Connecting through Conservation

Understanding • Tools & Resources • Informed Choices • Right Fit Options

2015 Consolidated Filing

April 1, 2016 | Docket No. E015/CIP-13-409.02 | E015/M-16-226

minnesota power
AN ALLETE COMPANY

power of one
a conservation program

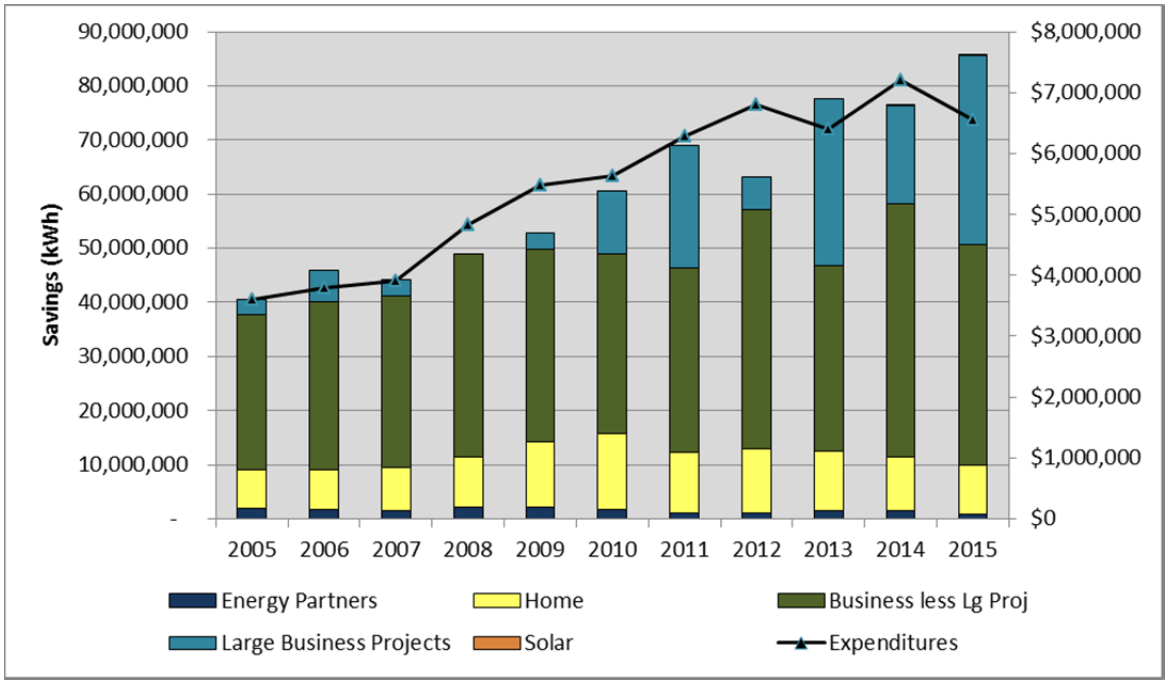
Summary

Minnesota Power
2015 Conservation Improvement Plan (CIP)
EXECUTIVE SUMMARY

In 2015, Minnesota Power, in collaboration with its customers, delivered once again on energy-saving objectives, surpassing the 1.5% energy-savings goal. The Company remains committed to providing sustainable energy-efficiency programs that provide opportunities for a diverse range of customers. Minnesota Power continues to maintain focus on the customer experience and reinforcing targeted program objectives—quality installations, informed decisions, conservation first and safety. Continuous program improvement and sustaining high quality conservation programs are an important part of Minnesota Power's broader *Energy***Forward** resource strategy plan. The Company is reshaping its power supply and providing customers with safe, reliable, and affordable energy while improving environmental performance, reducing emissions, and adding more renewable energy to the resource mix in the near-term as the Company continues to evolve toward its long-term *Energy***Forward** strategy of a diversified portfolio of one-third renewables, one-third coal, and one-third natural gas generation.

