COMMERCE DEPARTMENT

Conservation Improvement Program

Energy Savings, CO_2 Reductions and Economic Benefits Achieved
2014-2015
January 15, 2018

Prepared by
Minnesota Department of Commerce, Division of Energy Resources
Pursuant to Minnesota Statutes 216B.241, Subd. 1c (g)

Contents

Executive Summary

The Minnesota Commerce Department, 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 (CO_2) reductions achieved by energy conservation improvement programs for the two most recent years for which data is available. This updated report includes data through program year 2015.

In total, 2014 and 2015 were both successful program years, where overall energy savings goals were exceeded. In fact, 2015 was the most successful program year to date, in terms of total energy saved. In 2014 and 2015, utility-implemented conservation improvement programs reduced CO_2 emissions by over 1.3 million tons, reduced energy bills by over $200 million and helped support over 49,000 energy efficiency jobs.

Background on CIP

The Conservation Improvement Program (CIP) is a utility-administered program with regulatory oversight provided by Commerce. Utility CIP portfolios promote energy-efficient technologies and practices to residential, commercial and public customers through various means including incentives/rebates, marketing and technical assistance. These programs help Minnesota households and businesses lower their energy costs by using electricity and natural gas more efficiently. 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.

CIP began in Minnesota in the 1980s and was intended to motivate utility spending on energy efficiency. With passage of the Next Generation Energy Act in 2007, an energy efficiency resource standard was established in 2010, meaning that utilities were required to develop plans to achieve energy savings of 1.5% of average annual retail sales each year[1], unless adjusted by the Commissioner to no less than 1.0%[2]. Minnesota's current energy efficiency standard remains one of the most productive standards in the country – ensuring utilities, residents and businesses are optimizing their energy use.

Minnesota utilities operate a wide array of residential, commercial and industrial CIPs targeted to both retrofits as well as new construction projects. Each utility may tailor its portfolio of programs to meet the unique needs of its service territory. Typical end-uses targeted in residential programs include lighting, furnaces, air conditioners, ground source and air source heat pumps, and insulation and air sealing. Typical end-uses targeted 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

[1] As defined in Minn. Stat. §216B.241 subd. 1 (g), "gross annual retail sales" exclude sales to CIP-exempt customers.
[2] 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%.

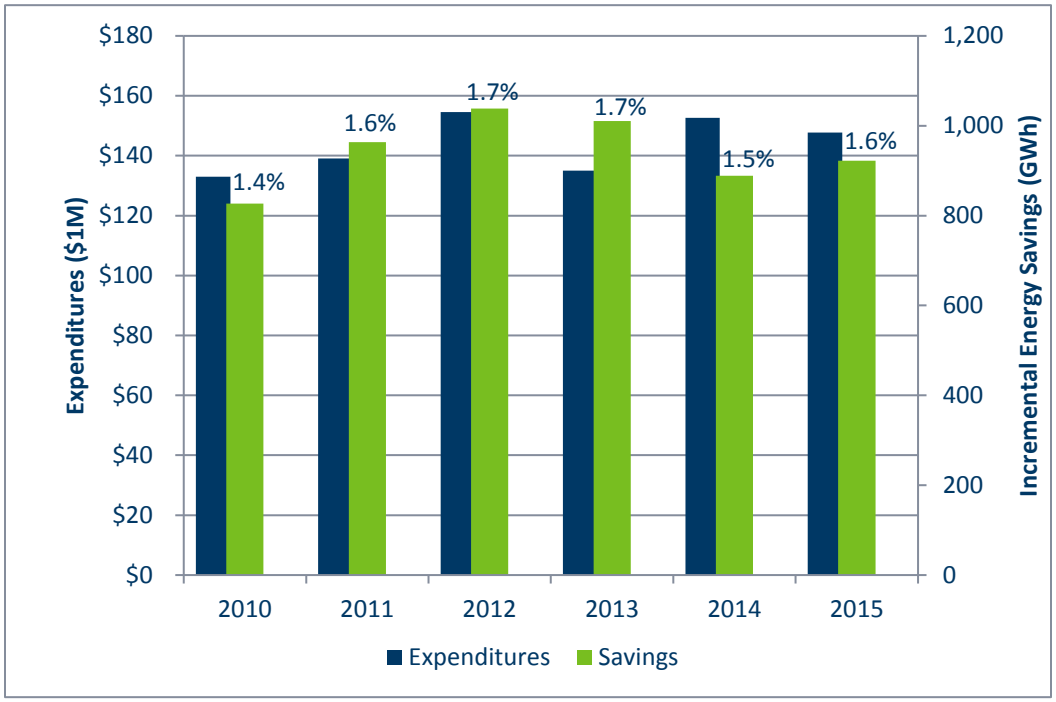
or school). Many utilities offer robust industrial efficiency programs that strive to help manufacturers increase the energy efficiency of their operations and compete in markets.

