Exhibit No.:	________________
Issue(s):	Ameren Missouri's Expected Load & Resource Mix/ Eligibility Parameters: Corporations & Municipals/ Conservation: Prudency & Marketing/ Tax Equity Financing & Risk Sharing Mechanisms
Witness/Type of Exhibit:	Marke/Rebuttal
Sponsoring Party:	Public Counsel
Case No.:	ET-2018-0063

REBUTTAL TESTIMONY

OF

GEOFF MARKE

Submitted on Behalf of
the Office of the Public Counsel

UNION ELECTRIC COMPANY D/B/A AMEREN MISSOURI'S

Case No. ET-2018-0063

May 18, 2018

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of 2017 Green Tariff	))))	File No. ET-2018-0063

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 rebuttal 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 18th day of May 2018.

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

Jerene A. Buckman
Notary Public

My commission expires August 23, 2021.

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REBUTTAL TESTIMONY

OF

GEOFF MARKE

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri
CASE NO. ET-2018-0063

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. 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.

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

A. Yes. A listing of the cases in which I have testified and/or commented before the Commission is attached in GM-1.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of this testimony is to respond to the supplemental direct testimony of:

- Ameren Missouri ("Company") witness Steven M. Wills;
- Walmart Inc. ("Walmart") witness Steve W. Chriss; and
- The terms of the non-unanimous stipulation and agreement ("S&A") entered into by other parties in this case on April 13, 2018.

Q. Would you provide a general overview of the Green Tariff application and the non-unanimous S&A?

A. Ameren Missouri's Green Tariff program is a subscription-based renewable energy (wind generation) option for certain non-residential eligible Ameren Missouri customers that can broadly be classified as falling into one of two categories:

- 3(M) Large General Service, 4(M) Small Primary Service and 11(M) Large Primary Service customers with at least 2.5 MW of demand, either at a single location or aggregated across a number of accounts; and
- Governmental entities (i.e., county, city, town or village) with Ameren Missouri accounts, regardless of size.

The Green Tariff is designed to support certain customers in their efforts to achieve self-imposed sustainability goals, without directly negatively impacting the service or costs of ratepayers who choose not to participate or are otherwise ineligible to do so. Participating customers will acquire the renewable energy credits ("RECs") associated with the energy to which they subscribe, and could enter into contracts for fifteen, ten, or five-year terms. The S&A also contains a mechanism to share risk between Ameren shareholders and Ameren Missouri ratepayers for company-owned resources. I discuss this mechanism in some detail later.

Q. What is OPC's position on Ameren Missouri's Green Tariff and the associated S&A?

A. OPC opposes this program being included as a regulated offering. It is OPC's view that if Ameren Missouri wants to offer this program, it should do so without any Commission approval or oversight either through Ameren Missouri itself as a non-tariffed offering or through a non-regulated affiliate. There is no reason to impose the additional risk of this program on Ameren Missouri's captive ratepayers—especially on ratepayers that are unable to participate in this option. Providing this service through a non-regulated affiliate is the best option to ensure that non-participating ratepayers are held harmless.

If Ameren Missouri's Green Tariff program is allowed to be a tariff offering, then OPC's recommendation is that the Commission require that Ameren Missouri base the program on one, or more, Power Purchase Agreements ("PPAs"), not on wind farms Ameren Missouri owns. The Green Tariff option through a PPA is similar to the Kansas City Power and Light Company's and KCP&L Greater Missouri Operation Company's Green Tariff proposals in Case Nos. ER-2018-0145 and ER 2018-0146, respectively. Ameren Missouri's ratepayers do not need to be paying for unnecessary increases in Ameren Missouri's rate base from additional supply-side generation. It is inappropriate to include (up to) 250 MW of wind generation (or any generation) beyond that which is statutorily mandated to meet the Renewable Energy Standard ("RES") requirement when Ameren Missouri does not need the generation to meet its load or its resource adequacy requirement for the Midcontinent Independent System Operator. The "potential" benefits associated with a somewhat depreciated supply-side unit at the end of the Green Tariff contractual terms do not outweigh the increased risks to Ameren Missouri's ratepayers and certainly do not merit a limited waiver of a prudency review challenge where all relevant factors are considered.

The rest of my testimony provides context for OPC's position, expounds on the specific provisions to the S&A to which OPC objects, and includes suggestions, where applicable, for Commission consideration.

II. AMEREN MISSOURI'S EXPECTED LOAD & RESOURCE MIX

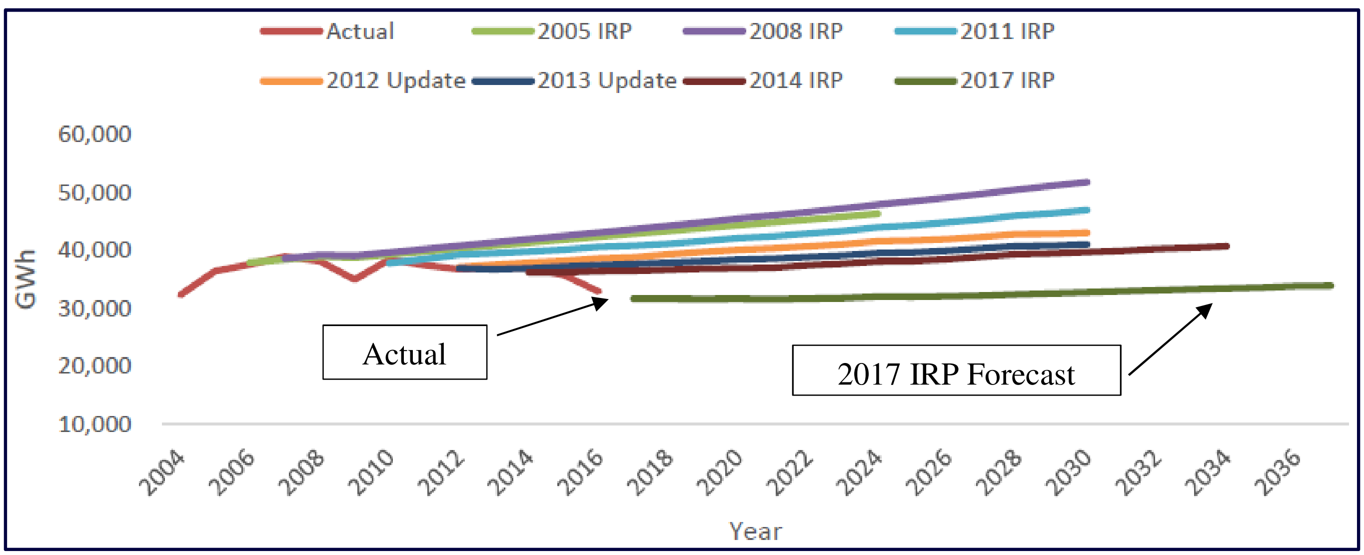
Q. Is Ameren Missouri currently long, short, or even, on generating capacity to serve its load?

A. It is long on capacity. Ameren Missouri's announcement to invest future Renewable Energy Standard ("RES") statutorily-mandated compliance costs in the form of 700 MW of wind generation will force Ameren Missouri to become even longer on capacity, and it will further devalue Ameren Missouri's existing generation.[1] Under the terms of the S&A, Ameren Missouri is allowed to procure up to an additional 250 MW of Company-owned wind generation. Importantly, the Commission should note that historically Ameren Missouri's load growth essentially has been flat or declined for several years, and it is not expected to grow within its planning period. According to Ameren Missouri's 2017 Integrated Resource Plan ("IRP"), Chapter 3—Load Analysis and Forecasting:

> Compared to Ameren Missouri's last IRP, filed in 2014, both the level and the growth rate of the forecasts are lower. The 0.30% growth rate in retail sales in this filing (between 2018 and 2037) is also lower than the 0.6% retail sales growth rate expected for the study period in the 2014 IRP forecast largely due to a combination of factors.[2]

Figure's 1 and 2 provide a visual of Ameren Missouri's historical energy and demand IRP forecasts relative to its most recent 2017 forecast and clearly shows a lower expected load forecast than from any previous iteration.

