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Customer Savings Plan; Economic

Issues: Customer Savings

Development Considerations

Witness:

Martin Hyman

Sponsoring Party:

Missouri Department of Economic

Development - Division of Energy

Type of Exhibit:

Rebuttal Testimony

Case Nos.:

EO-2018-0092

MISSOURI PUBLIC SERVICE COMMISSION

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EO-2018-0092

REBUTTAL TESTIMONY

OF

MARTIN R. HYMAN

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

DIVISION OF ENERGY

Jefferson City, Missouri February 7, 2018

> DED Exhibit No. 300 Date 5-09-18 Reporter KF File No. 50-208-0092

BEFORE THE PUBLIC SERVICE COMMISSION OF THE STATE OF MISSOURI

In the Matter of the App Empire District Electric Approval of Its Custome	Company for))	<u>File No. EO-2018-0092</u>	
AFFIDAVIT OF MARTIN HYMAN					
STATE OF MISSOURI)					
COUNTY OF COLE)	SS			
Martin R. Hyman, o	f lawful age, being d	uly sworn on hi	is oath,	deposes and states:	
1. My name is Martin I	1. My name is Martin R. Hyman. I work in the City of Jefferson, Missouri, and I am employed				
by the Missouri Dep	by the Missouri Department of Economic Development as a Planner III, Division of Energy.				
2. Attached hereto and	d. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf				
of the Missouri Depa	artment of Economic	Development -	– Divisi	on of Energy.	
3. I hereby swear and a	. 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.					
]Mw	T	Martin R. Hyman	
Subscribed and sworn to before me this 6th day of February, 2018.					
LAURIE ANN ARNOLD Notary Public - Notary Sea State of Missouri Commissioned for Callaway Co My Commission Expires: April 26 Commission Number: 168087	unty	Na	July 1	Und And Cl. Notary Public	
My commission expires;	4/24/20				

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I. INTRODUCTION

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- 2 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. Please describe your educational background and employment experience.
 - A. In 2011, I graduated from the School of Public and Environmental Affairs at Indiana University in Bloomington with a Master of Public Affairs and a Master of Science in Environmental Science. There, I worked as a graduate assistant, primarily investigating issues surrounding energy-related funding under the American Recovery and Reinvestment Act of 2009. I also worked as a teaching assistant in graduate school and interned at the White House Council on Environmental Quality in the summer of 2011. I began employment with DE in September of 2014. Prior to that, I worked as a contractor for the U.S. Environmental Protection Agency to coordinate intra-agency modeling discussions.
 - Q. Have you previously filed testimony before the Missouri Public Service Commission ("Commission") on behalf of DE or any other party?
 - A. Yes. Please see Schedule MRH-Reb1 for a summary of my case participation.

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II. PURPOSE AND SUMMARY OF TESTIMONY

- Q. What is the purpose of your Rebuttal Testimony in this proceeding?
- A. The purpose of my testimony is to provide general support for The Empire District Electric Company's ("Empire" or "Company") proposed "Customer Savings Plan," as well as to provide recommendations to address some of the economic development impacts of the Customer Savings Plan. DE does not take a position on Empire's requested accounting treatment regarding the Asbury plant or on the use of tax equity financing.
- 8 Q. What did you review in preparing this testimony?
- 9 A. I reviewed the Company's filings in this case, as cited below, in addition to other materials.
 - III. OVERVIEW OF COMPANY PROPOSAL
 - Q. Please describe the Company's proposed Customer Savings Plan.
 - A. Empire proposes to add as much as 800 MW of wind generation in or near its service territory using a tax equity partnership structure, as well as to retire its Asbury coal-fired generation facility to avoid environmental compliance investments; these investments in Asbury are related to requirements under the U.S. Environmental Protection Agency's ("EPA") coal combustion residuals ("CCR") rule and Effluent Limitations Guidelines ("ELG"). According to the Company, the Customer Savings Plan will allow the Company to partake in Production Tax Credits on a timely basis and save customers \$325 million

¹ Missouri Public Service Commission Case No. EO-2018-0092, In the Matter of the Application of The Empire District Electric Company for Approval of Its Customer Savings Plan, Direct Testimony of Christopher D. Krygier, October 31, 2017, pages 5-6, lines 14-16 and 1-5.

