Exhibit No.:	
Issues:	Energy Efficiency Programs
Witness:	Alex Schroeder
Sponsoring Party:	Missouri Department of Economic Development - Division of Energy
Type of Exhibit:	Direct Testimony
Case No.:	ER-2014-0351

MISSOURI PUBLIC SERVICE COMMISSION

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-2014-0351

DIRECT TESTIMONY

OF

ALEX SCHROEDER

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

DIVISION OF ENERGY

Jefferson City, Missouri
January 29, 2015

(Revenue Requirement)

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of The Empire District Electric Company for Authority To File Tariffs Increasing Rates for Electric Service Provided to Customers In the Company's Missouri Service Area	)))))	ER-2014-0351

AFFIDAVIT OF ALEX SCHROEDER

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

Alex Schroeder, of lawful age, being duly sworn on his oath, deposes and states:

1. My name is Alex Schroeder. 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 Direct 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.

Alex Schroeder

Subscribed and sworn to before me this 28th day of January, 2015.

KAY A. JOHANNPETER NOTARY NOTARY PUBLIC SEAL STATE OF MISSOURI

Notary Public

My commission expires:

KAY A. JOHANNPETER
Notary Public - Notary Seal
STATE OF MISSOURI
Cole County
My Commission Expires: Aug. 4, 2015
Commission # 11551967

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Alex Schroeder. 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 - Senior Energy Policy Analyst.

Q. Please describe your educational background and employment experience.

A. In 2008 I graduated from the University of Evansville in Evansville, Indiana with a B.S. in business economics. In 2009 I obtained an M.A. in economics from Fordham University in New York City. And in 2014, I graduated from the University of Missouri - Columbia with a Ph.D. in agricultural economics.

I have been employed by DE since January, 2014. Prior to that, I was employed by the Manhattan Institute in Washington, D.C. as a research associate. During my doctoral studies, I was employed on a part-time basis by the Department of Personal Financial Planning and the Department of Agricultural and Applied Economics as a graduate assistant and a research assistant, respectively.

Q. Have you previously filed testimony before the Missouri Public Service Commission on behalf of DE or any other party?

A. Yes. I recently filed both direct and rebuttal testimony on behalf of DE in Ameren Missouri's current rate case (ER-2014-0258).

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your direct testimony in this proceeding?

A. The purpose of my testimony is to encourage the maintenance of The Empire District Electric Company's (henceforth "Empire" or "Company") energy efficiency programs, even if the Company is unable get a MEEIA program in place. Towards that end, I will

a) Briefly highlight the value of utility-sponsored energy efficiency generally and Empire's programs specifically;

b) Explain how disrupting the continuity of these programs, or discontinuing them outright, would harm the Company, its ratepayers, and other stakeholders; and

c) Point out that maintaining a portfolio of efficiency programs until a MEEIA plan is in place is not inconsistent with any regulations.

III. THE BENEFITS OF ENERGY EFFICIENCY PROGRAMS

Q. Why are energy efficiency programs important?

A. There are a variety of economic, environmental, and security benefits associated with energy efficiency programs. The economic benefits of efficiency programs stem from the simple fact that the less energy one must to purchase to meet a given end, the more money one will have for other purposes. This economic benefit is more salient for lower-income households, who spend a greater percentage of their incomes on energy. More disposable income is a value in and of itself, but that marginal income also creates jobs. As the American Council for an Energy-Efficient Economy (ACEEE) writes, "[w]hen a business or household lowers their energy costs, they are then able to spend that money

elsewhere in the economy, resulting in additional jobs."[1] While the nature of jobs created in this way will depend on individual consumption patterns, the fact is that efficiency "frees up" wealth without undermining our ability to meet our energy needs. And obtaining more output for a given input in any economic realm is the fundamental way people - and their societies - become wealthier.

