response to Office of Public Counsel's Data Request 8046-8054
Case No. EO-2018-0092

Response provided by: Christopher D. Krygier
Title: Director, Rates and Regulatory Affairs
Company Response Number: 8048
Date of Response: May 1, 2018

Question:

Reference Krygier affidavit para. 13 – If this agreement is not approved by the Commission, when does Empire estimate that it would seek a change in rates, what would be the driver of this change in rates, and what is the estimated impact on rates that Empire would seek? Would the need for this change in rates be removed if this agreement is approved by the Commission?

Response:

Empire continues to make investments in its system that will drive a rate case at some point. However, the Company is still determining the timing of its next general rate case and the potential impact on rates.

Regardless of whether or not the Stipulation is approved, Empire is required by statute to file a general rate case by October 2019 (approximately) for rates effective September 2020. Additionally, Empire will have semi-annual changes in its Fuel Adjustment Clause.

Approval of the Stipulation is not anticipated to remove any need for a rate increase. The Company has instead agreed to delay any such rate case in accordance with the terms of the Stipulation.

Responsible person(s): Christopher D. Krygier

FILED

APR 02 2018

**COURT CLERK'S OFFICE - OKC
CORPORATION COMMISSION
OF OKLAHOMA**

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

IN THE MATTER OF THE APPLICATION)
OF THE EMPIRE DISTRICT ELECTRIC)
COMPANY FOR APPROVAL OF ITS)
CUSTOMER SAVINGS PLAN)

CAUSE NO. PUD 201700471

JOINT STIPULATION AND SETTLEMENT AGREEMENT

I. Introduction

The undersigned parties believe it is in the public interest to effectuate a settlement of the issues in Cause No. PUD 201700471.

Therefore, now the undersigned parties to the above entitled Cause present the following Joint Stipulation and Settlement Agreement ("Joint Stipulation") for the Oklahoma Corporation Commission's ("Commission") review and approval as a compromise and settlement of all issues in the proceeding between the parties to this Joint Stipulation ("Stipulating Parties"). The Stipulating Parties represent to the Commission that the Joint Stipulation represents a fair, just, and reasonable settlement of these issues, that the terms and conditions of the joint Stipulation are in the public interest, and the Stipulating parties urge the Commission to issue an Order in this Cause adopting the Joint Stipulation no later than May 31, 2018.

The Stipulating Parties agree that the Commission has jurisdiction with respect to the issues presented in this proceeding by virtue of Article IX, §18 *et seq.* of the Oklahoma Constitution and 17 O.S. §151 *et seq.*

It is hereby stipulated and agreed by and between the Stipulating Parties as follows:

II. Stipulated Facts

A. On October 31, 2017, The Empire District Electric Company ("Empire" or "Company") filed an application requesting approval from the Commission of its proposed plan to achieve up to \$325 million in savings for customers over the next twenty years ("Customer Savings Plan"). Under the Customer Savings Plan, Empire proposes (i) through Wind Holdco(s) to acquire up to 800 MW of strategically located wind generation (the "Wind Projects") using federal tax incentives in conjunction with tax equity partners and (ii) retire a coal-fired unit that will require significant capital investment by April 2019 in order to remain in compliance with environmental regulations and that incurs on-going operations and maintenance ("O&M"). In the current proceeding, Empire seeks regulatory validation of the Customer Savings Plan.

B. Empire is not seeking the recovery of any costs in this proceeding and is in the process of conducting a competitive solicitation for the Wind Projects.

C. Empire sought the following specific approvals in order to implement the Customer Savings Plan: (i) authorization to record its investment in and the costs to operate the Wind Projects; (ii) authorization to create a regulatory asset for the undepreciated balance of the Asbury facility; (iii) approval of the arrangements between Empire and affiliates necessary to implement the Customer Savings Plan, to the extent necessary; (iv) approval of depreciation rates for the Wind Projects, so that depreciation can begin as soon as the assets are placed in service; and (v) issuance of an order by May 31, 2018 so that Empire can take advantage of a limited window of opportunity to bring these savings to customers.