² Missouri Public Service Commission Case No. EO-2018-0092, In the Matter of the Application of The Empire District Electric Company for Approval of Its Customer Savings Plan, Direct Testimony of James McMahon, October 31, 2017, Direct Attachment JM-2, page 3.

over 20 years,³ based on Company modeling.⁴ This modeling showed savings from the use of tax equity financing, as well as from avoiding the fuel and operations and maintenance costs involved in operating the Asbury plant⁵ and from obviating the need for upgrades related to the CCR rule and the ELG.⁶ As part of its filing, Empire requests the creation of a regulatory asset for the undepreciated balance remaining on the Asbury facility.⁷

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Q. How did Empire model demand-side management ("DSM") programs when evaluating options for its Customer Savings Plan?

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A. The Company included a DSM portfolio in all of the plans that it analyzed. Empire characterizes the modeled DSM as the "reasonable achievable potential" (i.e., the Realistic Achievable Potential, or "RAP") portfolio, as well as the portfolio adopted following Empire's most recent rate case, ER-2016-0023.9

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Q. What rate impacts are projected from the Customer Savings Plan?

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rates on average over a 20-year period; in fact, all classes would experience some degree

For residential customers in Missouri, Empire estimates a \$0.0093 per kWh decrease in

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of rate impact decrease on average over the same period of time. ¹⁰ Empire's testimony does

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indicate a slight increase in rate impacts in 2020 and 2021 for most classes (excluding Feed

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Mill and Grain Elevator Service in 2021), as well as a slight increase in 2022 for

Miscellaneous Service customers and slight increases in 2022 and 2023 for transmission

³ EO-2018-0092, Krygier Direct, page 5, lines 11-13.

⁴ See EO-2018-0092, McMahon Direct.

⁵ *Ibid*, pages 38-39, lines 9-14 and 1-2.

⁶ Ibid, A Direct Attachment JM-2, pages 2-3.

⁷ EO-2018-0092, Krygier Direct, page 6, lines 19-20 and page 7, lines 7-9.

⁸ EO-2018-0092, McMahon Direct, page 20, lines 3-5.

⁹ Ibid, page 24, lines 9-11.

¹⁰ Missouri Public Service Commission Case No. EO-2018-0092, In the Matter of the Application of The Empire District Electric Company for Approval of Its Customer Savings Plan, Direct Testimony of Gregory E. Macias, October 31, 2017, page 12, line 1.

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customer Praxair, Inc.;¹¹ however, the Company has indicated that it is not certain if a rate increase would occur due to the Customer Savings Plan.¹²

Q. Are there any reliability concerns associated with the Customer Savings Plan?

- A. No, according to the Company. 13 Empire states that it, "... expects the accredited capacity for the new wind generation to replace a large part of the capacity lost if Asbury is retired," 14 that the Company has other types of resources that it can dispatch, 15 and that the Southwest Power Pool's Integrated Marketplace also supports reliable service. 16 In fact, the Southwest Power Pool has demonstrated the capability to reliably adjust to large amounts of wind energy on its system. 17
- Q. You noted that the Asbury plant would need additional investment to comply with EPA's CCR rule if it were to continue running. Has the EPA proposed the reconsideration of parts of that rule?
- A. Yes, although the EPA may not fully finish its reconsideration before December of 2019.¹⁸

 Unless the rule is stayed, it could still apply to the Asbury plant, as Empire states that, "...

 Asbury will be prohibited from placing any CCR in its existing surface impoundments after

¹¹ Ibid, Direct Attachment GEM-2, page 1.

¹² Missouri Public Service Commission Case No. EO-2018-0092, *In the Matter of the Application of The Empire District Electric Company for Approval of Its Customer Savings Plan*, Empire Response to Joint Motion Requesting Local Public Hearing, January 3, 2018, page 4.

¹³ Missouri Public Service Commission Case No. EO-2018-0092, In the Matter of the Application of The Empire District Electric Company for Approval of Its Customer Savings Plan, Direct Testimony of Blake A. Mertens, October 31, 2017, page 17, lines 1-3.

¹⁴ *Ibid*, page 16, lines 21-23.

¹⁵ *Ibid*, page 17, lines 3-7.

¹⁶ Ibid, lines 7-10.

¹⁷ Southwest Power Pool. 2017. "SPP sets North American record for wind power." February 13. https://www.spp.org/about-us/newsroom/spp-sets-north-american-record-for-wind-power/.

