

ACEEE developed this technical brief in response to the state of Missouri's request to provide information on investor-owned utility energy efficiency performance incentives.

Energy efficiency is a low-cost resource that provides numerous benefits to the electric system and its customers. Beyond energy savings, energy efficiency creates local jobs, saves money for customers, reduces pollution, improves public health, and is a low-cost option for utilities to meet system demand. However, regulated utilities traditionally face disincentives to implementing energy efficiency within their territories, as it reduces electricity sales and revenues.

Policies to address the economic disincentive of energy efficiency are critical to advance utility-sector efficiency programs and performance. These policies often consist of *revenue decoupling* (disconnecting utility revenue recovery from sales volumes)¹, *lost-revenue adjustment mechanisms* (LRAM) (allows utilities to recover authorized revenues that are reduced specifically due to energy efficiency programs)², and *performance incentives* (financial returns for energy efficiency achievements). Decoupling counteracts the disincentive of reducing electricity consumption, while performance incentives positively incentivize energy efficiency. In particular, performance incentives have been cited as one of the most important factors contributing to increasing utility energy savings year to year and to driving high levels of savings.³

Past reviews of utility performance incentives found that they typically fall into one of four categories:

- Shared net benefits incentives:
 - Utilities can earn a percentage of the benefits of their successful energy efficiency programs.
- Energy savings-based incentives:
 - Utilities can earn a reward for meeting pre-established energy savings goals.
- Multifactor incentives:
 - Utilities can earn rewards for meeting pre-established goals on multiple metrics such as energy savings, demand savings, or jobs created.
- Rate of return incentives:
 - Utilities can earn a rate of return on efficiency spending.⁴

This memorandum presents historical performance incentive data from four investor-owned (IOU) regulated electric utilities. We describe the performance incentive mechanisms for each utility and present information on the utilities' historical ability to meet savings targets. We provide data and discussion on additional metrics such as financial award amounts, energy and demand savings

¹ For additional information, see: raponline.org/wp-content/uploads/2016/05/rap-revenueregulationanddecoupling-2011-04.pdf.

² LRAM mechanisms are not preferred because they do not fully sever the ties between revenue and sales and utilities with this policy in place may still be incentivized to increase sales.

³ Baatz, B., A. Gilleo, and T. Barigye. *Big Savers: Experiences and Recent History of Program Administrators Achieving High Levels of Electric Savings*. American Council for an Energy-Efficient Economy. April. aceee.org/research-report/u1601.

⁴ Nowak, S., B. Baatz, A. Gilleo, M. Kushler, M. Molina, and D. York. *Beyond Carrots for Utilities: A National Review of Performance Incentives for Energy Efficiency*. American Council for an Energy-Efficient Economy. May. aceee.org/beyond-carrots-utilities-national-review.

achievements, budgets and spending, utilization of net-to-gross methodology, evaluation, measurement & verification (EM&V) spending, and other metrics as applicable.

Methodology

To complete this study, we reviewed past literature and studies on regulated utility business model policies for energy efficiency. From this review, we developed a list of four electric regulated utilities with characteristics similar to those in Missouri for comparison. This list includes utilities that are similar in size to those in Missouri, are regionally similar, and capture a range of performance incentive mechanisms. We also include a national leader on energy efficiency from the Northeast, where efficiency policies have been historically strong. The utilities we cover are: Oklahoma Gas and Electric (OGE), Entergy Arkansas (Entergy), Consumers Energy, and National Grid Massachusetts (National Grid). We then collected publicly available energy efficiency filings for these utilities and used other filings to gather data for analysis and discussion. Data included in the tables are based on what utilities have reported and limited to data relevant for performance incentive calculations.⁵

Results

This section presents data and results for the four utilities we reviewed. Each utility has a performance mechanism of varying size and structure, and the utilities reflect a diversity of policy choices with respect to energy savings targets, cost recovery mechanisms, and lost revenue recovery mechanisms. They also reflect a wide range of success in delivering energy efficiency, from 0.55% to 3.6% of sales in 2016. Table 1 summarizes key factors for performance incentives and energy efficiency performance for the utilities we reviewed.

Table 1. 2016 Energy efficiency performance, selected utilities

Investor-owned Utility	EERS target (% of sales)	Lost revenue recovery	Performance incentive	Energy savings (% of sales)	Financial award as a % of program spending
Oklahoma Gas & Electric	None	Lost revenue recovery mechanism through demand program rider	Shared net benefits	0.42%	23%
Entergy Arkansas	0.9%	Lost revenue recovery through formula rate plan rider	Shared net benefits	1.09%	6%
Consumers Energy (MI)*	1%	None	Multifactor	1.06%	15%
National Grid Massachusetts	2.6%	Full revenue decoupling	Multifactor	3.26%	6%

*Performance is for 2015

⁵ Sector level revenue, sales, and customer data are available in Appendix A. Program level spending and savings data are available in Appendix B.

OKLAHOMA GAS AND ELECTRIC (OGE)

OGE is an investor-owned utility with territory in Oklahoma and Arkansas. All data presented is for Oklahoma only. Table 1 shows OGE's total revenue, sales, customers, and percentage of advanced metering infrastructure (AMI) for 2010-2016.

Table 2. OGE annual utility data. *Source: EIA*⁶

Year	Revenues (thousands)	Sales (MWh)	Customers	AMI penetration
2010	\$1,815,160	23,328,941	715,127	26%
2011	\$1,882,824	24,234,786	721,269	70%
2012	\$1,806,590	24,046,252	728,987	100%
2013	\$1,888,123	24,203,012	737,272	100%
2014	\$1,957,030	24,307,160	745,456	100%
2015	\$1,810,576	24,065,469	754,057	100%
2016	\$1,903,799	24,194,368	763,758	100%

OGE is not subject to statutory energy efficiency targets but is required to propose and administer three-year portfolios of energy efficiency and demand response programs within its territory. Electric customers with consumption over 15,000 MWh annually (including combined meters) may opt out of energy efficiency programs and charges. It is estimated that 90% of customers eligible to opt out, do so, which represents about 30% of OK's electric load.⁷ OGE has a LRAM mechanism in place that allows the utility to recover their lost net revenues due to lost electricity sales through a demand program rider. The utility has historically run about 8 individual programs annually, including programs targeted to commercial, industrial, residential, and low-income customer segments. OGE's portfolio has included demand response rate options in some years, although energy savings contributions from these programs are minimal.⁸

OGE reports net savings. Evaluators have tailored net savings calculation methodologies using approaches such as self-reported surveys, deemed net-to-gross ratios, and interviews. In 2016, OGE's evaluator utilized approaches consistent with those outlined in the Arkansas Technical Reference Manual (TRM), calculating free-ridership and spillover as appropriate by program. OGE reported a portfolio-level net-to-gross ratio of 89.1% for energy savings, and 91.4% for demand savings for the 2016 program year.

OGE has a shared net benefits performance incentive in place. Utilities must achieve 85% of their energy savings goals to earn the incentive. The incentive amounts are calibrated to the level of savings proposed. In the 2010-2016 period studied, OGE was approved to earn 15% of their portfolio's net benefits. Net benefits are calculated using the Total Resource Cost Test as outlined in the California Standard Practice Manual. Costs included in the test are "all costs incurred for implementation of Demand Programs including all program costs, education or outreach program costs, Administrative

⁶ EIA (Energy Information Administration). 2017. *Electric Power Sales, Revenue, and Energy Efficiency Form EIA-861 Detailed Data Files*. Advanced Meters. Washington, DC: EIA. eia.gov/electricity/data/eia861/.

⁷ American Council for an Energy-Efficient Economy. 2018. *State and Local Policy Database*. <https://database.aceee.org/>.

⁸ Program level spending and savings figures are available in Appendix A.

costs, and EM&V costs”.⁹The utility recovers program costs concurrently with a rider called the Demand Program Rider (DPR). The rider includes recovery of program costs, evaluated lost revenue, and the utility performance incentive.

The following tables show OGE’s historical energy efficiency goals, performance, and financial awards.¹⁰

Table 3. OGE historical spending targets and actual spending

Year	Target costs	EM&V costs	Total costs	Costs as a % of target	Costs as a % of revenue
2010	\$15,401,538	\$101,170	\$12,576,019	82%	0.70%
2011	\$14,918,693	\$369,216	\$18,200,806	122%	0.97%
2012	\$15,115,534	\$836,837	\$14,662,068	97%	0.80%
2013	\$50,029,006	\$399,886	\$39,022,625	78%	2.17%
2014	\$55,060,221	\$1,121,412	\$47,351,790	86%	2.42%
2015	\$42,329,771	\$864,334	\$43,599,664	103%	2.34%
2016	\$35,507,849	\$823,253	\$33,341,870	94%	1.75%

Table 4. OGE electric energy savings targets and achievements

Year	Target savings (MW)	Total savings (MW)	Demand savings as a % of target	Target savings (MWh)	Total savings (MWh)	Energy savings as a % of target	Energy savings as a % of sales
2010	11.91	10.48	88%	45,647	47,473	104%	0.20%
2011	11.98	18.21	152%	45,331	60,743	134%	0.25%
2012	11.99	9.23	77%	45,271	34,406	76%	0.27%
2013	77.11	65.55	85%	66,923	82,315	123%	0.34%
2014	90.04	68.43	76%	137,435	103,076	75%	0.42%
2015	41.63	46.21	111%	144,176	99,481	69%	0.42%
2016	32.63	31.16	96%	95,554	133,011	139%	0.55%

Table 5. OGE performance incentive amounts

Year	Portfolio TRC Score	NPV of TRC Benefits	Financial award	Financial award as a % of program spending
2010	2.28	\$39,178,820	\$2,700,000	21%
2011	1.84	\$18,272,200	\$3,100,911	17%

⁹ Oklahoma Administrative Code. Title 165, Chapter 35. Electric Utility Rules. <https://www.occeweb.com/rules/CH35electricrules.pdf>.

