

Exhibit No.:
Issues: Demand Side Management
Low Income Weatherization
Witness: Adam Bickford
Sponsoring Party: Missouri Department of Natural
Resources – Division of Energy
Type of Exhibit: Direct Testimony
Case No.: ER-2012-0345

DIRECT TESTIMONY
OF
ADAM BICKFORD
MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENERGY

NOVEMBER 30, 2012

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

EMPIRE DISTRICT ELECTRIC COMPANY

RATE CASE
CASE NO. ER-2012-0345

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of The Empire District Electric)
Company of Joplin, Missouri Tariffs)
Increasing Rates for Electric Service)
Provided to Customers in the Missouri Service)
Area of the Company)

File No. ER-2012-0345

AFFIDAVIT OF ADAM BICKFORD

STATE OF MISSOURI)
)
CITY OF JEFFERSON)

SS

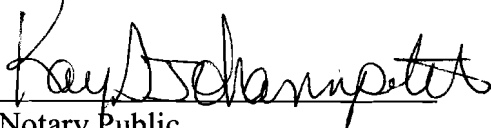
Adam Bickford, of lawful age, being duly sworn on his oath, deposes and states:

1. My name is Adam Bickford. I work in the City of Jefferson, Missouri, and I am employed by the Missouri Department of Natural Resources' Division of Energy as a Planner III.
2. Attached hereto and made a part hereof for all purposes is the Public version of my Direct Testimony on behalf of the Missouri Department of Natural Resources' Division of Energy, consisting of 12 pages of testimony and 1 schedule, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.
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.



Adam Bickford

Subscribed and sworn to before me this 30th day of November, 2012.



Notary Public

My commission expires:

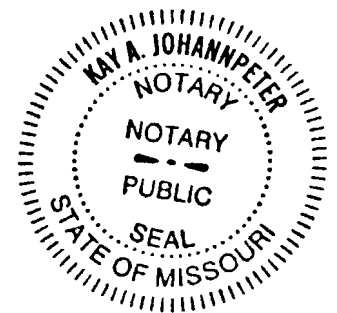
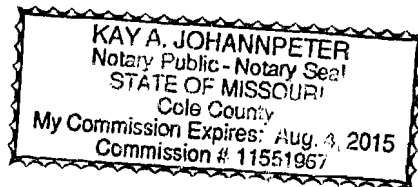


Table of Contents

I. Introduction	1
II. Empire’s DSM Programs.....	2
III. Empire’s MEEIA Filing.....	7
IV. Empire’s Weatherization Program	10
V. Summary and Conclusions.....	11

I. Introduction

1
2 **Q. Please state your name and business address.**

3 A. My name is Adam Bickford. My business address is Missouri Department of
4 Natural Resources, Division of Energy, 1101 Riverside Drive, P.O. Box 176,
5 Jefferson City, Missouri 65102-0176.

6 **Q. Please describe your educational background and employment experience.**

7 A. I began work with the Missouri Department of Natural Resources Division of Energy
8 in August, 2009. In my current position, I am a Planner III. Prior to working with
9 Missouri Department of Natural Resources I was employed as a program evaluator
10 by Optimal Solutions Group, LLC in Hyattsville, Maryland; the University of Missouri
11 Extension Office of Social and Economic Data Analysis in Columbia, Missouri; and
12 the Smithsonian Institution in Washington D.C. In these positions my
13 responsibilities included the design and execution of evaluation projects in the K-12
14 education and arts domains.

15 I received my B.A. degree in Sociology from the University of California,
16 Berkeley. I hold a Masters of Arts degree and a Doctor of Philosophy degree in
17 Sociology from the University of Chicago.

18
19 **Q. On whose behalf are you testifying?**

20 A. I am testifying on behalf of the Missouri Department of Natural Resources
21 ("MDNR"), an intervenor in these proceedings.

22

1 **Q. Have you previously testified before the Commission on behalf of the**
2 **Missouri Department of Natural Resources?**

3 A. Yes, I have testified on behalf of MDNR in multiple rate cases, integrated resource
4 planning cases, and Missouri Energy Efficiency Investment Act (“MEEIA”) cases.

5
6 **Q. What is the purpose of your testimony in these proceedings?**

7 A. My testimony will address Empire District Electric’s (“Empire”) recent experiences
8 with its suite of Demand Side Management (“DSM”) programs and Empire’s
9 agreement to file a MEEIA application after company files its 2013 IRP. I will
10 conclude with testimony concerning Empire’s low-income weatherization program
11 and tariff.