<u>Figure 1: Ameren Missouri actual historical energy sales and past IRP energy forecasts</u>[3]

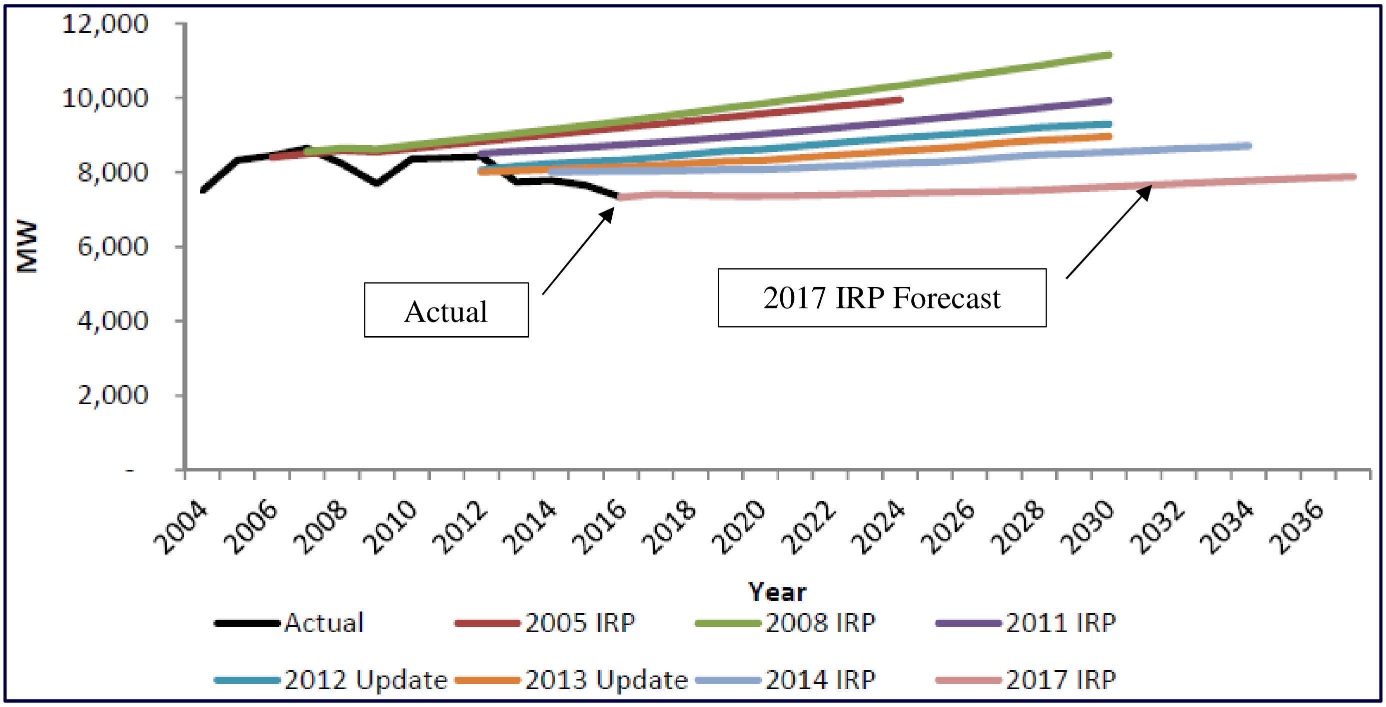


[1] Gray, B. (2017) Ameren Missouri to spend $1 billion on wind generation projects. *St. Louis Post-Dispatch*. http://www.stltoday.com/business/local/ameren-missouri-to-spend-billion-on-wind-generation-projects/article_08660e51-31e1-5ba3-a156-fb26769b75d6.html

[2] EO-2018-0038 Chapter 3 Load Analysis and Forecasting, p. 2.

[3] Ibid. p. 5

Figure 2: Ameren Missouri actual historical peak demand and past IRP peak demand forecasts[4]

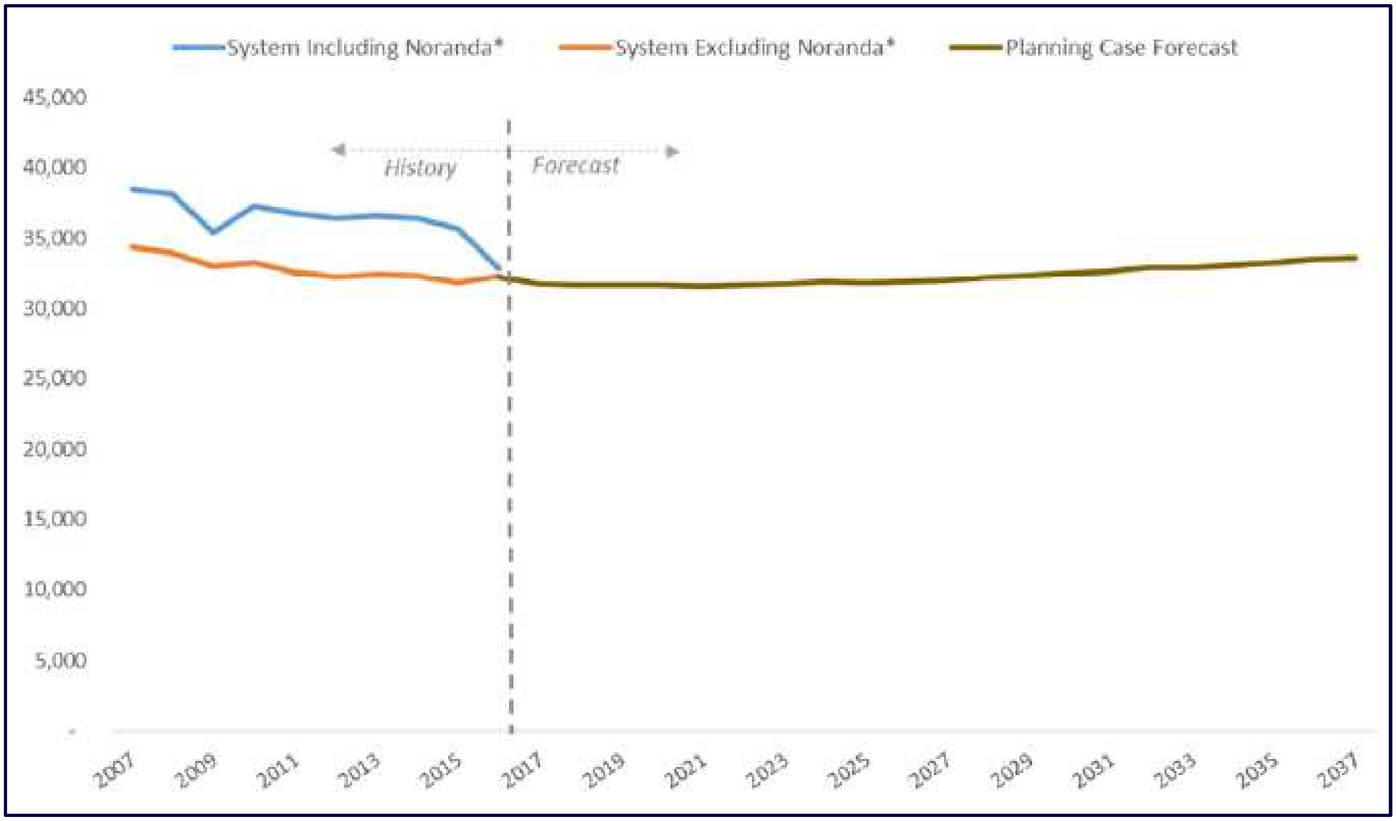


Q. What was the single biggest factor that contributed to the drop in historic and forecasted load?

A. That would be the loss of the New Madrid aluminum smelter. Noranda was Ameren Missouri's largest customer in the last decade, accounting for approximately 10% of Ameren Missouri's annual sales.[5] The impact of the loss of Noranda on Ameren Missouri's system can be seen in Figure 3.

