



**Minnesota Conservation  
Improvement Program:  
Energy And Carbon Dioxide Savings  
Report for 2013-2014**

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**Prepared by Minnesota Department of Commerce  
Division of Energy Resources**

**Pursuant to Minnesota Statutes 216B.241, subd. 1c(g)**

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## Executive Summary

The Minnesota Department of Commerce, Division of Energy Resources (Commerce) submits this report in fulfillment of Minn. Statutes §216B.241, subd. 1c(g), which requires the Commissioner of Commerce to produce and make publicly available a report on the annual energy savings and estimated carbon dioxide reductions achieved by energy conservation improvement programs for the two most recent years for which data are available. This report has been updated to include data through program year 2014.

### Electric and natural gas energy savings impacts

The Conservation Improvement Program (CIP) is a statewide program funded by ratepayers and administered by electric and natural gas utilities to help Minnesota households and businesses lower their energy costs by using electricity and natural gas more efficiently. CIP helps to conserve these important resources while reducing harmful emissions and the need to build new utility infrastructure.

Recognizing these benefits, lawmakers passed the Next Generation Energy Act (NGEA) in 2007, which set a 1.5% Energy Efficiency Resource Standard (EERS) beginning in 2010 for electric and natural gas utilities. Unless adjusted by the Commissioner of Commerce, each utility is required to develop a CIP plan to achieve energy savings of 1.5% of gross annual retail sales<sup>1</sup> on annual basis. The NGEA also set a statewide annual savings goal of 1.5% of annual retail sales, which was modified in 2013 legislation to *at least* 1.5%.<sup>2</sup>

Overall, electric and natural gas CIP savings have grown significantly since 2006, the earliest year for which Commerce began reporting through the Annual Energy and Carbon Dioxide Savings Reports.

Total electric and natural gas savings over 2013 and 2014 totaled 1,899 gigawatt-hours (GWh) and 5.9 billion cubic feet (bcf), respectively. Combined, these energy savings are equivalent to approximately 12,454,733 million-BTUs (MMBtu), enough energy to heat, cool, and power about 110,219 homes in Minnesota for one year.<sup>3</sup>

*Electric and gas CIP programs in 2013-2014 saved enough energy to heat, cool, and power about 110,219 homes in Minnesota for one year.*

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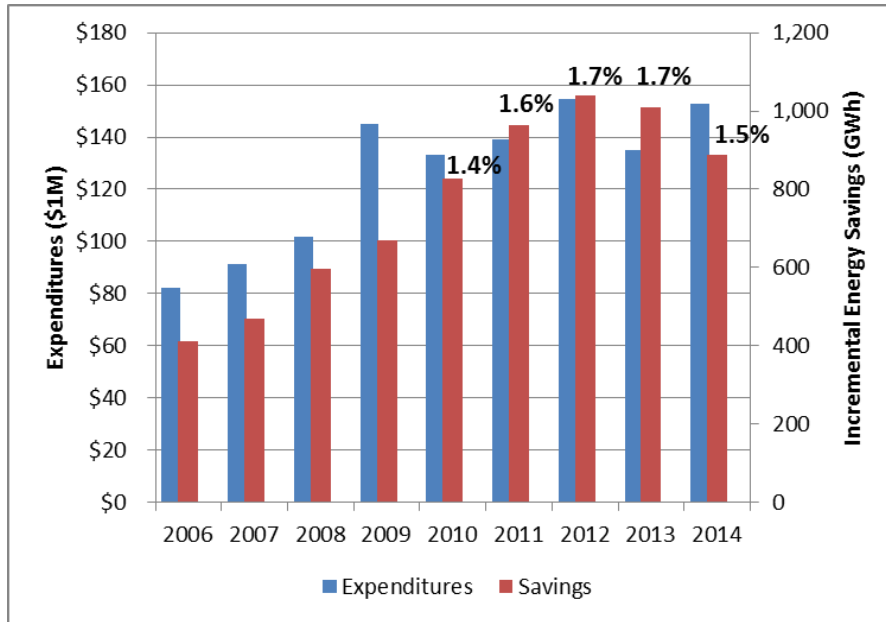
<sup>1</sup> As defined in Minn. Stat. §216B.241 subd. 1 (g), “gross annual retail sales” exclude sales to CIP-exempt customers.

<sup>2</sup> Minn. Stat. §216B.2401 as amended by Minn. Laws 2013, Ch. 85, Art. 12, Sec. 2.

<sup>3</sup> Based on average total annual energy consumption per home of 113.0 MMBtu for IA/MN/ND/SD from Table CE3.3 of the 2009 Residential Energy Consumption Survey by the US Energy Information Administration.

