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MISSOURI PUBLIC SERVICE COMMISSION

UNION ELECTRIC COMPANY d/b/a AMEREN MISSOURI

CASE NO. EA-2016-0208

SURREBUTTAL TESTIMONY

OF

MARTIN R. HYMAN

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

DIVISION OF ENERGY

Jefferson City, Missouri
September 30th, 2016

In the Matter of the Application of Union Electric)
Company d/b/a Ameren Missouri for Permission and)
Approval of a Certificate of Public Convenience and) Case No. EA-2016-0208
Necessity Authorizing it to Offer a Pilot Distributed)
Solar Program and File Associated Tariff)

STATE OF MISSOURI)
)
COUNTY OF COLE) SS

1. My name is Martin R. Hyman. I work in the City of Jefferson, Missouri, and I am employed by the Missouri Department of Economic Development as a Planner III, Division of Energy.
2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of the Missouri Department of Economic Development – Division of Energy.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge.


Martin R. Hyman

LAURIE ANN ARNOLD
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: April 26, 2020
Commission Number: 16808714

James Lee Arnold
Notary Public

My commission expires: 4/26/20

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Martin R. Hyman. My business address is 301 West High Street, Suite 720,
PO Box 1766, Jefferson City, Missouri 65102.

Q. By whom and in what capacity are you employed?

A. I am employed by the Missouri Department of Economic Development – Division of
Energy (“DE”) as a Planner III.

**Q. Have you previously filed testimony before the Missouri Public Service Commission
 (“PSC” or “Commission”) in this Certificate of Public Convenience and Necessity
 (“CCN”) case?**

A. Yes.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your Surrebuttal Testimony in this proceeding?

A. The purpose of my testimony is to respond to objections raised by Office of the Public
Counsel (“OPC”) witness Mr. J. Richmond Burdge in his Rebuttal Testimony.¹ Mr.
Burdge’s testimony does not fairly portray certain facts in this case. DE still recommends
approval of the Non-Unanimous Stipulation and Agreement (“Stipulation”) filed in this
case on August 31 between Union Electric Company d/b/a Ameren Missouri (“Ameren
Missouri” or “Company”), DE, the Commission Staff (“Staff”), and others.²

¹ Missouri Public Service Commission Case No. EA-2016-0208, *In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval of a Certificate of Public Convenience and Necessity Authorizing it to Offer a Pilot Distributed Solar Program and File Associated Tariff*, Rebuttal Testimony of J. Richmond Burdge Submitted on Behalf of The Office of the Public Counsel, September 7, 2016.

² Missouri Public Service Commission Case No. EA-2016-0208, *In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval of a Certificate of Public Convenience and Necessity*

III. RESPONSE TO TESTIMONY FROM OFFICE OF THE PUBLIC COUNSEL

Q. What are Mr. Burdge's objections to the Solar Partnership project?

A. Mr. Burdge lists numerous reasons for his recommendation to reject the project.

According to Mr. Burdge:

- Ameren Missouri does not need additional generating capacity until 2033;
- The Company is meeting its "quota" of Solar Renewable Energy Credits ("SRECS") under the Renewable Energy Standard ("RES");
- The project will not reduce Company carbon emissions;
- The Company's CCN application lacked necessary details;
- Delaying construction until 2020 would lower costs and allow Ameren Missouri to utilize tax and emissions credits; and,
- The Company will not learn much from the project.³

I address each of these contentions below.

A. CAPACITY NEED

Q. Please summarize Mr. Burdge's argument about Ameren Missouri's generating capacity.

A. Based on Ameren Missouri's 2014 Integrated Resource Plan and the recent closure of the Noranda Aluminum smelter, Mr. Burdge states that the Company has more than adequate capacity available to meet demand and reserve requirements.⁴

Authorizing it to Offer a Pilot Distributed Solar Program and File Associated Tariff, Non-Unanimous Stipulation and Agreement, August 31, 2016.

³ Burdge Rebuttal, pages 10-11, lines 11-19 and 1-5.

⁴ *Ibid*, pages 3-4, lines 1-17 and 1-8.