[4] Ibid. p. 6
[5] Ibid. p. 37.

Figure 3: Ameren Missouri planning case energy sales forecast with and without Noranda[6]



Q. That is just one customer. What about the others?

A. Figures 4, 5 and 6 show historic and forecasted energy sales over a thirty-year period for residential, commercial and industrial classes reprinted from Ameren Missouri's most recent IRP. It also underscores how big of an impact the loss of Noranda was on energy sales.

[6] Ibid. p. 31.

Figure 4: Planning case forecast of residential class energy sales 2006 – 2036[7]

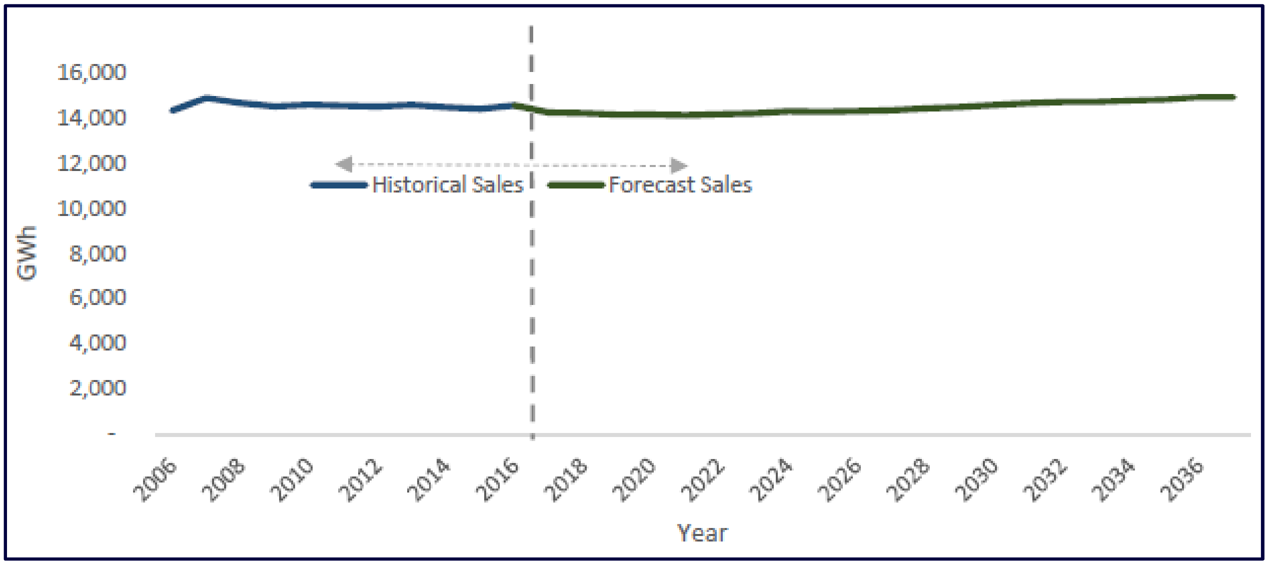
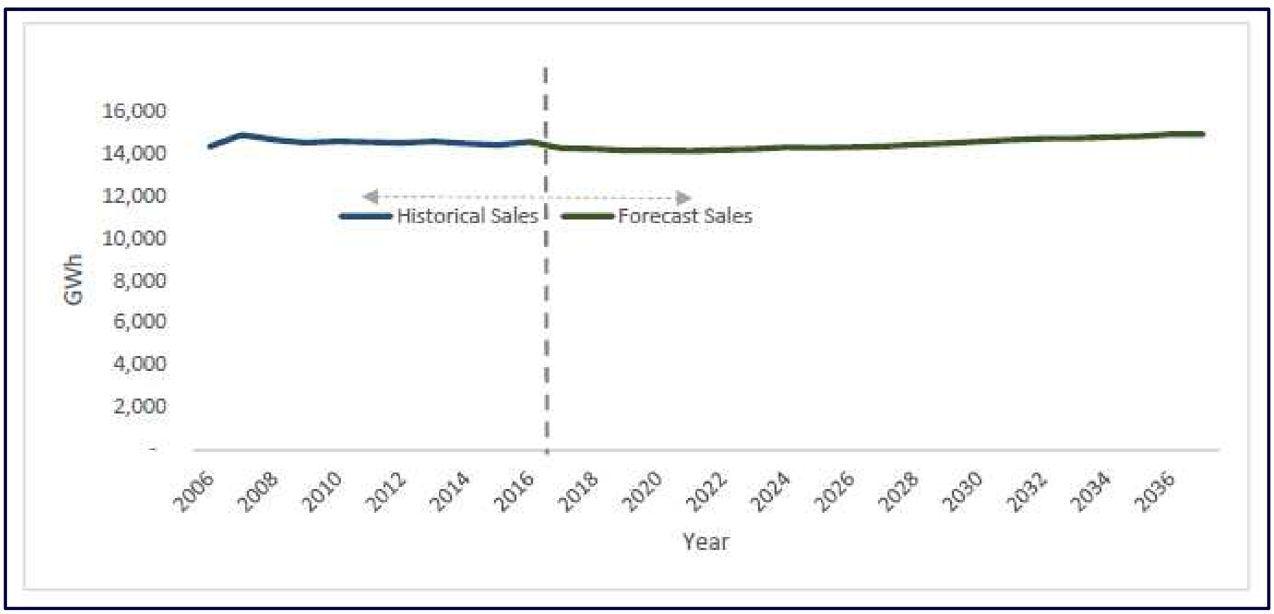
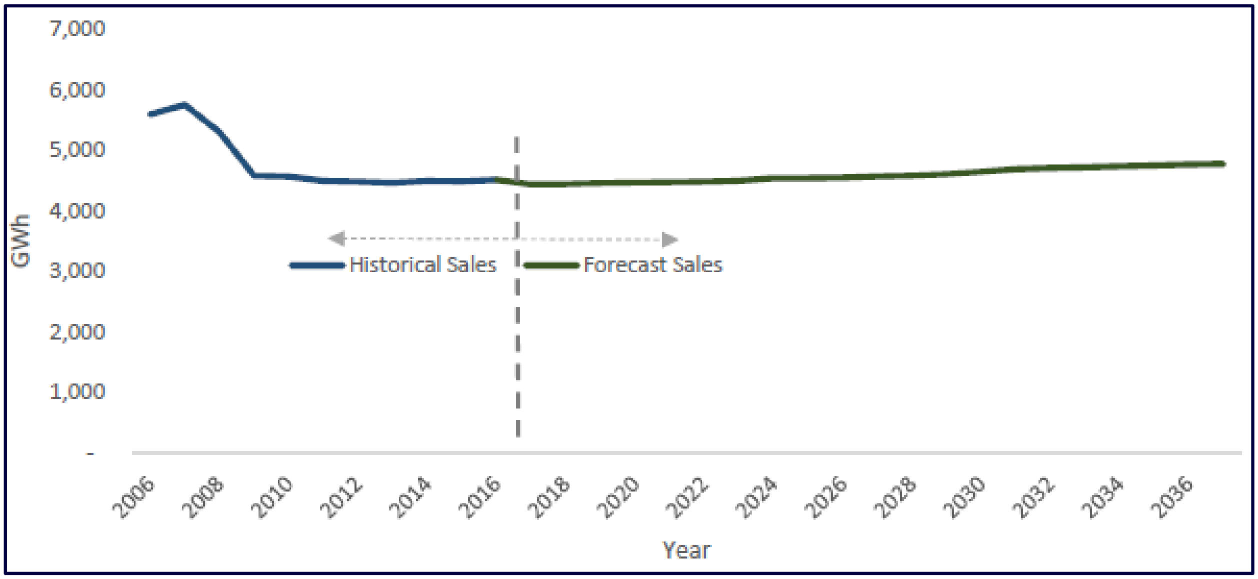


Figure 5: Planning case forecast of commercial class energy sales 2006 – 2036[8]



[7] Ibid. p. 33.
[8] Ibid. p. 35.

