Exhibit No.:	_______________
Issue(s)	Response to Intervenors' Rebuttal Testimony
Witness/Type of Exhibit:	Marke/Surrebuttal
Sponsoring Party:	Public Counsel
Case No.:	EA-2019-0010

SURREBUTTAL TESTIMONY

OF

GEOFF MARKE

Submitted on Behalf of the Office of the Public Counsel

EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EA-2019-0010

** **

Denotes Highly Confidential Information that has been Redacted

March 5, 2019

PUBLIC

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of The Empire District Electric Company for Certificates of Convenience and Necessity Related to Wind Generation Facilities	))))	File No. EA-2019-0010

AFFIDAVIT OF GEOFF MARKE

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Geoff Marke, of lawful age and being first duly sworn, deposes and states:

1. My name is Geoff Marke. I am a Regulatory Economist for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony.

3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

Geoff Marke
Chief Economist

Subscribed and sworn to me this 5th day of March 2019.

NOTARY PUBLIC STATE OF MISSOURI NOTARY SEAL
JERENE A. BUCKMAN
My Commission Expires
August 23, 2021
Cole County
Commission #13754037

Jerene A. Buckman
Notary Public

My Commission expires August 23, 2021.

TABLE OF CONTENTS

SURREBUTTAL TESTIMONY

OF

GEOFF MARKE

EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EA-2019-0010

I. INTRODUCTION

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

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

Q. Are you the same Geoff Marke who filed rebuttal testimony in Case No. EA-2019-0010?

A. I am.

Q. What is the purpose of your rebuttal testimony?

A. I primarily respond to Staff who, despite voicing real concerns regarding the Empire District Electric Company's ("Empire" or the "Company") proposed wind energy projects, ultimately aligns with Empire's desired ratepayer backed investment. The Company is clearly confident in the long-term proposition of investing $1.1 billion dollars in the hopes of making excess money in off-system sales for decades from intermittent wind, located in an area with a poor wind profile, in a rapidly changing ("vertically integrated") southwest Power Pool ("SPP") market, all the while competing in a field that is making incredible advancements in generation and storage. Empire is so confident, that they stopped modeling risks altogether since early 2018 for an investment that will not be operational until 2021. They are confident that their 2017 natural gas prices, four years of historic SPP market data and high wind forecast of 6.5 GW of competing wind will be accurate enough to forecast the next thirty to forty years of operation. They are also confident in moving forward without any SPP Generation Interconnection Agreements or without any terms or commitments from any tax equity partner(s). This confidence has seemingly convinced Staff and other parties, but not myself. Empire's applications make the utility the cost causer and the ratepayer the cost bearer, and represent a significant departure from traditional cost of service regulation and a slippery slope for future regulatory policy.

My misgivings notwithstanding, I recommend that if the Commission elects to move forward with any CCN approval, that those approvals be married to hold harmless conditions for ratepayers. Ratepayers should not be forced to function as market investors of $1.1 billion that is not necessary for its cost of service—especially, when no additional supply side investment is needed until at least 2029 and most likely longer now with the loss of 77 megawatt ("MW") of municipal customer load this past year.

Empire should be required to make its captive ratepayers whole through rates for each year during the life of the wind farms. In other words, when the wind farms do not generate net cash through the Holdcos equal to or greater than the costs of the wind farm included in rates, customers would be held harmless. This condition includes all costs, including, but not limited to the return of an on the capital investment for the merchant generation, all operations and maintenance costs, and administrative and general costs allocated to the wind farms when the Commission determines Empire's cost of service for setting rates.

II. RESPONSE TO THE MISSOURI PUBLIC SERVICE COMMISSION STAFF

Q. What concerns with Empire's applications does Staff raise in its rebuttal report?

A. Generally, Staff's areas of concern are as follows:

- Empire's Levelized Cost of Energy "(LCOE") inputs
- Future SPP wind additions
- Future market prices in the SPP Integrated Market
- Wind Farm Net Capacity Factor uncertainty
- Empire Missouri retail rate impact in the first ten years
- Lack of permits, studies and interconnection agreements

I respond to each of these concerns in turn.