Minnesota Power is pleased to report exceptional conservation program results for 2015. Figure 1 illustrates historical and recent kWh energy-savings achievements, along with CIP expenditures. Since the Next Generation Energy Act of 2007, Minnesota Power has been refining and expanding upon its proven conservation program platform, referred to collectively and referenced to herein as the Power of One®. The Company works hard to balance the multifaceted objectives associated with CIP policy, which are wide-ranging in scope and designed to not only achieve aggressive energy savings, but also to provide education, assistance, and support to all eligible customers interested in energy efficiency. The energy-efficiency environment is rapidly evolving and customer projects vary from year to year. The Company acknowledges that historical program performance is not a guarantee for future program success. As such, Minnesota Power will continue to work closely with customers to provide programs and resources that deliver energy-savings and empower them to make effective energy choices that are the right fit for their homes and businesses.

Figure 1: Minnesota Power's 2005–2015 CIP Achievements



Through its conservation program efforts, Minnesota Power achieved 85,701,251 kWh and 7,225.6 kW in demand savings in 2015. This is equivalent to 2.84% of retail energy sales,[1] well above the 1.5% energy-savings goal established in Minn. Stat. § 216B.241, and 184% of the approved energy-savings goal for the year. Minnesota Power spent a total of $6,554,551 to achieve these results. This is 92% of the approved program budget for 2015. The exceptionally high level of savings achieved in 2015 is largely due to the new construction of a single large industrial operation, which accounts for 46% of the total Power of One® Business savings achievement. Minnesota Power's total energy savings achievement for 2015, without the large industrial savings, equates to 1.68%. The opportunity for projects of this type in the future will be unlikely, both in project size and customer and process type.

Table 1: Minnesota Power's 2015 CIP Expenditures and Energy Savings

2015	***Expenditures***	***Energy Savings (kWh) at busbar***
Direct Savings Programs:		
Energy Partners (Low Income)	$342,968	839,768
Power of One® Home (Residential)	$1,103,826	9,110,101
Power of One® Business (Business/Commercial/Industrial/Agricultural)	$2,575,437	75,660,908
Indirect Savings Programs:		
Customer Engagement	$618,889	
Energy Analysis	$632,455	
Customer Renewable Energy	$300,678	90,474 *(1)*
Research & Development	$347,001	
Evaluation & Program Development	$463,940	
Regulatory Charges	$169,357	
Total	**$6,554,551**	**85,701,251**

(1) Credited energy savings for Made in Minnesota payments as provided for under Minn. Stat. § 216C.412, subd. 2 and calculated by the Department of Commerce are 81,881 kWh at the meter and not inclusive of demand savings.

For further context regarding the Power of One® strategy, refer to the Successes section of this filing. The success stories highlight people, businesses and communities taking ownership of their energy usage and how Minnesota Power has been connecting with customers through conservation.

[1] In accordance with Minnesota Rules part 7690.1200, 2010–2012, weather-normalized average retail energy sales were used to calculate the electric savings goal for Minnesota Power's 2014–2016 Triennial CIP. This equated to 3,071,179,967 kWh, net of CIP exempt customers at the time of the Triennial Filing. In 2014, Minnesota Power had three newly exempt customers. Adjusted weather-normalized average retail energy sales excluding these customers is 3,013,600,651 kWh. Savings for 2015 are calculated as a percentage of this adjusted figure.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Minnesota Power's 2015 Conservation Improvement Program Consolidated Filing	Reporting on CIP Tracker Account Activity, Financial Incentives Report, Proposed CPA Factors and 2015 Project Evaluations Docket No. E-015/M-16-226 E-015/CIP-13-409.02

SUMMARY OF FILING

Minnesota Power hereby files with the Minnesota Public Utilities Commission (MPUC or Commission) its annual Conservation Improvement Program Consolidated Filing in compliance with Minn. Stat. § 216B.241. Minnesota Power requests approval of 2015 CIP Tracker Account activity, resulting in a year-end 2015 balance of ($2,649,748). Minnesota Power also requests approval to book financial incentives in the amount of $7,476,643. In addition, Minnesota Power requests approval of a revised Conservation Program Adjustment (CPA) factor of $0.002494/kWh, to be first implemented without proration on July 1, 2016. Minnesota Power requests a variance of Minn. Rules 7820.3500 and 7825.2600 to permit the continued combination of the Conservation Program Adjustment with the Fuel and Purchased Power Clause Adjustment on customer bills.