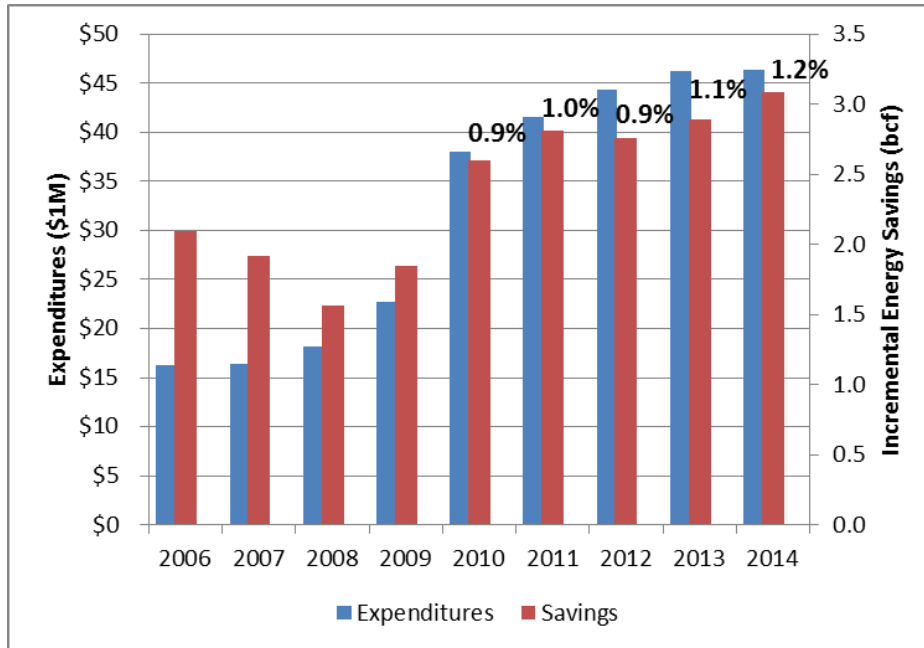
As illustrated in Figure 1 below, electric CIP savings exceeded the 1.5% standard in both 2013 and 2014, achieving overall savings of 1.74% and 1.51% of gross annual retail sales, respectively.

**Figure 1. Electric Utility CIP Expenditures and Savings from 2006-2014**



Statewide natural gas savings are shown in Figure 2 below. As illustrated below, overall natural gas CIP savings in 2013 and 2014 were equivalent to 1.1% and 1.2% of gross annual retail sales, respectively. While below the 1.5% standard, these achievement levels exceeded the minimum 0.75% savings goal that was approved for certain utilities over 2010-2012 and the minimum 1.0% savings goal approved by the Commissioner of Commerce.<sup>4</sup>

**Figure 2. Gas Utility CIP Expenditures and Savings from 2006-2014**



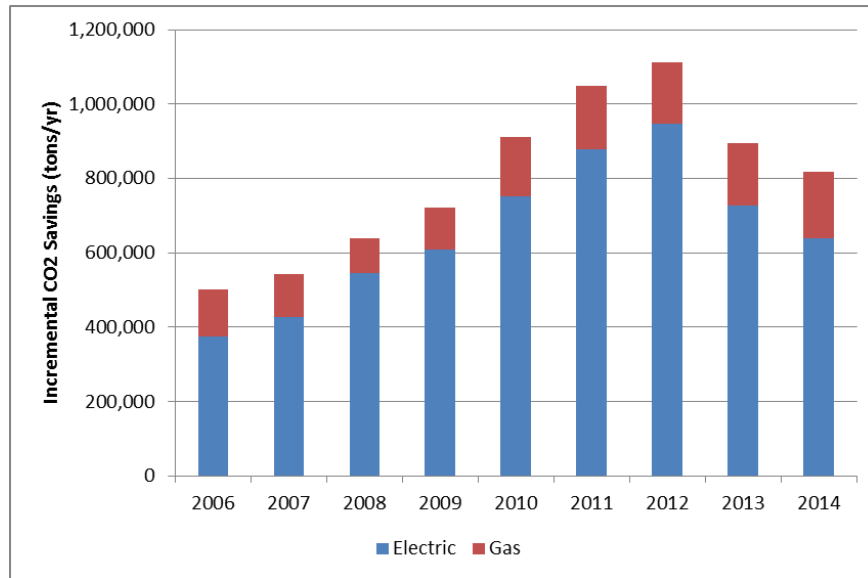
<sup>4</sup> Minn. Laws 2009, Ch. 110 Sec. 32 permitted the Commissioner to approve an average savings goal of 0.75% over the 2010-2012 triennial period for gas utilities party to a gas conservation potential study completed in 2009. In addition, Minn. Stat. §216B.241 subd. 1c (d) allows the Commissioner to adjust to a public utility’s savings goal to a minimum of 1.0%.

## Avoided carbon dioxide emissions

CIP plays a vital role in helping Minnesota achieve its carbon dioxide (CO<sub>2</sub>) emission goals. For 2013 and 2014, on average, each megawatt-hour (MWh) of electricity saved in Minnesota avoids 1,437 pounds (0.72 tons) of CO<sub>2</sub> emitted to the atmosphere, while each dekatherm (Dth) of natural gas saved avoids 117 pounds (0.06 tons) of CO<sub>2</sub>.<sup>5</sup>

As a result of the electric and natural gas savings achieved through CIP in 2013-2014, approximately 1.7 million tons of CO<sub>2</sub> emissions were avoided, equivalent to removing over 325,000 cars from the road for one year.<sup>6</sup>

Figure 3. Tons of CO<sub>2</sub> Avoided Through Electric and Gas CIP Programs from 2006-2014



*Electric and gas CIP programs in 2013-2014 avoided 1.7 million tons of CO<sub>2</sub> emissions, equivalent to removing over 325,000 cars from the road for one year.*

<sup>5</sup> The electric CO<sub>2</sub> emissions rate is provided by the Minnesota Pollution Control Agency to the Minnesota Public Utilities Commission and Minnesota Department of Commerce in Docket No. E,G999/CI-00-1343, and was last updated on April 25, 2016. The gas CO<sub>2</sub> emissions rate of 117 pounds of CO<sub>2</sub> per Dth is provided by the U.S. Energy Information Administration, and was last updated February 2, 2016 ([https://www.eia.gov/environment/emissions/co2\\_vol\\_mass.cfm](https://www.eia.gov/environment/emissions/co2_vol_mass.cfm)), accessed November 30, 2016. These updated emissions rates were applied to years 2013 and 2014. Previous years utilize a rate of 1,823 pounds of CO<sub>2</sub> per MWh of electricity saved and 121 pounds of CO<sub>2</sub> per Dth of natural gas saved.

<sup>6</sup> Calculated using the US Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator (<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>), accessed November 30, 2016.