Further, the discussion above leaves aside the jobs - which tend to be local and relatively well-paying - that directly result from an energy efficiency investment, which "creates more jobs than an equivalent investment in either the economy on average or in utility sector [sic] and fossil-fuels."[2] The economic benefits of efficiency are straightforward: It is a means by which we do more with less and thereby create real wealth.

Regarding environmental considerations, increasing the efficiency by which we use energy renders it possible to get more out of our supply-side resources; this, in turn, reduces the need to build additional power plants.[3] The extent to which efficiency initiatives improve our environment is directly related to the nature of those supply-side resources. And according to the EIA, 83% of Missouri's electricity generation is powered by coal, making our state one of the most coal-reliant in the country.[4] Burning coal constitutes a primary source of carbon dioxide emissions in the United States; further, it is a driver of sulfur dioxide, nitrogen oxides, particulate matter, and mercury, all of which have deleterious effects on human health and the natural environment.[5] While Missouri's investor-owned utilities are working to diversify their supply-side portfolios, our state's

[1] American Council for an Energy-Efficient Economy, "Energy Efficiency and Economic Opportunity", September 6th, 2012. Article authored by Eric Mackres. (http://www.aceee.org/blog/2012/09/energy-efficiency-and-economic-opport). Accessed January 22nd, 2015.
[2] Ibid.
[3] National Action Plan for Energy Efficiency, "Energy Efficiency: Reduce Energy Bills, Protect the Environment". (http://www.epa.gov/cleanenergy/documents/suca/consumer_fact_sheet.pdf). Accessed January 22nd, 2015.
[4] EIA, "Missouri: Profile Overview", March 27th, 2014. (http://www.eia.gov/state/?sid=MO). Accessed January 22nd, 2015.
[5] Union of Concern Scientists, "Coal Power: Air Pollution". (http://www.ucsusa.org/clean_energy/coalvswind/c02c.html). Accessed January 22nd, 2015.

continued dependence on coal means that the potential environmental benefits of efficiency are considerable. And aside from these benefits, efficiency can also play an important role in facilitating compliance with current and future environmental regulations (e.g., the forthcoming Clean Air Act 111(d) standards).

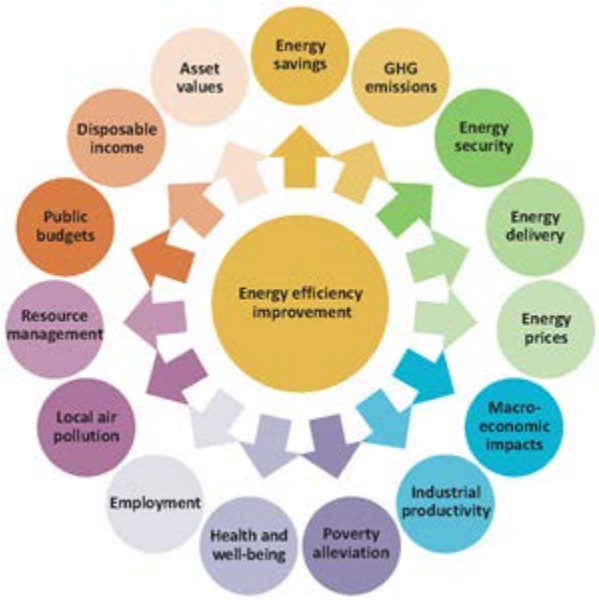
There are also significant security benefits associated with energy efficiency. According to the EPA, energy efficiency is a way for utilities to diversify their resource portfolios and it enables them to "hedge against uncertainty associated with fluctuating fuel prices and other risk factors."[6] The same logic holds at the consumer level as well: The less energy a consumer requires to satisfy one's needs, the less vulnerable he or she is to energy supply and/or price shocks. There are a number of domestic factors that could precipitate such a shock, including natural disasters, unforeseen changes in policy, or technological change. And to the extent we obtain our energy resources from abroad, our energy security is also a function of geopolitical phenomena. Energy efficiency cannot completely overcome these risks, but it can render them less detrimental when they actualize.