There are many energy and economic benefits that CIP brings to Minnesota. This report highlights the CO_2 reductions and energy savings that utilities achieved in 2014 and 2015. The Department also recognizes the positive economic impacts that utility-run CIP portfolios bring to Minnesota in terms of energy bill savings, job creation/retention and utility-scale benefits.

2014 and 2015 CIP Performance

Minnesota had some of the most successful years of CIP performance in 2014 and 2015. In fact, 2015 was the most successful CIP year in terms of total energy saved. Moreover, Minnesota's natural gas savings percentage was highest in the nation for 2015; electric utilities achieved the ninth highest savings percentage in 2015[3]. Total electric and natural gas savings for 2014 and 2015 totaled 1,810 gigawatt-hours (GWh) and 6.4 billion cubic feet (bcf), respectively. Combined, these energy savings are equivalent to 12,785,049 million-BTUs (MMBtus), enough energy to heat, cool and power about **113,142 homes** for a year[4]. Put another way CIP saved more power than the energy consumed by every housing unit in Rochester Minnesota[5].

Figure 1: CIP Electric Results 2010-2015



[3] Based on ACEEE analysis, Table 9 & 11, from the 2017 State Energy Efficiency Scorecard.

[4] 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

[5] According to the most recent Census American Survey Data Rochester Minnesota has 103,000 housing units. Ave. energy usage was used.

Figure 2: CIP Natural Gas Results 2010-2015

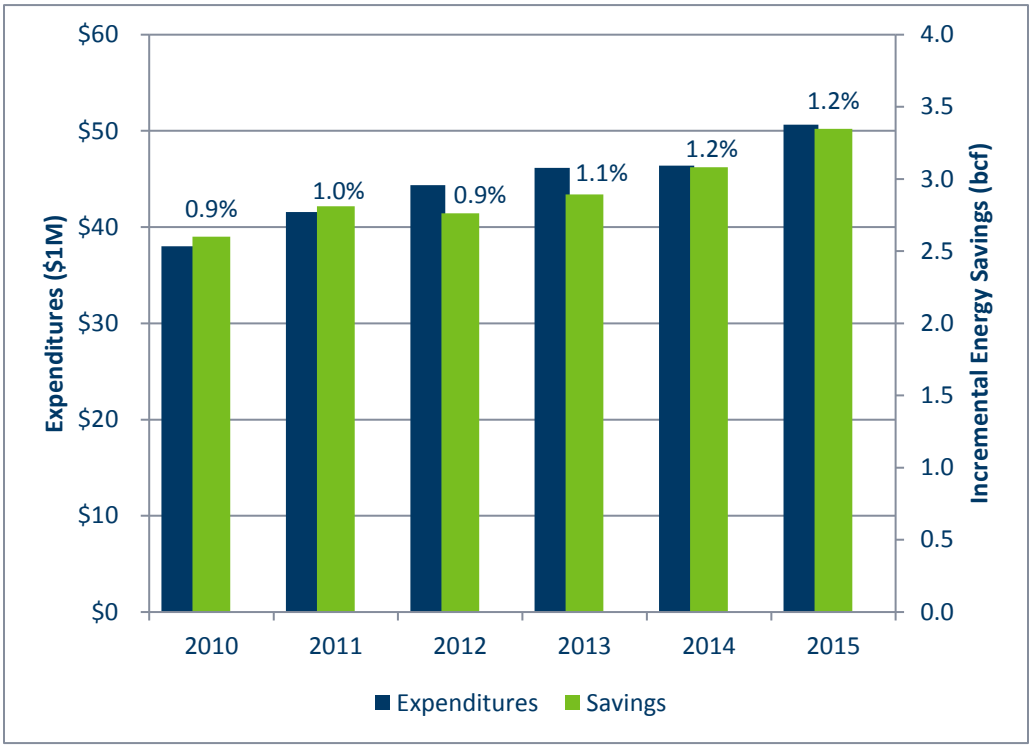
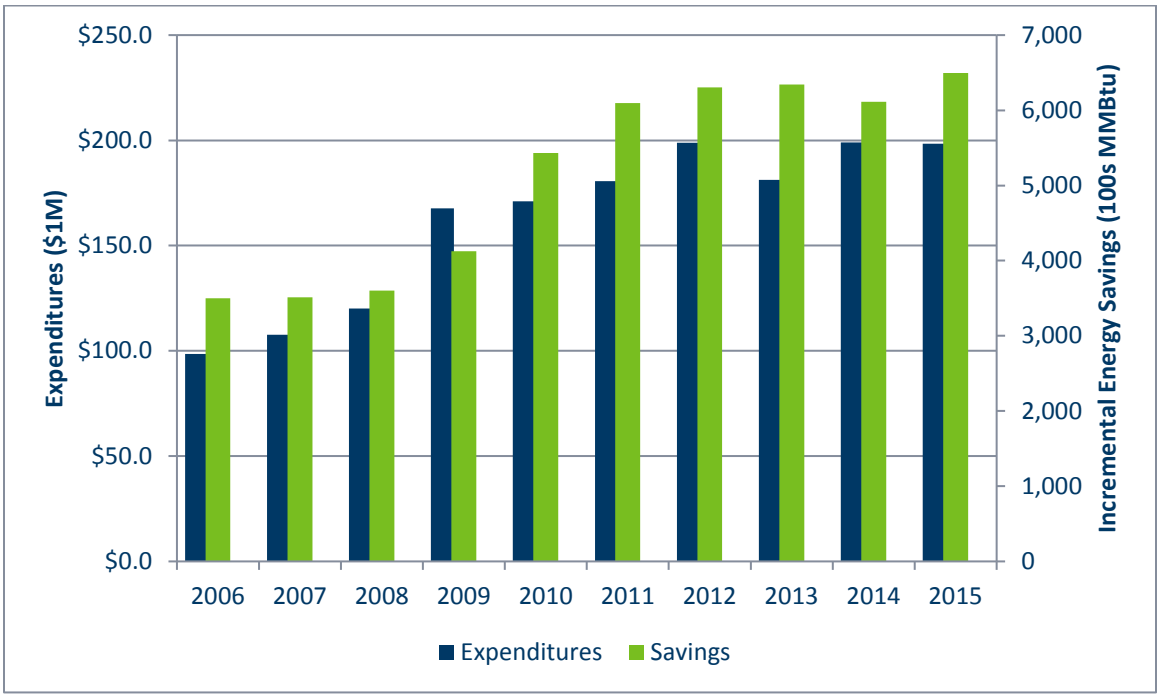


