

# 7. Demand-Side Resources

## Highlights

- Ameren Missouri has conducted a DSM Market Potential Study with primary data from its service territory to assess the potential for energy and demand savings
- A total of 425 demand side measures have been evaluated
- Ameren Missouri plans to spend nearly \$60 million over 3 years on energy efficiency programs to obtain nearly 253 GWh of energy savings and over 54 MW of peak demand savings.
- Business Custom Program incentive levels increased by over 50% from prior implementation plan levels.
- The budget for the Residential HVAC program has increased more than 25% from the Cycle 1 budget to position it as one of the premier program offerings.
- The innovative Multi-family Income Qualified program will continue and may be expanded depending on how Ameren Missouri and stakeholders determine how best to serve hard-to-reach customer segments.

Ameren Missouri has undertaken significant steps to improve and expand its consideration and evaluation of demand side resources. Chief among these is the development of a DSM Market Potential Study, which relies on primary market research within Ameren Missouri's franchise service territory. Using the results of this study, Ameren Missouri has developed a range of potential DSM portfolios for evaluation in the integration and risk portions of the IRP analysis.

## 7.1 Implementation Plan Summary

### 7.1.1 Introduction

The implementation plan covers a three year period beginning on January 1, 2012 and extending through December 31, 2014. The following table summarizes the estimated energy and demand savings and costs estimated for this period.

**Table 7. 1: Estimated Incremental Savings and Costs for the Implementation Period - LOW RISK Portfolio**

	<u>2012</u>	<u>2013</u>	<u>2014</u>
Estimated energy savings (MWh)	100,378	80,393	73,064
Estimated demand reduction (MW)	18	17	19
Estimated costs (Program costs in millions)*	\$ 20.50	\$ 18.76	\$ 20.17

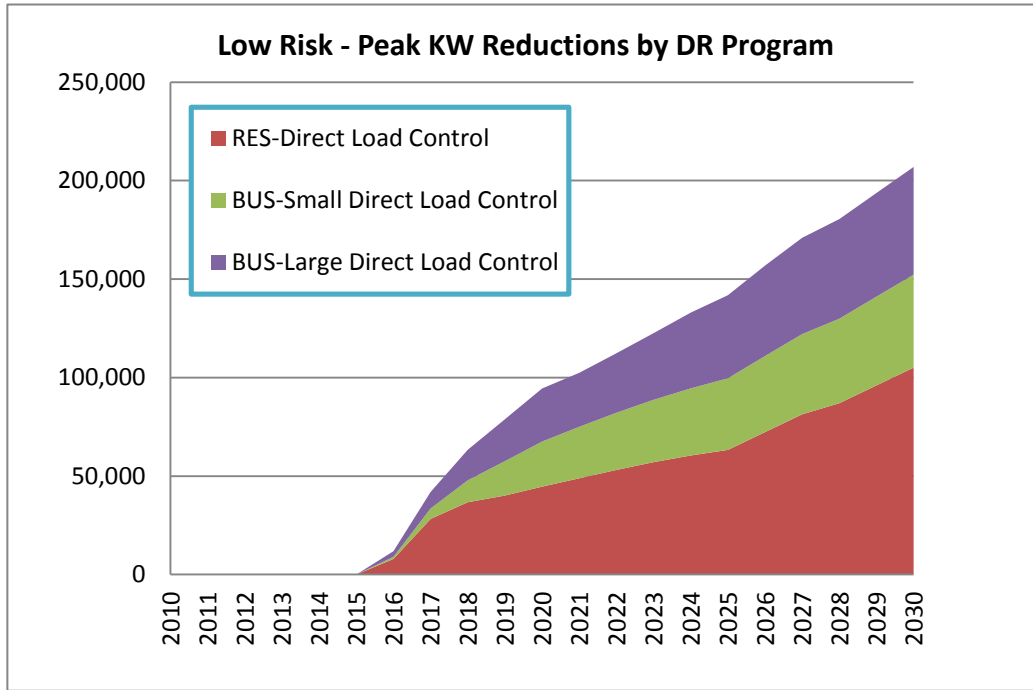
Table 7. 3: Ameren Missouri Portfolio Summary for Cycle 2 (2012-2014)