¹⁸ United States Court of Appeals for the District of Columbia Circuit Docket No. 15-1219, *Utility Solid Waste Activities Group, et al., Petitioners, v. United States Environmental Protection Agency, et al., Respondents*, Status Report, November 15, 2017, pages 7-8.

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April 2019." ¹⁹ Given the time and cost involved in the necessary environmental compliance upgrades before the deadline – and the time by which Empire must act on wind tax incentives²⁰ – the Company cannot delay a decision on the Customer Savings Plan based on an uncertain regulatory outcome.

Q. Has the EPA postponed implementation of the ELG?

- A. Yes. The EPA postponed some of the initial compliance dates under the ELG until late 2020.²¹ However, although Empire indicates in its filing that compliance with the ELG would have required an investment of approximately \$13.0 million, ²² that investment would also contribute to compliance with the CCR rule; ²³ as noted above, EPA may not finish reconsidering the CCR rule in time to affect Empire's investment decisions.
- Q. Did Empire consider keeping the Asbury plant online and acquiring new wind resources?
- A. Yes; however, under the base conditions analyzed by the Company, keeping Asbury online and acquiring new wind resources would cost \$75 million more than building the wind resources while retiring Asbury.²⁴

¹⁹ EO-2018-0092, Mertens Direct, page 14, lines 12-13.

²⁰ *Ibid*, page 15, lines 1-10.

²¹ U.S. Environmental Protection Agency. 2017. *Effluent Guidelines*. "Steam Electric Power Generating Effluent Guidelines – 2015 Final Rule." https://www.epa.gov/eg/steam-electric-power-generating-effluent-guidelines-2015-final-rule.

²² EO-2018-0092, McMahon Direct, Direct Attachment JM-2, page 20.

²³ Response to Data Request DED-DE No. 207.

²⁴ EO-2018-0092, McMahon Direct, page 37, lines 5-8.

A.

IV. DIVISION OF ENERGY'S RESPONSE

- Q. Does DE support the Company's proposal?
- A. Generally, yes, subject to the recommendations described below. Empire's proposal can reduce costs to customers, reduce reliance on out-of-state coal use, provide environmental benefits, and, under the right circumstances, support state and local economic development. DE's recommendations can support better economic outcomes for areas near the Asbury plant in the event that the Commission approves the Company's Customer Savings Plan. DE does not take a position on Empire's requested accounting treatment regarding the Asbury plant or on the use of tax equity financing.
- Q. Should Empire keep the Asbury plant open because of recent environmental compliance investments?
 - Not necessarily. If the use of the Asbury facility does not result in lower costs to customers, it is difficult to justify keeping the plant in operation. Such previous investments in environmental compliance represent "sunk costs" in economic terms, meaning that they are not relevant to future decision-making about the Asbury plant's operations. Regardless of whether these costs may be recovered through rates in the future, Empire should not keep the Asbury facility operating if doing so cannot be justified on an economic basis, nor if its continued operations require additional capital investments related to environmental compliance. As noted above, Empire has stated that keeping the Asbury facility in service along with the construction of new wind resources would not result in the lowest cost portfolio under base conditions; the lowest cost option involves the construction of wind and the retirement of the Asbury facility.

Q. Is DE's only interest in Empire's proposal that it provides the least-cost option?

A. No. While customer rate and bill impacts are important, it is also crucial that the Company's ratepayers receive value for their contributions to Empire's system investments. The Company's acquisition of additional wind energy (and the retirement of the Asbury facility) is not only the least-cost option, but the choice that provides customers with increased portfolio diversification, additional environmental benefits, and, under certain circumstances, economic benefits. These economic benefits will result from reduced revenue requirements (and rates) paid by Empire's customers, as well as from the construction and operation of wind facilities in Missouri (if such facilities are, in fact, constructed in Missouri). The plant's closure provides an opportunity to redeploy or retrain employees in the energy jobs of the future, potentially using skills that they already have.

Q. How will the retirement of the Asbury facility have positive environmental impacts?

A. Retiring the Asbury facility will eliminate the emissions associated with the plant's operation, such as carbon dioxide, sulfur oxides, nitrogen oxides, particulate matter, volatile organic compounds, carbon monoxide, ammonia, and mercury and other air toxics, 25 thereby improving air quality in the area of the plant.

In addition, the Missouri Department of Natural Resources states on a list of impaired waters under the Clean Water Act that the Asbury facility is a source of pollution for Blackberry Creek.²⁶ The retirement of the Asbury plant could contribute to improved water quality in this creek.