Figure 3: Aggregate CIP Performance 2006-2015



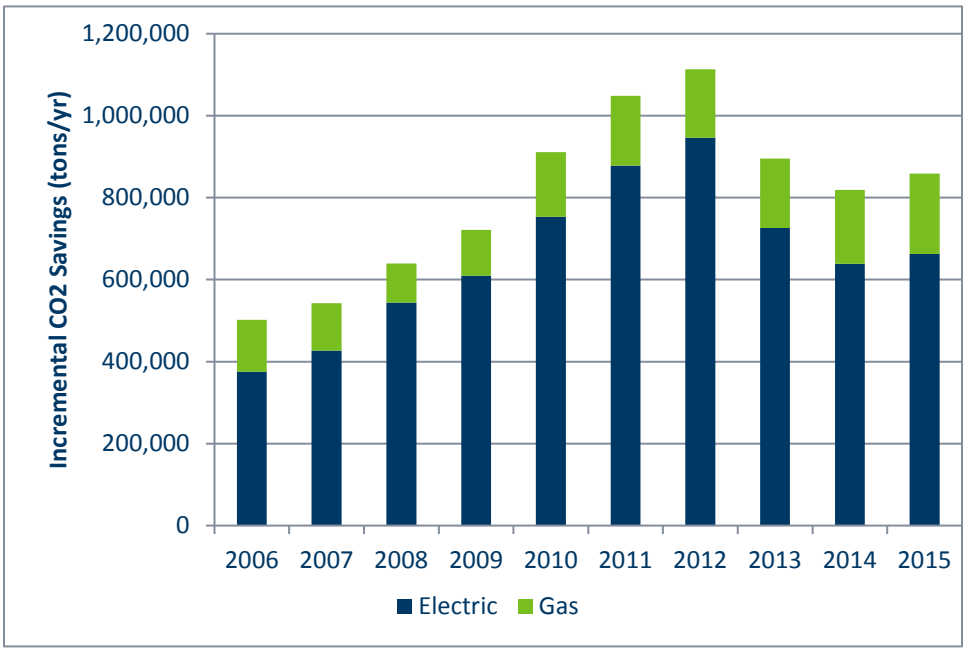
Savings Impact

CIP brings many positive economic and societal benefits to Minnesota. A recent economic analysis of CIP found that every dollar invested in CIP returns over $4 in benefits to Minnesota[6]. Minnesota's commitment to energy efficiency standards is nationally recognized. In 2017, the American Council for an Energy Efficient Economy (ACEEE) ranked Minnesota's CIP program the 4th most effective in the country[7].