Figure 6: Planning case forecast of industrial class energy sales 2006 – 2036[9]



According to Ameren Missouri's recent IRP, the 2007-2009 economic recession and post-recession recovery likely impacted the historical growth rates, and demographic and economic trends are likely to meaningfully temper future sales.[10]

Q. Have Ameren Missouri's energy efficiency programs affected load?

A. Yes. The promotion of demand-side management techniques and naturally occurring efficiency adoption have impacted historic load and will continue to temper future load growth. However, context is important, as the Commission is well aware, the terms the parties entered into for both of Ameren Missouri's MEEIA applications were predicated on a future where Noranda was fully operational, and, therefore, the forecasted loads were much greater. On February 5, 2016, parties to Case No. EO-2015-0055 (MEEIA Cycle II) filed a non-unanimous stipulation and agreement, in which the earnings opportunity award was based on a supply side valuation of "a 600 MW combined cycle gas generating plant to begin operation in the year 2023, at a capital cost of $948 million in 2023 dollars."[11]

[9] Ibid. p. 36.
[10] Ibid. 36-37.
[11] Non-Unanimous Stipulation and Agreement EO-2015-0055 p. 12. 13 A.

Per the S&A:

> Ameren Missouri represents that pursuant to its internal modeling, achieving approximately 183 MW (including reserve margin and losses) of coincident-demand savings in the year 2022 pursuant to this MEEIA Cycle, approximately 191 MW (including reserve margin and losses) of coincident-demand savings in the year 2022 pursuant to a MEEIA Cycle 3, and approximately 61 MW (including reserve margin and losses) of coincident-demand savings in the year 2022 pursuant to a MEEIA Cycle 4 results in the deferral of that combined cycle generating unit to a point in the future that varies based on the assumptions of the number of MEEIA cycles and the level of persistent demand savings associated with each MEEIA cycle.[12]

In its MEEIA Cycle II application Ameren Missouri had to assume that it had a cycle III and IV portfolios in place and approved to justify Commission approval of its MEEIA Cycle II settlement. Exactly three days later, on February 8, 2016, Noranda filed for bankruptcy.[13] Stated differently, if the signatories to Ameren Missouri's MEEIA Cycle II settlement had waited just approximately 72 hours before filing the S&A, it is very likely that the settlement terms would have been very different. As a result, Ameren Missouri ratepayers were locked into a suboptimal outcome for the next three years.

Q. If load is not growing *and* Ameren Missouri is bringing more renewables on-line *and* Ameren Missouri is also aggressively supporting demand-side management programs, is Ameren Missouri planning on retiring its fossil fuel generating units earlier?

A. No. Ameren Missouri's planned fossil fuel retirement dates have either remained the same or have been pushed out further. This can be seen by comparing Ameren Missouri's two most recent triennial IRP filings as shown in Table 1.

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[12] Ibid. p. 12. 13 B.
[13] Barker, J. (2016) New Madrid smelter to shut down next month after Noranda files for bankruptcy. *St. Louis Post-Dispatch*. http://www.stltoday.com/business/local/new-madrid-smelter-to-shut-down-next-month-after-noranda/article_b386f8cc-73a9-590e-8f1b-ebfcff6c6003.html

Table 1: Ameren Missouri fossil fuel retirement changes between triennial IRP's[14,15]

Site	Fuel Type	Retirement Date 2014 IRP	Retirement Date 2017 IRP	Retirement Change
Labadie	Coal	2042	2042	No
Meramec	Coal	2022	2022	No
Rush Island	Coal	2046	2045	Yes (-1 year)
Sioux	Coal	2033	2033	No
Kirksville	Natural Gas	2017	2021	Yes (+4 years)
Howard Bend	Oil	2015	Retired	No
Fairgrounds	Oil	2015	2021	Yes (+6 years)
Meramec CTG-1	Oil	2017	2021	Yes (+4 years)
Meramec CTG-2	Natural Gas	2020	2021	Yes (+1 year)
Mexico	Oil	2020	2023	Yes (+3 years)
Moberly	Oil	2020	2023	Yes (+3 years)
Moreau	Oil	2020	2023	Yes (+3 years)

The lone outlier is Ameren Missouri's one-year accelerated planned retirement date of its Rush Island Energy Center; it moved the date 2046 to 2045. To be clear, that is 27 years into the future. Why Rush Island Energy Center dates were accelerated from 28 years to 27 years is unclear and will require further discovery. Regardless, this adjustment will have no material impact on the topic at hand.

[14] EO-2018-0038 Chapter 4 Existing Supply-Side Resources, p. 11-12. & EO-2015-0084 Chapter 4: Existing Supply-Side Resources, p. 12-13.

[15] This is not an exhaustive list of Ameren Missouri's supply side generation units. Furthermore, there may be more than one unit at a particular site; however, the Company has not indicated individual unit retirements for general sites.

Q. Are you surprised that Ameren Missouri has extended the retirement dates of its natural gas and oil plants in its 2017 IRP filing from those it had in its 2014 filing?

A. Somewhat. Although OPC has not fully explored why the retirement dates were extended, with the exception of Howard Bend, which was retired and was the oldest of the "peaker" plants listed, each of those plants are likely "in the money" and are likely providing a net positive return to ratepayers. However, this is merely speculative at this point. OPC will need to conduct further discovery on this issue to confirm. Again, regardless, the point remains that the historic planned supply-side units useful life have almost entirely been extended.

Q. Would you please summarize your previous points?

A. Presently, Ameren Missouri is long on capacity. It will be even longer on capacity when it adds 700MW of wind generation to comply with the mandated statutory RES requirement. Historically, Ameren Missouri's load has dropped, and Ameren Missouri's forecasts its load to be at its lowest since the Company began forecasting its load for IRPs. Ameren Missouri lost its largest customer, the equivalent of 10% of its load when it lost Noranda as a customer. Ameren Missouri will also not regain this smelter load, at least in the near future, as the new owner of the aluminum smelter, Magnitude 7 Metals, has entered into a contract with Associated Electric Cooperative, Inc. for its electricity.[16] The Commission has approved two Ameren Missouri MEEIA portfolios and a third is pending in Case No. EO-2018-0211, each of which are intended to reduce load through demand-side management strategies and resulted in "generous" rewards to Ameren Missouri. Finally, Ameren Missouri has extended the planned retirement dates of almost all of its energy centers that it has planned to retire within the next few years.

[16] Missouri Department of Economic Development (2018) Magnitude 7 Metals announces plans to reopen Marston aluminum smelter, create 450 jobs. https://ded.mo.gov/content/magnitude-7-metals-announces-plans-reopen-marston-aluminum-smelter-create-450-jobs

For these reasons, as well as the concerns to be outlined later in this testimony, Ameren Missouri should not be increasing its rate base with additional supply-side generation. Why this should even be a consideration for debate is patently unclear.