²⁵ See response to Data Request DED-DE No. 201 and the accompanying "Attachment DE 201_2016 ASBURY FIO."

²⁶ Missouri Department of Natural Resources. 2018. "2018 Section 303(d) Listed Waters." https://dnr.mo.gov/env/wpp/waterquality/303d/docs/2018-303d-list-cwc-approved-1-4-2018.pdf. Page 1.

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- Q. Generally, are there business customers and localities that are interested in additional renewable energy use?
- Yes, The Missouri Comprehensive State Energy Plan ("CSEP") notes the emergence of A. corporate interest in renewable energy with the creation of the Corporate Renewable Energy Buyers' Principles ("Buyers' Principles"). These Buyers' Principles have been signed by Walmart, Target, Bloomberg, General Motors, IKEA, Procter & Gamble, Intel, Sprint, and many other companies. The CSEP states that, "Efforts to help Missouri utilities further diversify their portfolios and increase options for renewable power purchasing coupled with low energy prices will ensure our businesses are well positioned to meet future competition."27 The CSEP further notes that, "As major companies adopt corporate responsibility and renewable purchasing requirements, Missouri businesses will need to be prepared to respond to customer demands to remain competitive. Even government entities such as local cities with emissions reduction targets and the U.S. Department of Defense have established sustainability goals."28 As recently as August of 2016, support for renewable energy was communicated through letters from interested companies (General Mills, General Motors, Kellogg's, Nestle, Procter & Gamble, Target, Unilever, General Electric, and Owens Corning).²⁹

²⁷ Missouri Department of Economic Development – Division of Energy. 2015. *Missouri Comprehensive State Energy Plan*. https://energy.mo.gov/sites/energy/files/MCSEP.pdf. Page 178. https://energy.mo.gov/sites/energy/files/MCSEP.pdf. Page 178. https://energy.mo.gov/sites/energy/files/MCSEP.pdf. Page 178.

²⁹ 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, Operate, Control, Manage 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.

Rebuttal Testimony of Martin R. Hyman Case No. EO-2018-0092

In the Company's case, Empire has attempted to contact representatives of several companies, in addition to meeting with legislators and other government officials. The Company has stated that, "Generally speaking, the feedback for the proposed projects has been well received." 30

Based on the preceding discussion, increasing the Company's use of renewable energy generation will show current and prospective business customers that Empire's service territory is moving towards providing renewable energy options. This transition will also support future local decisions to increase the use of renewable energy.

Q. Are other utilities increasing their investments in renewable energy?

A. Yes. Kansas City Power and Light Company ("KCP&L") and KCP&L Greater Missouri Operations Company ("GMO") have both announced accelerated retirement of fossil fuel-fired generation units due to lower net present value of revenue requirement results. 31, 32

The preferred plan in Union Electric Company d/b/a Ameren Missouri's ("Ameren Missouri") most recent triennial Integrated Resource Plan filing includes the addition of 700 MW or more of wind generation in three years, as well as 100 MW of solar generation over ten years. 33 Although the 700 MW wind addition is characterized as meeting Renewable Energy Standard requirements and, "... and contribut[ing] toward the

³⁰ Response to Data Request MECG 1-20.

³¹ Missouri Public Service Commission Case No. EO-2017-0229, In the Matter of the 2017 Integrated Resource Plan Annual Update for Kansas City Power & Light Company, Kansas City Power & Light Company (KCP&L) Integrated Resource Plan 2017 Annual Update, June 1, 2017, pages 67-68.

³² Missouri Public Service Commission Case No. EO-2017-0230, In the Matter of the 2017 Integrated Resource Plan Annual Update for KCP&L Greater Missouri Operations Company, KCP&L Greater Missouri Operations Company (GMO) Integrated Resource Plan 2017 Annual Update, June 1, 2017, pages 67-68.

³³ Missouri Public Service Commission Case No. EO-2018-0038, In the Matter of Ameren Missouri's 2017 Utility Resource Filing Pursuant to 4 CSR 240 – Chapter 22, 2017 Integrated Resource Plan, 1. Executive Summary, September 25, 2017, page 9.