III. Settlement Agreement

A. Wind Projects Solicitation. The Stipulating Parties agree that the Commission, based on the testimony and analysis presented in this proceeding, should issue an order authorizing the Company's request for proposal (RFP) for the acquisition of up to 800 MW of strategically located wind generation (the "Wind Projects") using federal tax incentives in conjunction with tax equity partners, and authorizing the Company's retirement of the Asbury coal plant as detailed below. The Stipulating Parties further agree that, the following are conditions for any future Commission approval of the Wind Projects:

- a. the Wind Projects are to be located within the Southwest Power Pool ("SPP") footprint with energy and capacity deliverable to the Empire service territory;
- b. the Wind Projects shall be the lowest, reasonable levelized cost of electricity ("LCOE") at time of contract execution, but in no event greater than \$30/MWh, after consideration of all factors, such as capital cost per/kw, transmission interconnection, developer experience and safety record, completion schedule, permitting status, capacity factor, tax equity financing, and annual fixed O&M per/kw; and
- c. Empire shall guarantee for customers the capacity factor(s) to the extent provided by developers in definitive Wind Project purchase agreements.

The Stipulating Parties agree that, the above conditions are reasonable and in the public interest. Notwithstanding the above authorizations, the Stipulating Parties agree that the Company's next general rate proceeding shall serve as the regulatory docket to review (i) whether the Wind Projects selected in the competitive bidding process are consistent with the Generation Fleet Savings Analysis ("GFSA") and the conditions contained in this Paragraph A above; and (ii) the prudence of the acquisition of the Wind Project(s), including the prudence of (i) contracts with the wind developers, (ii) the financing costs, and (iii) the capital and operating costs.

B. Initial Depreciation Rates. The Stipulating Parties agree that the Commission should allow Empire to utilize a composite 3.33% depreciation rate for the Wind Project FERC accounts beginning with such time as the assets are placed in-service subject to future review and approval by the Commission of the Wind Projects. Any other assets that do not qualify for the wind FERC accounts, shall utilize the depreciation rate currently authorized. If assets are constructed in which no depreciation rate exists, the Company is authorized to utilize a rate based on information available.

C. Future Depreciation Rates. The Stipulating Parties further agree that Empire shall perform a depreciation study of the Wind Projects and submit it as part of its first base rate case filing after the Wind Projects are placed in-service.

D. Renewable Energy Credits. The Stipulating Parties further agree that in its first base rate case after the Wind Projects are placed in-service, Empire shall propose a tariff for the assignment of a portion of Renewable Energy Credits ("RECs") received from the Wind Projects to Oklahoma commercial and industrial customers, the assignment of which shall be priced at market value.

E. Tax Cuts and Jobs Act Credit Rider. The Stipulating Parties agree that the Commission should approve the Tax Cuts and Jobs Act Credit Rider ("TCJACR"), attached hereto as Attachment A. The TCJACR will represent the balance between the Oklahoma revenue requirement utilized in current base rates and a recalculated Oklahoma revenue requirement using the reduced corporate income tax rate of 21%. The TCJACR will be implemented the first month after the approval of this agreement but is effective for all purposes as of January 1, 2018 and will be trued-up in Empire's next Oklahoma general rate case proceeding. Empire also agrees to include a line item on its customer bills related to the impact of the TCJACR.

F. Tax Cuts and Jobs Act Regulatory Liability. The Stipulating Parties agree that Empire will establish a regulatory liability to account for the tax savings associated with Oklahoma jurisdictional excess Accumulated Deferred Income Taxes ("ADIT"). Empire will record a regulatory liability for the difference between the ADIT balance included in current Oklahoma rates, which was calculated using the 35% federal corporate income taxes, versus the now lower federal corporate income tax rate of 21%. The amortization of this regulatory liability will be done over the appropriate time period consistent with the tax normalization rules and as represented to the Internal Revenue Service (IRS). Empire is in the early stages of evaluating the cost and ability to use the Average Rate Assumption Method ("ARAM") as a method for computing and normalizing excess ADIT. Empire agrees to file a report with the Commission regarding Empire's ability to comply with ARAM accounting by no later than March 31, 2019. To the extent it does not create a normalization violation, until the normalization begins to be provided to customers, a tracker will capture the amortization that would have occurred in prior periods and will be held until the next Oklahoma general rate case. At the time of the next Oklahoma rate case, the tracker balance will be amortized over five years. Tracking of excess ADIT will begin as of January 1, 2018. These calculations shall specifically exclude the assets and investments related to the Asbury coal plant as those investments are addressed below.