Q. What is Staff's concern regarding Empire's LCOE inputs?

A. According to Staff witness Ms. Eubanks:

> [T]he portfolio LCOE of **
>
> ** Therefore, after reviewing Empire's filings and evidence, Staff recommends the Commission not rely on certain evidence Empire put forth to suggest that meeting a specific LCOE threshold constitutes need, in its findings of fact regarding need.[1]

Q. What is your response?

A. I find it very troubling that the primary input in Empire's direct testimony in support of this application, the projects overall LCOE, is specifically called out by Staff as unreliable and that Staff advises the Commission to not rely on Empire's LCOE in its findings of fact regarding need.

[1] EA-2019-0010 Staff Rebuttal Report. p. 21, 2-8.

If the Staff is directing the Commission to distrust this number because Empire calculated it incorrectly then this raises a significant question of what exactly the Commission is to rely upon for granting the CCNs. If the sole reason for granting the CCNs would be to promote renewable wind energy, to realize the benefits of a tax equity partner, and the urgency of expiring tax credits, then the Commission should also take into consideration that wind is coming online in SPP regardless of these wind farm projects (and Empire's customers are benefiting from that already). Empire has no tax equity partners to date, and it appears the prospects of Production Tax Credits ("PTCs") being renewed seem good.

Q. Why do you believe the PTCs have a good chance of being renewed?

A. For one, the U.S. Congress has renewed them previously. Second, there are politically practical reasons to believe this window will not be closed forever. As *Forbes*' Michael Lynch states:

> But it seems quite obvious that extending Production Tax Credit past its 2020 expiration date will be easy with the current Congress, since Democrats are likely to vote almost unanimously in favor and in the Senate, there should be good Republican support. Unlike the defense industry, this political calculus seems more serendipitous than intentional, especially given the strong Republican presence in states like Texas and North Dakota that have superior potential.[2]

Stated differently, it is hard to kill a subsidy; especially one that is widely popular and benefits both sides of the political spectrum for different reasons.

Q. What is Staff's concern regarding future market prices in the SPP Integrated Market?

A. Staff witness Oligschlaeger states:

> The projected benefits identified by Empire as accruing to its customers as a result of these wind additions is heavily dependent upon assumptions regarding the future amount of wind power that Empire can sell into the SPP Integrated Marketplace and the future price of that power in the SPP IM. Whether Empire's

[2] Lynch, M. (2019) Is renewables' production tax credit bullet proof? *Forbes*. https://www.forbes.com/sites/michaellynch/2019/02/13/is-renewables-production-tax-credit-bullet-proof/#4cdfb2726f3c

projections on these values will prove to be accurate is obviously uncertain, and the amount of projected net customer benefits may be reduced or (in a worst case scenario) eliminated in entirety if Empire's estimates are over-optimistic.[3]

Q. What is your response?

A. I agree with Staff even though Staff omits the many reasonable issues that could impact the assumptions regarding the future amount of wind power that Empire could sell into the SPP IM.

Q. Would you provide some examples?

A. Yes. I will provide five examples, in no particular order of preference:

1. FERC Order 841

On February 15, 2018, FERC issued its final order on Energy Storage Participation enabling storage resource participation in wholesale markets. Though energy storage technologies have been in use for nearly a century, the viability of battery storage as a tool to deliver grid resilience is increasing due to steep and ongoing decline in the price of the technology. FERC recognizes that energy storage viability has outpaced market regulations, and therefore it designed Order 841 to foster head-to-head competition between storage and traditional energy resources.

Although it is still a work in progress, viable, cost-effective storage will now compete with merchant generation wind (and all other resources) in the RTO markets. How much storage will come online and what its exact impact will be on future market prices is unknown; however, it seems reasonable to assume that storage would likely minimize wholesale price fluctuations, and, thus, impact the savings assumptions tied to Empire's merchant generation investment. Importantly, Empire's modeling did not consider energy storage, in part, because no data exists. For its part, the Commission should view storage with a long-term perspective in weighing the reasonableness of this merchant generation venture.

[3] EA-2019-0010 Staff Rebuttal Report p. 28, 17-22

2. Natural Gas Prices:

Empire's estimated customer benefits are largely dependent on its natural gas price assumptions over the next thirty years. This is because Empire is banking on gas prices to increase as supply declines, while relying ever more on wind generation. With that in mind, the Commission should be cognizant that on February 28, 2019, ExxonMobil announced that it had made the world's third biggest natural gas discovery in two years off the coast of Cyprus in the Eastern Mediterranean.