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continued transition of the generation fleet,"³⁴ Ameren Missouri also states that, "The potential exists to add even more wind generation in the coming years as a result of improving technology and economics, as well as renewable energy initiatives with large customers."³⁵ In fact, Ameren Missouri recently submitted a proposed tariff to allow large customers to purchase wind energy,³⁶ and filed to intervene in the present Empire case.³⁷ KCP&L and GMO filed rate cases (Case Nos. ER-2018-0145 and ER-2018-0146, respectively) in which they propose renewable energy and subscriber solar initiatives. City Utilities of Springfield recently added enough wind energy to its portfolio to meet 25 percent of its electric energy needs³⁸ at a lower cost than the utility's other purchased power.³⁹ Utilities throughout Missouri are exploring opportunities to increase the use of renewable energy.

Q. Are the DSM programs in Empire's filing accurately characterized?

A. No. DE disagrees with Empire's characterization of the DSM programs stipulated to in ER-2016-0023. The DSM programs in that stipulation were a result of settlement negotiations (as acknowledged by the Company), 40 not a RAP program portfolio analyzed by the utility. Although DE disagrees with Empire's characterization of its DSM portfolio,

³⁴ Ibid.

³⁵ Ibid, page 2.

³⁶ Missouri Public Service Commission Case No. ET-2018-0063, *In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of 2017 Green Tariff*, Application of Union Electric Company d/b/a Ameren Missouri for Approval of Its Renewable Choice Program and for Accounting Authority, November 27, 2017.

³⁷ Missouri Public Service Commission Case No. EO-2018-0092, In the Matter of the Application of The Empire District Electric Company for Approval of Its Customer Savings Plan, Ameren Missouri's Application for Intervention, November 22, 2017.

³⁸ City Utilities of Springfield, MO. "The New Frontier: Wind Power." January 31, 2017. https://www.cityutilities.net/2017/01/31/frontier-wind/.

³⁹ Brosseau, Kadee. 2016. "More wind energy will soon power Springfield." *KY3*. September 25. http://www.ky3.com/content/news/More-wind-power-will-soon-power-Springfield-394747411.html.

⁴⁰ EO-2018-0092, McMahon Direct, page 25, lines 6-9.

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DE supports Empire's Customer Savings Plan proposal, along with the suggestions stated below; the proposal could provide many benefits to customers.

V. ADDITIONAL ECONOMIC DEVELOPMENT CONSIDERATIONS

Q. How does Empire plan to address the current employees at the Asbury facility?

A. As of the time of Empire's filing, there were 55 employees at the facility. 41 The Company has indicated that these employees will not be involuntarily terminated, will be offered other employment at Empire (but may need to relocate), and will receive training opportunities. 42 However, employees that relocate will not be compensated for the costs of relocation, and employees could experience salary decreases in their new positions. 43

Q. What is the potential economic development impact of reassigning these employees?

A. The relocation of up to 55 employees could have impacts on area communities, since these employees spend part of their earnings in local economies. The employees could also be negatively impacted by having to spend money for relocation, as well as by potential salary decreases.

Q. Are there other potentially negative economic development impacts that would result from retiring the Asbury plant?

A. Yes. The Company pays property taxes on its assets. While the Company states as part of a data request response that, "Property taxes assessed/paid to the State of Missouri and its subdivisions are not necessarily specific to individual properties for investor owned utilities," Empire estimates that Asbury's assets accounted for approximately \$2,759,000

⁴¹ Missouri Public Service Commission Case No. EO-2018-0092, In the Matter of the Application of The Empire District Electric Company for Approval of Its Customer Savings Plan, Direct Testimony of David R. Swain, October 31, 2017, page 14, line 21.

⁴² Response to Data Request DED-DE No. 200 (Public).

⁴³ Response to Data Request DED-DE No. 200.1.

of the Company's 2016 property taxes. The Company also indicates that, " income taxes
cannot be distinctly identified for purposes of the Asbury plant operations," that the
Company, " submit[s] State withholding taxes as it relates to personal deductions of
employees," and that, "Empire remitted approximately \$19,256 in use taxes to the State
of Missouri during 2017."44

The loss of these tax revenues will affect state and local budget decisions. For example, to the extent that school districts rely on property taxes from the plant, schools near the plant may receive less revenue. This could be somewhat offset by any changes in population in these school districts due to the closure of the Asbury plant.