G. Most Favored Nations Clause. Within ninety (90) days after Empire receives final, non-appealable orders from the public utility commissions in Arkansas, Kansas, and Missouri granting approval for the Customer Savings Plan, the Company shall submit copies of the Orders to the Stipulating Parties in Cause No. PUD 201700471 detailing (i) any concessions granted to Empire's Arkansas, Kansas, and/or Missouri customers; (ii) any conditions for approval imposed by any state public utility commission; (iii) Empire's position on whether any such conditions or concessions create additional material value for customers than was included in conditions or concessions in a final order in Oklahoma in this cause; and (iv) Empire's proposal as to the actions necessary to pass along comparable value to its Oklahoma customers. Upon agreement of the Stipulating Parties, any such concessions or conditions favorable to customers shall be appended

to this Settlement Agreement and inure to the benefit of Empire's Oklahoma customers. If unanimous consent is not obtained from all Stipulating Parties to such concessions or conditions, any party to the proceeding in Cause No. PUD 201700471 may initiate a cause seeking the extension of any concessions and/or conditions on approval from other jurisdictions, or comparable value to such concessions and/or conditions, to Oklahoma customers. Given Paragraph H below, this section shall not apply to any benefits resulting from potential savings, regulatory treatments associated with the capital investment and operations and maintenance expense, or other issues associated with the Asbury coal plant between the retirement date of the Asbury facility and the implementation of new rates after the next general rate proceeding. This section also shall not apply to any conditions surrounding location preferences of any of the proposed wind farms.

H. Rate Case Moratorium, Future Regulatory Reviews and Asbury Recovery. Empire agrees that it shall not file a general rate proceeding or any other proceeding in Oklahoma (except a proceeding related to storm cost recovery or any emergency cost recovery needed by the Company) that requests or would result in an increase in rates, or seeks approval of a formula or performance-based rate plan, prior to the later of: (i) a test-year or pro forma six month test-year period that includes the constructed and in-service Wind Projects, or (ii) June 30, 2020. Also, in Empire's next Oklahoma general rate proceeding, the Stipulating Parties agree to consider in good faith a Empire proposal for alternative ratemaking structure or mechanisms due to the size of Empire's service territory in Oklahoma.

The Stipulating Parties agree that the Commission should take no action in this proceeding regarding the prudence, cost recovery, rate design, or cost allocation of the Wind Projects. However, the Stipulating Parties agree that Empire shall prepare and recommend a rate design proposal, in Empire's next general rate case proceeding, to allocate the costs of Empire's production plant and the Wind Projects using a 4CP Average and Excess allocation methodology.

The Stipulating Parties agree that the retirement of Asbury is reasonable, given the GFSA conducted by the Company. The Stipulating Parties agree that the Commission should issue an order authorizing the Company to record on its books a regulatory asset for the undepreciated balance of the Asbury facility at the time the Asbury facility is retired. The Stipulating Parties further agree that the return on that regulatory asset shall be the Company's weighted average cost of capital and such return on that regulatory asset shall take effect beginning in the next general rate proceeding. The Stipulating Parties further agree that Empire shall commence amortization of the deferred amounts associated with the Asbury retirement at the time of regulatory asset creation, with the amortization to be completed over a thirty (30) year period. The Stipulating Parties agree that the Company shall continue its recovery of Asbury through base rates and the Environmental Compliance Rider ("ECR") approved in Cause No. PUD 201600468 and continue recovering the investment to offset any regulatory lag associated with the rate case moratorium described above.

I. The Stipulating Parties agree that, if Empire does not obtain approval of the Customer Savings Plan in Missouri that is acceptable to the Company, the Stipulating Parties shall not be bound by the terms of this Agreement. This paragraph shall not apply to the TCJACR if such rider is made effective by Commission order approving this Agreement before June 30, 2018.