1 **Q. Is this a relevant consideration for this case?**

2 A. No. As acknowledged by OPC in its formal objection to the Stipulation,⁵ the legal
3 standard for a Commission decision in this case indicates that, “The term ‘necessity’ does
4 not mean ‘essential’ or ‘absolutely indispensable,’ but that **an additional service would**
5 **be an improvement justifying its cost**” (emphasis added).⁶ Even if the Company does
6 not “need” this project to meet capacity requirements, the project is still an improvement
7 which would justify its cost – Ameren Missouri has stated that there are customers who
8 want the “additional service” this project would provide, and that the project would
9 provide a learning experience for the Company.⁷
10 More than 60 percent of the largest companies across the country have established goals
11 to increase their use of renewable energy.⁸ Sixty-two of these companies have signed the
12 “Corporate Renewable Energy Buyer’s Principles” to gain easier and greater access to
13 renewable electricity in order to meet their clean and low-carbon energy goals.⁹ A
14 number of Missouri companies filed letters of support for Grain Belt Express Clean Line
15 LLC’s CCN application, which further demonstrates the increased commercial and

⁵ Missouri Public Service Commission Case No. EA-2016-0208, *In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval of a Certificate of Public Convenience and Necessity Authorizing it to Offer a Pilot Distributed Solar Program and File Associated Tariff*, Public Counsel’s Objection to the Non-Unanimous Stipulation and Agreement, September 7, 2016, page 2.

⁶ *State ex rel. Intercon Gas, Inc. v Pub. Serv. Comm’n*, 848 S.W.2d 593, 597 (Mo. App. W.D. 1993).

⁷ Missouri Public Service Commission Case No. EA-2016-0208, *In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval of a Certificate of Public Convenience and Necessity Authorizing it to Offer a Pilot Distributed Solar Program and File Associated Tariff*, Application for a Blanket Certificate of Public Convenience and Necessity, April 27, 2016, page 3.

⁸ Corporate Renewable Energy Buyers’ Principles. 2016. Home page. <http://buyersprinciples.org/>.

⁹ *Ibid.*

1 industrial customer interest in gaining access to zero carbon emitting, renewable
2 energy.¹⁰

3 **Q. What other improvements will the project provide?**

4 A. The project will provide the Company with a learning opportunity regarding distributed
5 solar generation on customer-owned property, allow the Company to reduce carbon
6 emissions, and improve Ameren Missouri's ability to comply with future environmental
7 compliance requirements. In conjunction with the Company's Solar Subscriber proposal
8 in EA-2016-0207,¹¹ the Solar Partnership pilot will expand the choices available to
9 customers to meet evolving demands for renewable energy. Additional solar energy
10 generation supports the overarching third goal in Missouri's Comprehensive State Energy
11 Plan to diversify the state's energy portfolio.¹²

12 **B. SOLAR RENEWABLE ENERGY CREDITS**

13 **Q. Mr. Burdge refers to the RES's SREC requirements as a "quota." Is this a fair**
14 **portrayal of the RES?**

15 A. No. The RES statute states at §393.1030.1, RSMo. that the portfolio requirements for
16 renewable energy more generally involve "no less than" the specified percentages of

¹⁰ Missouri Public Service Commission Case No. EA-2016-0358, *In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Own, Control, Manage, Operate and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood-Montgomery 345kV Transmission Line*, Direct Testimony of Michael P. Skelly on Behalf of Grain Belt Express Clean Line LLC, August 30, 2016, Schedule MPS-3.

¹¹ Missouri Public Service Commission Case No. EA-2016-0207, *In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Offer a Pilot Subscriber Solar Program and File Associated Tariff*, Application for Approval of a Subscriber Solar Pilot Tariff, April 27, 2016. See also Missouri Public Service Commission Case No. EA-2016-0207, *In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Offer a Pilot Subscriber Solar Program and File Associated Tariff*, Non-Unanimous Stipulation and Agreement, September 23, 2016.

¹² Missouri Department of Economic Development – Division of Energy. 2015. "Missouri Comprehensive State Energy Plan." <https://energy.mo.gov/energy/docs/MCSEP.pdf>. Page 227.

1 utility sales; this same section also provides for a solar energy “carve-out” by stating, “At
2 **least** two percent of each portfolio requirement shall be derived from solar energy”
3 (emphasis added). Mr. Burdge’s use of the word “quota” incorrectly implies that the RES
4 portfolio requirements are caps on renewable energy development when, in fact, they are
5 minimum thresholds.