> Based on preliminary interpretation of the well data, the discovery could represent a natural gas resource of approximately 5 trillion to 8 trillion cubic feet (142 billion to 227 billion cubic meters).[4]

Moreover, according to *MarketWatch*:

> The global shale gas market production is expected to grow from 5,563 billion cubic feet in 2016 to 8,000 billion cubic feet in 2024 at CAGR of 4.7% for the same period. . . .
>
> United State is the largest market for this natural gas followed by Canada and China. Eventually, North America is the leading region for shale gas market and will continue to grow over the forecast period. This region was the only active producer of shale gas till 2010. Europe and Middle East & Africa are the second fastest growing market, followed by Asia Pacific and Latin America region.[5]

3. Diminishing Returns from Renewable Generation

I spoke at some length on this issue in my rebuttal testimony by maintaining that the expected inundation of wind assets coming online in the SPP IM will impact future expected earnings,

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[4] Koukakis, N. (2019) ExxonMobil makes biggest natural gas discovery in two years off the coast of Cyprus. *CNBC*. https://www.cnbc.com/2019/02/28/exxonmobil-makes-big-natural-gas-discovery-off-the-coast-of-cyprus.html

[5] MarketWatch. (2019) Shale gas market is supposed to reach 8,000 billion cubic feet in 2024. https://www.marketwatch.com/press-release/shale-gas-market-is-supposed-to-reach-8000-billion-cubic-feet-in-2024-2019-03-03

and recent research suggests this issue is at play across all markets. For example Blazquez, et al states:

> Renewables with negligible marginal costs of dispatch—such as solar or wind—could fall victim to their own success after capturing large shares in liberalized power markets. . . . Given existing liberalized market structures in most of the developed economies, future deployment of renewables could become more costly and less scalable because of their impact on electricity prices. . . . Paradoxically, a too successful renewables policy could reduce the efficiency and effectiveness of future such polices.[6]

This phenomenon is also discussed at length in the surrebuttal testimony of OPC witness Lena Mantle including attachments from similar conclusions from researchers at Lawrence Berkeley National Labs and the Massachusetts Institute of Technology.

4. Wind Variability

There can be considerable variation in wind speeds and output year-to-year. Recent research suggests that the wind energy industry likely overstates the expected annual energy production of proposed wind farms. According to Pryor, et al (2018):

> Inter-annual variability (IAV) of expected annual energy production (AEP) from proposed wind farms plays a key role in dictating project financing. IAV in pre-construction projected AEP and the difference in 50th and 90th percentile (P50 and P90) AEP derives in part from variability in wind climates. <u>However, the magnitude of IAV in wind speeds at/close to wind turbine hub-heights is poorly constrained and maybe overestimated by the 6% standard deviation of annual mean wind speeds that is widely applied within the wind energy industry.</u> Thus there is a need for improved understanding of the long-term wind resource and the inter-annual variability therein in order to generate more robust predictions of the financial value of a wind energy project. . . . <u>These results</u>

[6] Blazquez, et al. (2018) The renewable energy policy paradox. *Renewable and Sustainable Energy Reviews*. 82 (1) 1-5. https://www.sciencedirect.com/science/article/pii/S1364032117312546

> <u>indicate it may be appropriate to reduce the IAV applied to pre-construction AEP estimates to account for variability in wind climates, which would decrease the cost of capital for wind farm developments</u>.[7] (emphasis added)

5. Vertically Integrated Characteristics of SPP

The Commission should note that even if the premise of entering the wholesale market with a merchant generation asset was a sound investment in a vacuum, of the litany of RTO markets to invest in, SPP would arguably be the worst option. This is because SPP is both an energy-only market, does not contain member states that have aggressive renewable standards, and is largely populated by vertically integrated utilities who all have a clear financial incentive to build out supply-side generation because they earn a return of and on it. Stated differently, if I were going to invest in a merchant generator, I would look to the deregulated markets (PJM, New England, etc…), not SPP.

Each of these five variables will impact future price assumptions hoped to be gained decades from now.