## CIP as an energy resource

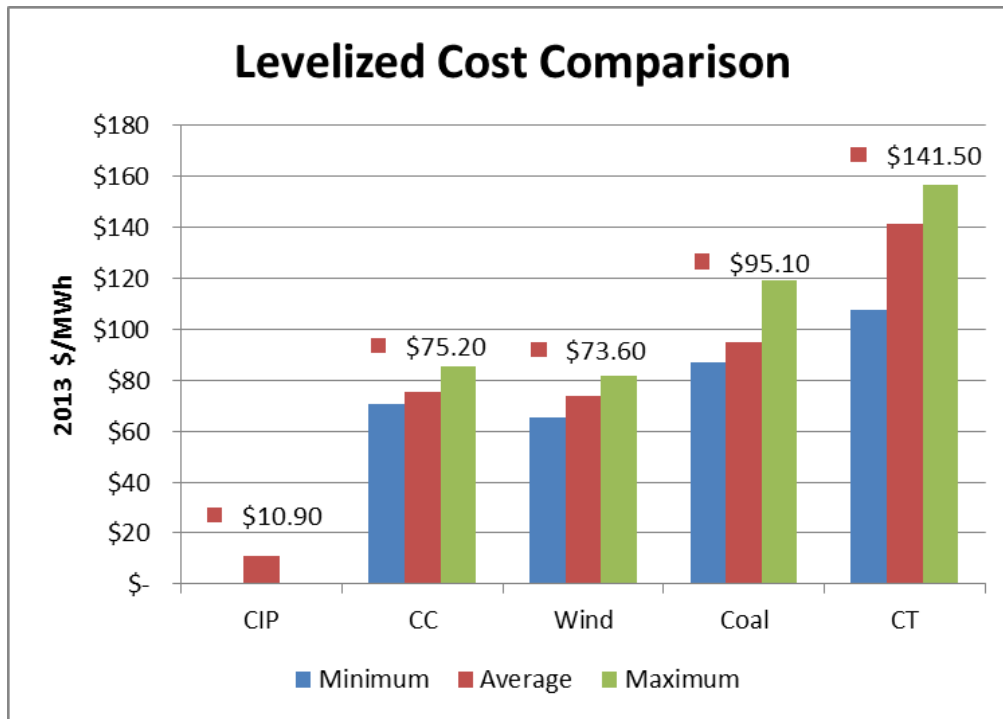
Aside from reducing CO<sub>2</sub> and other air emissions, one of the primary purposes of CIP is to serve as a low cost resource for meeting future energy needs. In Minnesota, demand-side management (DSM) programs, which are comprised primarily of CIP programs, are treated as a resource alongside supply-side resources (including fossil fuel, nuclear, and renewable generation resources) in integrated resource planning (IRP), a process that attempts to determine the least cost mix of supply resources for meeting the needs of an electric utility's customers over the next 15 years. One reason high levels of DSM are often selected through the IRP process is because CIP programs are a low cost resource in comparison to supply-side options.

This observation is supported by Figure 4, which compares the actual levelized cost of CIP programs over 2012-2014 to the levelized cost of different electric generation technologies modeled by the US Energy Information Administration (EIA) in the 2015 Annual Energy Outlook using data from across the United States. Levelized cost represents the per-kilowatt-hour cost (in real dollars) of building and operating a generating plant or DSM program over an assumed financial life and duty cycle, and provides a convenient metric for comparing the lifecycle cost of different energy resources.

Furthermore, building an electric generation plant usually requires a long lead time before the plant is fully operational – the EIA assumes a 5-year lead time to account for regulatory approval, construction, and commissioning activities. During this time, the price of fuel or materials could change significantly, or the demand for energy could deviate significantly from forecasted projections, presenting a serious financial risk to investors and ultimately ratepayers. In contrast, CIP programs are less exposed to these risks since they require less upfront investment and can be ramped up or down relatively quickly in response to changing market conditions.

It must be noted that while levelized cost comparisons are a convenient way to compare the cost of different energy resources, they should not be used as the sole basis for energy investment decisions. Specific technological and regional factors must be considered, as well as broader public policy implications. Furthermore, Figure 4 below only includes utility-scale centralized generation sources. Distributed generation sources, such as residential-scale wind and solar technologies or combined heat and power plants are thought to provide additional benefit in terms of grid support, avoided transmission costs and economic development. However, the levelized cost comparison demonstrates that in terms of the cost of constructing and operating an energy resource, CIP programs are very competitive with supply-side resources.

Figure 4. Levelized Cost Comparison of CIP to Various Electric Generation Options. Source: Minnesota Department of Commerce (CIP data) and US Energy Information Administration's Annual Energy Outlook 2015.



Key:

- CIP = Levelized Average Cost of Conservation Improvement Programs in 2012-2014
- CC = Natural gas-fired combined-cycle plant
- Wind = Utility-scale wind energy plant
- Coal = Conventional baseload coal plant
- CT = Natural gas-fired combustion turbine



## Background on CIP

### Overview

CIP is a utility-administered program with regulatory oversight by Commerce. State law requires Minnesota electric and natural gas utilities to invest at least 1.5% and 0.5% annually of their gross operating revenues (GOR), respectively, in conservation improvement programs. Xcel Energy's electric utility, as an owner of a nuclear generating plant in Minnesota is required to invest at least 2.0% of GOR annually in CIP.<sup>7</sup> CIP programs promote energy efficient technologies and practices to residential, commercial, and public customers through various means including marketing, incentives, and technical assistance. Commerce reviews and approves utility CIP filings to ensure that energy savings are calculated accurately, statutory requirements are met, and programs meet cost-effectiveness standards.