6 **Q. Is it relevant, then, that the Company may not need the project for RES**
7 **compliance?**

8 A. No.

9 **C. CARBON EMISSIONS**

10 **Q. Does Mr. Burdge claim that the project will not reduce carbon emissions?**

11 A. Yes. In doing so, he cites Ameren Missouri’s statement that, because of its participation
12 in the Midcontinent Independent System Operator, Inc.’s (“MISO”) market, no non-
13 renewable generation will necessarily come offline because of renewable generation.¹³

14 **Q. Is this a complete description of the circumstances surrounding the Company’s**
15 **generation assets?**

16 A. No. As alluded to later by Mr. Burdge,¹⁴ the federal Clean Power Plan (“CPP”) would
17 require Ameren Missouri to reduce its carbon emissions if it is upheld in the courts. The
18 presence of solar generation assets will better enable the Company to do so; since there
19 are no emissions from solar facilities, the Company can replace generation and capacity
20 from its carbon-intensive generation assets with solar power, particularly during daytime
21 peak periods. Although MISO has examined the costs of compliance with carbon

¹³ Burdge Rebuttal, page 5, lines 8-15.

¹⁴ *Ibid*, page 10, lines 1-9.

1 regulations,¹⁵ the current MISO market does not account for carbon emissions;
2 consequently, the economic signals currently sent by MISO do not provide Ameren
3 Missouri with incentives which align the Company's business needs with all
4 environmental constraints. As new regulations require consideration of environmental
5 externalities, the MISO market will provide stronger signals to participants about societal
6 costs.

7 **Q. In discussing carbon emissions, you mentioned societal costs and externalities. Has**
8 **the cost of carbon emissions been quantified?**

9 A. Yes. Most notable among the various quantifications of the costs of carbon emissions is
10 the federal government's "social cost of carbon." This cost is already used by the federal
11 government to assess the impacts of regulatory proposals. The most recent assessment of
12 the social cost of carbon found an average cost in 2015 of \$11 to \$56 per metric ton of
13 carbon dioxide (in 2007 dollars), depending on the discount rate (or time value of money)
14 used. By 2050, this average cost rises to between \$26 and \$95 per metric ton. The
15 analyses used to arrive at these values do not even take into account all physical,
16 ecological, and economic effects from climate change, so the social cost of carbon could
17 be even higher.¹⁶ Despite this uncertainty, it is evident that carbon emissions have
18 quantifiable social impacts.

¹⁵ Midcontinent Independent System Operator, Inc. 2016. "EPA Proposal to Reduce Carbon Dioxide Emissions."
[https://www.misoenergy.org/WhatWeDo/EPARegulations/Pages/111\(d\).aspx](https://www.misoenergy.org/WhatWeDo/EPARegulations/Pages/111(d).aspx).

¹⁶ U.S. Environmental Protection Agency. 2016. "The Social Cost of Carbon."
<https://www3.epa.gov/climatechange/EPAactivities/economics/scc.html>.

D. APPLICATION REQUIREMENTS

Q. Mr. Burdge claims that the lack of detail regarding project siting and construction is a reason to reject the Company's CCN.¹⁷ Is this objection appropriately based on the CCN rules?

A. No. Mr. Burdge cites the rules for a CCN application, but fails to include the provision at 4 CSR 240 3.105(1)(B)2 requiring: "The plans and specifications for the complete construction project and estimated cost of the construction project **or a statement of the reasons the information is currently unavailable and a date when it will be furnished ...**"(emphasis added).

Q. Are the reasons for the lack of information on siting addressed in the CCN application and Stipulation?

A. Yes. The original CCN application states that Ameren Missouri does not have specific sites selected, but will provide information about the selected sites once they are known.¹⁸ Paragraphs 4, 5, and 8 of the Stipulation, as well as Appendix A, provide that the Company will use specified criteria to select a site and file information regarding the selection process. Signatories will evaluate this information and take any disputes about site eligibility to the Commission.¹⁹

Q. Does the Stipulation also address project costs?

A. Yes. Solar facility costs are individually capped at \$2.20 per watt and \$10 million in total across the project.²⁰

¹⁷ Burdge Rebuttal, page 10, lines 18-19.