Q. What is Staff's concern regarding the wind farms' net capacity factors?

A. Staff witness Eubanks states:

> **

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[7] Pryor, et al (2018) Interannual variability of wind climates and wind turbine annual energy production. *Journal of Wind Energy Science* https://www.researchgate.net/publication/326195791_Inter-annual_variability_of_wind_climates_and_wind_turbine_annual_energy_production

[8] Ibid. p. 18, 2-8

**

Q. What is your response?

A. I agree and already articulated this specific concern above. Note that a P50 estimate means that there is 50% likelihood that the actual output will be greater and a 50% likelihood that the actual output will be less. Restated, the magnitude of risk inherent in these applications is dependent, in large part, on the expected net capacity factors attainable from the wind farms, which share the same probability inherent in flipping a coin.

Q. What is Staff's concern regarding the potential rate impacts due to these wind farms over the next ten years?

A. Staff witness Oligschlaeger states:

> A related project risk is that Empire's own modeling of the financial impact of the wind additions shows that in the first ten years of the windfarms' operation minimal net customer savings are expected. This is because of the need to fully pay off the tax equity partner's investment in that ten-year period through receipt of tax benefits and cash distributions, leaving little opportunity for customers to gain material benefits from the Wind Projects over this period. If Empire's assumptions regarding the quantity of and the price of wind power generated by these projects prove to be overly optimistic, ratepayers may be asked to bear significant financial losses for at least the first ten years of wind farm operation.[9]

Q. What is your response?

A. I agree with Staff and Empire that the first ten years will not be financially beneficial for Empire's ratepayers. Where we disagree centers on how much ratepayers will be impacted. However, to my knowledge, no one is suggesting that Empire's rates are going to be reduced

[9] Ibid. p. 28, 23-30.

over the next decade because of this billion dollar merchant investment. I believe there is nothing to suggest that years eleven onward will be any better. The only thing unique about year ten is that the tax equity partner(s) is expected to have recouped its investment plus made its profit. Of course, ratepayers will then experience another large increase to Empire's rate base (albeit at a depreciated an amount) and the savings assumed in the second and third decades of these projects are still predicated on there being an attractive market for off-system sales. That is a far from certain outcome.

Q. Do you have a sense of what the near term rate impact will be?

A. Not definitively. If I could confidently state that rates will increase X% over the next ten years this case would be easier to comprehend, and I likely could a draw definitive conclusion. The problem is that there are many variables, not only in this case, but in any rate case that can impact rates. That being said, I confidently believe the probability that rate increases will be greater than 2.85% a year for the next five years is nearly certain.

Q. Why?

A. Because Empire has not elected to choose Plant-in-Service Accounting ("PISA") as a result of the passage of SB 564.[10] The PISA option caps rates at 2.85%. I struggle with why an electric utility would not elect PISA unless it was confident it would request larger rate increases in the near future.

It is important not to forget that in its last triennial IRP (2016) Empire concluded it did not have to add any additional supply-side investment until 2029. Empire's ratepayers paid for that long reprieve in their electric rates, literally through a compounded rate increases of 62.23% from 2007 to 2016. Since 2016, the only thing that has materially changed about Empire's load is that it has gone down.

Q. What is Staff's concern regarding securing permits?

A. Staff witness Cunigan states:

[10] See also response to OPC DR-2045.

> Empire stated in response to Staff Data Request 0029 that no permits had been obtained at this time and provided the following information showing permits that are anticipated to be needed.[11]

That list contained 44 separate permits and omitted Kansas-specific permits, as it was a November response to Staff's data request. Presumably, there are many Kansas-specific permits as well.

Mr. Cunigan then makes the following recommendation:

> Regarding the application requirements, Staff recommends the Commission include the following two conditions with approval of the CCN:
>
> - Filing of the construction-level plans and specifications prior to commencing construction of each project,
> - Filing of the evidence of all required permits and approvals of affected governmental bodies outlined in Empire's response to Staff Data Request 0029.[12]

Q. What is your response?

A. I agree with Staff, but I would also extend those filing requirements to include applicable Kansas permits if the Commission ultimately approves a CCN for the Neosho Ridge Wind Farm.