¹⁰ Oklahoma Gas and Electric. 2017. 2010-2016 Oklahoma Demand Programs Annual Reports. <https://www.occeweb.com/pu/EnergyEfficiency/EfficiencyPage.html>.

2012	1.53	\$9,039,000	\$2,609,501	18%
2013	1.68	\$32,006,000	\$1,858,951	5%
2014	1.69	\$69,937,000	\$4,147,963	9%
2015	2.26	\$87,356,020	\$10,127,912	23%
2016	1.77	\$47,801,463	\$4,863,968	15%

OGE has had varied success meeting their energy savings targets, ranging from about 70% of the target achieved to over 130% achieved. OGE's performance incentives have ranged from about \$1.8M to over \$10M in 2015, representing between 5% and 23% of their program spending.

ENTERGY ARKANSAS

Entergy is an investor-owned utility with territory in Arkansas and Tennessee. All data presented is for Arkansas only. Table 6 shows Entergy's total revenue, sales, customers, and percentage of AMI penetration for 2010-2016.

Table 6. Entergy annual utility data. Source: EIA

Year	Revenues (thousands)	Sales (MWh)	Customers	AMI penetration
2010	\$1,645,303	22,002,962	694,097	0.07%
2011	\$1,630,857	21,583,497	695,385	0.12%
2012	\$1,681,502	21,086,842	697,187	0.15%
2013	\$1,678,683	20,859,130	699,100	0.17%
2014	\$1,642,891	21,049,257	701,085	0.11%
2015	\$1,820,796	21,160,164	704,170	0.10%
2016	\$1,733,728	20,639,342	706,871	0.09%

Entergy is subject to statutory energy savings goals under Arkansas' Energy Efficiency Resource Standard (EERS). The EERS has had electricity savings goals in place since 2011, starting at 0.25% of total electric sales and rising by 0.25% per year to 0.75% of sales in 2013. Targets remained steady in 2014, then rose to 0.9% for 2015-2018 and will be 1% in 2019. Targets will rise to 1.2% of 2018 sales from 2020-2022.¹¹ Customers with monthly demand of over 1MW may opt out of utility energy efficiency programs and are not required to achieve energy savings unless it is a manufacturing customer. Program cycles typically operate in three-year periods. Utilities in Arkansas do not have revenue decoupling, but are approved to recover lost revenue through their formula rate plan rider using a future test year sales forecast.

The Arkansas Public Service Commission (ASPC) approved a shared net benefits performance incentive mechanism for utilities in 2010. The policy allows utilities to earn an increasing percentage of their achieved net benefits annually. Utilities meeting between 80 and 100% of the annual target are eligible to receive 10% of their achieved net benefits capped at 5% of program spending. The incentive calculation does not include the performance incentive as a utility cost. For achievement of 100-120% of

¹¹Arkansas Public Service Commission. 2015. *In the Matter of the Continuation, Expansion, and Enhancement of Public Utility Energy Efficiency Programs in Arkansas*. Docket no. 13-002-U. http://www.apscservices.info/pdf/13/13-002-U_226_1.pdf

the target, the cap is raised to 8% of program spending.¹² The ASPC could issue penalties for non-achievement, although there are no formal penalties in place.

Net benefits for calculating the performance incentive are calculated using the Total Resource Cost test as outlined in the California Standard Practice Manual. Values are calculated at both the program and portfolio level. In 2016, Entergy calculated their TRC values using avoided capacity and energy costs considering when during the day the expected savings would likely be realized. Additionally, Entergy calculated non-energy benefits as outlined in Arkansas’ TRM version 6.0, which accounted for 42% of the total TRC net benefits. As outlined in the manual, net savings calculations include the calculation of free ridership and spillover rates. Evaluation methods employed by the independent contractor hired by Entergy included tracking system and desk reviews, metered data analysis, and on-site measurement and verification as appropriate for the program or measure. In 2016, Entergy had an overall net-to-gross ratio of 91% for energy savings and 95.9% for demand savings. Program level net-to-gross ratios for energy savings ranged from 80% to 105%.

Utilities in Missouri recover energy efficiency program costs concurrently with the program year (or true-ups from the previous year) through a cost recovery rider on customer bills. Lost revenue is addressed through Entergy’s Formula Rate Plan Rider.

The following tables show Entergy’s historical energy efficiency goals, performance, and financial awards.¹³

Table 7. Entergy historical spending targets and actual spending

Year	Target costs	EM&V costs	Total costs	Costs as a % of target	Costs as a % of revenue
2010	\$11,430,346	\$159,525	\$10,713,410	94%	0.40%
2011	\$18,684,699	\$37,305	\$13,413,739	72%	0.80%
2012	\$39,609,138	\$1,372,002	\$28,515,019	72%	1.70%
2013	\$53,032,398	\$2,116,185	\$52,285,262	99%	3.10%
2014	\$59,913,755	\$2,268,195	\$65,453,663	109%	3.65%
2015	\$71,178,268	\$1,238,830	\$62,190,181	87%	3.42%
2016	\$65,963,717	\$1,193,023	\$60,963,717	92%	3.48%

Table 8. Entergy electric energy savings targets and achievements

Year	Target savings (MW)	Total savings (MW)	Demand savings as a % of target	Target savings (MWh)	Total savings (MWh)	Energy savings as a % of target	Energy savings as a % of sales
2010	29.90	26.91	90%	34,885	44,251	127%	0.20%

¹²Arkansas Public Service Commission. *In the Matter of the Consideration of Innovative Approaches to Ratebase Rate of Return Ratemaking Including, but not Limited to, Annual Earnings Reviews, Formula Rates, and Incentive Rates for Jurisdictional Electric and Natural Gas Utilities*. Docket No. 08-137-U. http://www.apscservices.info/efilings/docket_search_results.asp.

¹³ Entergy Arkansas. 2017. In the Matter of the Application of Entergy Arkansas, Inc. for Approval of Energy Efficiency Programs and Energy Efficiency Cost Rate Rider. apscservices.info/eeAnnualReports.aspx.

2011	35.23	19.83	56%	53,960	41,958	78%	0.19%
2012	47.35	23.26	49%	96,694	107,627	111%	0.51%
2013	49.90	57.80	116%	139,622	188,468	135%	0.90%
2014	48.30	63.05	131%	135,738	205,507	151%	0.98%
2015	101.18	75.20	74%	162,886	230,341	141%	1.09%
2016	91.50	92.50	101%	161,478	253,290	157%	1.23%

Table 9. Entergy performance incentive amounts

Year	Portfolio TRC Score	NPV of TRC Benefits	Financial award	Financial award as a % of program spending
2010	2.8	\$52,859,000	\$0	0%
2011	1.4	\$9,908,000	\$0	0%
2012	1.23	\$9,975,551	\$1,286,500	5%
2013	2.11	\$67,830,000	\$3,712,268	7%
2014	1.88	\$66,312,000	\$4,581,754	7%
2015	1.34	\$35,016,070	\$3,501,607	6%
2016	3.81	\$193,606,360	\$4,617,460	8%

Entergy was not eligible for performance incentives in 2010 and did not meet the minimum 80% target achievement in 2011. Entergy has exceeded their target every year beginning in 2012, ranging from about 111% of the target achieved to over 150% achieved. Entergy's performance incentives have ranged from about \$1.2M to over \$4.6M, representing between 5% and 8% of their program spending.

CONSUMERS ENERGY

Consumers is an investor-owned utility with territory in Michigan. Table 10 shows Consumers' total revenue, sales, and customers for 2010-2016.

Table 10. Consumers annual utility data. *Source: EIA*

Year	Revenues (thousands)	Sales (MWh)	Customers	AMI penetration
2010	\$3,718,332	37,368,674	1,789,763	No data
2011	\$3,796,127	37,519,166	1,789,884	0.00%
2012	\$3,916,376	37,737,194	1,789,583	2.97%
2013	\$4,006,969	36,552,532	1,791,217	8.98%
2014	\$4,144,046	37,233,269	1,792,421	21.62%
2015	\$4,031,759	36,929,954	1,797,237	45.53%
2016	\$4,157,268	37,554,296	1,806,511	74.47%

Consumers is subject to statutory energy savings goals under Michigan's EERS. The EERS went into effect in 2009, requiring electric utilities to achieve 0.3% savings as a percentage of the prior year's retail

sales. Targets increased annually until 2012 when the target was set at 1%. This target is in place through 2021. Utility spending was capped at 0.1% of annual sales in 2010, rising to 2.0% from 2012 – 2016, after which the cap was removed. Savings above the target can be used to meet up to 1/3 of the following year’s target, unless the utility has earned an incentive on those savings.¹⁴ Self-direct programs that exempt customers from energy efficiency charges (except the low-income portion of the funding) are available for customers that have a peak demand of at least 1MW in aggregate. In 2015, 7 customers were self-directed.¹⁵ Electric utilities in Michigan do not have a decoupling or LRAM mechanism in place. Consumers reports net savings using a net-to-gross ratio deemed to be 90% by the Michigan Public Service Commission.