¹⁸ EA-2016-0208, CCN Application, page 5.

¹⁹ EA-2016-0208, Stipulation, pages 2 and 3 and Appendix A.

²⁰ *Ibid*, page 2.

E. PROJECT DELAY

Q. Should Ameren Missouri delay this project while solar costs decline?

A. No. Nobody can predict with certainty that any specific cost declines will occur. If anything, solar costs could even increase if the CPP is upheld and construction costs increase as utilities rush to add carbon-free generation. However, even if predictions about cost declines were reliable, Mr. Burdge's contention that, "... the longer Ameren Missouri were to delay the Solar Partnership project, the less it would cost to build"²¹ would have the Commission perpetually delaying all utility solar projects; opposing parties would continually be able to claim that the Commission should wait for project approval until costs decline.

Q. Would delaying the start of this project until 2020 provide a tax benefit to the Company?

A. No, quite the opposite. Mr. Burdge states that the federal Business Energy Investment Tax Credit ("ITC") applicable to this project will decline in 2020 from 30 percent to 26 percent.²² In other words, the Company would receive a lower tax benefit if it delayed construction, a fact which renders Mr. Burdge's conclusion regarding cost declines from delaying construction even more questionable. A reduced ITC would increase total project costs, resulting in a higher revenue requirement that ratepayers could ultimately bear. OPC's witness in another recent CCN case stated that the solar project in question

²¹ Burdge Rebuttal, page 9, lines 3-4.

²² *Ibid*, lines 7-9.

1 at that time would not benefit from as much from the ITC if construction was delayed
2 until 2021.²³

3 **Q. Is the Company guaranteed to receive any additional Emission Rate Credits or**
4 **allowances under the CPP if it delays this project?**

5 A. No. In part, this possibility depends on the state plan chosen by Missouri (or implemented
6 for Missouri by the federal government) in the event the CPP is upheld. If, as is likely to
7 be the case, Missouri was to choose a “mass-based” compliance plan (i.e., compliance
8 based on the absolute amount of carbon dioxide emitted), then the Company would
9 demonstrate compliance using emissions allowances; unless the state sets aside
10 allowances for renewable energy projects and/or participates in the Clean Energy
11 Incentive Program (“CEIP”), emissions allowances may not be directly received for
12 renewable energy deployment (except indirectly to the extent that emissions from
13 generation portfolios are reduced). However, participation in the CEIP is optional on the
14 part of the state and is not a given. Again, Mr. Burdge seems to recommend that the
15 Commission wait to approve this project until conditions hypothetically change.

16 **F. LESSONS FROM PROJECT**

17 **Q. What are the bases of Mr. Burdge’s concerns with the ability of the Company to**
18 **learn from the project?**

19 A. Mr. Burdge contends that: there is little difference between Ameren Missouri’s O’Fallon
20 solar facility and this project; the Company has no methods for evaluating its learning

²³ Missouri Public Service Commission Case No. EA 2015-0256, *In the Matter of the Application of KCP&L Greater Missouri Operations Company for Permission and Approval of a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage Solar Generation Facilities in Western Missouri*, Transcript of Proceedings, vol. 2, February 11, 2016, pages 494-495, lines 24-25 and 1-6.

opportunities and key questions; the Company is interested mostly in marketing data, which will not benefit ratepayers; and that the Company has no written “lessons learned” from its O’Fallon facility.²⁴

Q. Are Mr. Burdge’s references to the O’Fallon facility relevant in these contexts?

A. No. The O’Fallon facility is a single, 5.7 MW installation, while the project proposed in this CCN will potentially consist of multiple customer-sited (i.e., distributed generation) installations totaling about 5 MW. In describing these facts, Mr. Burdge neglects the point that the facilities in this project will be cited on customer properties;²⁵ this will provide the Company with unique learning opportunities, such as best practices for coordinating with property owners in order to allow maintenance access. Company control over siting with respect to congestion mitigation and addressing local peak load are additional advantages to using a company-owned approach to customer-sited, small-scale generation.