Avoided CO_2 Emissions

Minnesota's greenhouse gas emission reduction goals were established with the Next Generation Energy Act of 2007. Commerce recognizes the important role CIP and energy efficiency play in reducing Minnesota's carbon footprint. Through utility's CIP portfolios Minnesota reduced carbon emissions by over 1.3 million tons in 2014-2015[8] – this is equivalent to removing over **289,000 passenger cars** from the roads for a year[9]. Overall, as Minnesota's electricity production adds more renewable energy, the amount of CO_2 reductions achieved through energy efficiency will be reduced. This is seen in Figure 4 below – with lower CO_2 reductions starting in 2013.

Furthermore, CIP-run energy efficiency upgrades implemented in Minnesota's homes and businesses have an average effective life of 15 years[10]. Thus, CIP energy savings have an accumulative impact that helps achieve CO_2 reductions for many years. Since 2006, CIP has achieved over nine million tons of first-year CO_2 reductions and these projects are still reducing energy consumption and lowering CO_2 emissions.



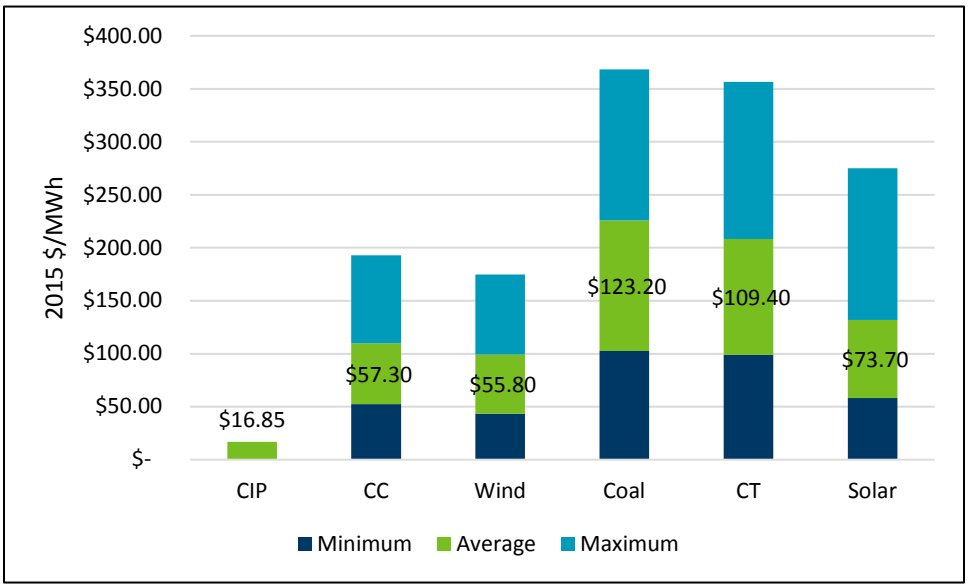
[6] The Aggregate Economic Impact of the Conservation Improvement Program 2008-2013. Cadmus. 2015
[7] ACEEE 2017 State Energy Efficiency Scorecard.
[8] The electric CO_2 emissions rate is provided by the Minnesota Pollution Control Agency to the Minnesota Public Utilities Commission and Minnesota Department of Commerce in Docket No. E, G999/CI-00-1343, updated in February, 2017. The gas CO_2 emissions rate of 117 pounds of CO_2 per Dth is provided by the U.S. Energy Information Administration, and was last updated February 2, 2016. These updated emissions rates were applied to years 2013 - 2015. Previous years utilize a rate of 1,823 pounds of CO_2 per MWh of electricity saved and 121 pounds of CO_2 per Dth of natural gas saved.
[9] Calculated using the US Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator (https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator), accessed August 29, 2017
[10] Each energy efficiency measure implemented has an average effective life determined by analyzing relevant research and fieldwork. While measures have a varying effective life – the Dept. has determined that 15 years is a reasonable average for CIP portfolios.

CIP as an Energy Resource

Beyond reducing CO_2 and other 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 is comprised primarily of CIP, 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.

When considering the cost of constructing and operating an energy resource, CIP is very competitive with supply-side resources for many reasons. First, CIP requires less upfront investments than investments in new energy generation facilities. Moreover, CIP delays the need to create new power generation in Minnesota by reducing total energy demand. In addition, since Minnesota does not have any fossil fuel resources, CIP increases the reliability of utilities because it lowers the need to import fossil fuels from outside the state.