Minnesota Power submits its Conservation Improvement Program (CIP) Consolidated Filing via eFiling with the Department of Commerce, Division of Energy Resources (Department) to comply with annual CIP project evaluation filing requirements. Please note that this filing is available through the eDockets system maintained by the Department and the MPUC. Access this document by going to eDockets at https://www.edockets.state.mn.us/EFiling/home.jsp and selecting "Search documents." For Docket Number, insert "13" for the year and "409.02" for the number and then click on "Search." The MPUC Docket Number is "16" for the year and "226" for the number. A paper copy of this filing is available upon request.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Minnesota Power's 2015 Conservation Improvement Program Consolidated Filing	Reporting on CIP Tracker Account Activity, Financial Incentives Report, Proposed CPA Factors and 2015 Project Evaluations Docket No. E-015/M-16-226 E-015/CIP-13-409.02

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MPUC

SECTION 1

INTRODUCTION AND BACKGROUND

In its Order in Docket No. E015/M-91-458 (August 4, 1993), the Minnesota Public Utilities Commission (Commission or MPUC) combined future Conservation Improvement Program (CIP) tracker reports and Demand Side Management (DSM) financial incentives reports into a single submittal filed annually. This is the twenty-third annual filing by Minnesota Power in compliance with that Order. In addition, when the MPUC established the Conservation Program Adjustment (CPA) in Docket No. E015/M-93-996, it required Minnesota Power to file each April 1 for a revised CPA factor. This submittal includes Minnesota Power's proposed revised CPA factor. The Department of Commerce, Division of Energy Resources (Department) requires each utility to annually file an evaluation of its authorized CIP programs. Since each program evaluation is the basis for the financial incentives to which Minnesota Power is authorized, a separate evaluation section of this filing has been included to fulfill the Department filing requirements. Finally, prior orders from the Department (formerly the Office of Energy Security or OES) have required Minnesota Power to respond in one manner or another in this filing. For administrative ease, a separate section has been provided to properly respond to the various requirements established by recent Department orders.

ORGANIZATION OF FILING

Minnesota Power respectfully submits this report on its electric CIP achievements for 2015. This report is organized into several sections. Each section is dependent on information from the other sections, making it appropriate to file the collection of sections as a single document. The sections and information addressed are:

1) **Summary—**Introduction & Background
2) **CIP Tracker Account Activity Report**, including 2015 expenditures and cost recovery by month.
3) **Financial Incentives Report**
4) **2016–2017 Proposed Conservation Program Adjustment (CPA)**

   This is the calculation of the CPA factor for the period from July 2016 through June 2017 based on estimated expenditures, cost recovery, and financial incentive.

5) **2015 CIP Status Report**

This section focuses on overall CIP achievements, participation, expenditures, energy conserved and demand reduced by each segment and program. Minn. Rule 7690.0550 states that this information must be included in a utility's annual program status report.

6) **2015 Evaluation & Results**

Minn. Rule 7690.0550 also requires a utility to provide information on the cost-effectiveness of its programs, as calculated from the utility, participant, ratepayer, and societal perspectives. This section includes all cost-effectiveness analyses as well as project information sheets.[2]

7) **Research & Development**

8) **Customer Renewable Energy**

9) **Compliance**

This section provides information to satisfy provisions in Minn. Stat. §§ 216B.2401, 216B.241, 216B.2411, and 216C.412, including spending requirements and caps. This section also includes all other ordered compliance requirements, including those required by the October 10, 2013 Decision for the CIP Triennial Filing. Subsequent to the approval of the CIP Triennial Filing, there were three customers granted exemption status, effective January 1, 2014.[3] Minnesota Power recalculated its minimum spending requirements and energy-saving goal accordingly and reported this in a Budget Modification Request on November 26, 2014. The Department acknowledged the changes in its December 10, 2014 letter. These changes are reflected in this filing.

10) **Success Stories**

11) **Appendix**

[2] As directed by the Department, the project information sheets were extracted from the Department's ReportingESP software.

[3] Docket No. E015/CIP-13-852

Minnesota Power submits the following information:

A. Name, Address, and Telephone Number of Utility
(Minn. Rules 7825.3500 (A) and 7829, subp. 3 (A))

Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 722-2641

B. Name, Address, and Telephone Number of Utility Attorney
(Minn. Rules 7825.3500 (A) & 7829, subp. 3 (B))

David R. Moeller
Senior Attorney
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 723-3963
dmoeller@allete.com (e-mail)

C. Date of Filing and Date Proposed Rates Take Effect

This petition is being filed on April 1, 2016. The revised CPA factor is proposed to take effect without proration on July 1, 2016. Until MPUC approval, the existing CPA factor will remain in effect.