With passage of the Next Generation Energy Act in 2007, the EERS was established beginning in 2010, meaning that utilities were required to develop plans to achieve savings of 1.5% of average annual retail sales each year, unless adjusted by the Commissioner to no less than 1.0%.<sup>8</sup> This standard remains one of the most aggressive standards in the country, especially considering that efficiency programs have been operating in Minnesota since the early 1980s. In 2013, legislation was passed that strengthened Minnesota's commitment to energy efficiency and conservation, finding that cost-effective energy savings are preferred over all other energy resources, and that a *minimum* energy savings of 1.5% of annual retail energy sales of electricity and natural gas is to be achieved every year.<sup>9</sup>

Minnesota utilities operate a wide array of residential, commercial, and industrial CIP programs targeted to both retrofits as well as new construction. Each utility may tailor its portfolio of programs to meet the unique needs of its service territory. Typical end-uses in residential programs include lighting, furnaces, air-conditioners, ground source and air source heat pumps, and insulation and air sealing. Typical end-uses in commercial/industrial programs include lighting, HVAC, energy recovery ventilation equipment, food service equipment, and electric motors. Traditionally, programs have offered prescriptive equipment-based incentives (e.g. replacing an incandescent light bulb with an LED lamp), while more advanced programs are using building-centric or systems approaches to incentivize customers to implement bundles of efficiency measures or achieve a certain energy performance level beyond code (e.g. recommissioning an office building or school). Many utilities offer robust industrial efficiency programs that strive to help manufacturers increase the energy efficiency of their operations and compete in markets.

CIP programs help create and retain jobs in a variety of market sectors. Aside from the utility employees that are directly involved in program administration and marketing, utilities generally

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<sup>7</sup> Minn. Stat. §216B.241 Subdivision 1a. Paragraph (3).

<sup>8</sup> In 2009, legislation was passed that allowed the Commissioner to approve an average annual savings goal of 0.75% for gas utilities subject to a conservation potential study completed that year (Minn. Laws 2009, Ch. 110, Sec. 32). In 2011, legislation was passed that modified the 1.0% minimum standard to only apply to public utilities, i.e., investor-owned utilities (Minn. Laws 2009, Ch. 97, Sec. 20).

<sup>9</sup> Minn. Laws 2013, Ch. 85, Art. 12, Sec. 2

partner with external parties to deliver their programs. For example, utilities leverage local HVAC contractors and other trade partners to promote their program offerings to customers during the bidding process. Retailers such as home improvement stores and local hardware stores are critical for promoting high efficiency residential lighting and other consumer products. For commercial and industrial programs, utilities often partner with engineering firms to identify, evaluate, and implement efficiency projects. The incentives and marketing offered through CIP programs help drive business for architects, engineers, installers, retailers, and many others. In return, customers spend less money on energy, freeing up dollars for other uses.

## CIP regulatory process

Commerce is responsible for reviewing and approving utility CIP plans and annual status reports. All Minnesota utilities report their annual budget and actual program data in Reporting<sub>ESP</sub><sup>TM</sup>, a Cloud-based energy efficiency data management system developed by Energy Platforms, LLC. Investor-owned utilities (IOUs) are required to file three-year (triennial) plans and annual status reports through eDockets. Consumer-owned utilities (municipal utilities or electric cooperatives) file annual plans on the Departments of Commerce's Energy Savings Platform.<sup>10</sup>

As part of the CIP plan review process, Commerce staff evaluate the cost-effectiveness of the measures and programs proposed by each utility. Under CIP administrative rules<sup>11</sup>, Minnesota uses four of the five standard benefit-cost tests included in the *California Standard Practice Manual for Economic Analysis of Demand-side Programs and Projects*.<sup>12</sup> The Societal test, which compares some of the benefits to society of a program or measure to its total costs, is used to screen programs for cost-effectiveness. After Commerce Staff completes their review, the Commissioner of Commerce or his/her delegated authority (currently the Deputy Commissioner of the Division of Energy Resources) approves each utility's plan as filed or with modifications.

On an annual basis, both investor-owned and consumer-owned (i.e., cooperative or municipal) utilities submit status reports summarizing the CIP expenditures, participation, and savings achieved the previous year. Commerce reviews these reports to ensure the reasonableness of reported savings, that portfolios are cost-effective, and that relevant statutory requirements were met.

Minnesota statutes include mechanisms for IOUs to recover the costs of implementing CIP programs and earn a performance incentive based on the level of savings and amount of net benefits

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<sup>10</sup> The Energy Savings Platform® (ESP) was developed through a public-private partnership with Energy Platforms, LLC. and is an essential tool for ensuring that utility EE programs are cost-effective, achieving their approved energy savings goals, and meeting the requirements of Minnesota State law. ESP is made up of two applications, ESP (operations) and Reporting<sub>ESP</sub>. ESP (operations) is a user-configurable application for program implementation and energy savings tracking by utilities. Additionally ESP has the function of using automated calculators for quantifying energy savings based on the energy efficiency algorithms found within Minnesota's Technical Reference Manual (TRM). All data within ESP (operations) are private by default, but can be shared with other organizations. Reporting<sub>ESP</sub> is Minnesota's designated tool for energy efficiency program reporting by utilities and also serves as a central, publically-accessible database of energy efficiency data. Information is entered at the program-level in Reporting<sub>ESP</sub> and can be dynamically grouped and analyzed by utility, aggregator, program category, market segment, etc.

<sup>11</sup> Minnesota Rules chapter 7690.0500.