Figure 5 Levelized Cost Comparison of CIP to Various Electricity Generation Options [11]



Key:
CIP = Levelized Average Cost of CIP in 2013-2015
CC = Natural gas-fired combined-cycle plant
Wind = Utility-scale wind energy plant
Coal = Conventional baseload coal plant
CT = Natural gas-fired combustion turbine
Solar = Utility-scale solar energy plant

Consumer, Business and Employment Benefits from Energy Savings

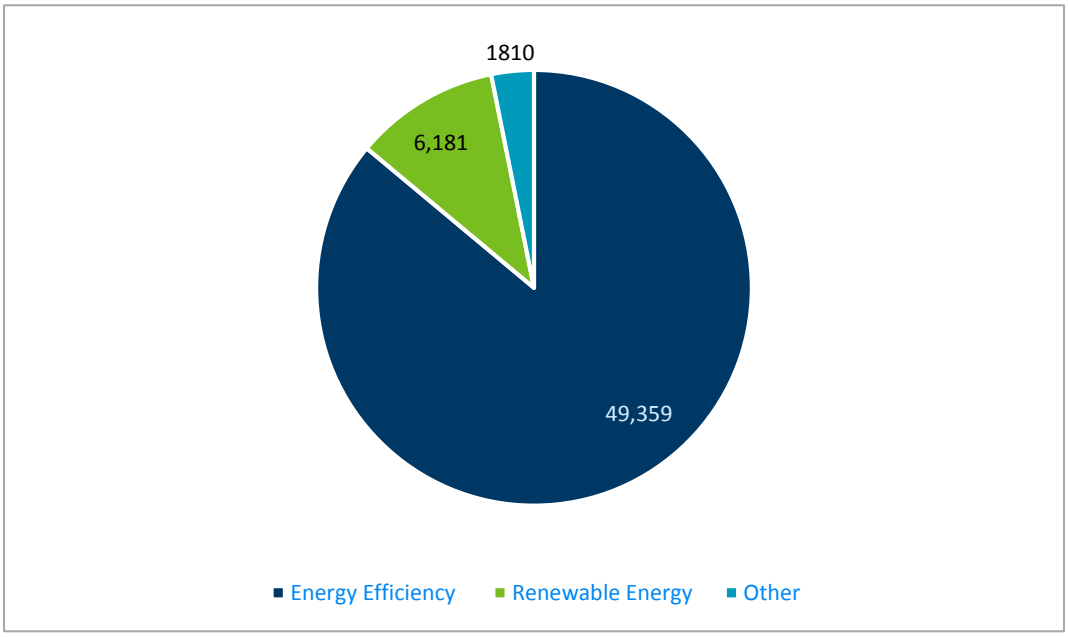
Another major benefit CIP provides is that consumers and businesses (both large and small) save a significant amount of money on energy bills each year through the energy efficiency measures that are implemented through CIP. CIP saved Minnesota's businesses and residents over $217 million on energy bills in 2014-2015[12].

[11] Source: Minnesota Department of Commerce (CIP data) and US Energy Information Administration's Annual Energy Outlook 2017.
[12] Based on a 9.53-cent average for the price of electricity (kWh) in Minnesota https://www.eia.gov/electricity/state/minnesota/index.php. In addition, a $6.93 price per therm of natural gas in Minnesota. https://www.eia.gov/dnav/ng/ng_pri_sum_dcu_SMN_a.htm

These bill savings free up resident's dollars, giving them more money to spend on other goods and allows for more financial freedom. Moreover, businesses are on tight budgets across Minnesota and every dollar saved through energy efficiency is a dollar that can be reinvested back into a business.

Furthermore, the CIP program helps Minnesota's economy by creating and retaining jobs in the energy efficiency sector. Analysis from 2017 shows that Minnesota has over 49,000 jobs[13] in the energy efficiency field. Energy efficiency jobs are located in every county in Minnesota and in a number of different trades including HVAC, engineering, design and building, and lighting. CIP spending and investments help expand and protect these Minnesota energy efficiency jobs.

Figure 6: Clean Energy Employment Sector Breakdown



[13] Based on Clean Jobs Midwest 2017 Minnesota report – showing 49,359 energy efficiency jobs in Minnesota and 57,351 total clean energy jobs.

CIP Savings and Expenditures[14]

Electric CIP Performance 2014 - 2015

Table 1: 2014 Electric CIP Performance

Organization	Incremental Energy Savings (kWh/yr)	Energy Savings %	Incremental CO_2 Savings (tons/yr)	Expenditures	Expenditures %
Investor-Owned Utilities					
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%
Totals - Investor-Owned Utilities	**601,710,465**	**1.72%**	**432,329**	**$ 102,316,135**	**3.30%**
Cooperative CIP Aggregators					
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%
Totals - Coop CIP Aggregators	**145,934,811**	**1.01%**	**104,854**	**$ 31,596,063**	**2.07%**
Municipal CIP Aggregators					
CMMPA - 10 of 12 members	6,181,251	1.9%	4,441	$ 662,901	1.52%
MMPA - 7 of 11 members	2,777,109	0.8%	1,995	$ 512,896	1.5%
MRES - 23 of 24 members	25,707,662	1.3%	18,471	$ 4,179,055	2.7%
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%
Totals - Municipal CIP Aggregators	**92,631,470**	**1.5%**	**66,556**	**$ 12,545,815**	**2.3%**
Independent Cooperatives					
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%
Totals - Independent Cooperatives	**2,927,020**	**0.97%**	**2,103**	**$ 382,407**	**1.46%**

[14] For the tables in this section 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.)
All data was derived from Reporting$_{ESP}$ as of November, 2017.