Q. What is Staff's concern regarding interconnection agreements?

A. According to Staff witness Shawn Lange:

> **
>
> **[13]

[11] Ibid. p. 6, 23-25
[12] Ibid. p. 10, 4-7
[13] Ibid. p. 29, 20-23

Mr. Lange then lists a series of known **

** Finally, Mr. Lange notes:

> **
>
> ** All of these concerns would be alleviated if properly taken into account in the updated MPP as proposed by Staff.[14]

Q. What is your response?

A. I inquired into this issue as well. OPC DR-2063 and the subsequent response is as follows.

> <u>Question</u>: Please update the status of each of Empire's Generator Interconnection Agreements ("GIAs") for the three wind farms—Kings Point, North Fork Ridge, and Neosho Ridge (regardless of whether it is Empire or Apex's responsibility). If no updates are available, please provide a narrative explanation and/or expected dates as to when updates will be available.

[14] Ibid. p.34, 5-17 (emphasis added).

> Response: The first round of modeling has not been completed by SPP. Based on a schedule available from SPP, that modeling is expected to be completed on October 20, 2019.

Empire informed me that it would be seeking an interim report in the absence of full approval. I inquired into timeliness of that report as well. OPC DR-2062 and Empire's response follow:

> Question: Please update the status of each of Empire's Interim Generator Interconnection Agreements (Interim "GIAs") for the three wind farms—Kings Point, North Fork Ridge, and Neosho Ridge (regardless of whether it is Empire or Apex's responsibility). If no updates are available, please provide a narrative explanation and/or expected dates as to when updates will be available.

> Response: The interim availability studies requested for the three projects have not yet commenced due to SPP resource constraints. SPP has not been able to provide a definitive completion date for these studies.

The absence of any signed SPP interconnection agreement obviously concerns me, let alone the fact that Empire "hopes" to have an answer by October 20, 2019. Being now more than two years after Empire brought its wind farm plans in front of the Commission further compounds my concern.

The Commission should note, as stated in my rebuttal testimony, as of January 2019, SPP has already publically stated that it has approximately 10 GWs of unbuilt wind with signed interconnection agreements and that is more than 3.5 GWs of what was modeled in Empire's "high wind" forecast. It also has over 70 GWs of pending generation interconnection requests—which presumably includes Empire's planned wind farms.[15]

Clearly, SPP is dealing with a flood of applications, and that is delaying the process for Empire. Empire could have mitigated such a scenario had it sought CCN approval to begin with, instead

[15] See EA-2019-0010 Rebuttal Testimony of Geoff Marke p. 14, 4-8.

of first seeking “preapproval” or “directional guidance” from the Commission in 2017 (Case No. EO-2018-0092).

Q. What is your response to Mr. Lange’s **

******

A. First, I am not entirely sure why Staff considers this to be confidential material. Putting aside that question for a moment, this is a big concern. **

** I disagree with Mr. Lange that an ill-defined 50/50 sharing mechanism for only the first third of the useful life of this wind farm project alleviates this concern. That would merely mitigate “some” of the costs ratepayers would bear for a finite amount of time.

Q. What is curtailment in the context of the proposed projects?

A. In the power sector, “curtailment” means a forced reduction in the energy output from a power producing plant, resulting in the plant’s dispatching to the electric grid less than the maximum amount of energy it is capable of generating. Effectively, the grid operator “turns off” or “reduces” the power being fed to it from the transmission lines leading from the power plant to the electric grid, so that less than all of the energy the plant is capable of generating makes its way into the electric grid.

According to the Columbia Environmental Law Review:

> Past experience shows that curtailment is not region-specific and impacts wind farms, irrespective of turbine size, in various locations throughout the country. Curtailment is a very real threat that looms menacingly for operational wind farms whose energy supply flows into a congested electric transmission grid.[16]

Q. Why is curtailment important?

A. PTCs are created only when wind turbines generate electricity and are not curtailed.

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[16] Diamond, K. (2016) Technology, curtailment and transmission: Innovation and challenges facing today’s U.S. wind energy. *Columbia Journal of Environmental Law*—Field Report. http://www.columbiaenvironmentallaw.org/wp-content/uploads/sites/14/2016/04/Diamond_-_Innovations_and_Challenges_Facing_US_Wind_Energy___FR_-1.pdf

Q. Did Staff propose any additional conditions related to curtailment?

A. Yes. Staff proposed that Empire be required to complete a sensitivity analysis on curtailment and the dispatching down of each Wind Project.[17]

Q. Do you support this?

A. Yes. But these exercises should have already have been undertaken. Understand that a curtailment and dispatch down of each Wind Project will only result in a reduction in the Net Capacity Factor of these wind projects and therefore a reduction in overall savings. The only reason I can see to not undertake this obvious exercise is if you do not want to know the results.