<sup>12</sup> [http://www.calmac.org/events/spm\\_9\\_20\\_02.pdf](http://www.calmac.org/events/spm_9_20_02.pdf)

achieved.<sup>13</sup> Most IOUs file their status reports as part of larger consolidated filings that include proposed adjustments to CIP cost-recovery riders based on the previous year's expenditures and performance incentive earned. Concurrent with the status report review process, Commerce staff review the proposed cost-recovery adjustments and file recommendations concerning the proposed adjustments to the Commission. After considering Commerce's recommendations and any public comments filed, the Commission then approves the proposed adjustments as is or with modifications.

For cooperative and municipal utilities, local utility commissions, boards or city councils determine their own cost recovery mechanisms. Commerce is unaware of any cooperative or municipal utilities that award themselves a performance incentive for CIP achievements.

### **CIP data collection and management with ESP**

Minnesota has approximately 180 investor-owned, municipal, and cooperative utilities that are required to implement CIP programs. Although this requirement existed prior to passage of the Next Generation Energy Act, the establishment of the 1.5% EERS in CIP increased the need for accurate and verifiable savings. To this end, Commerce has undertaken three major initiatives:

- 1) Development of measurement and verification (M&V) protocols for large commercial/industrial projects
- 2) Development of a Technical Reference Manual (TRM) providing standard algorithms and assumptions for calculating savings from a wide array of energy efficiency measures
- 3) Development of a Cloud-based software platform for CIP data collection and program operations (ESP®)

Recent development efforts have focused on integration of the TRM in ESP. Commerce staff have developed a library of on-line calculators called SmartMeasures™ based on the TRM that is shared with each utility in the state for no charge. This provides each utility with a library of pre-approved calculators that it can use to track and report savings, thereby eliminating the need for the utility and its CIP partners to develop and maintain the calculators on their own. This approach reduces duplication and further improves the accuracy of CIP data as more utilities adopt the Smart Measure library.

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<sup>13</sup> Minn. Stat. §216B.16, subd. 6b and 6c.

## CIP Savings and Expenditures

### Statewide totals

Table 1. Statewide Electric CIP Totals, 2006-2014<sup>14</sup>

Year	Incremental Energy Savings (GWh/yr)	% of Average Retail Sales	Incremental CO2 Savings (tons/yr)	Expenditures (million \$)	Approximate \$/kWh
2006	412	-	375,537	\$82.2	0.013
2007	468	-	426,646	\$91.2	0.013
2008	597	-	544,428	\$102.0	0.011
2009	669	-	609,906	\$144.9	0.014
2010	826	1.4%	753,260	\$133.0	0.011
2011	963	1.6%	878,156	\$139.0	0.010
2012	1,038	1.7%	946,252	\$154.6	0.010
2013	1,011	1.7%	726,089	\$135.1	0.009
2014	888	1.5%	638,330	\$152.6	0.011

Table 2. Statewide Natural Gas CIP Totals, 2006-2014

Year	Incremental Energy Savings (Dth/yr)	% of Average Retail Sales	Incremental CO2 Savings (tons/yr)	Expenditures (million \$)	Approximate \$/therm
2006	2,095,047	-	126,750	\$16.3	0.052
2007	1,917,144	-	115,987	\$16.4	0.057
2008	1,563,496	-	94,592	\$18.1	0.077
2009	1,843,347	-	111,522	\$22.8	0.082
2010	2,612,212	0.9%	158,039	\$38.0	0.097
2011	2,810,069	1.0%	170,009	\$41.6	0.099
2012	2,761,702	0.9%	167,083	\$44.4	0.107
2013	2,893,256	1.1%	169,400	\$46.2	0.106
2014	3,082,145	1.2%	180,460	\$46.4	0.100

<sup>14</sup> The cost per unit of energy savings (kWh, therm, and MMBtu) in Tables 1-3 were calculated using a typical weighted-average energy efficiency measure lifetime of 15 years. Although the exact weighted-average lifetime is dependent on the specific mix of energy efficiency measures installed in a given year, Commerce has found that 15 years is a reasonable assumption based on the weighted average lifetimes reported in utility status reports.

Table 3. Statewide Combined Electric and Gas CIP Totals, 2006-2014

Year	Incremental Energy Savings (MMBtu/yr)	% of Average Retail Sales	Incremental CO2 Savings (tons/yr)	Expenditures (million \$)	Approximate \$/MMBtu
2006	3,500,788	-	502,287	\$98.5	1.88
2007	3,514,199	-	542,633	\$107.6	2.04
2008	3,601,443	-	639,020	\$120.1	2.22
2009	4,126,391	-	721,428	\$167.7	2.71
2010	5,431,875	1.1%	911,299	\$171.0	2.10
2011	6,097,254	1.2%	1,048,165	\$180.6	1.97
2012	6,303,789	1.3%	1,113,335	\$198.9	2.10
2013	6,341,297	1.4%	895,490	\$181.2	1.91
2014	6,113,436	1.3%	818,790	\$199.0	2.17

## Utility/aggregator totals

The following tables summarize statewide, aggregator, and utility-level data from 2013 and 2014. The 2013 data was derived from a Reporting<sub>ESP</sub> export as of January 30, 2016. The 2014 data was derived from a Reporting<sub>ESP</sub> export as of November 23, 2016.

The following definitions apply:

- “Incremental energy savings” means first-year, annualized energy savings from newly installed measures, including avoided line losses for electric utilities. Includes savings from conservation improvements and electric utility infrastructure projects.
- “Energy Savings %” means energy savings from conservation improvements and electric utility infrastructure projects as a percent of annual retail sales, excluding sales to CIP-exempt customers.
- “Incremental CO2 Savings” means first-year, annualized carbon dioxide savings resulting from newly installed conservation improvements and electric utility infrastructure projects.
- “Expenditures” includes expenditures on conservation improvements only (excludes electric utility infrastructure projects.)
- “Expenditures %” means conservation improvement expenditures as a percent of gross operating revenues from service provided in the state, excluding sales to CIP-exempt customers. (Excludes spending on electric utility infrastructure projects.)