12

13 **II. Empire’s DSM Programs**

14

15 **Q. When did Empire begin its DSM programs?**

16 A. Empire began its programs in 2006, pursuant to the Stipulation and Agreement
17 approved by the Missouri Public Service Commission (“Commission”) in Cases No.
18 EO-2004-0570¹ and EO-2005-0263.²

19 **Q. What is the state of Empire’s DSM programs?**

20 A. Currently Empire offers five programs to its residential customers and two programs
21 for its Commercial and Industrial (C&I) customers. Empire also offers its C&I

¹ Missouri Public Service Commission, Case No. ER-2004-0570, In the Matter of the tariff filing of The Empire District Electric Company to implement a general rate increase for retail electric service provided to customers in its Missouri service area, issued December 22, 2004.

² Missouri Public Service Commission, Case No. EO-2005-0263, In the Matter of The Empire District Electric Company’s Application for Certificate of Public Convenience and Necessity and Approval of an Experimental Regulatory Plan Related to Generation Plant, Order Approving Stipulation and Agreement, Issued August 12, 2005

1 customers an Interruptible Service Rider Tariff and funds the Apogee HomeEnergy
2 Suite, which is an energy usage monitoring tool, on its website.

3 **Q. Does Empire have a DSM advisory group?**

4 A. Yes. Empire has maintained a DSM advisory group since it began its programs in
5 ER-2004-0570. Prior to Empire's 2011 rate case (File No. ER-2011-0004), this
6 group was a voting collaborative, but has been an advisory group since.³ Since the
7 beginning of the IRP stakeholder meetings, specified in the stipulation and
8 agreement in EO-2010-0066⁴, the DSM advisory group meetings have been
9 conducted in conjunction with the IRP stakeholder meetings.

10 The Company typically provides quarterly reports of program performance at
11 the advisory group meetings. These reports list program expenses, the number of
12 participants, and the amount of energy saved. Additionally, the Company reports
13 significant program milestones and offers the opportunity for advisory group
14 members to discuss program issues.

15 **Q. Is MDNR a member of Empire's DSM advisory group?**

16 A. Yes.

17 **Q. Describe the focus of Empire's residential DSM portfolio.**

18 A. Empire's residential programs focus on improving the efficiency of the housing
19 stock. Two programs address new construction: the Low Income New Home and
20 the Energy Star New Home programs, and two address existing homes: the Low
21 Income Weatherization program and the Home Performance with Energy Star

³ See Global Agreement, File No. ER-2011-0004, Paragraph 8.

⁴ See Nonunanimous Stipulation and Agreement, File No. EO-2010-0066.

1 program. Finally, the Central Air Conditioning (CAC) program provides rebates to
2 upgrade central air conditioners and heat pumps.

3 While Empire's residential programs address both existing homes and new
4 construction, data from Empire's quarterly reports show that existing home
5 programs have a higher participation rate. Consider that, according to Empire's 4th
6 Quarter of 2011 DSM Advisory Group report, the Home Performance with Energy
7 Star program had 67 participants, while over the same period, Energy Star New
8 Homes program had 8 (see Schedule AB-1). There are multiple reasons for this
9 difference, not the least of which is the slow recovery of the new home market in
10 the wake of the 2007-2008 recession. We encourage Empire to continue to
11 participate in both programs. The Home Performance with Energy Star program,
12 sponsored nationally by U.S. EPA and U.S. DOE and available in select cities or
13 areas where there are local sponsors, offers a comprehensive whole-house
14 approach to making energy-efficient home improvements. It has recently been
15 implemented in the Springfield area creating a stronger presence in southwest
16 Missouri. Empire's continued participation will contribute to building market demand
17 for energy audits and trained home energy auditors in this area of the state.

18 **Q. Describe the focus of Empire's C&I portfolio.**

19 A. Empire's C&I portfolio consists of two energy efficiency programs, the Commercial
20 and Industrial Rebate Program, and the Building Operator Certification (BOC)
21 program. The first program provides rebates for replacement of C&I lighting and
22 other facility upgrades. The BOC program is a training effort designed to educate
23 building operators about energy savings practices; MDNR administers this program

1 under a memorandum of understanding with Empire. Empire also has a demand
2 response tariff, its Interruptible Service Rider, which provides C&I users with a
3 lower rate in exchange for interruptions in service during high-demand periods.

4 **Q. How would you characterize the performance of Empire's DSM programs?**

5 A. It has been difficult for MDNR to assess the performance of Empire's programs.

6 Prior to ER-2011-0004, Empire's programs operated on multiple program years.

7 The stipulation and agreement in ER-2011-0004 restarted all program years on

8 January 1, 2011. Some energy savings information is available from Empire's

9 quarterly reports to its DSM advisory group, but this information is incomplete as

10 Empire did not provide KWH savings data for the 3rd quarter of 2011. One should

11 note the Joplin tornado in May 2011 and its immediate recovery period occurred

12 during this quarter. Additionally, some key staff members left Empire for other

13 positions. The fact that DSM program reporting was not a priority at this time is

14 understandable.