Table 2: 2014 Electric CIP Performance cont.

Organization	Incremental Energy Savings (kWh/yr)	Energy Savings %	Incremental CO_2 Savings (tons/yr)	Expenditures	Expenditures %
Independent Municipals					
Aitkin Public Utilities	536,005	1.5%	385	$ 50,801	1.5%
Alvarado, City of	1	0.0%	0	$ 7,857	1.9%
Anoka, City of (MMPA member)	4,085,822	1.5%	2,936	$ 399,631	1.6%
Biwabik Public Utilities	101,144	1.5%	73	$ 9,554	1.9%
Brainerd Public Utilities	3,770,629	1.6%	2,709	$ 275,834	1.5%
Brewster Light & Power, City of	4,500	0.1%	3	$ 7,454	1.8%
Chaska, City of (MMPA Member)	5,752,788	1.8%	4,133	$ 493,945	1.5%
Delano Municipal Utilities	842,358	1.6%	605	$ 106,243	2.2%
East Grand Forks Water & Light Dept. (MMPA member)	5,586,187	3.5%	4,014	$ 464,099	3.3%
Ely, City of	818,487	2.3%	588	$ 62,441	1.9%
Gilbert Water & Light	160,045	1.5%	115	$ 10,254	1.0%
Glencoe Light & Power Commission	1,190,149	1.6%	855	$ 117,319	1.6%
Grand Rapids Public Utilities Commission	2,711,138	1.6%	1,948	$ 201,539	1.4%
Hibbing Public Utilities Commission	1,840,734	1.5%	1,323	$ 115,701	0.8%
Hutchinson Utilities Commission (MRES Member)	3,178,768	1.1%	2,284	$ 236,903	0.9%
Kandiyohi, City of	220	0.0%	0	$ 650	0.3%
Lake Crystal Municipal Utilities	260,637	1.5%	187	$ 45,795	1.9%
Madelia Municipal Light & Power	127,998	0.5%	92	$ 49,076	1.4%
Mountain Iron Water & Light Dept	327,647	1.6%	235	$ 20,186	0.9%
New Ulm Public Utilities	5,504,943	2.8%	3,955	$ 266,486	1.3%
Nielsville, City of	2,924	0.6%	2	$ 944	1.6%
Pierz Utilities	87,421	0.9%	63	$ 4,057	0.5%
Proctor Public Utilities	379,082	1.5%	272	$ 35,831	1.7%
Randall Electric, City of	122,596	2.4%	88	$ 4,719	1.1%
Round Lake, City of	1,645	0.0%	1	$ 1,400	0.4%
Shakopee Public Utilities (MMPA member)	4,887,878	1.2%	3,512	$ 697,145	1.8%
St. Charles Light & Water	414,632	1.9%	298	$ 79,158	2.6%
Truman Public Utilities	43,264	0.3%	31	$ 36,891	2.1%
Two Harbors, City of	209,222	0.7%	150	$ 48,295	1.5%
Virginia Dept. of Public Utilities	1,915,200	1.7%	1,376	$ 123,037	0.9%
Warroad Municipal Light & Power (NMPA member)	149,065	0.3%	107	$ 17,342	0.4%
Willmar Municipal Utilities	203,658	0.1%	146	$ 63,588	0.2%
Totals - Independent Municipals	**45,216,787**	**1.5%**	**32,488**	**$ 5,764,230**	**2.0%**
TOTALS - COOPS & MUNICIPALS	**286,710,088**	**1.2%**	**206,001**	**$ 50,288,515**	**2.1%**
TOTALS - ELECTRIC UTILITIES	**888,420,553**	**1.5%**	**638,330**	**$ 152,604,650**	**2.8%**