III. ELIGIBLITY PARAMETERS: CORPORATIONS & MUNICIPALS

Corporate Customer Risk

Q. Does OPC have any concerns about the eligibility parameters for commercial or industrial customers?

A. Yes. Companies operating in competitive markets fail. Guided by the invisible hand, entrepreneurs take risks to fulfill consumer demand for goods and services. Consequently, the mortality rate of companies can be relatively high. Empirical studies on firm mortality rates support this conclusion. In a 2015 Santa Fe Institute study that utilized a statistical technique called "survival analysis" examined data compiled by Standard & Poor's which covered the period of 1950-2009 and included a total sample size of 26,561 publicly traded companies. The study found that a firm's mortality, that is, it's risk of dying in the next year—had nothing to do with how long it had already been in business or what kind of products it produced. According to one of the authors, Marcus Hamilton, PhD:

> It doesn't matter if you're selling bananas, airplanes, or whatever," Hamilton says—the mortality rate is the same. Though the number, of course, varies from firm to firm, the team estimated that **the typical company lasts about ten years** before it's bought out, merges, or gets liquidated. (emphasis added)[17]

Because the contractual terms entered into by eligible commercial and industrial ratepayers may be for as long as fifteen years, OPC has concerns about the inability to collect early termination fees if such a commercial or industrial ratepayer ceases to exist or goes bankrupt

[17] Science Daily (2015) How long do firms live? Finding patterns of company mortality in market data. *Santa Fe Institute.* https://www.sciencedaily.com/releases/2015/04/150401132856.htm and Daepp, M.I.G, et al (2015) The mortality of companies. *Journal of the Royal Society Interface*. 12, 106. http://rsif.royalsocietypublishing.org/content/12/106/20150120#sec-2

(e.g. filed Chapter-7 status). However, the S&A's *risk sharing mechanism—termination fees* (vi, g) provision largely alleviates this concern. Risk exposure to both shareholders and ratepayers would be further diluted to the extent that the bundled RE Blocks are not populated with multiple participants. That is, if Company X was the only company in a PPA for five years there would be more risk exposure than if there were five companies with RE Blocks bundled with a five-year PPA. With these concerns in mind, OPC recommends inclusion of a robust FAQ description page similar to the types of questions Ameren Missouri agreed to in its Community Solar program case, Case No. EA-2016-0207. OPC also recommends that disclaimer language be drafted that explicitly expresses in plain English, that applicants should actively seek out independent third-party financial and energy market advisors before entering into a contract. Time permitting, OPC will attempt to draft specific recommended language for consideration in future testimony.

Municipal Customer Risk

Q. Does OPC have any concerns about the eligibility parameters for municipal customers?

A. Yes. Municipals go bankrupt too. In fact, 61 municipalities have gone bankrupt since 2010. The largest with a debt of $18.5 billion was Detroit, Michigan, in 2013.[18] It is also not unreasonable to assume that over the next fifteen years there will be another economic recession which would call for tighter austerity measures at any or all levels of government. OPC's concern with opening up the Green Tariff option to municipal customers centers on assumed imperfect knowledge and inadequate budgetary and energy market forecasting by the potential eligible municipality. As it stands, OPC has more confidence that an entity like Walmart will be in a better position to accurately access and negotiate its energy needs than a municipality such as a village. If Walmart leaves Village A to adjacent Village B, Walmart is most assuredly better off. In this outcome, Village is clearly the loser. Especially if Village A entered into a Green Tariff agreement that assumed, in part, a Walmart would be creating local revenues and supporting local tax base throughout the terms of the contract. All things being

[18] Governing (2017) Data: Bankrupt Cities, Municipalities List and Map. http://www.governing.com/gov-data/municipal-cities-counties-bankruptcies-and-defaults.html

equal, bankrupt municipalities are relatively rare, it is far more likely fluctuations associated with managing and balancing a public budget will alter the attractiveness and future cost considerations with locking-in a premium price for renewable electric service.

Q. Could you illustrate?

A. Yes. On October 27th, 2017 the City of St. Louis passed Resolution 124 in which St. Louis committed to 100 percent clean energy by 2035.[19, 20] According to the Sierra Club, St. Louis joins a trend of over 65 cities, more than five counties and one state, that have adopted 100% clean energy goals.[21] Approximately six months later, on May 2nd, 2018 Moody's Investors Service downgraded St. Louis' credit rating from A3 to Baa1.[22] Moody's had previously cut the city's ratings in August 2015,[23] October 2016[24] and March 2017.[25] According to the Post-Dispatch:

> The new rating comes as the St. Louis Board of Alderman begins the process of reviewing the fiscal 2019 budget, which contains cuts to make up for an estimated $10 million shortfall.
>
> Additionally, a bond issue will go before St. Louis voters in August, when they'll decide if the city should borrow about $50 million for new equipment for the fire

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[19] St. Louis-MO.Gov (2018) Resolution No. 124 / Session 2017-2018: The City's Sustainability Plan. https://www.stlouis-mo.gov/government/city-laws/resolutions/resolution.cfm?rDetail=true&resolutionId=10762

[20] Gray, B. (2017) Alderman pass resolution for St. Louis to pursue 100 percent clean energy by 2035. *St. Louis Post-Dispatch* http://www.stltoday.com/business/local/aldermen-pass-resolution-for-st-louis-to-pursue-percent-clean/article_3dcd5d0c-38c6-5d10-ba7e-4a76b2f4ecff.html

[21] Sierra Club.Ready-for-100. 100% Commitments in cities, counties & States https://www.sierraclub.org/ready-for-100/commitments

[22] Moody's Investors Service(2018) Rating Action: Moody's downgrades St. Louis, MO's rating to Baa1; outlook revised to stable https://www.moodys.com/research/Moodys-Downgrades-St-Louis-MOs-GO-rating-to-Baa1-outlook--PR_904563801

[23] Postor, N.J.C. (2015) Moody's downgrades St. Louis city's credit ratings. *St. Louis Post-Dispatch* http://www.stltoday.com/news/local/govt-and-politics/moody-s-downgrades-st-louis-city-s-credit-rating/article_ee19629e-fad2-57de-8207-50b49bef1bc2.html

[24] Nicklaus. D. (2016) Moody's lowers city of St. Louis debt rating. *St. Louis Post-Dispatch*. http://www.stltoday.com/business/columns/david-nicklaus/moody-s-lowers-city-of-st-louis-debt-rating/article_8f6d2436-3186-55ec-b60d-630727a5e826.html

[25] Nicklaus. D. (2017) Moody's downgrades St. Louis' credit, citing 'weak reserve position' *St. Louis Post-Dispatch* http://www.stltoday.com/business/columns/david-nicklaus/moody-s-downgrades-st-louis-credit-citing-weak-reserve-position/article_29340677-0900-5502-b270-54b527e7114b.html

> department, bridge repairs, and renovations to city-owned buildings such as City Hall, courthouses and correctional facilities. That includes the installation of permanent air conditioning for the City Workhouse.[26]

Whether or not a lower credit rating will have any material impact on the clean energy resolution that was passed is unclear. However, the point remains that municipalities are subject to budgetary and economic limitations. OPC is not recommending that municipal customers be excluded from a Green Tariff option, rather, it is recommending that Ameren Missouri provide additional safeguards to properly inform municipal customers about the terms of what they are entering into. OPC is currently exploring how this issue is handled with Green Tariff programs of other utilities, and reserves the right to provide additional recommendations on this specific issue in its surrebuttal testimony.