IV. General Reservations

The Stipulating Parties represent and agree that, except as specifically provided:

A. Negotiated Settlement. This Joint Stipulation represents a negotiated settlement for the purpose of compromising and resolving the issues presented in this Cause.

B. Authority to Execute. Each of the undersigned counsel of record affirmatively represents to the Commission that he or she has fully advised his or her respective client(s) that the execution of this Joint Stipulation constitutes a resolution of issues which were raised in this proceeding; that no promise, inducement or agreement not herein expressed has been made to any Stipulating Party; that this Joint Stipulation constitutes the entire agreement between and among the Stipulating Parties; and each of the undersigned counsel of record affirmatively represents that he or she has full authority to execute this Joint Stipulation on behalf of his or her client(s).

C. Balance/Compromise of Positions. The Stipulating Parties stipulate and agree that the agreements contained in this Joint Stipulation have resulted from negotiations among the Stipulating Parties. The Stipulating Parties hereto specifically state and recognize that this Joint Stipulation represents a balancing of positions of each of the Stipulating Parties in consideration for the agreements and commitments made by the other Stipulating Parties in connection therewith. Therefore, in the event that the Commission does not approve and adopt all of the terms of this Joint Stipulation, this Joint Stipulation shall be void and of no force and effect, and no Stipulating Party shall be bound by the agreements or provisions contained herein. The Stipulating Parties agree that neither this Joint Stipulation nor any of the provisions hereof shall become effective unless and until the Commission shall have entered an Order approving all of the terms and provisions as agreed to by the parties to this Joint Stipulation.

D. Admissions and Waivers. The Stipulating Parties agree and represent that the provisions of this Joint Stipulation are intended to relate only to the specific matters referred to herein, and by agreeing to this settlement, no Stipulating Party waives any claim or right which it may otherwise have with respect to any matters not expressly provided for herein. In addition, none of the signatories hereto shall be deemed to have approved or acquiesced in any ratemaking principle, valuation method, cost of service determination, depreciation principle or cost allocation method underlying or allegedly underlying any of the information submitted by the parties to this Cause and except as specifically provided in this Joint Stipulation, nothing contained herein shall constitute an admission by any Stipulating Party that any allegation or contention in this proceeding is true or valid or shall constitute a determination by the Commission as to the merits of any allegations or contentions made in this proceeding.

E. No Precedential Value. The Stipulating Parties agree that the provisions of this Joint Stipulation are the result of negotiations based upon the unique circumstances currently represented by the Applicant and that the processing of this Cause sets no precedent for any future causes that the Applicant or others may file with this Commission. The Stipulating Parties further agree and represent that neither this Joint Stipulation nor any Commission order approving the same shall constitute or be cited as precedent or deemed an admission by any Stipulating Party in

any other proceeding except as necessary to enforce its terms before the Commission or any court of competent jurisdiction. The Commission's decision, if it enters an order approving this Joint Stipulation, will be binding as to the matters decided regarding the issues described in this Joint Stipulation, but the decision will not be binding with respect to similar issues that might arise in other proceedings. A Stipulating Party's support of this Joint Stipulation may differ from its position or testimony in other causes. To the extent there is a difference, the Stipulating Parties are not waiving their positions in other causes. Because this is a stipulated agreement, the Stipulating Parties are under no obligation to take the same position as set out in this Joint Stipulation in other dockets.

F. Discovery. As between and among the Stipulating Parties, any pending requests for information or discovery and any motions that may be pending before the Commission are hereby withdrawn.

WHEREFORE, the Stipulating Parties hereby submit this Joint Stipulation and Settlement Agreement to the Commission as their negotiated settlement of this proceeding with respect to all issues raised within the Application filed herein by The Empire District Electric Company or by Stipulating Parties to this Cause, and respectfully request the Commission to issue an Order approving the recommendations of this Joint Stipulation and Settlement Agreement.