Table 3: 2015 Electric CIP Performance

Organization	Incremental Energy Savings (kWh/yr)	Energy Savings %	Incremental CO_2 Savings (tons/yr)	Expenditures	Expenditures %
Investor-Owned Utilities					
Minnesota Power	85,701,641	2.84%	60,762	$ 6,554,551	2.8%
Otter Tail Power	48,711,455	2.33%	34,536	$ 6,105,074	3.9%
Xcel Energy	501,627,710	1.73%	355,654	$ 91,385,775	3.5%
Totals - Investor-Owned Utilities	**636,040,806**	1.87%	**450,953**	**$ 104,045,400**	3.4%
Cooperative CIP Aggregators					
Dairyland Power Coop	12,555,688	1.49%	8,902	$ 1,863,792	1.6%
East River Electric Power Coop	3,750,429	1.13%	2,659	$ 429,436	1.4%
Great River Energy (All-Rqmts Members)	97,659,555	1.10%	69,241	$ 17,643,569	1.8%
Great River Energy (Fixed Members)	26,607,326	0.85%	18,865	$ 3,969,088	1.2%
Minnkota Power Coop/NMPA - 17 of 18 members	27,678,829	1.59%	19,624	$ 2,897,507	1.5%
Totals - Coop CIP Aggregators	**168,251,827**	**1.12%**	**119,291**	**$ 26,803,392**	**1.6%**
Municipal CIP Aggregators					
CMMPA - 10 of 12 members	7,738,596	2.42%	5,487	$ 661,424	2.2%
MMPA - 7 of 11 members	3,767,808	1.10%	2,671	$ 522,895	1.5%
MRES - 23 of 24 members	21,672,245	1.11%	15,366	$ 3,932,155	2.4%
SMMPA - 15 of 18 members	13,508,065	1.45%	9,577	$ 2,386,322	2.6%
The Triad (SMMPA members)	29,501,089	1.52%	20,916	$ 5,169,007	2.7%
Totals - Municipal CIP Aggregators	**76,187,803**	**1.39%**	**54,017**	**$ 12,671,803**	2.5%
Independent Cooperatives					
Minnesota Valley Coop Light & Power	3,035,104	1.83%	2,152	$ 368,137	2.2%
Sioux Valley Energy	704,626	0.61%	500	$ 53,526	0.5%
Totals - Independent Cooperatives	**3,739,730**	**1.33%**	**2,651**	**$ 421,663**	**1.4%**

Table 4: 2015 Electric CIP Performance cont.

Organization	Incremental Energy Savings (kWh/yr)	Energy Savings %	Incremental CO_2 Savings (tons/yr)	Expenditures	Expenditures %
Independent Municipals					
Aitkin Public Utilities	523,175	1.5%	371	$ 49,814	1.7%
Alvarado, City of	17,570	0.5%	12	$ 2,150	0.5%
Anoka, City of (MMPA member)	3,263,072	1.2%	2,314	$ 394,849	1.6%
Biwabik Public Utilities	101,726	1.6%	72	$ 11,407	1.8%
Brainerd Public Utilities	3,533,179	1.6%	2,505	$ 194,190	1.1%
Brewster Light & Power, City of	5,495	0.1%	4	$ 9,951	2.3%
Chaska, City of (MMPA Member)	5,264,817	1.6%	3,733	$ 500,231	1.5%
Delano Municipal Utilities	1,111,203	2.1%	788	$ 70,176	1.4%
East Grand Forks Water & Light Dept. (MMPA member)	3,124,190	1.9%	2,215	$ 346,396	2.6%
Ely, City of	807,350	2.2%	572	$ 58,935	1.7%
Gilbert Water & Light	158,319	1.5%	112	$ 10,860	1.1%
Glencoe Light & Power Commission	1,316,582	1.8%	933	$ 127,642	1.7%
Grand Rapids Public Utilities Commission	2,496,557	1.5%	1,770	$ 220,254	1.6%
Hibbing Public Utilities Commission	1,853,279	1.5%	1,314	$ 104,425	0.8%
Hutchinson Utilities Commission (MRES Member)	1,562,981	0.5%	1,108	$ 243,847	1.0%
Kandiyohi, City of	10,369	0.3%	7	$ 4,294	1.6%
Lake Crystal Municipal Utilities	339,084	2.0%	240	$ 48,460	1.7%
Madelia Municipal Light & Power	209,503	0.8%	149	$ 57,491	1.7%
Mountain Iron Water & Light Dept	326,489	1.6%	231	$ 23,894	1.1%
Nashwauk Public Utilities	263,810	2.5%	187	$ 13,422	1.8%
New Ulm Public Utilities	1,215,241	0.6%	862	$ 219,641	1.0%
Pierz Utilities	75,414	0.8%	53	$ 7,594	0.8%
Proctor Public Utilities	377,983	1.5%	268	$ 20,181	0.9%
Randall Electric, City of	11,039	0.2%	8	$ 2,084	0.5%
Round Lake, City of	11,116	0.2%	8	$ 1,450	0.3%
Shakopee Public Utilities (MMPA member)	5,264,949	1.3%	3,733	$ 528,165	1.3%
St. Charles Light & Water	179,859	0.9%	128	$ 82,060	2.9%
Truman Public Utilities	76,889	0.6%	55	$ 27,216	1.5%
Two Harbors, City of	504,574	1.8%	358	$ 46,924	1.5%
Virginia Dept. of Public Utilities	2,236,829	1.9%	1,586	$ 148,777	1.1%
Warroad Municipal Light & Power (NMPA member)	717,917	1.3%	509	$ 51,625	1.2%
Willmar Municipal Utilities	1,231,286	0.4%	873	$ 189,568	0.7%
Totals - Independent Municipals	**38,191,846**	**1.27%**	**27,078**	**$ 3,817,973**	**1.3%**
TOTALS - COOPS & MUNICIPALS	**286,371,206**	**1.21%**	**203,037**	**$ 43,714,831**	**1.76%**
TOTALS - ELECTRIC UTILITIES	**922,412,012**	**1.60%**	**653,990**	**$ 147,760,231**	**2.7%**