Putting that issue aside, I am not sure what the results will do to inform this Commission now. If the results come back in six months and present a 50% probability of a 3% reduction over the life of these assets, will Staff hold the MPP constant for what was assumed in the original model? Can the model even be relied upon? Will some other condition be put in place? Although I support Staff's concerns and agree that such analysis is most definitely warranted, it is unclear what outcome this will result in especially with projects that needs to begin construction as soon as possible to realize PTCs.

Q. Have you seen concerns similar to those that Staff has raised in cases in other states that are in SPP's footprint?

A. Yes. In Case No. EO-2018-0092 I spoke at length about AEP's 2GW Windcatcher Wind Farm that then had open dockets in Texas, Oklahoma, Arkansas and Louisiana. Parties in those cases raised concerns in the aforementioned states in contested cases surrounding Windcatcher that are similar to the concerns Staff has raised here.

Q. What happened to AEP's 2GW Windcatcher Wind Farm?

A. The Texas Public Utility Commission rejected American Electric Power's (AEP) application in total; thus, ending that proposal.

[17] EA-2019-0010 Staff Rebuttal Report, p. 37, 27-28.

Q. Why?

A. Because of the risks to ratepayers of AEP's projections being wrong.[18]

Q. Is it not better for Empire's wind projects that Windcatcher will not be selling wind energy into the SPP market?

A. Yes. However, AEP is still moving forward with wind projects that would ultimately compete with Empire's wind farm projects. Six months after Texas rejected its application, AEP released a request for proposal for up to 1.2 GWs of wind resources.[19]

Q. What CCN conditions is Staff proposing?

A. Staff witness Dietrich lists the following conditions:

1. Implementation of the Market Protection Provision as proposed in Appendix A to the non-unanimous Stipulation and Agreement between Empire, MECG, Staff, Renew Missouri Advocates, and DE filed on April 24, 2018 in Case No. EO-2018-0092 with the following changes:

   a. Remove the guarantee cap which was a negotiated value equal to $35 Million;

   b. Limit the value of PPA_Replacement to the amount calculated based upon the number of MWh generated to produce RECs in order to comply with the RES;

   c. Incorporate mutually agreeable provisions to adequately balance risks and performance related to Transmission Congestion Rights ("TCRs") and Auction Revenue Rights ("ARRs") related to the Neosho Ridge interconnection point to Empire's load serving area;

   d. inclusion of network interconnection costs in the revenue requirement for each project.

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[18] See GM-1.

[19] Morehouse, C. (2018) AEP seeks 1.2 GW of wind proposals, nearly six months after canceling $4.5B WindCatcher. *UtilityDive*. https://www.utilitydive.com/news/aep-seeks-12-gw-of-wind-proposals-nearly-six-months-after-canceling-2-gw/545589/

2. Completion of the SPP Definitive Impact System Impact Studies;

a. Empire will demonstrate that the outstanding studies do not raise any new issues, and if they do, that the Commission is satisfied with Empire's solution to address those issues.

3. Completion, and subsequent filing with the Commission, of a sensitivity analysis on curtailment and the dispatching down of each Wind Project;

a. Empire will demonstrate that the analysis does not raise any new issues, and if it 1 does, that the Commission is satisfied with Empire's solution to address those 2 issues.

4. Filing of the construction-level plans and specifications prior to commencing construction of each project;

a. If the specifications materially change from those contained in the Applications, Empire must file an updated application for the Wind Project(s).

5. Filing of the evidence of all required permits and approvals of affected governmental bodies outlined in Empire's response to Staff Data Request 0029;

6. Empire's commitment to cap the total network upgrade costs for which recovery may be 10 sought at Empire's estimate plus 10% contingency;

7. Use of the in-service criteria contained in attached Schedule CME-r1 to determine whether the projects are in-service.[20]

Q. What is your response to Staff's proposed CCN conditions?

A. I am encouraged by the fact that Staff is recognizing the risk exposure inherent in these wind farm projects, and Staff's recognition that the Market Protection Plan it agreed to in Case No. EO-2018-0092 is inadequate. However, Staff's conditions do not reduce the uncertainty regarding the costs of the projects, revenues to be received due to the projects, the amount of generation of the projects, or the financing of the projects. Staff's conditions just reduce the

[20] Ibid. p. 37, 10-28 & p. 38, 1-13

amount of economic harm to the captive ratepayers for ten years, 1/3 of the estimated life of these wind farms.