Q. What does Mr. Burdge mean by a, “... methodology to evaluate what [the Company] learns?”²⁶

A. Mr. Burdge does not provide additional detail about what such a methodology could be. However, it should be noted that Appendix B of the Stipulation includes a section entitled, “Planned Activities to Gain Insights” which describes the responsibilities of Ameren Missouri’s division directors regarding learning opportunities.²⁷

²⁴ Burdge Rebuttal, pages 5-6, lines 17-20 and 1-13.

²⁵ Missouri Public Service Commission Case No. EA-2016-0208, *In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval of a Certificate of Public Convenience and Necessity Authorizing it to Offer a Pilot Distributed Solar Program and File Associated Tariff*, Direct Testimony of Michael W. Harding on Behalf of Union Electric Company d/b/a Ameren Missouri, April 27, 2016, page 2, lines 2-3.

²⁶ Burdge Rebuttal, page 6, line 7.

²⁷ EA-2016-0208, Stipulation, Appendix B, page 2.

1 **Q. Is there value to ratepayers in collecting marketing data with respect to this**
2 **project?**

3 A. Yes. Given the benefits of increasing solar energy deployment, it is beneficial to
4 ratepayers to determine what marketing practices (e.g., providing compensation to
5 program participants) will ensure the success of future projects.

6 **IV. COMMISSION DECISION IN EA-2015-0256**

7 **Q. Earlier this year, a solar facility CCN case involving KCP&L Greater Missouri**
8 **Operations Company (“GMO”) took place. Did OPC make similar arguments**
9 **against the GMO CCN application as it is making in this case?**

10 A. Yes. In EA-2015-0256, OPC witness Dr. Michael Proctor argued, in part, that GMO did
11 not need its proposed solar project for energy, capacity, or RES compliance purposes,²⁸
12 that delaying the project until 2020 would produce the lowest evaluated long-run cost,²⁹
13 and that GMO could receive a diminished ITC in 2020.³⁰ However – contrary to Mr.
14 Burdge’s argument in the present case that longer delays would result in lower costs for
15 Ameren Missouri’s proposal in a declining cost environment – Dr. Proctor noted that the
16 additional decline in the ITC in 2021 to 22 percent would make GMO’s project more
17 expensive than if construction were to occur in 2020.³¹

²⁸ EA 2015-0256, Transcript of Proceedings, vol. 2, pages 485-486, lines 13-25 and 1-15.

²⁹ *Ibid*, page 489, lines 1-7, page 499, lines 2-8, and pages 511-512, lines 18-25 and 1-3.

³⁰ *Ibid*, pages 494-495, lines 24-25 and 1-6, and page 512, lines 1-2.

³¹ *Ibid*, pages 494-495, lines 24-25 and 1-6.

Q. Did the Commission decide in favor of OPC's position in the GMO CCN case?

A. No. In its Report and Order, the Commission acknowledged that GMO's solar plant was not the least-cost option, that GMO did not need a solar plant for capacity purposes,³² and that it would cost less to build the plant in 2020;³³ however, the Commission also noted the small size of the project (and, subsequently, the relatively low cost reductions from such a delay),³⁴ GMO's learning opportunities from the plant,³⁵ current and future environmental compliance requirements,³⁶ the environmental benefits of solar energy, and the public interest served by solar energy.³⁷ Such findings would also apply to Ameren Missouri's proposal in the present case.

V. CONCLUSIONS

Q. Please summarize your conclusions and the positions of DE.

A. DE remains supportive of the Stipulation filed in this case, which provides an assurance that Ameren Missouri will expand the choices available to its customers. Mr. Burdge's testimony does not fairly portray the facts of this case and reiterates arguments rejected by the Commission in a prior case.

Q. Does this conclude your Surrebuttal Testimony in this case?

A. Yes.

³² Missouri Public Service Commission Case No. EA 2015-0256, *In the Matter of the Application of KCP&L Greater Missouri Operations Company for Permission and Approval of a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage Solar Generation Facilities in Western Missouri*, Report and Order, March 2, 2016, pages 8-9.

³³ *Ibid*, page 10.

³⁴ *Ibid*.

³⁵ *Ibid*, pages 10-11, 14, and 15.

³⁶ *Ibid*, page 14

³⁷ *Ibid*, page 15.