D. Statute Controlling Schedule for Processing the Petition

This petition is made pursuant to Minn. Stat. §§ 216B.241, 216B.16, subd. 6c, 216B.2401, and 216B.2411. These statutes do not contain schedules for processing petitions. Minn. Rule 7690.0550 outlines the schedule and information to be included in a utility's annual status report. Minn. Rule 7825.3200 requires that utilities serve notice to the Commission at least 90 days prior to the proposed effective date of modified rates.

Furthermore, Minnesota Power's request for approval of conservation cost recovery, a revised CPA factor, and required reports fall within the definition of a "Miscellaneous Tariff Filing" under Minn. Rules 7829.0100, subp. 11 and 7829.1400, subp. 1 and 4 permitting comments in response to a miscellaneous filing to be filed within 30 days, and reply comments to be filed no later than 10 days thereafter.

E. Utility Employee Responsible for Filing

Tina S. Koecher
Manager – Customer Solutions
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 355-3805
tkoecher@mnpower.com (e-mail)

F. Official Service List

Pursuant to Minn. Rule 7829.0700, Minnesota Power respectfully requests the following persons to be included on the Commission's official service list for this proceeding:

Tina S. Koecher
Manager – Customer Solutions
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 355-3805
tkoecher@mnpower.com

David R. Moeller
Senior Attorney
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 723-3963
dmoeller@allete.com

Deb Knoll
Supervisor – Eval. & Compliance
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 723-7458
dknoll@mnpower.com

G. Service on Other Parties

Minnesota Power is eFiling this report and notifying all persons on Minnesota Power's CIP Service List that this report has been filed through eDockets. A copy of the service list is included with the filing along with a certificate of service.

H. Filing Summary

As required by Minn. Rule 7829.1300, subp. 1, Minnesota Power is including a summary of this filing on a separate page.

SUMMARY OF FILING REQUESTS

Based on information provided throughout this filing, Minnesota Power requests the following:

From the MPUC:

- Approval of the 2015 CIP Tracker activity, resulting in a year-end 2015 balance of ($2,649,748).
- Approval to book CIP Financial Incentives as per Exhibit 2 of this filing to the CIP Tracker.
- Approval to implement Minnesota Power's proposed revised Conservation Program Adjustment factor without proration for bills rendered on and after July 1, 2016.
- Approval of a variance of Minn. Rules 7820.3500 and 7825.2600 to permit Minnesota Power to continue combining the Conservation Program Adjustment with the Fuel Clause Adjustment on customer bills.
- Approval of an updated Carrying Charge rate for the CIP Tracker as per Exhibit 1 of this filing.

From the Department:

- Approval of the individual 2015 CIP Project Evaluations.
- Approval of Minnesota Power's response to various Department orders as indicated in the "Compliance" section of this filing.

PROCEDURE AND AUTHORITY

Minnesota Power is submitting this petition in accordance with Minn. Stat. § 216B.241 and in compliance with MPUC and Department rules and orders relating to annual filings associated with Minnesota Power-sponsored energy conservation improvement activities, including Minn. Rule 7690.0550. The financial incentives section of this petition is submitted in accordance with Minn. Stat. § 216B.16, subd. 6c.

This petition constitutes a Miscellaneous Filing as that term is defined in Minn. Rules 7829.0100, subp. 11 and 7829.1300, which identify the time frame and procedures required to process this petition.

All correspondence with respect to this filing should be sent to:

Tina S. Koecher
Manager – Customer Solutions
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 355-3805
(218) 723-3931 (fax)
tkoecher@mnpower.com

David R. Moeller
Senior Attorney
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 723-3963
(218) 723-3955 (fax)
dmoeller@allete.com

Deb Knoll
Supervisor – Eval. & Compliance
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 723-7458
(218) 723-3931 (fax)
dknoll@mnpower.com

Respectfully submitted,

Date: April 1, 2016

Tina S. Koecher
Manager – Customer Solutions
Minnesota Power

SECTION 2

CIP TRACKER ACCOUNT ACTIVITY REPORT

On May 16, 1991, in Docket No. E015/M-91-90, the MPUC ordered Minnesota Power to file an annual CIP Tracker Report by February 15 of each year, which would contain information as shown in Exhibit 1. The annual filing date was changed to April 30 by Commission Order dated August 4, 1993, in Docket No. E015/M-91-458, and later changed to April 1 of each year. This report is in compliance with these orders.