IV. CONSERVATION: PRUDENCY & MARKETING

Prudency of siting wind farms in the vicinity of vulnerable species

Q. Does OPC have any concerns as it relates to the impacts of wind farms on wildlife and habitat?

A. Yes. OPC is cognizant that more wind projects will likely begin in Missouri moving forward. If wind farms result in fatalities of vulnerable or protected animal populations Ameren Missouri 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 sited in Missouri:

<u>Pre-Site Selection:</u>

[26] Bott. C. (2018) St. Louis credit rating again downgraded in 'wake-up call' from Moody's. *St. Louis Post-Dispatch*. http://www.stltoday.com/news/local/govt-and-politics/st-louis-credit-rating-again-downgraded-in-wake-up-call/article_836eb616-af3b-5172-8044-4ab8706f116d.html

- 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.

<u>Post Construction Mortality Monitoring:</u>

- 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, MPSC, MOPC;
- 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.

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.[27]

[27] See GM-2.

Marketing of Green Tariff as a Bird and Bat Friendly Corporate/Municipal Energy Option

Q. Are there any additional benefits for adopting best practices in the pre-site selection of wind farms and post-construction mortality monitoring?

A. Yes. Today, there is nothing stopping a corporate entity from entering into a PPA with a renewable Independent Power Producer ("IPP") to meet its sustainability goals. For example, Anheuser-Busch InBev signed a deal to buy power produced by an Oklahoma wind farm this past September.[28] With the PTC phase-down in place it is not unreasonable to assume that there will be plenty of renewable options for corporate entities that want to meet self-imposed sustainability goals. Unfortunately, not all of these renewable options can guarantee or market their product as being both green *and* conservation-friendly. Ameren Missouri is in a unique position to differentiate its "green" service by actively adopting best practices for proper siting of its wind farms for birds and bats *and* by promoting transparent impact data by properly collecting and sharing mortality figures. These recommendations are also consistent with values espoused in Ameren's 2017 Corporate Social Responsibility Report which lists "Nature and Wildlife" within its social-responsibility framework; in part, that report states:

> Nature and wildlife benefit from a wide range of programs we support in both Missouri and Illinois. Our aim is to protect, preserve and educate for future generations. The actions we've taken demonstrate **our commitment to being a good environmental steward**.
>
> - We're continuing existing efforts to enhance habitat for wildlife and birds, including eagles and other raptors. This includes planting over 8,000 trees and shrubs on three islands in the Mississippi River, covering 61 acres.
> - Meanwhile, we're enhancing our avian protection program by sponsoring education programs in area schools, monitoring Peregrine falcon nests at our energy centers and sponsoring the Starved Rock State Park Eagle Days.

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[28] Brown, L. (2017) Anheuser-Busch signs wind farm power deal as part of global renewable energy goal. *St. Louis Post-Dispatch.* http://www.stltoday.com/business/local/anheuser-busch-signs-wind-farm-power-deal-as-part-of/article_b947910e-ed54-5b34-934a-cb2173388fdb.html

- In addition, an Eagle Construction Area mapping effort has been developed to provide greater protection of bald eagles in our service territory.[29]

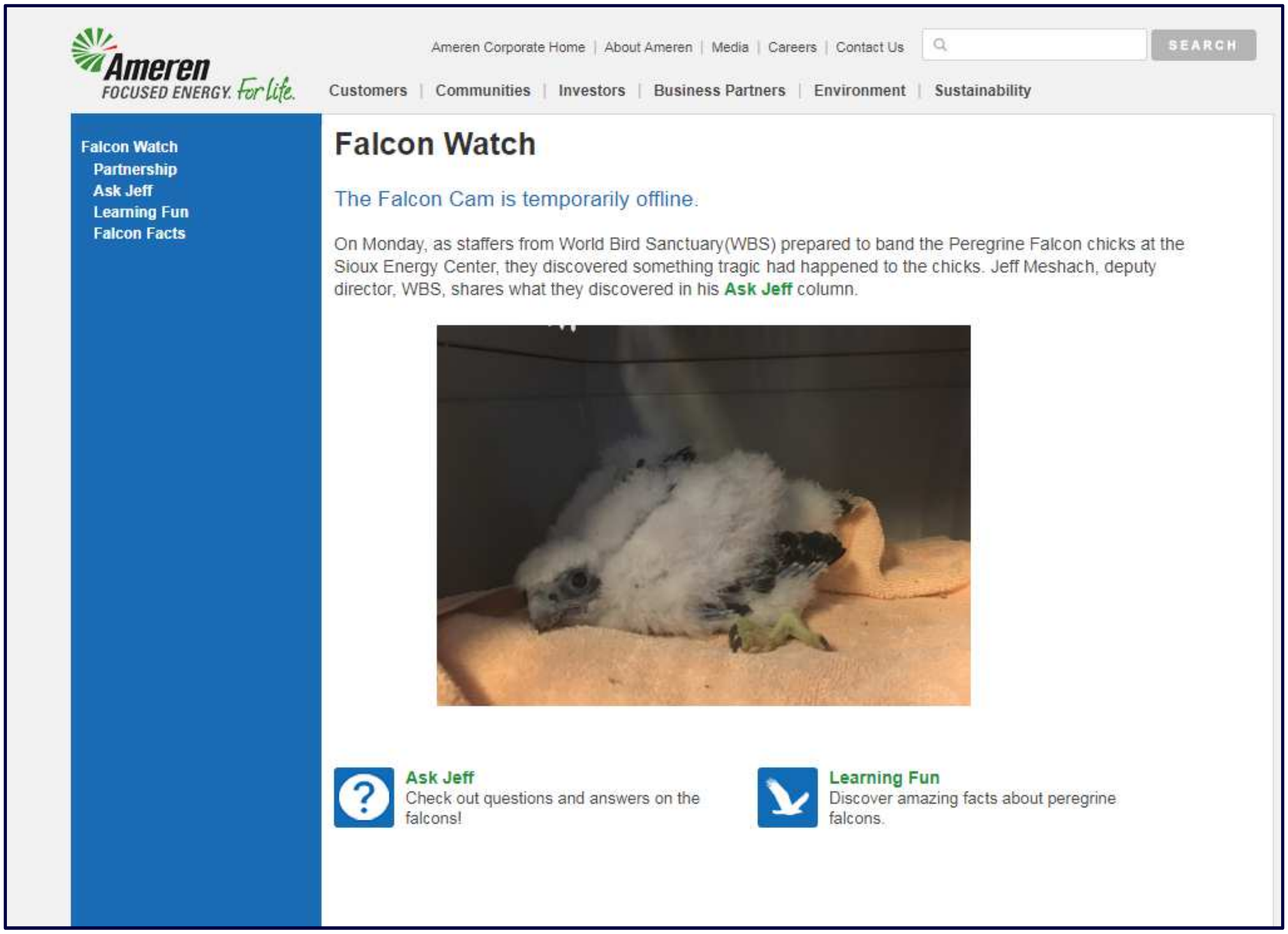
Adopting OPC's recommendations for all future Ameren Missouri wind farms would also be consistent and complement efforts Ameren Missouri has made to support avian species such as the World Bird Sanctuary as seen in Figure 7 and the Peregrine Falcon habitat at the Sioux Energy Center as seen in Figure 8.