Table 4. Electric Utility CIP Totals, 2013

Organization	Incremental Energy Savings (kWh/yr)	Energy Savings %	Incremental CO2 Savings (tons/yr)	Expenditures	Expenditures %
<b>Investor-Owned Utilities</b>					
Alliant Energy	8,157,503	1.00%	5,861	\$2,166,000	2.80%
Minnesota Power	77,630,644	2.40%	55,778	\$6,405,828	2.70%
Otter Tail Power	35,792,001	1.70%	25,717	\$5,253,935	3.80%
Xcel Energy	494,677,799	1.70%	355,426	\$79,570,696	3.00%
<b>Totals - Investor-Owned Utilities</b>	<b>616,257,948</b>	<b>1.80%</b>	<b>442,781</b>	<b>\$93,396,460</b>	<b>3.00%</b>
<b>Cooperative CIP Aggregators</b>					
Dairyland Power Coop	5,518,318	0.90%	3,965	\$2,493,067	3.50%
East River Electric Power Coop	11,599,401	3.50%	8,334	\$367,323	1.50%
Great River Energy (All-Rqmts Members)	193,137,366	2.30%	138,769	\$15,575,524	1.70%
Great River Energy (Fixed Members)	27,418,152	1.00%	19,700	\$4,277,865	1.60%
Minnkota Power Coop/NMPA - 17 of 18 members	27,446,537	1.60%	19,720	\$2,481,152	1.40%
<b>Totals - Coop CIP Aggregators</b>	<b>265,119,775</b>	<b>1.90%</b>	<b>190,489</b>	<b>\$25,194,931</b>	<b>1.70%</b>
<b>Municipal CIP Aggregators</b>					
CMMPA - 10 of 12 members	3,821,466	1.20%	2,746	\$668,391	2.20%
MMMPA - 8 of 11 members	9,474,550	1.50%	6,807	\$939,095	1.50%
MRES - 23 of 24 members	17,221,376	0.90%	12,374	\$3,999,925	2.60%
SMMPA - 15 of 18 members	18,495,262	2.00%	13,289	\$2,574,555	2.90%
The Triad (SMMPA members)	40,489,019	2.10%	29,091	\$4,346,841	2.30%
<b>Totals - Municipal CIP Aggregators</b>	<b>89,501,674</b>	<b>1.60%</b>	<b>64,307</b>	<b>\$12,528,807</b>	<b>2.40%</b>
<b>Independent Cooperatives</b>					
Minnesota Valley Coop Light & Power	2,905,341	1.70%	2,087	\$333,403	2.40%
Sioux Valley Energy	549,603	0.50%	395	\$63,974	0.70%
<b>Totals - Independent Cooperatives</b>	<b>3,454,944</b>	<b>1.30%</b>	<b>2,482</b>	<b>\$397,377</b>	<b>1.70%</b>

Table 5. Continued - Electric Utility CIP Totals, 2013

Organization	Incremental Energy Savings (kWh/yr)	Energy Savings %	Incremental CO2 Savings (tons/yr)	Expenditures	Expenditures %
<b>Independent Municipals</b>					
Ada	15	0.00%	0	\$20,583	1.50%
Aitkin	560,036	1.60%	402	\$35,813	1.00%
Alvarado	2	0.00%	0	\$13,185	3.20%
Anoka (MMPA member)	3,559,261	1.40%	2,557	\$497,387	2.10%
Biwabik	118,909	1.80%	85	\$12,321	2.00%
Brainerd	2,914,558	1.60%	2,094	\$195,952	1.30%
Brewster	4,000	0.10%	3	\$4,530	1.00%
Delano (CMMPA member)	972,820	1.90%	699	\$76,489	1.80%
East Grand Forks (MMPA member)	3,344,734	2.20%	2,403	\$400,762	3.10%
Ely	857,713	2.30%	616	\$86,107	2.40%
Gilbert	173,790	1.60%	125	\$13,752	1.60%
Glencoe (CMMPA member)	1,153,724	1.60%	829	\$108,692	1.50%
Grand Rapids	2,894,311	1.70%	2,080	\$169,620	1.20%
Hibbing	1,417,620	1.20%	1,019	\$91,980	0.70%
Hutchinson (MRES member)	2,194,670	0.80%	1,577	\$225,719	0.90%
Lake Crystal	356,073	2.10%	256	\$22,528	0.80%
Madelia	75,242	0.30%	54	\$33,961	1.00%
Mountain Iron	427,057	2.00%	307	\$27,653	1.20%
New Ulm	2,252,995	1.20%	1,619	\$268,848	1.30%
Nielsville	3,320	0.60%	2	\$875	1.50%
Pierz	159,595	1.60%	115	\$17,247	2.20%
Proctor	326,664	1.30%	235	\$15,652	0.70%
Shakopee (MMPA member)	8,269,325	2.10%	5,942	\$521,872	1.40%
St. Charles	186,038	0.80%	134	\$83,552	2.80%
Truman	59,501	0.50%	43	\$22,031	1.20%
Two Harbors	322,626	1.10%	232	\$60,955	2.00%
Virginia	2,241,081	2.10%	1,610	\$79,982	0.60%
Warroad (NMPA member)	120,646	0.20%	87	\$51,770	1.30%
Willmar	1,262,295	0.50%	907	\$374,858	1.50%
<b>Totals - Independent Municipals</b>	<b>36,228,619</b>	<b>1.40%</b>	<b>26,030</b>	<b>\$3,534,675</b>	<b>1.40%</b>
<b>TOTALS - COOPS &amp; MUNICIPALS</b>	<b>394,305,012</b>	<b>1.70%</b>	<b>283,308</b>	<b>\$41,655,791</b>	<b>1.90%</b>
<b>TOTALS - ELECTRIC UTILITIES</b>	<b>1,010,562,959</b>	<b>1.70%</b>	<b>726,089</b>	<b>\$135,052,250</b>	<b>2.50%</b>