Consumers is eligible to earn a multifactor performance incentive that includes savings-based metrics as well as program goals like expanding low income programs, creating consistency in rebate amounts, promoting deep energy savings (as described below), and reducing peak demand.¹⁶ The incentive mechanism has changed slightly over time. Prior to 2012, achievement of 115% or more of the energy savings target with a Utility Cost Test (UCT) score of 1.25 or greater qualified the Company to earn the maximum incentive allowed per Commission Order. This was calculated on a sliding scale in relation to the level of achievement, capped at the smaller of either 15% of the Company’s investment or 25% of net benefits. The UCT includes net costs for provider incentives paid by customers.

The performance incentive continues to include energy savings performance metrics as a major portion of the incentive calculation. The calculations began to include other metrics in 2013. In an effort to bolster the installation of longer-lasting measures, the performance incentive began to include calculation of the Long-Life Equipment Savings Multiplier (LLESMS). The LLESMS is a 10% savings multiplier awarded to measures installed with a measure life of 10 years or more. In 2014, the calculation began to consider lifetime savings rather than annual energy savings. Other metrics included in the incentive calculation include performance on low-income programs and increases in participation in multi-measure C&I programs over a baseline year.

The following tables show Consumers’ historical energy efficiency goals, performance, and financial awards.¹⁷

Table 11. Consumers historical spending targets and actual spending

Year	Target costs	EM&V costs	Total costs	Costs as a % of target	Costs as a % of spending cap	Costs as a % of revenue
------	--------------	------------	-------------	------------------------	------------------------------	-------------------------

¹⁴ State of Michigan. Public Act of 2016, Enrolled Senate Bill No. 438. <https://www.legislature.mi.gov/documents/2015-2016/publicact/htm/2016-PA-0342.htm>.

¹⁵ Michigan Public Service Commission. 2016. *2016 Report on the Implementation of P.A. 295 Utilite Energy Optimization Programs*. https://www.michigan.gov/documents/mpsc/2016_Energy_Optimization_Report_to_the_Legislature_with_Appendix_Nov_30_543919_7.pdf.

¹⁶ Michigan Public Service Commission, Case U-18261, 2017. Settlement Agreement. <https://mi-psc.force.com/s/case/500t0000008eg12AAA/in-the-matter-on-the-commissions-own-motion-regarding-the-regulatory-review-revisions-determinations-and-or-approvals-necessary-for-consumers-energy-company-to-fully-comply-with-public-act-295-of-2008-and-public-act-342-of-2016?>

¹⁷ Consumers Energy. 2016. *In the Matter of the Commission’s Own Motion Regarding the Regulatory Reviews, Revisions, Determinations, and/or Approvals Necessary for Consumers Energy Company to Fully Comply with Public Act 295 of 2008: Application to Reconcile Its 2015 Energy Optimization Plan Costs*. MPSC Case No. U-18025. efile.mpsc.state.mi.us/efile/docs/18025/0003.pdf.

2010	\$33,850,000	\$1,583,705	\$33,844,872	100.0%	99.00%	1%
2011	\$48,760,000	\$1,978,346	\$48,544,467	99.6%	99.50%	1.5%
2012	\$67,510,000	\$2,506,196	\$67,369,007	99.8%	91.90%	2%
2013	\$69,220,000	\$2,928,945	\$69,097,040	99.8%	92.80%	2%
2014	\$75,000,000	\$3,080,614	\$74,878,934	99.8%	97.00%	2%
2015	\$76,500,000	\$3,338,161	\$76,173,581	99.6%	97.00%	2%

Table 12. Consumers electric energy savings targets and achievements

Year	Total savings (MW)	Target savings (MWh)	Total savings (MWh)	Total savings with LLESM (MWh)	Energy savings as a % of target	Energy savings as a % of sales
2010	No data	176,166	251,187	-	143%	0.71%
2011	No data	255,039	353,006	-	138%	1.04%
2012	No data	333,360	409,353	-	123%	1.23%
2013	59.80	335,498	456,867	473,045	141%	1.41%
2014	53.80	333,051	410,972	466,190	140%	1.40%
2015	41.40	331,877	282,459	353,398	106%	1.06%

Table 12. Consumers performance incentive amounts

Year	UCT score	Total financial award	Financial award as a % of program spending
2010	3.90	\$5,080,000	15.01%
2011	1.60	\$7,280,000	15.00%
2012	2.84	\$10,110,000	15.01%
2013	2.70	\$10,400,000	15.05%
2014	3.53	\$11,200,000	14.96%
2015	3.22	\$11,430,000	15.01%

Consumers has consistently exceeded their energy savings targets by 23% to 43%. Their performance incentive financial awards have increased with the utility's program spending, and have been above \$11M in recent years.

NATIONAL GRID

National Grid is an investor-owned utility with distribution service in Massachusetts, New York, and Rhode Island. Table 14 shows National Grid's total revenue, sales, and customers for 2010-2016 in the state of Massachusetts.

Table 14. National Grid annual utility data. *Source: EIA*

Year	Revenues (thousands)	Sales (MWh)	Customers	AMI penetration
2010	\$2,020,887	22,635,060	1,269,893	0.00%
2011	\$1,958,203	21,332,015	1,286,484	0.03%
2012	\$1,990,823	21,178,324	1,281,516	0.03%
2013	\$2,170,324	21,315,231	1,287,884	1.25%
2014	\$2,304,690	20,884,129	1,291,188	1.12%
2015	\$2,407,140	20,885,521	1,307,820	1.11%
2016	\$2,049,584	20,191,208	1,294,180	1.11%

National Grid MA is subject to statutory energy savings targets under the state’s Green Communities Act.¹⁸ The Act requires utilities to prioritize achieving all cost-effective energy efficiency resources above using other resources. Utilities in Massachusetts have been required to provide energy efficiency programs to customers since the 1980s. Beginning with program year 2010, utilities are required to file three-year energy efficiency plans with the Department of Public Utilities (DPU). Targets are set on a statewide-basis (for all program administrators combined) and began at 1.4% of annual sales in 2010 and ramped up incrementally to 2.6% in 2015. The 2016-2018 program plan increases the target to 2.94% of sales by 2018.¹⁹ Cost-effectiveness is determined using the Total Resource Cost test, and evaluations are overseen by Massachusetts’s multi-stakeholder Energy Efficiency Advisory Committee (EEAC). There are no opt-out provisions for large customers in Massachusetts. As outlined in the Massachusetts TRM, net savings are calculated considering free-ridership, participant spillover, and non-participant spillover.²⁰

Utilities in Massachusetts have full revenue decoupling and are eligible to earn a shareholder incentive. A statewide pool of available incentive dollars is allocated based on each program administrator’s contribution towards the state’s saving target. The shareholder incentives are multi-factor and are divided up based on the performance of utilities on metrics set in the program cycle plans. Metrics considered include a *savings mechanism* (based on total savings benefits in dollars), a *value mechanism* (based on savings net benefits in dollars), and *performance metrics* (determined based on set metrics for a program or measure in order to encourage other desired benefits). Utilities must meet a minimum threshold of their targets to earn an incentive and are also capped at a percentage of the target. The payout rates are calculated based on the total pool of available incentive funds divided by the total benefits goal.

The specific design of the performance incentive has changed for each program cycle. The three different metrics have made up various percentages of the total incentive, and the minimum thresholds have varied slightly over the years. For example, in the 2016-2018 program cycle, 61.5% of the incentive is based on the performance on the savings mechanism, and 38.5% of the incentive is based on performance on the value mechanism. \$100M total in performance incentives are available for the

¹⁸ Department of Public Utilities. 2010. Petition of Massachusetts Electric Company and Nantucket Electric Company, d/b/a National Grid, pursuant to G.L. c. 25, § 21 for approval by the Department of Public Utilities of its Three-Year Energy Efficiency Plan for 2010 through 2012. <http://ma-eeac.org/wordpress/wp-content/uploads/1-28-10-DPU-Order-Electric-PAs1.pdf>.

¹⁹ Massachusetts Energy Efficiency Advisory Council. 2017. *Plans and Updates*. <http://ma-eeac.org/plans-updates/>.

²⁰ Mass Save. 2015. *Massachusetts Technical Reference Manual*. <http://ma-eeac.org/wordpress/wp-content/uploads/2016-2018-Plan-1.pdf>.

state’s program administrators, leading to a payout rate is \$0.01055/ dollar of total evaluated benefits and \$0.01095/ dollar of Total Resource Cost test evaluated benefits excluding the performance incentive costs. For the 2016-2018 program cycle, utilities must achieve 75% or more of their target savings in order to earn the savings and value portions of the incentive and are capped at 125% of the target.²¹ The *performance metrics mechanism* was used between 2010 and 2012 but has not made up a portion of the performance incentive since then.