THE EMPIRE DISTRICT ELECTRIC COMPANY

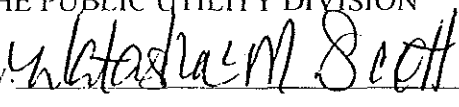
Dated: 4/2/18

By: 

Kimber L. Shoop

THE PUBLIC UTILITY DIVISION

Dated: 4/2/18

By: 

Natasha Scott

The Public Utility Division stipulates with the exception of return on the Albany facility as stated in the third sentence of the third paragraph of paragraph #.

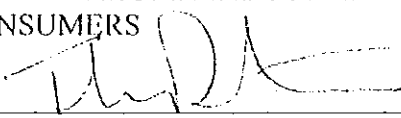
By: 

Jared Haines

Dated: 4/2/18

THE OKLAHOMA INDUSTRIAL ENERGY
CONSUMERS

Dated: 4/2/18

By: 

Thomas P. Schroedter

THE EMPIRE DISTRICT ELECTRIC COMPANY
602 Joplin Street
Joplin, Missouri 64801

Original Sheet No. xx
Replacing Sheet No.
Date Issued: xx-xx-2018

STANDARD PRICING SCHEDULE:

STATE OF OKLAHOMA

TAX CUTS AND JOBS ACT CREDIT RIDER
SCHEDULE – TCJACR

AVAILABILITY:

This TCJACR rider applies to all retail customer billings rendered by The Empire District Electric Company ("Company").

PURPOSE:

The Company shall provide to customers as an adjustment to the aforementioned bills, a tax credit equal to the difference between the revenue requirement utilized in current base rates and as recalculated using the reduced corporate federal income tax rate of 21%, as a result of the Tax Cuts and Jobs Act of 2017.

TERM:

This rider will have a term beginning with the first month following the effective date of a Commission Final Order approving this rider in Cause No. PUD 201700471 and ending with the rate effective date of the Company's next general rate case, unless otherwise ordered by the Commission.

CALCULATION:

The components of the TCJACR calculation shall be as follows:

| |
|--|
| Annual Revenue Requirement - Revised |
| -(Less) |
| Annual Revenue Requirement – as authorized |
| _____ |
| = (Annual TCJACR Credit) |

Annual Revenue Requirement – Revised = all components of the revenue requirement per the rate design for Cause No. PUD 201100082, updated only for the impact of the corporate federal income tax being lowered to 21%.

Annual Revenue Requirement – As Authorized = all components of the revenue requirement per the rate design for Cause No. PUD 201100082.

Rates Authorized by the Oklahoma Corporation Commission:
(Effective) xxx xx, 2018
(Order No.) xxxxxx

Public Utility Division Stamp:
(Cause No.) GM-5
PUD-201700471
88/89

THE EMPIRE DISTRICT ELECTRIC COMPANY
 602 Joplin Street
 Joplin, Missouri 64801

Original Sheet No. xx
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 Date Issued: xx-xx-2018

STANDARD PRICING SCHEDULE:

STATE OF OKLAHOMA

TAX CUTS AND JOBS ACT CREDIT RIDER
 SCHEDULE – TCJACR

TCJACR FACTORS

| Class | TCJACR Factor per kWh |
|----------------------------|---------------------------------|
| Residential | -0.00402711 |
| Residential Total Electric | -0.00343981 |
| Commercial | -0.00486516 |
| Total Electric Building | -0.00367109 |
| General Power | -0.00349431 |
| Power Transmission | -0.00280784 |
| Special Lights | -0.00593657 |
| Class | Monthly TCJACR Factor per light |
| Street Lights | -0.31581767 |
| Private Lights | -0.04846102 |

SUBJECT TO TRUE-UP:

The credit provided pursuant to this rider, as approved by the Commission in Cause No. PUD 201700471, shall be compared to the estimated revenue requirement calculated using the lower federal corporate income tax on an annualized basis. The amount of any over/(under) credit shall take place during the Company's next general rate case or as otherwise ordered by the Commission.

Rates Authorized by the Oklahoma Corporation Commission:
 (Effective) xxx xx, 2018
 (Order No.) xxxxxx

Public Utility Division Stamp:
 (Cause No.) GM-5
 PUD-201700471
 89/89