15 Nevertheless, it is possible to estimate program activity for the 2011 program

16 year.⁵ Quarterly reports presented to the DSM Advisory Group report a set of

17 expected performance metrics, i.e., the program budget, the number of expected

18 participants, and the expected savings from Empire's programs. Actual

19 expenditures, participation and savings are also available from these reports. It is

20 possible to compare the reported KWH savings from the 2011 program year to the

21 annual sales reported Empire's 2011 annual report to the Commission.

⁵ The data from the 2011 program year consist of a cumulative report of program performance between January and August, 2011 (presented to the DSM advisory group on September 28, 2011) an incremental report of program performance for the month of September, 2011 (presented to the DSM advisory group on December 21, 2011) and an incremental report of program performance for the 4th Quarter of 2011 (October through December 2011, presented to the DSM advisory group on March 27, 2012). KWH savings information was not provided in the 3rd Quarter 2011 report.

1 Under the MEEIA rules, DSM program performance is calculated as the
2 percentage of KWH savings to sales. Although Empire does not currently have a
3 MEEIA plan, it is instructive to assess Empire's savings using the same metrics as
4 the utilities with approved MEEIA plans (i.e., Ameren Missouri and KCPL Greater
5 Missouri Operations). Going forward, Empire should consider its DSM program
6 savings as a percentage of sales as it develops its MEEIA DSM plan and demand-
7 side investment mechanism (DSIM). The portfolio and program level summary of
8 expected performance metrics and actual performance of Empire's current
9 programs is presented in Schedule AB-1.

10 **Q. Please summarize Schedule AB-1.**

11 A. Empire's DSM programs are exceeding its budgeted levels of energy savings and
12 are close to meeting its budgeted cost and participation levels. We note that these
13 values do not include KWH savings for the month of September, 2011, so the
14 results in Schedule AB-1 underestimate the total savings of the Empire DSM
15 portfolio in the 2011 program year.

16 The first value to note is the percentage of KWH savings relative to sales in
17 2011. Schedule AB-1 reports that the Empire portfolio saves 0.11% of sales. To
18 put this in context, the incremental MEEIA savings goal for 2012 is 0.3%.⁶ The
19 MEEIA rules are relevant to utility DSM performance even in the absence of utility
20 MEEIA DSM plans and DSIMs.⁷

21 Despite this, when Empire's DSM program performance is compared to its
22 budgeted performance level, Empire's portfolio appears to be out performing its

⁶ See 4 CSR 240-20.094(2)(A)...

⁷ See, for example, Surrebuttal Testimony of John A. Rogers, File No. ER-2010-0355, January 5, 2011. p. 5

1 expectations. At the portfolio level, these programs are achieving more than 4
2 times the expected KWH savings. The portfolio has achieved 91% of its expected
3 participants and spent 92% of its expected budget, see Schedule AB-1.

4 **Q. Has Empire met the MEEIA “goal of achieving all cost-effective demand-side
5 savings”?**

6 A. It does not appear that Empire has met this goal with its current programs. MDNR
7 looks forward to Empire’s MEEIA DSM plan and DSIM filing that should more
8 readily address Missouri’s policy goal of achieving all cost-effective demand side
9 savings.⁸

10 **III. Empire’s MEEIA Filing**

11 **Q. Has Empire filed a MEEIA DSM plan and a DSIM?**

12 A. Yes, but they were subsequently withdrawn. Empire filed a MEEIA DSM plan and
13 DSIM application in File No. E-2012-0206 on February 28, 2012. This filing
14 satisfied one of the terms of the stipulation and agreement for EO-2010-0066⁹,
15 Empire’s last IRP case. However, MDNR, the Commission Staff and other parties
16 had concerns about Empire’s MEEIA application, and as part of the IRP case,
17 parties agreed that Empire should withdraw its MEEIA plan and DSIM in a
18 Stipulation filed on June 6, 2012.¹⁰ As part of that stipulation, Empire agreed to file
19 a new MEEIA application within 120 days after it files its 2013 triennial IRP. The
20 IRP is scheduled to be filed on April 1, 2013, so Empire’s revised MEEIA filing
21 should be made by August 1, 2013.

⁸ Section 393.1124 RSMo, 4.

⁹ See Nonunanimous Stipulation and Agreement, File No. EO-2010-0066.