Table 6. Gas Utility CIP Totals, 2013

Organization	Incremental Energy Savings (Dth/yr)	Energy Savings %	Incremental CO2 Savings (tons/yr)	Expenditures	Expenditures %
<b>Investor-Owned Utilities</b>					
Alliant Energy	10,769	0.60%	631	\$327,337	2.50%
CenterPoint Energy	1,570,811	1.20%	91,971	\$22,829,711	2.50%
Great Plains Natural Gas	14,969	0.30%	876	\$378,793	1.20%
Greater Minnesota Gas	4,155	0.90%	243	\$86,088	1.80%
Minnesota Energy Resources	424,826	1.00%	24,874	\$8,630,239	3.40%
Xcel Energy	779,122	1.10%	45,618	\$12,780,833	2.40%
<b>Totals - Investor-Owned Utilities</b>	<b>2,804,652</b>	<b>1.10%</b>	<b>164,212</b>	<b>\$45,033,001</b>	<b>2.60%</b>
<b>Municipal Aggregators</b>					
The Triad	50,571	1.20%	2,961	\$391,771	1.20%
<b>Independent Municipals</b>					
Duluth	30,402	0.60%	1,780	\$661,340	1.60%
Hutchinson	6,525	0.40%	382	\$67,955	0.50%
Perham	1,106	0.10%	65	\$14,657	0.20%
<b>Totals - Independent Municipals</b>	<b>38,033</b>	<b>0.50%</b>	<b>2,227</b>	<b>\$743,952</b>	<b>1.20%</b>
<b>TOTALS - MUNICIPALS</b>	<b>88,604</b>	<b>0.70%</b>	<b>5,188</b>	<b>\$1,135,723</b>	<b>1.20%</b>
<b>TOTALS - GAS UTILITIES</b>	<b>2,893,256</b>	<b>1.10%</b>	<b>169,400</b>	<b>\$46,168,725</b>	<b>2.50%</b>

Table 7. Electric Utility CIP Totals, 2014

Organization	Incremental Energy Savings (kWh/yr)	Energy Savings %	Incremental CO2 Savings (tons/yr)	Expenditures	Expenditures %
<b>Investor-Owned Utilities</b>					
Interstate Power and Light	10,240,769	1.29%	7,358	\$ 2,036,582	2.66%
Minnesota Power	76,338,363	2.53%	54,849	\$ 7,200,833	3.09%
Otter Tail Power	33,805,392	1.62%	24,289	\$ 5,188,931	3.33%
Xcel Energy	481,325,941	1.66%	345,833	\$ 87,889,789	3.33%
<b>Totals - Investor-Owned Utilities</b>	<b>601,710,465</b>	<b>1.72%</b>	<b>432,329</b>	<b>\$ 102,316,135</b>	<b>3.30%</b>
<b>Cooperative CIP Aggregators</b>					
Dairyland Power Coop	4,080,188	0.62%	2,932	\$ 3,317,034	4.40%
East River Electric Power Coop	7,209,038	2.21%	5,180	\$ 311,123	1.15%
Great River Energy (All-Rqmts Members)	85,634,941	0.99%	61,529	\$ 19,426,501	2.05%
Great River Energy (Fixed Members)	21,800,752	0.70%	15,664	\$ 5,656,725	1.89%
Minnkota Power Coop/NMPA - 17 of 18 members	27,209,892	1.58%	19,550	\$ 2,884,680	1.62%
<b>Totals - Coop CIP Aggregators</b>	<b>145,934,811</b>	<b>1.01%</b>	<b>104,854</b>	<b>\$ 31,596,063</b>	<b>2.07%</b>
<b>Municipal CIP Aggregators</b>					
CMMPA - 10 of 12 members	6,181,251	1.38%	4,441	\$ 662,901	1.52%
MMPA - 7 of 11 members	2,777,109	0.42%	1,995	\$ 512,896	0.78%
MRES - 23 of 24 members	25,707,662	1.09%	18,471	\$ 4,179,055	2.30%
SMMPA - 15 of 18 members	16,187,720	1.75%	11,631	\$ 2,629,412	2.95%
The Triad (SMMPA members)	41,777,728	2.15%	30,017	\$ 4,561,551	2.36%
<b>Totals - Municipal CIP Aggregators</b>	<b>92,631,470</b>	<b>1.47%</b>	<b>66,556</b>	<b>\$ 12,545,815</b>	<b>2.19%</b>
<b>Independent Cooperatives</b>					
Minnesota Valley Coop Light & Power	2,777,701	1.41%	1,996	\$ 346,648	2.06%
Sioux Valley Energy	149,319	0.14%	107	\$ 35,759	0.38%
<b>Totals - Independent Cooperatives</b>	<b>2,927,020</b>	<b>0.97%</b>	<b>2,103</b>	<b>\$ 382,407</b>	<b>1.46%</b>