The benefits of energy efficiency are not limited to the environmental, economic, and security realms. The forgoing is offered as a brief survey of how efficiency initiatives improve our quality of life as both producers and consumers. To put this survey in context, a recent report sponsored by the International Energy Agency identified "at least fifteen distinct benefits [associated with energy efficiency], from health and well-being to

[6] EPA, "Energy Efficiency: Benefits of Energy Efficiency". (http://epa.gov/statelocalclimate/local/topics/energy-efficiency.html). Accessed January 22nd, 2015.

improved industrial productivity."[7] [8] Figure 1 below illustrates how these benefits can be categorized.

Figure 1: The Multiple Benefits of Energy Efficiency[9]



Q. What is the benefit of having *utility-sponsored* efficiency programs specifically?

A. It is true that individuals can adopt efficiency measures of their own accord, without the involvement of a utility. However, in sponsoring and administering energy efficiency programs, utilities serve three important functions.

The first is simply that utilities provide information. Customers unfamiliar with energy efficiency may not know what measures to undertake in order to maximize efficiency gains. This information is often context-specific and may be difficult to acquire and/or understand. By offering a suite of programs, utilities communicate various means by

[7] International Energy Agency, "About the Multiple Benefits of Energy Efficiency". (http://www.iea.org/topics/energyefficiency/energyefficiencyiea/multiplebenefitsofenergyefficiency/). Accessed January 22nd, 2015.

[8] For a comprehensive overview of energy efficiency's diverse benefits, see Regulatory Assistance Project, "Recognizing the Full Value of Energy Efficiency", September 2013. Paper's lead authors were Jim Lazar and Ken Colburn. (http://www.raponline.org/document/download/id/6739). Accessed January 27th, 2015.

[9] Figure obtained from page 20 of the Executive Summary in International Energy Agency's *Capturing the Multiple Benefits of Energy Efficiency*. Released on September 9th, 2014. (http://www.iea.org/W/bookshop/475-Capturing_the_Multiple_Benefits_of_Energy_Efficiency). Accessed January 29th, 2015.

which customers can focus their efforts to reduce energy consumption. This is an important role, and one that is easy to overlook for those employed in the energy field (i.e., those familiar with efficiency measures).

The second pertains to what I refer to as the "time-preference barrier" to energy efficiency. Undertaking efficiency measures involves spending money today to realize savings in the future. Many customers may discount the future to a degree such that future energy savings do not outweigh the requisite expenditures today; these customers will not adopt efficiency measures independently. By sponsoring programs (e.g., providing rebates for more efficient light bulbs), utilities can reduce the upfront expenditure burden associated with undertaking efficiency measures, and thereby incent more efficiency than would naturally occur.

Third, with these programs utilities are essentially correcting a market failure. That is, there are positive externalities associated with efficiency (e.g., a cleaner environment, job creation, security, etc.) that may not be "internalized" by utility customers. In other words, customers may be undertaking a level of efficiency below that which is optimal. By sponsoring programs, utilities incent customers to undertake more efficiency than they otherwise would. This brings the private benefit of participating in a given efficiency program in line with the true benefits of such. At this new, optimal level, more efficiency is exchanged in the market, which corrects the market failure and brings it to equilibrium.[10]

[10] In view of the costs associated with sponsoring energy efficiency programs, it is fitting to mention here that efficiency is presently the cheapest way to meet our energy needs. See, for example, Midwest Energy News, "Studies: Efficiency Still the Cheapest Energy Resource", April 4th, 2014. Article authored by Karen Uhlenhuth. (http://www.midwestenergynews.com/2014/04/04/studies-efficiency-still-the-cheapest-energy-resource/). Accessed January 26th, 2015.