¹⁰ See Second Nonunanimous Stipulation And Agreement, File No. EO-2010-0066.

1 While Empire's DSM program plan submitted in its MEEIA application
2 included all of the programs specified in the stipulation to EO-2010-0166, including
3 multiple residential programs that offered rebates to Empire customers for the
4 purchase of high efficiency lighting and efficient household appliances, many other
5 aspects of the MEEIA application were problematic.

6 **Q. Why did MDNR recommend that Empire withdraw its MEEIA filing?**

7 A. Empire's MEEIA filing proposed a level of savings well below the savings goals
8 established in 4 CSR 240-20.094(2)(A). The MEEIA rules state:

9 The commission shall use the greater of the annual realistic achievable energy
10 savings and demand savings as determined through the utility's market
11 potential study or the following incremental annual demand-side savings goals
12 as a guideline to review progress toward an expectation that the electric utility's
13 demand-side programs can achieve a goal of all cost effective demand-side
14 savings.¹¹
15

16 Review of Empire's MEEIA filing suggested it had not produced a DSM portfolio
17 that would satisfy the policy goals of MEEIA. Partially, this was due to the lack of a
18 DSM Potential Study that identified levels of Realistic Achievable Potential (RAP)
19 and Maximum Achievable Potential (MAP) savings.

20 **Q. What is the relevance of a DSM Potential Study?**

21 A. Utilities are required by the Chapter 22 rules¹² to estimate DSM portfolios that
22 produce savings levels equal to RAP and MAP and include these levels of savings
23 in the alternative resource plans that are at the core of the integrated analysis.

24 While Empire submitted a DSM potential study in support of its 2010 IRP in File No.
25 EO-2010-0166, the study did not identify both RAP and MAP levels of savings. The

¹¹ 4 CSR 240-20.094(2)(A).

¹² See 4 CSR 240-22.050(2)

1 lack of clearly identified levels of savings was one of the reasons MDNR entered
2 into the stipulation and agreement in Empire's 2010 IRP filing. Empire is
3 completing a revised potential study as it prepares for its 2013 IRP. We expect that
4 Empire's upcoming 2013 IRP will provide valid estimates of RAP and MAP savings
5 and that these estimates will inform its MEEIA filing.

6 **Q. What do you anticipate will happen between now and the time that Empire**
7 **makes its MEEIA filing?**

8 A. There will be several events in 2013 that will precede Empire's submission of a
9 MEEIA filing. MDNR is hopeful that this MEEIA filing will offer Empire's ratepayers
10 a broader set of programs and will commit the company to pursuing a greater level
11 of energy savings than it has in the past.

12 In April, 2013 Empire will file its triennial IRP, which will include a revised
13 potential study. This potential study should include estimates for RAP and MAP
14 savings, as specified in the Chapter 22 rules. The IRP stipulation anticipates that
15 the alternative resource plans tested as part of the integrated analysis will
16 incorporate a range of DSM savings portfolios, beginning with the RAP level of
17 savings and ramping up to more aggressive levels of savings relative to the MAP
18 estimates.

19 According to the Chapter 22 rules, each level of savings will be
20 operationalized as a set of DSM program portfolios. The resulting DSM portfolios
21 should include a broader range of programs than what Empire currently offers. We
22 expect that these additional programs will include all of the residential rebate
23 programs specified in the stipulation and agreement in File No. EO-2010-0166.

1 This will address the major shortcomings of Empire's existing DSM portfolio and
2 allow Empire to capture some of the easily achievable savings that exist in its
3 service territory.

4 Based on the results of Empire's IRP, we expect that Empire's MEEIA filing,
5 will include a DSM plan that proposes higher levels of savings than its current
6 programs, that these savings will ramp up over the period of the MEEIA filing, and
7 that Empire will propose a DSIM that provides it with sufficient incentive to achieve
8 these savings.

9 **IV. Empire's Weatherization Program**

10 **Q. What is MDNR's position regarding Empire's Low-Income Weatherization**
11 **program?**

12 A. The Weatherization program provides cost-effective energy-efficient home
13 improvements to Missouri's low income households, especially the elderly, children,
14 those with physical disadvantages, and others hit hardest by high utility costs. The
15 program aims to lower utility bills and improve comfort while ensuring health and
16 safety. Conducting a high quality Weatherization program produces proven results
17 that will benefit all of Empire's customers, either by direct effects of a weatherized
18 home or the benefits of reduced system energy demand, environmental
19 improvements and lower arrearages and uncollectible accounts. Due to these
20 benefits and savings from weatherization, and to support the sustainability of the
21 community action agencies that provide weatherization services, MDNR supports
22 ongoing funding of weatherization programs, and encourages Empire to increase
23 funding for weatherization as it develops its MEEIA plan.