The following tables show National Grid’s historical energy efficiency goals, performance, and financial awards.²²

Table 15. National Grid historical spending targets and actual spending

Year	Target costs	EM&V costs	Total costs	Costs as a % of target	Costs as a % of revenue
2010	\$122,750,040	\$2,657,588	\$104,632,350	85.24%	5.2%
2011	\$185,655,651	No data	\$116,094,289	62.53%	5.9%
2012	\$163,083,485	No data	\$217,514,830	133.38%	10.9%
2013	\$206,039,468	\$2,426,237	\$186,456,356	90.50%	8.6%
2014	\$212,321,300	\$5,363,526	\$229,705,007	108.19%	10.0%
2015	\$221,181,428	\$5,475,549	\$251,730,695	113.81%	10.5%
2016	\$276,435,867	\$4,593,905	\$264,114,980	95.54%	12.9%

Table 16. National Grid electric energy savings targets and achievements

Year	Target savings (MW)	Total savings (MW)	Demand savings as a % of target	Target savings (MWh)	Total savings (MWh)	Energy savings as a % of target	Energy savings as a % of sales
2010	90.83	90.52	100%	289,774	291,910	100.7%	1.29%
2011	72.15	48.43	67%	422,914	342,996	81.1%	1.61%
2012	77.90	54.50	70%	518,875	424,051	81.7%	2.00%
2013	85.31	74.60	87%	559,120	502,193	89.8%	2.36%
2014	92.33	86.88	94%	588,812	611,064	103.8%	2.93%
2015	108.79	113.34	104%	614,464	679,852	110.6%	3.26%
2016	104.12	116.08	111%	641,043	745,129	116.2%	3.69%

Table 17. National Grid performance incentive amounts

Year	Portfolio TRC Score	Financial award	Financial award as a % of program spending
2010	3.23	\$8,191,302	8%

²¹ National Grid. 2015. *2016-2018 Energy Efficiency Plan Term Sheet*. <http://ma-eeac.org/wordpress/wp-content/uploads/Term-Sheet-2016-2018-Plan-9-23-15-Supp.-10-26-15-Final.pdf>.

²² Massachusetts Energy Efficiency Advisory Council. 2017. *Results and Reporting*. <http://ma-eeac.org/results-reporting/>.

2011	4.24	\$9,425,469	8%
2012	3.42	\$9,848,087	5%
2013	4.3	\$13,876,363	7%
2014	4.06	\$14,468,082	6%
2015	2.64	\$15,839,602	6%
2016	3.14	\$16,756,778	6%

National Grid has had varied success meeting their annual energy savings targets, ranging from about 81% of the target achieved to over 116% achieved. However, Massachusetts measures program success over three-year periods, so meeting annual goals is less important than the overall three-year target. National Grid has earned performance incentives ranging from about \$8.2M to over \$16.5M in 2016, representing between 5% and 8% of their program spending.

Discussion

Positive performance incentives are important help address the inherent disincentives that utilities face regarding the provision of energy efficiency programs for their customers. In particular, performance incentives have been cited as one of the most important factors contributing to increasing utility energy savings year to year and to driving high levels of savings. Additionally, there is a high correlation between utilities with performance incentives in place and high energy efficiency budgets. Moreover, when properly designed, they can help focus the attention of utility management on the achievement of goals important to state policymakers and regulators.

These four utilities represent a range of energy efficiency achievements, including OGE that achieved 0.55% savings as a percentage of sales and National Grid that has achieved over 3.6% savings as a percentage of sales in 2016. The utilities included in this study also vary widely in their program spending levels, but most utilities earn performance incentives between 5 and 15% of their energy efficiency program costs.

This group of utilities also represents a range of performance incentive design options. Those designing the incentives can choose to reward the benefits or programs that are important to their state's policy objectives or other desired outcomes. For example, Consumers is eligible for rewards for long-life measures and low-income program achievement, while Entergy is eligible for shared net benefits of their overall portfolio. These decisions reflect various motivations for incentivizing energy efficiency programs and achievement.

It is also important to note that the performance incentive mechanisms included here have all shifted over time. This indicates that utility performance incentives should be revisited periodically to ensure that the utilities are meeting their goals and are being challenged to achieve deeper savings, and to ensure that the utilities' energy efficiency portfolios are continuing to meet the broader goals of the state or regulators.

We appreciate this opportunity to present data on utility energy efficiency performance and performance incentive designs. ACEEE is available to provide additional resources, research, and analysis of options for aligning utility business models for energy efficiency performance.

For more information on the information contained in this memo, please contact Senior Research Analyst Grace Relf (grelf@aceee.org) or ACEEE Fellow Dan York (dyork@aceee.org). For more

information on technical assistance opportunities, please contact Utilities Program Manager Rachel Gold (rgold@aceee.org).

Appendix A. Utility data by sector

Table A1. OGE data by sector. *Source:* EIA

Year	Residential			Commercial			Industrial		
	Revenues (thousands)	Sales (MWh)	Customers	Revenues (thousands)	Sales (MWh)	Customers	Revenues (thousands)	Sales (MWh)	Customers
2010	\$835,073	8,759,063	614,181	\$663,281	8,856,116	91,912	\$316,806	5,713,762	9,034
2011	\$882,545	9,126,768	619,151	\$678,251	9,173,491	93,104	\$322,028	5,934,527	9,014
2012	\$822,079	8,422,475	625,663	\$667,255	9,359,143	94,329	\$317,256	6,264,634	8,995
2013	\$842,358	8,668,433	632,362	\$706,219	9,357,636	95,946	\$339,546	6,176,943	8,964
2014	\$865,708	8,652,606	639,163	\$738,689	9,472,917	97,326	\$352,634	6,181,637	8,967
2015	\$840,341	8,431,968	646,260	\$666,976	9,578,009	98,905	\$303,259	6,055,492	8,892
2016	\$893,409	8,568,873	654,457	\$711,647	9,770,954	100,411	\$298,743	5,854,541	8,890

Table A2. Entergy data by sector. *Source:* EIA

Year	Residential			Commercial			Industrial		
	Revenues (thousands)	Sales (MWh)	Customers	Revenues (thousands)	Sales (MWh)	Customers	Revenues (thousands)	Sales (MWh)	Customers
2010	\$771,405	8,500,515	582,972	\$459,889	6,420,368	89,015	\$413,995	7,081,919	22,109
2011	\$747,937	8,228,512	583,973	\$465,035	6,325,891	89,445	\$417,872	7,028,945	21,966
2012	\$758,156	7,858,971	584,559	\$487,336	6,302,526	90,050	\$435,999	6,925,231	22,577
2013	\$764,681	7,921,074	585,377	\$484,390	6,169,123	90,724	\$429,602	6,768,830	22,998
2014	\$746,943	8,069,917	586,022	\$475,214	6,170,936	91,417	\$420,726	6,808,318	23,645
2015	\$816,386	8,016,287	588,065	\$530,581	6,254,827	92,310	\$473,817	6,888,937	23,794
2016	\$782,205	7,618,426	589,522	\$509,557	6,225,368	93,493	\$441,954	6,795,445	23,855

Table A3. Consumers data by sector. *Source:* EIA

Year	Residential			Commercial			Industrial		
	Revenues (thousands)	Sales (MWh)	Customers	Revenues (thousands)	Sales (MWh)	Customers	Revenues (thousands)	Sales (MWh)	Customers
2010	\$1,678,879	12,968,152	1,569,183	\$1,260,297	12,418,359	211,694	\$779,156	11,982,163	8,886
2011	\$1,729,025	12,931,530	1,571,319	\$1,265,735	12,211,724	209,704	\$801,367	12,375,912	8,861
2012	\$1,769,254	12,901,196	1,571,873	\$1,311,778	12,242,611	208,830	\$835,344	12,593,387	8,880
2013	\$1,840,822	12,792,609	1,573,802	\$1,368,337	12,171,885	208,654	\$797,809	11,588,038	8,761
2014	\$1,874,563	12,593,983	1,574,243	\$1,404,200	12,049,100	209,499	\$865,283	12,590,186	8,679
2015	\$1,829,595	12,494,679	1,577,087	\$1,484,507	12,908,291	218,553	\$717,657	11,526,984	1,597
2016	\$1,969,484	12,789,439	1,584,318	\$1,494,445	13,050,342	220,572	\$693,339	11,714,515	1,621

Table A4. National Grid data by sector. *Source:* EIA

Year	Residential			Commercial			Industrial		
	Revenues (thousands)	Sales (MWh)	Customers	Revenues (thousands)	Sales (MWh)	Customers	Revenues (thousands)	Sales (MWh)	Customers
2010	\$1,174,292	9,629,489	1,115,759	\$683,551	9,579,120	149,782	\$163,026	3,426,177	4,351
2011	\$1,127,685	8,759,427	1,127,391	\$673,273	9,286,585	154,663	\$157,170	3,284,899	4,429
2012	\$1,142,135	8,697,585	1,124,755	\$683,548	9,266,899	152,519	\$165,071	3,212,899	4,241
2013	\$1,244,978	8,918,051	1,129,768	\$745,209	9,251,020	153,917	\$180,065	3,145,151	4,198
2014	\$1,327,974	8,538,380	1,132,271	\$791,180	9,205,186	154,772	\$185,420	3,139,516	4,143
2015	\$1,448,401	8,480,798	1,147,218	\$773,462	9,242,841	156,492	\$185,171	3,160,728	4,108
2016	\$1,202,850	8,158,431	1,134,656	\$677,135	9,104,837	155,506	\$169,444	2,927,026	4,017