IV. EMPIRE'S ENERGY EFFICIENCY PROGRAMS

Q. What energy efficiency programs does Empire currently offer and how have they performed?

A. Table 1 below lists Empire's current efficiency programs, as well as the cumulative energy and demand savings associated with them from the beginning of 2010 through the third quarter of 2014.

Table 1: Empire's Energy Efficiency Cumulative Program Performance, Q1 2010 - Q3 2014[11]

Program	Energy Savings (kWh)	Demand Savings(kW)
Energy Star New Homes	1,433,850	513
High Efficiency AC Rebate	2,694,459	1,830
Home Performance with Energy Star	578,400	402
Low-Income New Homes	3,804	2
Low-Income Weatherization	1,529,286	341
Building Operator Certification	N/A	N/A
Commercial and Industrial Rebate	20,041,450	3,425
TOTAL	26,281,249	6,513

Regarding the budgets and expenditures for these programs, the cumulative figures from Q1 2010 - Q3 2014 indicate that all programs (with the exception of the C&I Rebate Program) have come in under budget. Table 2 below provides an overview of these figures.

Table 2: Empire's Energy Efficiency Cumulative Budgets and Expenditures, Q1 2010 - Q3 2014[12]

Program	Budget ($)	Expenditures ($)	Variance ($)
Energy Star New Homes	1,516,900	760,804	756,096
High Efficiency AC Rebate	1,812,000	1,016,447	795,553
Home Performance with Energy Star	526,750	247,680	279,070
Low-Income New Homes	49,875	3,444	46,431

[11] These data were obtained from Empire's response to data request DED DR 011. The performance numbers were calculated by taking the sum of "Estimated Incremental Annual Energy [or Demand] Savings" for each quarter over the time period Q1 2010 - Q3 2014.

[12] These data were obtained from Empire's response to data request DED DR 011. Cumulative Budget and expenditure figures were calculated by taking the sum of the "Budget" and "Expenditure" amounts for each quarter over the time period Q1 2010 - Q3 2014.

Low-Income Weatherization	1,075,543	901,991	173,551
Building Operator Certification	166,225	56,566	109,659
Commercial and Industrial Rebate	1,965,000	2,169,309	(204,309)
TOTAL	7,112,293	5,156,241	1,956,051

What these data indicate is that Empire's programs have achieved real demand and energy savings over the past few years. While cumulative expenditures have fallen short of targets, isolating performance data from 2014 brings recent success into relief.

In order to compare actual performance with targets for the first three quarters of 2014, I referenced the DSM Advisory Group Quarterly Report, which was presented to stakeholders at the last DSM Advisory Group meeting with Empire in December. We can see that for the first three quarters of 2014[13], programs have consistently performed well relative to targets. For all programs in aggregate, actual total costs ($897,703) have been well under budget ($1,175,883) and actual energy savings (3,491,686 kWh) have exceeded targets (2,680,782 kWh). While actual demand savings for the first three quarters of 2014 (901 kW) were slightly below the target (1,226 kW), these data - though indicating potential for improvement - hardly convey failure.[14]

Q. Are there additional reasons Empire should maintain its current energy efficiency programs?

A. Yes. On pages 21-22 of his direct testimony, Mr. W. Scott Keith recommends the discontinuation of all of Empire's energy efficiency programs, to be effective at the conclusion of this rate case. Mr. Keith does express support for implementing a new suite of programs under the MEEIA umbrella. But to the extent the programs are unavailable

[13] Quarter 4 data for 2014 has not yet been presented to stakeholders.

[14] There is a tab in the DSM Advisory Group Quarterly Report spreadsheet titled "Demand Savings (2014)". However, the four charts within that tab are all labeled as some variant of "Energy Savings". But the figures are expressed in kW and are comparable to those in the Company's response to DED DR 011. I therefore concluded that this was simply a mistake and that the figures in the "Demand Savings (2014)" are in fact demand savings values.

in the interim, Empire, its customers, and other stakeholders would be worse off. In addition to the forfeiture of the benefits listed above, I want to focus on an additional reason here.