1 As Missouri's state energy office, the MDNR Division of Energy administers
2 the federal Weatherization program funded by the U.S. Department of Energy, and
3 administers utility funded programs for several utilities on the Eastern side of the
4 state. MDNR does not have a formal role in administering Empire's Weatherization
5 program, but does have a concern with the average and maximum per-house
6 funding levels in Empire's weatherization tariff. The per-house funding level is
7 considerably below that authorized by the federal weatherization program, and
8 could be reducing the potential benefits of the weatherization program, if cost-
9 effective weatherization measures are not being installed due to the stated per-
10 house limits.

11 **V. Summary and Conclusions**

12 **Q. Please summarize your testimony.**

13 A. My testimony in this case has focused primarily on Empire's DSM programs and the
14 prospect for future programs under MEEIA. Empire will file its triennial IRP in April,
15 2013. This filing will be accompanied by a potential study that includes estimates
16 for RAP and MAP. This study will lead to the consideration of higher levels of
17 energy savings in the integrated analysis. The integrated analysis will inform
18 Empire's upcoming MEEIA filing. This MEEIA filing will include a DSM plan and an
19 accompanying DSIM that should incent Empire to achieve higher levels of savings.

20 In the meantime, Empire should review its Weatherization tariff with its
21 collaborative to determine whether per-house average and maximum levels should
22 be increased.

23

1 **Q. Does this conclude your testimony?**

2 A. Yes. Thank you.

Schedule AB-1 Expected and Actual Program Metrics by DSM Program, January 2011 to December 2011

2011 Program year	Expected Program Metrics			Actual Program Metrics			Percentage (Actual/Expected)		
	Budgeted Cost	Budgeted Participants	Budgeted KWH Savings	Actual Cost	Actual Participants	Actual KWH Savings	Cost	Participants	KWH Savings
Residential Portfolio									
Weatherization	\$270,717	147		\$140,087	444	605,172	52%	301%	
Low-Income New Homes	\$7,000	7	0	\$1,348	1	0	19%	15%	
Central Air Conditioner	\$357,521	780	329,940	\$349,966	446	565,974	98%	57%	172%
Home Performance w/ ENERGY STAR	\$101,062	201	75,600	\$62,641	250	248,400	62%	125%	329%
ENERGY STAR New Homes	\$270,449	253	211,167	\$133,770	160	411,906	49%	63%	195%
Commercial & Industrial Portfolio									
Building Operator Certification	\$22,542	13	0	\$2,029	1	0	9%	8%	
Commercial & Industrial Rebate	\$363,313	178	417,208	\$574,376	105	2,881,476	158%	59%	691%
Total	\$1,392,603	1,580	1,033,915	\$1,264,217	1,407	4,712,928	91%	89%	456%
Actual MWH Savings						4,712.93			
MWH sold*						4,142,915			
Savings as percentage of Sales						0.11%			

4th Quarter 2011 (October-December, 2011)

Program	Expected Program Metrics			Actual Program Metrics			Percentage (Actual/Expected)		
	Budgeted Cost	Budgeted Participants	Budgeted KWH Savings	Actual Cost	Actual Participants	Actual KWH Savings	Cost	Participants	KWH Savings
Residential Portfolio									
Weatherization	\$50,325	36	49,068	\$68,109	113	154,019	135%	314%	314%
Low-Income New Homes	\$ -	0	0	\$ -	0	0			
Central Air Conditioner	\$78,000	195	247,455	\$45,150	108	137,052	58%	55%	55%
Home Performance w/ ENERGY STAR	\$25,000	63	75,600	\$26,800	67	80,400	107%	106%	106%
ENERGY STAR New Homes	\$65,199	81	211,167	\$6,800	8	20,856	10%	10%	10%
Commercial & Industrial Portfolio									
Building Operator Certification	\$ -	0	0	\$ -	0	0			
Commercial & Industrial Rebate	\$66,000	30	312,906	\$127,461	31	883,898	193%	103%	282%
Total	\$284,524	405	896,196	\$274,320	327	1,276,225	96%	81%	142%

Sources

*Total Sales to Ultimate Customers, Empire District Electric Company 2011 Annual Report, Page 3a

DSM Program Information:

January to August, 2011: DSMAG Agenda and Handouts for 09/28/2011

September, 2011 DSM ADVSIORY GROUP MEETING - QUARTER 3 DECEMBER 21, 2011

October to December, 2011 DSM Advisory Group 4th Quarter 2011 Review March 27, 2012