Appendix B. Utility program-level spending and savings data

Table B1. OGE program-level data. *Source:* OGE

Program totals	TRC	Annual MWh	Annual MW	Annual Costs
2010				
Low Income Weatherization	2.55	8,243	1.74	\$5,881,907
Fixed Income Weatherization	2.57	3,108	0.79	\$2,361,246
Residential HEEP	1.51	649	0.98	\$1,126,741
Positive Energy Home	3.33	173	0.12	\$113,850
Geothermal HVAC	1.87	628	0.15	\$145,275
Commercial Lighting	3.39	29,755	5.99	\$1,045,840
Standard Offer Program	1.78	4,917	0.70	\$162,830
Education	-	-	-	\$833,477
EM&V	-	-	-	\$101,170
Marketing	-	-	-	\$267,639
Printing	-	-	-	\$25,234
Professional Services	-	-	-	\$611,981
Totals	2.28	47,473	10.48	\$ 12,677,190
2011				
Low Income Weatherization	1.39	7,298	1.53	\$5,061,153
Fixed Income Weatherization	1.71	3,119	0.68	\$2,297,096
Residential HEEP	1.14	16,042	8.94	\$5,161,630
Positive Energy Home	2.11	833	0.60	\$533,568
Geothermal HVAC	1.29	1,030	0.25	\$251,251
Commercial Lighting	3.25	25,324	4.90	\$1,011,861
Standard Offer Program	7.81	7,097	1.31	\$354,897
Education	-	-	-	\$750,792
EM&V	-	-	-	\$369,216
Marketing	-	-	-	\$797,803
Professional Services	-	-	-	\$730,232
Employee Expenses	-	-	-	\$76,539
Labor	-	-	-	\$804,768
Total	18.70	60,743	18.21	\$18,200,806
2012				
Low Income Weatherization	1.13	10,080	2.28	\$6,026,453
Fixed Income Weatherization	0.75	92	0.02	\$60,593

Program totals	TRC	Annual MWh	Annual MW	Annual Costs
Residential HEEP	1.11	4,457	2.40	\$3,448,163
Positive Energy Home	1.37	1,187	0.85	\$759,326
Geothermal HVAC	1.38	1,611	0.39	\$362,813
Commercial Lighting	2.51	11,976	2.39	\$487,422
Standard Offer Program	5.73	5,004	0.88	\$243,378
Education	-	-	-	\$598,900
Marketing	-	-	-	\$539,805
Professional Services	-	-	-	\$119,949
Employee Expenses	-	-	-	\$39,820
EM&V	-	-	-	\$836,837
Labor	-	-	-	\$991,452
Total	1.53	34,406	9.23	\$14,514,911
2013				
Residential WRAP	1.64	11,965	3.49	\$162,931
Residential HEEP	1.57	13,229	6.31	\$118,545
Positive Energy Home	1.74	3,387	1.25	\$14,864
Geothermal HVAC	0.97	591	0.27	\$16,024
Commercial Lighting	1.86	19,867	3.94	\$20,481
Commercial CEEP	2.24	1,858	0.43	\$16,764
Industrial IEEP	8.77	2,424	0.36	\$17,258
Education	-	-	-	\$33,020
SmartHours	1.68	28,994	39.41	\$-
Customer Education	-	-	-	\$16,971,651
Incentives/Rebates	-	-	-	\$17,999,551
Admin Costs	-	-	-	\$3,270,750
Research & Development	-	-	-	\$380,787
Total	20.47	82,315	55.44	\$39,022,626
2014				
Weatherization Program	3.06	9,779	3.69	\$5,496,982
Home Energy Efficiency Program	1.58	32,760	13.81	\$3,673,289
Positive Energy New Home Construction	1.83	2,134	1.25	\$910,041
Geothermal Program	1.09	611	0.35	\$467,460
Commercial Lighting	3.10	25,157	4.77	\$1,547,952

Program totals	TRC	Annual MWh	Annual MW	Annual Costs
Program				
Commercial Energy Efficiency Program	3.28	8,568	2.73	\$2,245,605
Industrial Energy Efficiency Program	1.67	200	0.05	\$36,843
Education Program	-	-	-	\$-
Research & Development	-	-	-	\$204,814
SmartHours	1.42	19,333	32.49	\$12,193,844
IVVC Program	1.33	4,534	9.30	\$-
Planning & Design	-	-	-	\$35,112
Customer Education	-	-	-	\$14,885,705
EM&V	-	-	-	\$1,121,412
Admin	-	-	-	\$4,342,557
Regulatory	-	-	-	\$190,174
Total	15.30	93,297	64.75	\$41,854,808
2015				
Weatherization Program	3.24	10,898	4.03	\$5,506,720
Home Energy Efficiency Program	1.60	25,901	10.12	\$3,706,802
Positive Energy New Home Construction	1.71	2,431	1.36	\$953,304
Geothermal Program	1.05	841	0.37	\$467,246
Commercial Lighting Program	3.82	34,363	6.17	\$4,046,275
Commercial Energy Efficiency Program	4.68	8,447	3.07	\$2,463,063
Industrial Energy Efficiency Program	2.01	735	0.16	\$195,148
Education Program	1.32	-	-	\$272,774
SmartHours	1.32	11,496	10.90	\$9,445,291
IVVC Program	3.32	4,369	10.02	\$-
Peak Time Rebate	-	-	-	\$-
Planning & Design	-	-	-	\$8,804
Marketing & Delivery	-	-	-	\$11,482,695
EM&V	-	-	-	\$864,334
Admin	-	-	-	\$4,156,478
Regulatory	-	-	-	\$30,729

Program totals	TRC	Annual MWh	Annual MW	Annual Costs
Total	24.07	99,481	46.21	\$43,599,663
2016				
Home Energy Efficiency Program	2.07	41,862	7.20	\$6,379,737
Positive Energy New Home Construction	1.46	2,926	0.94	\$982,037
Weatherization Program	2.78	13,716	5.60	\$5,345,668
Commercial Energy Efficiency Program	1.77	71,541	12.22	\$8,167,062
IVVC Program	1.01	2,965	5.20	\$-
Delivery	-	-	-	\$10,005,658
Marketing	-	-	-	\$1,057,418
EM&V	-	-	-	\$823,253
Admin	-	-	-	\$ 581,037
Total	9.09	133,010	31.16	\$33,341,870

Table B2. Entergy program-level data. *Source:* Entergy

Program totals	Annual kWh	Annual kW	Annual Costs
2010			
Lighting & Appliances	3,121,934	340	\$209,508
Arkansas Weatherization Program	2,666,649	751	\$656,841
Energy Efficiency Arkansas	-	-	\$181,964
Home Energy Solutions	9,562,161	4,828	\$2,294,391
Efficient Cooling Solutions	1,360,087	603	\$671,667
C&I Prescriptive	7,440,298	1,256	\$564,859
C&I Custom Solutions	15,433,679	3,101	\$990,605
Small Business	1,327,339	290	\$416,884
City Smart	3,338,655	1,302	\$486,205
Agricultural Irrigation Load Control	-	6,400	\$3,431,488
Demand Response	-	8,000	\$715,511
Regulatory			\$93,487
Total	44,250,802	26,871	\$10,713,410
2011			
Lighting & Appliances	12,142,849	1,361	\$1,058,032
Arkansas Weatherization Program	1,991,412	669	\$619,497

Program totals	Annual kWh	Annual kW	Annual Costs
Energy Efficiency Arkansas	-	-	\$304,154
Home Energy Solutions	6,685,137	3,477	\$2,363,899
Energy Solutions Multi-Family	-	-	\$22,097
Energy Solutions for Manufactured (Mobile) Homes	-	-	\$100,644
Energy Star New Homes	-	-	\$60,988
Efficient Cooling Solutions	1,400,520	899	\$929,119
Residential Benchmarking Pilot	-	-	\$96,087
Residential Direct Load Control	-	-	\$9,899
C&I Prescriptive	6,634,605	900	\$749,314
C&I Custom Solutions	10,275,701	2,348	\$1,427,566
Small Business	1,259,460	328	\$427,534
City Smart	1,568,473	377	\$327,117
Agricultural Energy Solutions	-	-	\$47,476
Agricultural Irrigation Load Control	-	9,472	\$4,686,563
Regulatory			\$183,755
Total			\$13,413,739
2012			
Lighting & Appliances	27,344,941	3,185	\$3,231,819
Arkansas Weatherization Program	3,248,354	1,475	\$2,527,754
Energy Efficiency Arkansas	3,042,245	1,458	\$983,508
Home Energy Solutions	1,753,019	205	\$567,348
Energy Solutions Multi-Family	650,756	76	\$690,623
Energy Solutions for Manufactured (Mobile) Homes	27,383	8	\$121,847
Energy Star New Homes	16,840,944	-	\$1,192,405
Efficient Cooling Solutions	-	2,592	\$2,671,152
Residential Benchmarking Pilot	981,539	272	\$610,607
Residential Direct Load Control	-	-	\$329,749
C&I Prescriptive	19,028,322	3,011	\$3,714,246
C&I Custom Solutions	20,830,917	2,422	\$5,403,317
Small Business	4,089,338	871	\$965,850
City Smart	9,611,846	1,644	\$1,471,138
Agricultural Energy Solutions	177,222	22	\$108,428
Agricultural Irrigation Load Control	-	6,020	\$3,925,228