Table 9. Gas Utility CIP Totals, 2014

Organization	Incremental Energy Savings (Dth/yr)	Energy Savings %	Incremental CO2 Savings (tons/yr)	Expenditures	Expenditures %
<b>Investor-Owned Utilities</b>					
Interstate Power and Light	14,036	0.82%	822	\$ 379,946	2.92%
CenterPoint Energy	1,701,716	1.25%	99,635	\$ 23,701,520	2.67%
Great Plains Natural Gas	19,788	0.36%	1,159	327,380	1.08%
Greater Minnesota Gas	5,157	1.14%	302	\$ 100,725	2.16%
Minnesota Energy Resources	369,068	1.08%	21,609	\$ 7,360,832	2.93%
Xcel Energy	849,698	1.22%	49,750	\$ 12,968,939	2.46%
<b>Totals - Investor-Owned Utilities</b>	<b>2,959,463</b>	<b>1.19%</b>	<b>173,277</b>	<b>\$ 44,839,342</b>	<b>2.62%</b>
<b>Municipal Aggregators</b>					
The Triad	52,139	1.3%	3,053	\$ 571,266	2.17%
<b>Independent Municipals</b>					
Duluth Public Works & Utilities	45,673	1.0%	2,674	\$ 815,657	2.44%
Hutchinson Utilities Commission (MRES Member)	23,803	1.5%	1,394	\$ 125,161	1.29%
New Ulm Public Utilities	86	0.0%	5	\$ 2,461	0.04%
Perham Natural Gas	981	0.1%	57	\$ 20,602	0.37%
<b>Totals - Independent Municipals</b>	<b>70,543</b>	<b>0.8%</b>	<b>4,130</b>	<b>\$ 963,881</b>	<b>1.74%</b>
<b>TOTALS - MUNICIPALS</b>	<b>122,682</b>	<b>1.0%</b>	<b>7,183</b>	<b>\$ 1,535,147</b>	<b>1.9%</b>
<b>TOTALS - GAS UTILITIES</b>	<b>3,082,145</b>	<b>1.2%</b>	<b>180,460</b>	<b>\$ 46,374,489</b>	<b>2.6%</b>

## APPENDIX A. Electric Municipal Power Agency Membership

### Central Minnesota Municipal Power Agency (CMMPA)

**12 members:** Blue Earth, Delano, Fairfax, Glencoe, Granite Falls, Janesville, Kasson, Kenyon, Mountain Lake, Sleepy Eye, Springfield, and Windom.

Delano and Glencoe disaggregated from CMMPA's CIP in 2013.

### Minnesota Municipal Power Agency (MMPA)

**11 members:** Anoka, Arlington, Brownston, Buffalo, Chaska, East Grand Forks, LeSeur, N. St. Paul, Olivia, Shakopee and Winthrop.

Anoka, East Grand Forks, and Shakopee operate as independent entities under CIP. Effective January 1, 2015, Chaska also disaggregated from MMPA's CIP.

### Missouri River Energy Services (MRES)

**24 Minnesota members:** Adrian, Alexandria, Barnesville, Benson, Breckenridge, Detroit Lakes, Elbow Lake, Henning, Hutchinson, Jackson, Luverne, Lake Park, Lakefield, Madison, Marshall, Melrose, Moorhead, Ortonville, St. James, Sauk Centre, Staples, Wadena, Westbrook, and Worthington.

Hutchinson operates as an independent entity under CIP.

### Northern Municipal Power Agency (NMPA)

**10 Minnesota members:** Bagley, Baudette, Fosston, Halstad, Hawley, Roseau, Stephen, Thief River Falls, Warroad, and Warren.

NMPA aggregates its CIP programs with Minnkota Power Cooperative.

Warroad operates as an independent entity under CIP.

### Southern Minnesota Municipal Power Agency (SMMPA)

**18 members:** Austin, Blooming Prairie, Fairmont, Grand Marais, Lake City, Litchfield, Mora, New Prague, North Branch, Owatonna, Preston, Princeton, Redwood Falls, Rochester, Spring Valley, St. Peter, Waseca, and Wells.

Austin, Owatonna, and Rochester operate as a distinct entity (the Triad) under CIP.

- On the electric side, the Triad includes all three cities.
- On the gas side, the Triad includes Austin and Owatonna only.

## APPENDIX B. Generation and Transmission Cooperative Membership

### Dairyland Power Cooperative

**3 Minnesota members:** Freeborn-Mower Cooperative Services, Peoples Cooperative Service, and Tri-County Electric Cooperative.

### East River Electric Power Cooperative

**3 Minnesota members:** Lyon-Lincoln Electric Cooperative, Renville-Sibley Cooperative Power Association, and Traverse Electric Cooperative.

### Great River Energy – All-Requirements Member Cooperatives

**20 members:** Arrowhead Electric Cooperative, BENCO Electric Cooperative, Brown County Electric Association, Connexus Energy, Cooperative Light & Power, Dakota Electric Association, East Central Energy, Goodhue County Cooperative Electric Association, Itasca-Mantrap Cooperative Electric Association, Kandiyohi Power Cooperative, Lake Country Power, Lake Region Electric Cooperative, McLeod Cooperative Power Association, Mille Lacs Energy Cooperative, Nobles Cooperative Electric, North Itasca Electric Cooperative, Runestone Electric Association, Stearns Electrical Association, Steele-Waseca Cooperative Electric, and Todd-Wadena Electric Cooperative.

Elk River Municipal Utilities is also aggregated with Great River Energy – All-Requirements Members CIP totals.

### Great River Energy – Fixed Member Cooperatives

**8 members:** Agralite Electric Cooperative, Crow Wing Power & Light, Federated Rural Electric Association, Meeker Cooperative Light & Power Association, Minnesota Valley Electric Cooperative, Redwood Electric Cooperative, South Central Electric Association, and Wright-Hennepin Cooperative Electric Association.

### Minnkota Power Cooperative

**8 Minnesota members:** Beltrami Electric Cooperative, Clearwater-Polk Electric Cooperative, North Star Electric Cooperative, PKM Electric Cooperative, Red River Valley Cooperative Power Association, Red Lake Electric Cooperative, Roseau Electric Cooperative, and Wild Rice Electric Cooperative.