Gas CIP Results for 2014 - 2015

Table 5: 2014 Natural Gas CIP Performance

Organization	Incremental Energy Savings (Dth/yr)	Energy Savings %	Incremental CO_2 Savings (tons/yr)	Expenditures	Expenditures %
Investor-Owned Utilities					
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%
Totals - Investor-Owned Utilities	**2,959,463**	**1.19%**	**173,277**	**$ 44,839,342**	**2.62%**
Municipal Aggregators					
The Triad	52,139	1.3%	3,053	$ 571,266	2.17%
Independent Municipals					
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%
Totals - Independent Municipals	**70,543**	**0.8%**	**4,130**	**$ 963,881**	**1.74%**
TOTALS - MUNICIPALS	**122,682**	**1.0%**	**7,183**	**$ 1,535,147**	**1.9%**
TOTALS - GAS UTILITIES	**3,082,145**	**1.2%**	**180,460**	**$ 46,374,489**	**2.6%**

Table 6: 2015 Natural Gas CIP Performance

Organization	Incremental Energy Savings (Dth/yr)	Energy Savings %	Incremental CO_2 Savings (tons/yr)	Expenditures	Expenditures %
Investor-Owned Utilities					
CenterPoint Energy	1,851,930	1.36%	108,431	$ 25,893,618	2.9%
Great Plains Natural Gas	69,393	1.25%	4,063	$ 724,644	2.4%
Greater Minnesota Gas	6,810	1.51%	399	$ 109,114	2.3%
Minnesota Energy Resources	493,382	1.14%	28,888	$ 8,870,639	3.3%
Xcel Energy	838,318	1.21%	49,084	$ 13,577,149	2.6%
Totals - Investor-Owned Utilities	**3,259,833**	**1.28%**	**190,863**	**$ 49,175,164**	**2.9%**
Municipal Aggregator					
The Triad	36,139	0.86%	2,116	$ 401,579	1.2%
Independent Municipals					
Duluth Public Works & Utilities	31,277	0.65%	1,831	$ 802,296	2.2%
Hutchinson Utilities Commission (MRES Member)	17,491	1.1%	1,024	$ 182,725	1.5%
New Ulm Public Utilities	3,235	0.4%	189	$ 55,739	0.7%
Perham Natural Gas	350	0.0%	20	$ 26,380	0.4%
Totals - Independent Municipals	**52,353**	**0.6%**	**3,065**	**$ 1,067,140**	**1.7%**
TOTALS - MUNICIPALS	**88,492**	**0.7%**	**5,181**	**$ 1,468,719**	**1.5%**
TOTALS - GAS UTILITIES	**3,348,325**	**1.25%**	**196,044**	**$ 50,643,883**	**2.8%**

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, Brownton, Buffalo, Chaska, East Grand Forks, Le Sueur, 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 Lake Electric Cooperative, Red River Valley Cooperative Power Association, Roseau Electric Cooperative, and Wild Rice Electric Cooperative.

APPENDIX C. CIP Regulatory Process Information

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$_{ESP}$™, 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 Commerce's Energy Savings Platform.[15]

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[16], 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*.[17] 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 achieved.[18] Most IOUs file their status reports as part of larger consolidated filings with the Minnesota Public Utilities Commission 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.

[15] 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 ReportingESP. 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. ReportingESP 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 ReportingESP and can be dynamically grouped and analyzed by utility, aggregator, program category, market segment, etc.

[16] Minnesota Rules chapter 7690.0500.

[17] http://www.calmac.org/events/spm_9_20_02.pdf

[18] Minn. Stat. §216B.16, subd. 6b and 6c.

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% energy efficiency resource standard 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.