Program totals	Annual kWh	Annual kW	Annual Costs
Total	107,626,826	23,261	\$28,515,019
2013			
Efficient Cooling Solutions	11,420,543	5,714	\$2,758,468
Energy Solutions for Manufactured Homes	626,613	5,231	\$935,574
Energy Solutions for Multi-Family	713,413	4,673	\$573,725
Energy Star New Homes	54,305	95	\$398,544
Home Energy Solutions	13,935,561	79	\$8,493,070
Lighting & Appliances	29,525,658	17	\$3,133,611
Residential Benchmarking Pilot	9,380,303	6,374	\$1,528,523
Residential Direct Load Control	-	12,041	\$3,312,919
C&I Custom Solutions	58,279,669	162	\$14,525,835
C&I Prescriptive	38,471,904	-	\$8,005,269
City Smart	15,888,237	5,965	\$2,675,130
Small Business	7,787,545	6,489	\$1,784,952
Agricultural Energy Solutions	1,939,724	1,488	\$491,796
Agricultural Irrigation Load Control	-	1,611	\$3,137,809
Arkansas Weatherization Program	444,779	268	\$298,394
Energy Efficiency Arkansas	-	7,576	\$231,644
Total	188,468,000	57,782	\$52,285,262
2014			
Efficient Cooling Solutions	9,980,117	7,696	\$3,097,755
Energy Solutions for Manufactured Homes	729,822	5,563	\$845,838
Energy Solutions for Multi-Family	1,130,258	4,502	\$515,294
Energy Star New Homes	49,268	194	\$378,899
Home Energy Solutions	16,642,347	92	\$11,216,692
Lighting & Appliances	42,939,371	12	\$4,409,506
Residential Benchmarking Pilot	6,664,570	4,528	\$1,154,974
Residential Direct Load Control	-	15,910	\$3,759,412
C&I Solutions Program	97,702,202	106	\$23,795,293
City Smart	14,662,275	-	\$2,815,908
Small Business	12,199,594	13,886	\$3,171,022
Agricultural Energy Solutions	2,577,203	2,079	\$391,596
Agricultural Irrigation Load Control	-	1,509	\$3,810,523

Program totals	Annual kWh	Annual kW	Annual Costs
Arkansas Weatherization Program	229,868	371	\$214,827
Energy Efficiency Arkansas	-	6,597	\$230,496
Regulatory	-	-	\$105,721
Total	205,506,894	63,045	\$59,913,755
2015			
Efficient Cooling Solutions	11,572,605	8,840	\$2,745,610
Energy Solutions for Manufactured Homes	684,987	7,212	\$872,388
Energy Solutions for Multi-Family	1,312,305	4,789	\$572,536
Energy Star New Homes	71,233	200	\$383,932
Home Energy Solutions	23,232,000	84	\$11,025,851
Lighting & Appliances	51,572,134	26	\$4,817,393
Residential Benchmarking Pilot	8,423,919	5,723	\$1,524,456
Residential Direct Load Control	-	20,273	\$4,562,443
C&I Solutions Program	99,757,000	69	\$23,954,964
City Smart	13,303,502	-	\$2,857,698
Small Business	16,647,393	12,399	\$3,549,012
Agricultural Energy Solutions	3,608,417	2,622	\$540,737
Agricultural Irrigation Load Control	-	2,227	\$4,349,702
Arkansas Weatherization Program	155,245	474	\$185,324
Energy Efficiency Arkansas	-	10,263	\$233,147
Regulatory	-	-	\$14,988
Total	230,223,656	75,201	\$62,190,181
2016			
Efficient Cooling Solutions	10,724,845	8,160	\$2,344,395
Energy Solutions for Manufactured Homes	1,620,786	8,535	\$810,080
Energy Solutions for Multi-Family	2,794,597	3,348	\$688,946
Home Energy Solutions	24,842,378	865	\$14,042,588
Lighting & Appliances	53,871,110	192	\$4,723,152
Residential Benchmarking Program	8,142,462	5,863	\$598,198
Residential Direct Load Control	52,172	28,099	\$4,052,965
C&I Solutions Program	91,431,787	-	\$19,748,340
City Smart	25,040,969	1,886	\$4,215,474
Commercial Midstream	10,411,844	11,123	\$1,033,206

Program totals	Annual kWh	Annual kW	Annual Costs
Small Business	17,197,779	2,024	\$3,293,002
Agricultural Energy Solutions	7,159,184	4,410	\$887,504
Agricultural Irrigation Load Control	-	965	\$3,586,750
Energy Efficiency Arkansas	-	17,027	\$230,642
Regulatory	-	-	\$14,865
Total	253,289,913	92,496	\$60,270,107

Table B3. Consumers program-level data 2010-2012. *Source:* Consumers

Program totals	UCT	Annual MWh	Annual Costs
2010			
ENERGY STAR Lighting	11.20	55,753	\$3,164,796
ENERGY STAR Appliances	5.70	1,470	\$60,344
HVAC & Water Heating	2.20	3,083	\$1,832,863
Income Qualified	1.10	3,714	\$2,211,940
MF Direct Install	2.10	3,540	\$1,047,634
Existing Home Retrofit	-	-	\$0
New Construction	-	-	\$106,554
Appliance Recycling	5.50	18,093	\$1,479,493
Energy Education	3.10	1,163	\$226,848
Residential Pilots	-	3,474	\$667,371
Comprehensive & Custom Business Solutions	5.70	125,137	\$14,171,017
Small Business Direct Install	4.00	17,308	\$3,381,279
Business Pilots	-	3,034	\$582,821
Self-Direct	-	12,343	\$0
Utility oversight	-	-	\$1,988,524
Tracking system	-	-	\$748,923
Education & Awareness	-	3,075	\$590,760
EM&V	-	-	\$1,583,705
Total without incentive	4.50	251,187	\$33,844,872
Total with incentive/Total	3.90	251,187	\$33,844,872
2011			
ENERGY STAR Lighting	2.50	106,034	\$6,226,205

Program totals	UCT	Annual MWh	Annual Costs
ENERGY STAR Appliances	2.80	1,333	\$144,208
HVAC & Water Heating	0.70	4,313	\$1,704,344
Income Qualified	0.40	4,390	\$2,099,065
MF Direct Install	0.7	8,036	\$1,886,166
Home Performance with ENERGY STAR	0.30	1,141	\$1,246,378
New Construction	-	-	\$30,000
Appliance Recycling	1.10	20,407	\$2,453,372
Think! Energy- Energy Education	0.80	1,821	\$344,787
Residential Pilots	-	6,286	\$1,196,521
Comprehensive & Custom Business Solutions	3.40	156,697	\$16,720,733
Small Business Direct Install	0.90	21,265	\$6,122,928
Business Pilots	-	6,228	\$1,185,464
Self Direct	-	7,404	\$0
Utility oversight	-	-	\$2,690,777
Tracking system	-	-	\$820,455
Education & Awareness	-	7,651	\$1,694,718
EM&V	-	-	\$1,978,346
Total without incentive	1.80	353,006	\$48,544,467
Total with incentive/Total	1.60	353,006	\$48,544,467
2012			
ENERGY STAR Lighting	6.36	78,996	\$6,203,651
ENERGY STAR Appliances	3.34	1,447	\$277,610
HVAC & Water Heating	2.42	5,284	\$2,179,519
Income Qualified	1.29	3,677	\$1,563,654
MF Direct Install	1.15	6,127	\$2,824,536
Home Performance with ENERGY STAR	0.46	1,707	\$3,537,620
New Construction	1.33	179	\$147,390
Appliance Recycling	4.31	40,269	\$4,153,407
Think! Energy- Energy Education	1.78	2,244	\$589,873

Program totals	UCT	Annual MWh	Annual Costs
Home Energy Analysis (HEA)	0.75	4,852	\$3,150,029
Residential Pilots	-	7,079	\$1,430,664
Comprehensive & Custom Business Solutions	4.72	150,736	\$20,637,393
Small Business Direct Install	4.37	75,651	\$9,508,822
Business Multifamily Direct Install	3.95	5,365	\$698,162
Business Pilots	-	8,797	\$1,777,843
Self Direct	-	7,118	\$0
Utility oversight	-	-	\$3,335,655
Tracking system	-	-	\$861,362
Education & Awareness	-	9,825	\$1,985,621
EM&V	-	-	\$2,506,196
Total without incentive	3.28	409,353	\$67,369,007
Total with incentive/Total	2.84	409,353	\$67,369,007

Table B4. Consumers program-level data 2013-2015. *Source:* Consumers

Program totals	UCT	Annual MWh	Annual MWh w/LLES Multiplier	Lifetime MWh Savings	Annual MW Savings	Annual MW Savings w/LLES Multiplier	Annual Costs
2013							
Appliance Recycling	3.34	31,357	31,357	250,859	3.70	3.70	\$4,521,572
ENERGY STAR Appliances	3.03	421	446	4,392	0.10	0.10	\$85,598
ENERGY STAR Lighting	7.99	101,878	101,918	921,349	12.10	12.10	\$6,418,208
Home Energy Analysis (HEA)	1.01	3,354	3,435	31,618	0.40	0.40	\$1,730,680
Home Energy Report	0.81	28,410	28,410	28,410	-	-	\$2,111,089
Home Performance with ENERGY STAR	0.89	706	759	9,695	0.20	0.20	\$855,858
HVAC & Water Heating	2.47	5,502	6,002	79,108	1.10	1.20	\$2,033,870
income Qualified Energy Assistance	0.68	2,033	2,075	18,598	0.20	0.20	\$1,553,208