Figure 7: Snapshot of Ameren Missouri's World Bird Sanctuary Endorsement[30]

[29] Ameren (2017) Achieving Balance: 2017 Ameren Corporate Social Responsibility Report. http://2017.amerencsr.com/environment/who-benefits-from-our-efforts/

[30] Ameren Missouri (2018) The World Bird Sanctuary https://www.ameren.com/missouri/environment/world-bird-sanctuary

Figure 8: Snapshot of Ameren Missouri's "Falcon Watch"[31]



Speaking specifically to Ameren Missouri's support of the aforementioned endeavors, Ameren Missouri's Vice President of External Affairs and Communications, Warren Wood stated:

> "We're proud to support a project to repopulate the Mississippi Valley with Peregrine Falcons . . . It's part of our shared passion with our partners, the World Bird Sanctuary and the Missouri Department of Conservation to protect and preserve the environment."[32]

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[31] Ameren Missouri (2018) Falcon Watch https://www.ameren.com/falcon-watch
[32] Ameren Missouri(2018)News releases: Ameren Missouri falcon cam soars into fifth season http://ameren.mediaroom.com/news-releases?item=1446

Finally, such practices would literally reinforce Ameren's motto "Focused Energy. *For Life*." as seen in Figure 9.

<u>Figure 9: Ameren Missouri Trademark and Slogan (emphasis added)</u>

Q. Has Ameren Missouri ever agreed to specific site conditions, site evaluations or post construction data collection of a supply side asset?

A. Yes. GM-3 and GM-4 contain Appendix A and D respectively of the S&A entered into by parties to Case No: EA-2016-0207, Ameren Missouri's Community Solar Program. The fact that Ameren Missouri went to such lengths to ensure proper siting of its future solar project underscores that OPC's pre-site selection and post-construction data recommendations for potential wind sites are reasonable, appropriate, and not uncommon.

V. TAX EQUITY FINANCING & RISK SHARING MECHANISMS

Q. How does U.S. Federal tax policy promote wind projects?

A. It does so primarily through the federal income tax Production Tax Credits ("PTCs") and accelerated depreciation. According to Todd Mooney in his direct testimony for The Empire District Electric Company's ("Empire") in its "Customer Savings Plan" case, Case No: EO-2018-0092:

> Wind projects generate PTCs for the first ten years of commercial operations in the amount of $24 per MW-hour, which is adjusted annually for inflation, as reported by the Internal Revenue Service. The PTCs represent a dollar for dollar reduction of the tax liability of an owner of a qualifying project. For example, a 200 MW wind project that produced 900,000 MW-hours in a given year would generate PTCs that would be available for an owner of the project to reduce its tax liability by $21.6 million (900,000 MW-hours x $24 per MW-hour).[33]

Q. Did Empire propose to finance its wind project with conventional utility debt and equity financing?

A. No. Empire proposed financing through a tax equity structure involving one or more tax equity partners. According to Mr. Mooney:

> Empire is proposing a tax equity structure in order to maximize customer savings by utilizing the value of the available tax incentives. Such a structure enables Empire to reduce the capital investment it needs to construct the Wind Project by an amount that reflects the ability of a Tax Equity Partner to utilize the tax savings provided by both PTCs and MACRS [Modified Accelerated Cost Recovery System] in the near term. The reduced capital investment allows customers to realize the benefits of the full 10 years of PTCs and MACRS from day 1 through a reduced rate base. Given the time value of money, using a tax equity structure (as compared with direct ownership of the Wind Project by Empire without a partner) would result in between $4 and $7 per MW hour more savings for Empire customers.[34]

Q. Did Empire put forward any cost savings estimates as a result of this partnership?

A. Yes., Mr. Mooney testified:

[33] Case No. EO-2018-0092, Direct Testimony of Todd Mooney p. 5, 6-13.
[34] Ibid. p. 8, 3-11.

> This partnership will allow Empire to acquire up to 800 MW of wind generation for as little as 40 cents on the dollar.[35]

Q. Did OPC support Empire's "Customer Savings Plan"?

A. No. OPC strongly recommended that the Commission reject the plan for many reasons, not least of which was the fact that the Customer Savings Plan is predicated on captive ratepayers bearing the risks a developer acting as an Independent Power Producer ("IPP") would bear.

Q. Did OPC specifically oppose the tax equity financing structure of the Customer Savings Plan?

A. OPC's opposition was based on the facts that no equity partners were identified and no specific tax equity agreement terms were offered, merely broad, ill-defined parameters. That being said, *if* a tax equity partnership for procuring wind generation results in a utility procuring wind assets at a reduced cost to it, then this financing method should be utilized by all wind projects that are necessary to meet RES mandates *or* are necessary for resource adequacy requirements. The latter two "generation need" requirements are of course absent from both Ameren Missouri's and Empire's applications making the appropriate terms surrounding the financing structure, at best, a secondary issue.

Q. Does OPC have a recommendation regarding this information?

A. OPC welcomes any explanation from Ameren Missouri or the signatories to the S&A in this case (many of whom are the same signatories in the Empire case) as to why the purported lower cost to Empire with tax equity financing Empire claimed is not available to Ameren Missouri in this case.

To be clear, OPC's primary position is that Ameren Missouri's Green Tariff program should not be a tariffed program. If Ameren Missouri wants to offer this program, then it should do so without any Commission approval or oversight, either through Ameren Missouri itself as a

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[35] Ibid. p. 4, 11-13.

non-tariffed offering or through a non-regulated affiliate. That being said, it seems wholly inappropriate to ignore the financing cost savings narrative put forward in the Empire "Customer Savings" case when examining all relevant factors in the Ameren Missouri "Green Tariff" case.

Risk Sharing Mechanisms

Q. Is there anything else between the two non-unanimous S&A's that merits comment?

A. Yes. Although the terms, context and appropriateness differ considerably between both applications, it is worth noting that each S&A contains a "risk sharing" mechanism that allocates potential costs to both ratepayers and shareholders. Unlike the Empire S&A, Ameren Missouri's "risk sharing" mechanism can truly be described as a sharing of risks. For example, Ameren Missouri's 50/50 difference between assumed and actual costs/benefits contains no "cost cap" for shareholders. Finally, and although it is not a condition directly germane to the Empire S&A, the terms of the Ameren Missouri S&A includes a provision in which shareholders bear all costs for unexpected termination of RE blocks in the event that subscription levels fell below the 100 to 50% total level. Stated differently, if Company X entered into a Green Tariff contract for 20% of the total RE blocks for ten years but then Company X went bankrupt after year 2, the overall subscription level for the Green Tariff would now be at 80% but the costs associated with the unsubscribed 20% would not be borne by ratepayers but by shareholders. If Company X instead entered into a contract for 60% of the total RE blocks and then went bankrupt, shareholders would bear 50% of those costs and ratepayers only 10%. OPC recognizes and applauds these specific provisions entered into by Ameren Missouri which stand in stark contrast to the Empire S&A.

Q. Does this conclude your testimony?

A. Yes.

CASE PARTICPATION OF
GEOFF MARKE, PH.D.

Company Name	Employed Agency	Case Number	Issues
Union Electric Company d/b/a Ameren Missouri	Office of Public Counsel (OPC)	ET-2018-0063	**Rebuttal:** Green Tariff, Corporate/Municipal Renewable Energy Option
Liberty Utilities (MidStates Natural Gas)	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	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

SECOND REGULAR SESSION

HOUSE BILL NO. 2634

99TH GENERAL ASSEMBLY

INTRODUCED BY REPRESENTATIVE BERRY.

6519H.01I D. ADAM CRUMBLISS, Chief Clerk

AN ACT

To repeal section 393.170, RSMo, and to enact in lieu thereof two new sections relating to wind energy.

Be it enacted by the General Assembly of the state of Missouri, as follows:

Section A. Section 393.170, RSMo, is repealed and two new sections enacted in lieu thereof, to be known as sections 393.170 and 393.1800, to read as follows:

393.170. 1. No gas corporation, electrical corporation, water corporation or sewer corporation shall begin construction of a gas plant, electric plant, water system or sewer system without first having obtained the permission and approval of the commission.