A disruption in efficiency programs would essentially eliminate the foundation upon which a MEEIA portfolio could be built. Empire's current programs could play an important role as a segue into a MEEIA plan. While the nature and number of programs may change with the implementation of MEEIA, customers taking advantage of current programs represent something akin to "low-hanging fruit", as they would likely constitute many of the first MEEIA program participants. This is because the behavioral change associated with transitioning from one efficiency program to another is likely to be less severe than the behavioral change associated with participating in a program anew. The discontinuation of all programs between the end of the rate case and the beginning of MEEIA would eliminate this "low-hanging fruit", thereby undermining Empire's efforts to garner participation in MEEIA once it is in place.[15] This point is consistent with the traditional business admonition that it is considerably more expensive to gain a new customer than keep an existing one.[16] Note that a disruption in program continuity would also disrupt - and potentially end - Empire's relationships with the outside entities that help administer their programs, creating yet another barrier to a successful MEEIA start. DE encourages Empire to work with stakeholders to get a MEEIA plan in place. But in the interim, prudence requires that current programs be maintained. This would allow the Company to build its new MEEIA programs off of existing programs, whose participants

[15] This assumes that there will be a gap between the end of this rate case and the beginning of MEEIA, which may not necessarily be the case.

[16] See, for example, Boles, J., Barksdale, H., and Johnson, J. (1997). Business Relationships: An Examination of the Effects of Buyer-Salesperson Relationships on Customer Retention and Willingness to Refer and Recommend. *Journal of Business and Industrial Marketing, 12*(3/4), p. 253-264.

could then make a relatively easy transition to MEEIA. Ending current programs would represent a step in the wrong direction and make the implementation of a successful MEEIA portfolio more difficult and costly.

Q. Would it be inconsistent with any pertinent laws or regulations for Empire to maintain its current energy efficiency programs between the end of this rate case and the beginning of a MEEIA portfolio?

A. No.

Q. Please explain.

A. There is nothing in pertinent regulations requiring an investor-owned electric utility to cease existing demand-side management (DSM) programs until it has a MEEIA portfolio approved. In data request DED-DE 013, DE asked:

> On page 22, lines 4 and 5 of W. Scott Keith's Direct Testimony for The Empire District Electric Company (Empire) in ER-2014-0351, Mr. Keith states that, "[u]nder current Commission rules, all electric energy efficiency programs should be approved under the Commission's MEEIA rules." Is Mr. Keith implying that maintaining energy efficiency programs absent a MEEIA portfolio would be inconsistent with particular rules? If so, please cite the rule(s) requiring that such programs be in a MEEIA portfolio.

Mr. Keith responded with the following:

> Yes. Empire's current DSM or energy efficiency programs do not include a fair or reasonable "cost" recovery mechanism and are inconsistent with the MEEIA rule, and Empire has requested termination of the programs. The MEEIA process enables Empire to request a reasonable cost recovery mechanism and Empire has requested approval of a new energy efficiency portfolio and a new cost recovery mechanism.

DE concurs that in many ways, a MEEIA portfolio would be preferable to Empire's current DSM framework. However, DE also believes that while the MEEIA rules outline standards by which DSM programs should be organized, they do not require the cessation of all DSM initiatives in the interim. Rather than being read as a prohibition against non-

MEEIA DSM programs, the rules should be read as a framework for reorganizing their programs into an acceptable MEEIA portfolio. Ending programs before getting a MEEIA in place would take Empire even further from that goal than they are now.

In short, maintaining existing programs while working towards MEEIA is not inconsistent with any rule(s). Even before MEEIA, Missouri's investor-owned electric utilities (including Empire) had the authority to offer energy efficiency programs and recover the associated costs. While the MEEIA regulations outline a new framework for organizing such programs, nothing within these regulations suggests that said authority has been rescinded.

Q. Does this conclude your direct testimony in this case?

A. Yes.