Program totals	UCT	Annual MWh	Annual MWh w/LLES Multiplier	Lifetime MWh Savings	Annual MW Savings	Annual MW Savings w/LLES Multiplier	Annual Costs
Insulation and Windows Programs	1.51	660	726	13,193	0.40	0.40	\$678,638
Residential Multifamily	1.15	7,626	7,955	75,725	0.90	1.00	\$3,679,529
New Home Construction	1.21	152	167	3,011	-	-	\$208,928
THINK! ENERGY	2.08	2,641	2,685	25,106	0.30	0.30	\$601,997
Residential Pilots Programs	-	6,792	6,792	-	-	-	\$1,398,767
Comprehensive & Custom Business Solutions	4.39	154,270	166,774	1,932,456	23.90	25.60	\$21,534,533
Small Business Direct Install	2.64	81,964	84,184	536,499	16.20	16.50	\$10,068,877
Business Multifamily Direct Install	4.67	4,317	4,576	42,596	0.40	0.40	\$391,573
Business Pilots	-	9,478	9,478	-	-	-	\$1,952,000
Self-Direct	-	5,936	5,936	-	-	-	\$0
Utility oversight	-	-	-	-	-	-	\$3,690,106
Tracking system	-	-	-	-	-	-	\$723,339
Education & Awareness	-	9,370	9,370	-	-	-	\$1,929,702
EM&V	-	-	-	-	-	-	\$2,928,945
Total without incentive	3.12	456,867	473,045	3,972,554	59.80	62.10	\$69,097,040
Total with incentive/Total	2.70	456,867	473,045	3,972,554	59.80	62.10	\$69,097,040
2014							
Appliance Recycling	3.24	25,706	25,706	205,646	3.10	3.10	\$4,368,394
ENERGY STAR Appliances	1.10	446	481	5,249	0.10	0.10	\$368,675
ENERGY STAR Lighting	10.07	72,614	86,593	1,086,871	8.70	10.40	\$5,905,397
Home Energy Analysis (HEA)	0.83	2,514	3,066	38,943	0.30	0.30	\$2,554,747
Home Energy Report	1.56	35,316	35,316	35,316	-	-	\$2,215,876
Home Performance with	0.52	287	314	4,741	0.10	0.10	\$755,380

Program totals	UCT	Annual MWh	Annual MWh w/LLES Multiplier	Lifetime MWh Savings	Annual MW Savings	Annual MW Savings w/LLES Multiplier	Annual Costs
ENERGY STAR							
HVAC & Water Heating	2.89	7,408	8,068	84,380	1.30	1.40	\$1,858,340
income Qualified Energy Assistance	0.91	2,708	3,961	62,354	0.30	0.50	\$3,686,005
Insulation and Windows Programs	1.12	561	618	14,766	0.30	0.40	\$1,038,430
Residential Agriculture	2.75	570	626	8,565	0.10	0.10	\$178,210
Residential Multifamily	1.66	4,565	7,140	120,487	0.50	0.80	\$3,818,580
New Home Construction	0.99	127	140	2,801	-	-	\$251,698
THINK! ENERGY							
Residential Pilots Programs	-	6,615	6,615	-	-	-	\$1,487,137
Comprehensive & Custom Business Solutions	5.64	180,233	204,821	3,142,696	29.50	34.20	\$25,333,826
Small Business Direct Install	5.43	40,749	51,042	743,844	8.70	10.80	\$7,084,657
Business Multifamily Direct Install	7.45	3,318	4,283	69,604	0.40	0.50	\$442,127
Business Pilots	-	9,378	9,378	-	-	-	\$2,108,396
Self-Direct	-	5,062	5,062	-	-	-	\$0
Utility oversight	-	-	-	-	-	-	\$4,607,915
Tracking system	-	-	-	-	-	-	\$908,671
Education & Awareness	-	9,897	9,897	-	-	-	\$2,225,083
EM&V	-	-	-	-	-	-	\$3,080,614
Total without incentive	4.09	410,972	466,190	5,657,831	53.80	63.10	\$74,878,934
Total with incentive/Total	3.53	410,972	466,190	5,657,831	53.80	63.10	\$74,878,934
2015							
Appliance Recycling	3.28	25,160	25,160	201,282	3.00	3.00	\$4,405,543
ENERGY STAR Appliances	0.96	481	511	5,421	0.10	0.10	\$466,486

Program totals	UCT	Annual MWh	Annual MWh w/LLES Multiplier	Lifetime MWh Savings	Annual MW Savings	Annual MW Savings w/LLES Multiplier	Annual Costs
ENERGY STAR Lighting	9.62	53,173	77,212	1,223,754	6.40	9.30	\$7,376,401
Home Energy Analysis (HEA)	1.95	4,409	6,699	111,034	0.50	0.70	\$2,949,007
Home Energy Report	0.45	4,856	4,856	4,856	1.00	1.00	\$731,746
Home Performance with ENERGY STAR	0.57	419	457	6,523	0.20	0.20	\$841,437
HVAC & Water Heating	3.38	7,207	7,850	82,608	1.30	1.40	\$1,658,359
income Qualified Energy Assistance	1.04	2,374	4,119	75,656	0.30	0.50	\$3,745,904
Insulation and Windows Programs	1.33	687	756	18,436	0.40	0.50	\$1,135,060
Residential Agriculture	2.79	490	661	10,863	0.10	0.20	\$211,113
Residential Multifamily	1.30	2,830	5,218	99,154	0.30	0.60	\$3,738,991
New Home Construction	0.59	151	166	3,329	-	-	\$331,562
THINK! ENERGY	3.68	1,596	2,791	51,905	0.10	0.30	\$673,007
Residential Pilots Programs	-	6,847	6,847	6,847	-	-	\$1,571,581
Comprehensive & Custom Business Solutions	5.07	112,682	137,492	2,332,666	18.90	22.80	\$20,917,699
Small Business Direct Install	3.51	33,909	46,343	794,175	8.50	11.60	\$11,587,224
Business Multifamily Direct Install	5.27	2,724	3,796	69,890	0.40	0.50	\$625,932
Business Pilots	-	8,334	8,334	8,334	-	-	\$1,912,832
Self-Direct	-	4,899	4,899	4,899	-	-	\$0
Utility oversight	-	-	-	-	-	-	\$4,941,464
Tracking system	-	-	-	-	-	-	\$895,414
Education & Awareness	-	9,231	9,231	9,231	-	-	\$2,118,657
EM&V	-	-	-	-	-	-	\$3,338,161
Total without incentive	3.73	282,459	353,398	5,120,863	41.40	52.60	\$76,173,581

Program totals	UCT	Annual MWh	Annual MWh w/LLES Multiplier	Lifetime MWh Savings	Annual MW Savings	Annual MW Savings w/LLES Multiplier	Annual Costs
Total with incentive/Total	3.22	282,459	353,398	5,120,863	41.40	52.60	\$76,173,581

Table B4. National Grid program-level data 2013-2016. *Source:* National Grid

Program	Winter Capacity (kW)	Energy (Annual MWh)	Total Program Costs
2010			
Residential New Construction & Major Renovation	432.00	2,179	\$1,838,120
Residential Cooling & Heating Equipment	404.00	1,732	\$2,171,780
Residential Multi-Family Retrofit	1,859.00	7,748	\$6,424,556
Residential MassSave	2,531.00	15,426	\$14,232,324
Residential ENERGY STAR Lighting	8,198.00	39,941	\$6,336,937
Residential ENERGY STAR Appliances	836.00	5,628	\$2,987,529
Residential Education			
Workforce Development			
OPOWER	6,357.00	25,622	\$1,391,790
Deep Energy Retrofit	-	-	\$249,166
Residential New Construction & Major Renovation - Major Renovation Statewide Pilot	-	-	\$34,968
Residential New Construction - Multi-Family (4-8 story) Statewide Pilot	-	-	\$121,943
Residential New Construction - Lighting Design Statewide Pilot	-	-	\$12,385
Residential New Construction - V3 ENERGY STAR Homes Statewide Pilot	-	-	\$11,096
Heat Pump Water Heating Pilot	-	-	\$34,235
Low-Income Residential New Construction	40.00	222	\$124,824
Low-Income 1-4 Family Retrofit	797.00	4,102	\$7,445,762
Low-Income Multi-Family Retrofit	437.00	2,239	\$2,828,533
C&I New Construction and Major Renovation	3,163.00	24,369	\$9,994,027
C&I LargeRetrofit	18,712.00	140,441	\$34,376,765
C&I Small Retrofit	2,984.00	25,262	\$8,834,316
2011			
Residential New Construction & Major Renovation	325.00	1,741	\$1,664,823