2. No such corporation shall exercise any right or privilege under any franchise hereafter granted, or under any franchise heretofore granted but not heretofore actually exercised, or the exercise of which shall have been suspended for more than one year, without first having obtained the permission and approval of the commission. Before such certificate shall be issued a certified copy of the charter of such corporation shall be filed in the office of the commission, together with a verified statement of the president and secretary of the corporation, showing that it has received the required consent of the proper municipal authorities.

3. The commission shall have the power to grant the permission and approval herein specified whenever it shall after due hearing determine that such construction or such exercise of the right, privilege or franchise is necessary or convenient for the public service. The commission may by its order impose such condition or conditions as it may deem reasonable and necessary. Unless exercised within a period of two years from the grant thereof, authority conferred by such certificate of convenience and necessity issued by the commission shall be null and void.

EXPLANATION — Matter enclosed in bold-faced brackets **[**thus**]** in the above bill is not enacted and is intended to be omitted from the law. Matter in **bold-face** type in the above bill is proposed language.

4. The commission shall not grant permission and approval for the construction of wind energy generation facilities until the Missouri wind energy task force established under section 393.1800 has issued its report to the general assembly.

393.1800. 1. There is hereby established the "Missouri Wind Energy Task Force".

2. The task force's primary purpose shall be to study both the positive and negative effects that wind energy has on this state, its people, and its resources.

3. The task force shall consist of the following members:

(1) Five members of the house of representatives, with three members to be appointed by the speaker of the house of representatives, one of whom is a member of the utilities committee, one of whom is a member of the agriculture policy committee, and one of whom is a member of the conservation and natural resources committee, and two members to be appointed by the minority leader of the house of representatives, both of whom are members of the utilities committee, the agriculture policy committee, or the conservation and natural resources committee;

(2) Five members of the senate, with three members to be appointed by the president pro tempore of the senate, at least one of whom is a member of the agriculture, food production and outdoor resources committee; and two members to be appointed by the minority leader of the senate, at least one of whom is a member of the agriculture, food production and outdoor resources committee;

(3) The governor or his or her designee;

(4) The director of the department of natural resources or his or her designee;

(5) The director of the department of economic development or his or her designee; and

(6) The director of the department of agriculture or his or her designee.

4. The speaker of the house of representatives shall appoint a chair of the task force and the president pro tempore of the senate shall appoint a vice chair.

5. The staffs of house research, senate research, and the joint committee on legislative research shall provide such legal, research, clerical, technical, and bill drafting services as the task force may require in the performance of its duties.

6. The task force, its members, and any staff assigned to the task force shall receive reimbursement for actual and necessary expenses incurred in attending meetings of the task force or any subcommittee thereof.

7. The task force shall meet within two months from adoption of this resolution.

8. The task force shall report a summary of its activities and any recommendations for legislation to the General Assembly by January 1, 2019.

9. The task force is authorized to function during the legislative interim of both the second regular session of the Ninety-ninth General Assembly and the first regular session of the One Hundredth General Assembly.

10. The task force shall terminate on January 1, 2020.

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<u>Appendix A – Site Documentation</u>

CCN Application filing:

A. When filing its CCN application, Ameren Missouri will file the information required by 4 CSR 240-3.105(B) in File No. EA-2016-0207. This filing will also include an assessment that the identified site meets the Minimum Application Conditions listed below, as well as documentation regarding the Additional Considerations for Site Selection listed below.

B. Ameren Missouri will schedule a conference call within 7 calendar days of the filing of the information to answer questions.

C. Parties may issue data requests for additional information. The time to answer these data requests will be shortened to 7 calendar days, with 3 business days to object or notify the issuer that additional time will be needed to provide the information requested.

E. Consistent with expedited treatment of the CCN application, Staff will file a report in the CCN case that says they have verified that the site selected does (or does not) meet the agreed-upon criteria. Other parties may file a report at the same time, but are not required to do so.

Minimum Application Conditions to be met are as follows, in no particular order:

- Site is within the Ameren Missouri service territory
- Site provides a suitable location for solar (flat, minimal shading issues, accessible) minimum of eighty-five percent (85%) of the solar resource is available to the solar photovoltaic system. Near sub-transmission, distribution lines, or substations (12kV - 69 kV)
    - Interconnection must be at sub-transmission or distribution level
    - Interconnection must not require significant capacity upgrades
- Not in a flood plain

Additional Considerations for Site Evaluation, in no particular order:

- Price of Bid
- Price of Interconnection Cost and Upgrades
- Type of installation (Ground Mount, Rooftop, Canopy)
- Quality of site (risk of erosion, deterioration of structure, or quality of soil)
- Environmental risk of site
- Existing security at site location
- Safety risk at location
- Type of Facility: (Greenfield, Office, Educational, Industrial, Manufacturing, Retail, Data center, Warehouse, Healthcare, Military, Recreational, Other)
- Site Status: (Owned, Leased, Other)

APPENDIX D

Each report filed pursuant to paragraph 16 shall include at a minimum: a discussion of knowledge gained of each Learning Opportunity, a discussion of progress towards answering each Key Question to Explore, and the results of and documentation of Planned Activities to Gain Insight, to the extent the specified surveys have been conducted.

Learning Opportunities:

To gauge how customers will react to various pricing sensitivities, to evaluate the potential impacts on net energy metering structures and to determine the real or perceived value of increasing solar generation at the distribution level, as compared to adding solar generation at the transmission level.

In gauging customer reactions to pricing, Ameren Missouri will also determine customer sensitivity to program design aspects including, but not limited to: the timing, level, and refund limitation of the up-front “reservation fee;” the program length commitment; subscription transferability between customers; the 50 percent usage cap on subscription; and the potential for a portion of the monthly charge to increase following rate cases.

This program will assist Ameren Missouri in determining first-hand how best to structure supply options related to distributive solar generation. The intent is to engage customers, solicit their feedback and provide a basis to continually adjust the program offering in order to meet their expectations. The lessons learned through this pilot program should provide insights into the advantages and challenges associated with distributed generation resources on the Ameren Missouri grid. Testing the deployment, this small-scale pilot project may be helpful in developing real time solutions for distributed generation.

Key Questions to Explore and Planned Activities to Gain Insights:

Ameren Missouri will conduct a survey of the program participants after the first 18 months of program operation. The intent will be to gather customer feedback seeking answers to questions such as:

- What were customer’s expectations coming into the program?
- Is the program meeting customer’s expectations?
- What areas of the program need improvement?
- What aspects of the program do the customers like and dislike?
- Do participants find the timing, level, and refund limitation of the up-front “reservation fee” reasonable?
- Are current and potential subscribers willing to commit to a two-year subscription?
- Would a shorter mandatory subscription period (or no period at all) be more appropriate?
- Would current or potential subscribers be interested in the ability to transfer subscriptions to other customers without penalty?
- Is the block size appropriate?
- Do current or potential subscribers want to be able to subscribe to more than 50 percent of their usage? Should the limitation be relaxed or eliminated for customers exhibiting high load factors?

- Are customers aware of the potential for part of the subscription fee to increase with rate cases? With this knowledge, are they still willing to participate?
- Are there any aspects of the program that provide the customer with a greater understanding of solar energy generation?
- What is the impact of the program on non-participating ratepayers?

A similar survey will then be conducted after three years to determine if the program has provided enough value to be extended and/or what changes would be necessary to gain a higher level or a continued level of participation. In addition to surveying program participants, Ameren Missouri will solicit input from non-participants to determine reasons for non-participation and alternative program design provisions which might encourage participation. This survey shall be conducted every six years thereafter over the life of the solar resource.