LOW RISK	Incremental GWh			Incremental MW			Budget (millions of \$)		
	2012	2013	2014	2012	2013	2014	2012	2013	2014
Lighting	44.3	30.5	17.1	1.3	0.9	0.5	\$3.78	\$2.70	\$1.53
HVAC	9.2	10.8	14	4.4	5.1	6.5	\$3.11	\$3.74	\$4.95
Appliance Recycling	7.0	3.9	3.4	1.0	0.6	0.5	\$1.65	\$0.95	\$0.89
Low Income	3.3	2.8	2.2	0.2	0.2	0.2	\$2.78	\$2.96	\$3.12
<b>EE Residential Total</b>	<b>63.9</b>	<b>48.1</b>	<b>36.8</b>	<b>6.9</b>	<b>6.8</b>	<b>7.7</b>	<b>\$11.32</b>	<b>\$10.34</b>	<b>\$10.49</b>
Standard	9.8	11.5	13.7	3.9	4.6	5.5	\$2.90	\$3.35	\$3.94
Custom	23.6	17.7	19.2	6.3	4.8	5.3	\$5.57	\$4.26	\$4.75
RCx	1.0	0.8	0.8	0.2	0.2	0.2	\$0.11	\$0.09	\$0.08
New Construction	1.2	1.4	1.7	0.4	0.5	0.6	\$0.43	\$0.54	\$0.71
Multifamily Common	0.9	0.9	0.9	0.2	0.2	0.2	\$0.17	\$0.19	\$0.21
<b>EE Business Total</b>	<b>36.5</b>	<b>32.3</b>	<b>36.3</b>	<b>10.9</b>	<b>10.2</b>	<b>11.7</b>	<b>\$9.18</b>	<b>\$8.42</b>	<b>\$9.69</b>
<b>EE PORTFOLIO TOTAL</b>	<b>100.4</b>	<b>80.4</b>	<b>73.1</b>	<b>17.8</b>	<b>17.0</b>	<b>19.4</b>	<b>\$20.50</b>	<b>\$18.76</b>	<b>\$20.17</b>
	<b>Total System Energy (GWh)</b>			<b>Total System Peak (MW)</b>			<b>Total Revenue Requirements (million \$)</b>		
	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Ameren Missouri									
Baseline Forecasts	41,035	41,291	41,601	8,318	8,380	8,425	\$3,034	\$3,251	\$3,474
DSM as %	0.24%	0.19%	0.18%	0.22%	0.20%	0.23%	0.68%	0.58%	0.58%

The graphs on the following pages summarize portfolio cumulative energy savings, cumulative peak demand savings, and annual program costs for the planning horizon.

It should be noted that 2010 and 2011 reflect plans from the previous 3-year implementation plan (Cycle 1) that are already in motion. Also, no demand response (“DR”) programs are part of the upcoming implementation plan (Cycle 2), but are planned to begin in 2016. A more detailed description of the energy savings and demand reduction calculations for each program can be found in the Electronic Work Papers –BatchTool\_(desired program name).xlsx”.

Figure 7. 14: Low Risk Demand Response Potential



7.2.7 Rate Design

The Company considered alternative rate designs in the development of its demand response programs. The following matrix illustrates the demand response technologies and rate designs considered:

Table 7. 18: Demand Response Program Matrix

Demand Response Program	Residential [1M]	Small C&I [2M]	Medium C&I [3M]	Large C&I [4M, 11M]
<b>Direct Load Control</b>				
Residential Direct Load Control	X			
Small C&I Direct Load Control		X		
<b>Dynamic Pricing Programs</b>				
Residential Dynamic Pricing	X			
C&I Dynamic Pricing		X	X	X
<b>Other C&amp;I Programs</b>				
Demand Bidding			X	X
Curtable				X
DR Aggregator Contracts		X	X	X