Residential Cooling & Heating Equipment	398.00	2,105	\$2,447,821
Residential Multi-Family Retrofit	1,329.00	5,386	\$6,504,681
Residential MassSave	2,839.00	14,504	\$16,329,348
Residential Behavioral/Feedback Program	10,462.00	41,901	\$2,819,130
Residential ENERGY STAR Lighting	10,213.00	49,390	\$8,626,692
Residential ENERGY STAR Appliances	925.00	7,241	\$3,865,398
Deep Energy Retrofit	-	-	\$415,042
Residential New Construction & Major Renovation - Major Renovation Statewide Pilot	-	-	\$60,292
Residential New Construction - Multi-Family (4-8 story) Statewide Pilot	-	-	\$328,062
Residential New Construction - Lighting Design Statewide Pilot	-	-	\$27,904
R&D Demonstration	-	-	\$45,241
Community-based pilot	-	-	\$100,762
Low-Income Residential New Construction	49.00	243	\$241,301
Low-Income 1-4 Family Retrofit	824.00	4,730	\$9,402,303
Low-Income Multi-Family Retrofit	522.00	2,542	\$3,095,892
C&I New Construction and Major Renovation	9,162.00	51,432	\$13,214,505
C&I LargeRetrofit	18,875.00	132,943	\$29,090,312
C&I Small Retrofit	4,175.00	28,838	\$11,706,320
2012			
Residential New Construction & Major Renovation	433.00	2,104	\$1,687,032
Residential Cooling & Heating Equipment	623.00	3,213	\$3,977,844
Residential Multi-Family Retrofit	3,037.00	9,947	\$6,975,715
Residential MassSave	4,490.00	15,565	\$25,401,189
Residential Behavioral/Feedback Program	15,296.00	61,177	\$3,494,842
Residential ENERGY STAR Lighting	17,715.00	78,297	\$11,584,451
Residential ENERGY STAR Appliances	1,167.00	8,049	\$3,319,071
Deep Energy Retrofit	-	-	\$899,161
Residential New Construction & Major Renovation - Major Renovation Statewide Pilot			\$144,853
Residential New Construction - Multi-Family (4-8 story) Statewide Pilot			\$468,422
Residential New Construction - Lighting Design Statewide Pilot			\$24,162
R&D Demonstration			\$318,363
Community-based pilot			\$69,514

Low-Income Residential New Construction	33.00	150	\$284,837
Low-Income Retrofit	2,285.00	9,804	\$18,324,485
C&I New Construction and Major Renovation	12,760.00	86,344	\$22,671,194
C&I LargeRetrofit	14,923.00	106,370	\$34,338,200
C&I Small Retrofit	6,698.00	43,029	\$20,588,433
2013			
Residential New Construction & Major Renovation	573.47	2,949	\$1,954,842
Residential Multi-Family Retrofit	1,001.36	8,716	\$7,373,371
Residential Home Energy Services	5,764.99	29,988	\$35,762,813
Residential Behavior/Feedback Program	14,934.86	71,118	\$6,424,833
Residential Cooling & Heating Equipment	1,484.75	6,699	\$5,304,392
Residential Lighting	18,626.74	110,094	\$15,001,819
Residential Consumer Products	1,230.33	8,129	\$3,370,846
Residential Statewide Marketing	-	-	\$825,805
Residential DOER Assessment	-	-	\$444,661
Residential EEAC Consultants	-	-	\$0
Residential Sponsorship & Subscriptions	-	-	\$68,806
Residential HEAT Loan	-	-	\$6,860,788
Residential Workforce Development	-	-	\$53,420
Residential R&D and Demonstration	-	-	\$38,966
Residential Education	-	-	\$799,438
Low-Income New Construction	17.22	89	\$151,104
Low-Income Single Family Retrofit	1,514.52	8,433	\$17,657,736
Low-Income Multi-Family Retrofit	1,069.07	5,165	\$5,555,136
Low-Income Statewide Marketing			\$116,257
Low-Income DOER Assessment			\$150,756
Low-Income Energy Affordability Network			\$146,927
C&I New Construction	12,141.89	87,692	\$24,226,808
C&I Retrofit	19,941.95	126,766	\$35,693,321
C&I Direct Install	6,427.93	34,926	\$16,974,738
C&I Statewide Marketing			\$420,880
C&I DOER Assessment			\$765,101
C&I EEAC Consultants			\$0
C&I Sponsorships & Subscriptions			\$312,791
2014			
Residential New Construction & Major Renovation	744.75	3,613	\$2,430,238

Residential Multi-Family Retrofit	3,211.51	10,217	\$8,996,940
Residential Home Energy Services	8,267.82	44,352	\$42,754,328
Residential Behavior/Feedback Program	18,456.64	87,889	\$6,572,448
Residential Cooling & Heating Equipment	1,341.11	5,644	\$5,387,876
Residential Lighting	21,306.59	125,681	\$17,970,990
Residential Consumer Products	1,263.41	7,140	\$3,975,757
Residential Statewide Marketing	-	-	\$1,005,812
Residential DOER Assessment	-	-	\$463,636
Residential EEAC Consultants	-	-	\$0
Residential Sponsorship & Subscriptions	-	-	\$198,523
Residential HEAT Loan	-	-	\$8,312,311
Residential Workforce Development	1,409.77	-	\$43,593
Residential R&D and Demonstration	-	-	\$12,128
Residential Education	21.80	-	\$448,048
Low-Income New Construction	21.80	115	\$150,275
Low-Income Single Family Retrofit	1,409.77	8,123	\$14,855,358
Low-Income Multi-Family Retrofit	3,811.18	13,189	\$14,725,801
Low-Income Statewide Marketing			\$104,382
Low-Income DOER Assessment			\$146,492
Low-Income Energy Affordability Network			\$141,058
C&I New Construction	17,621.35	137,542	\$32,883,551
C&I Retrofit	16,958.72	126,622	\$44,547,470
C&I Direct Install	6,723.37	39,654	\$21,824,807
C&I Statewide Marketing			\$402,449
C&I DOER Assessment			\$775,092
C&I EEAC Consultants			\$0
C&I Sponsorships & Subscriptions			\$575,647
2015			
Residential New Construction & Major Renovation	618.58	3,090	\$2,576,969
Residential Multi-Family Retrofit	3,462.07	11,285	\$8,915,644
Residential Home Energy Services	10,229.05	55,500	\$45,836,322
Residential Behavior/Feedback Program	17,616.84	83,890	\$6,365,744
Residential Cooling & Heating Equipment	1,422.51	4,743	\$4,299,881
Residential Lighting	18,065.05	107,973	\$16,702,486
Residential Consumer Products	860.09	6,778	\$3,579,049
Residential Statewide Marketing	-	-	\$853,774

Residential DOER Assessment	-	-	\$477,645
Residential EEAC Consultants	-	-	\$0
Residential Sponsorship & Subscriptions	-	-	\$113,593
Residential HEAT Loan	-	-	\$7,950,729
Residential Workforce Development	-	-	\$36,232
Residential R&D and Demonstration	-	-	\$559,221
Residential Education	-	-	\$615,192
Low-Income New Construction	7.12	113	\$94,700
Low-Income Single Family Retrofit	1,345.31	8,026	\$14,221,121
Low-Income Multi-Family Retrofit	5,682.54	13,712	\$17,002,495
Low-Income Statewide Marketing			\$83,740
Low-Income DOER Assessment			\$161,965
Low-Income Energy Affordability Network			\$139,439
C&I New Construction	15,416.43	124,397	\$28,572,358
C&I Retrofit	29,116.45	212,446	\$73,558,423
C&I Direct Install	9,496.33	47,901	\$31,436,445
C&I Statewide Marketing			\$575,163
C&I DOER Assessment			\$821,954
C&I EEAC Consultants			\$0
C&I Sponsorships & Subscriptions			\$371,185
2016			
Residential New Construction	1.27	6,208	\$5,335,599
Residential Multi-Family Retrofit	1.97	8,064	\$13,363,755
Residential Home Energy Services-Measures	10.34	57,953	\$44,406,782
Residential Home Energy Services- RCS	-	-	\$6,392,254
Residential Behavior/Feedback Program	18.49	88,056	\$6,340,330
Residential Cooling & Heating Equipment	0.75	4,442	\$5,021,700
Residential Consumer Products	1.08	5,668	\$3,121,230
Residential Lighting	27.25	200,287	\$23,869,700
Residential Statewide Marketing	-	-	\$495,397
Residential Statewide Database	-	-	\$11,665
Residential DOER Assessment	-	-	\$694,126
Residential Sponsorship & Subscriptions	-	-	\$5,560
Residential HEAT Loan	-	-	\$7,462,665
Residential Workforce Development	-	-	\$36,247
Residential R&D and Demonstration	-	-	\$92,768

Residential Education	-	-	\$697,679
Low-Income Single Family Retrofit	1.12	6,740	\$14,842,043
Low-Income Multi-Family Retrofit	2.44	9,288	\$12,699,724
Low-Income Statewide Marketing	-	-	\$145,148
Low-Income Statewide Database	-	-	\$901
Low-Income DOER Assessment	-	-	\$176,329
Low-Income Energy Affordability Network	-	-	\$139,991
Low-Income Sponsorships and Subscriptions	-	-	\$885
C&I New Buildings and Major Renovations	2.60	18,421	\$7,741,362
C&I Initial Purchas & End of Useful Life	3.61	26,873	\$12,782,532
C&I Existing Building Retrofit	22.84	166,419	\$71,267,303
C&I Small Business	8.18	43,561	\$23,725,781
C&I Multifamily Lighting	1.46	5,018	\$7,648,743
C&I Upstream Lighting	12.69	98,131	\$11,023,315
C&I Statewide Marketing	-	-	\$495,468
C&I Statewide Database	-	-	\$14,575
C&I DOER Assessment	-	-	\$648,410
C&I Sponsorships & Subscriptions	-	-	\$66,707
C&I Workforce Development	-	-	\$65,599
C&I R&D and Demonstration	-	-	\$39,486

*Costs are program costs only and do not include administrative costs.