- Q. Does DE have any suggestions related to Empire's proposal and its potential economic development impacts on local communities?
- A. Yes. To address the concerns noted above, DE suggests actions such as the following:
 - 1. Empire could pay for the full cost of employee relocation if an employee relocates within the state of Missouri to continue working for Empire or its affiliates;
 - The Company should strive to provide displaced employees with opportunities to enter
 positions at Empire or its affiliates with no reduction in salaries, or, in the alternative,
 should offer retraining for another career;
 - Empire could work with the Division of Workforce Development to sponsor retraining
 opportunities for plant employees that seek employment outside of Empire or its
 affiliates, as well as to residents of the communities affected by the Asbury plant
 closure;

⁴⁴ Initial response and supplemental response to Data Request DED-DE No. 205.

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- Empire could provide a one-time contribution to local school districts to both mitigate
 the effects of lost property tax revenues and allow these districts to revise their budgets;
 and,
- 5. The Company should pursue available federal funding opportunities for assisting communities surrounding coal-fired power plants, to the extent applicable.

VI. CONCLUSIONS

- Q. Please summarize your conclusions and the positions of DE.
- A. DE generally supports the Company's proposed Customer Savings Plan, although DE takes no position as to the accounting treatment of the remaining value of Asbury's assets or on the use of tax equity partnership financing. DE also recommends certain actions that would mitigate potential negative economic impacts due to the Asbury plant's closure.
- Q. Does this conclude your Rebuttal Testimony in this case?
- 13 A. Yes.

Case Involvement of Martin R. Hyman

Case No.	Utility	Case Type	Testimony Round(s)	Issue(s)
EO-2015-0055	Ameren Missouri	MEEIA	Rebuttal, Surrebuttal, Rebuttal to Supp. Direct	Program modifications, settlement
ER-2014-0370	KCP&L	Rate	Rebuttal, Surrebuttal	Residential rate design, demand response rates, Clean Charge Network
WR-2015-0301 (SR 2015-0302)	MAWC	Rate	Direct, Rebuttal, Surrebuttal	Rate design, demand-side efficiency
EA-2015-0256	GMO	CCN	Live	Tartan criteria
ER-2016-0023	Empire	Rate	Direct, Rebuttal, Surrebuttal	Residential rate design, DSM
EM-2016-0213	Empire/Liberty	Merger	Rebuttal, Surrebuttal	Energy efficiency, renewable energy, CHP, microgrids
ER-2016-0156	GMO	Rate	Direct, Rebuttal, Surrebuttal	Residential rate design, demand response rates, DSM, AMI, solar costs
EA-2016-0208	Ameren Missouri	CCN	Rebuttal, Surrebuttal	Settlement
ET-2016-0246	Ameren Missouri	Tariff	Rebuttal, Surrebuttal	EV-related policy and rate design considerations
ER-2016-0285	KCP&L	Rate	Direct, Rebuttal, Surrebuttal	Residential rate design, Commission questions, value of solar, EVs/Clean Charge Network, DSM
ER-2016-0179	Ameren Missouri	Rate	Direct, Rebuttal	Residential rate design, Commission questions, value of solar, DSM
WU-2017-0296	MAWC	AAO	Rebuttal (for DED)	Lead service line replacement
GR-2017-0215 and GR-2017-0216	Spire	Rate	Direct, Rebuttal, Surrebuttal	Revenue Stabilization Mechanism, energy efficiency, residential rate design
WR-2017-0285	MAWC	Rate	Direct, Rebuttal	Residential rate design, Revenue Stabilization Mechanism, inclining block rates, lead service line replacement
EM-2018-0012	GPE	Merger	Rebuttal	Economic development
EO-2015-0055	Ameren Missouri	MEEIA	Rebuttal	Pre-pay

As used above, the following terms are referred to by acronyms, abbreviations, or short-hand notation:

Accounting Authority Order	AAO		
Union Electric Company d/b/a Ameren Missouri	Ameren Missouri		
Automated Metering Infrastructure	AMI		
Certificate of Public Convenience and Necessity	CCN		
Department of Economic Development	DED		
Demand-Side Management	DSM		
Combined Heat and Power	CHP		
The Empire District Electric Company	Empire		
Electric Vehicle	EV		
KCP&L Greater Missouri Operations Company	GMO		
Great Plains Energy Incorporated	GPE		
Liberty Utilities	Liberty		
Kansas City Power & Light Company	KCP&L		
Missouri Energy Efficiency Investment Act	MEEIA		
Missouri-American Water Company	MAWC		
Spire Missouri Inc. d/b/a Spire	Spire		