III. RESPONSE TO ECONOMIC BENEFITS

Q. Do you share the belief that the projects will result in local benefits to the public, specifically: payments to landowners, job creation, increase in tax revenue and economic benefits for Missouri counties with higher poverty rates as justification for Empire's wind farm projects?

A. I agree that the local economy would see a short-term gain for approximately 18 months as the projects are undergoing construction, and the projects will create approximately twenty permanent Missouri jobs. However, I disagree with the premise that the local economy as a whole will benefit from lease payments and tax revenues because the local economy, i.e. Empire's customers, will be funding those lease payments and tax revenues. In other words, the lease payments and tax revenues will be a wealth transfer from within the region. Moreover, Empire's Missouri ratepayers will be paying the lion's share of the Kansas taxes and payments-in-lieu-of-taxes because of the Kansas Neosho Wind Farm since Empire's Missouri customer base is much larger than Empire's Kansas customer base.

Q. Have you quantified the taxes and PILOT impact on Empire's Missouri ratepayers?

A. No, but I know what Empire modeled. Property taxes and/or Payments In Lieu Of Taxes ("PILOTs") are costs included in the operation and maintenance ("O&M") input in Empire's Levelized Cost of Energy ("LCOE") calculation. The aggregate of the forty-years totals Empire assumed for the two Missouri wind farms—Kings Point and North Fork Ridge is ** ** For the Kanas Neosho Ridge wind farm Empire assumed a 40-year total of ** **. However, the Kansas amount is currently in-flux and not finalized. **

**

Q. Is there anything else of which the Commission should be aware regarding taxes or PILOTs?

A. There is still a lot of uncertainty surrounding both taxes and PILOTs, especially as it pertains to Kansas. **

Q.

A.

Q.

A.

[21] See GM-2

**

Q. Does OPC oppose the Green Tariff concept?

A. Of course not. OPC has worked with many of the same stakeholders to put forward acceptable Green Tariff's related to potential wind projects and tariffs for community solar programs for both KCPL and Ameren Missouri. In each case, there were important customer protections put in place to minimize risk to nonparticipants in the event that the offering did not materialize as modeled.

Q. What sort of customer protections did the Commission approve in those Green Tariff cases?

A. In Ameren Missouri's Green Tariff Case No. ET-2018-0063, the parties agreed to risk-sharing provisions, which included Ameren Missouri shareholders bearing the first fifty percent of undersubscription program capacity (whether positive or negative), alleviating much of OPC's stated concerns in that case.

Parties also stipulated to Green Tariffs that the Commission later approved in Case No. ER-2018-0145 and ER-2018-0146 for Kansas City Power and Light Company ("KCPL") and KCP&L Greater Missouri Operations ("GMO"). In those cases, the companies agreed to shareholders bearing all of the risk attributed to the unsubscribed program capacity.

Parties agreed to a Solar Subscription Rider in which KCPL and GMO shareholders agreed to bear the first 75% of unsubscribed program capacity and ratepayer's bearing the remaining 25% of unsubscribed program capacity.

Q. Are there any similar protections proposed in this case?

A. No. There has been nothing approaching the Ameren Missouri, KCPL or GMO consumer protections regarding the procurement of renewable energy not necessary for providing safe and adequate service or meeting the state's RES requirements. As stated earlier, the market protection plan from Case No. EO-2018-0092 has been alluded to in various testimony, but the actual or amended plan has not been introduced to date, nor has what has been put forward been comparable in terms to the consumer protections realized by Ameren Missouri, KCPL and GMO customers.

Q. Putting aside consumer protections, are Ameren Missouri, KCPL and GMO's Green Tariff's comparable to Empire's applications here in terms of risk exposure?

A. No. Even without the consumer protections agreed to in the Green Tariff cases, those applications were predicated on actual contractual committed demand for the service before it could move forward. In contrast, Empire models its application on an assumed demand for this intermittent generation materializing in the future at a premium price. This difference cannot be understated.

Q. Does this conclude your testimony?

A. Yes