Page 1 of Exhibit 1 summarizes the CIP Tracker Account activity for 2014 and 2015 and presents the tracker balance month-by-month throughout each year. During 2015, $6,554,551 of CIP expenditures were charged to Tracker 2, while base rates recovered $4,747,302, and an additional recovery of $9,367,417 occurred through the CPA factor, as seen on page 1 of the exhibit. In addition, ($210,949) in carrying charges and $6,237,702 of financial incentives were booked to Tracker 2. Page 2 of Exhibit 1 provides detail of expenditures by project and other factors that affected the CIP Tracker Account throughout 2015. The resulting CIP Tracker Account balance at the end of 2015 was ($2,649,748).

In 1994, Minnesota Power was allowed to implement a conservation cost recovery mechanism known as the Conservation Program Adjustment (CPA). This addition to customers' bills was combined with the existing Fuel and Purchased Power Clause Adjustment and presented as a new billing line item known as the "Resource Adjustment," thereby reflecting both demand-side and supply-side costs. The original CPA factor was implemented in January 1994. Subsequent MPUC action has modified the CPA factor yearly. There were two CPA factors in effect during this reporting period. The first was $0.003425/kWh, effective September 2014, as approved by the MPUC Order dated July 28, 2014, in Docket No. E015/M-14-233 and consistent with the subsequent compliance filing submitted July 30, 2014. The second was $0.000442/kWh, effective November 2015, in accordance with the MPUC Order dated September 16, 2015, in Docket No. E015/M-15-80 and consistent with the subsequent compliance filing submitted September 25, 2015.

There were two Carrying Charge rates used and reflected in Exhibit 1. The first, which was effective from June 2011 through August 2015, utilized the weighted cost of capital as approved on March 7, 2011, in Minnesota Power's Retail Rate, Docket No. E015/GR-09-1151.

The second, effective September 2015, utilized a multi-year credit facility rate,[4] in accordance with the MPUC Order dated September 16, 2015, in Docket No. E015/M-15-80. The development of the monthly Carrying Charge rates can be seen on pages 3 and 4 of Exhibit 1. As part of this filing, Minnesota Power presents an updated Carrying Charge rate and proposes an effective date of July 1, 2016, or upon approval by the MPUC, whichever is later. The proposed Carrying Charge rate can be found on page 5 of Exhibit 1.

Since the MPUC has previously approved a carrying charge mechanism on the prior month Tracker balance net of deferred tax, Minnesota Power references this adjustment procedure for informational purposes only.

CIP TRACKER ACCOUNT CHANGES

During the 1999 Legislative Session, a law was enacted allowing certain large electric and gas customers to be excluded from CIP minimum spending requirements. Several of Minnesota Power's Large Power customers petitioned the Department for approval to be excluded from CIP minimum spending. Those petitions requested an effective date of January 1, 2000. As a result, Minnesota Power created a second internal CIP Tracker Account as of January 1, 2000, to segregate cost responsibility. Minnesota Power continued to recover costs from all retail customers through the first CIP Tracker Account balance with the application of CPA and Conservation Cost Recovery Charge (CCRC) revenues until its balance was zero. While there remained a balance in the first Tracker, a carrying charge was applied. CIP expenditures during 2000 and beyond have been and will continue to be charged to the second CIP Tracker Account (Tracker 2).

Once the first CIP Tracker balance was eliminated, the customers who had successfully petitioned out of minimum spending requirements no longer had the CPA factor applied. The CCRC revenue from those customers was calculated each month and a credit was applied to their bills (CPA2) equal to the CCRC revenue. In this way, the approved exempt customers have not been charged for subsequent conservation costs resulting from Minnesota Power's ongoing CIP efforts. Further, because the credit to the bill is specific to each individual customer, no cross-subsidy or rate design issues are raised. Beginning in November 2009, and in accordance with Minnesota Power's Retail Rate Case, Docket No. E015/GR-08-415, customers who have opted out of CIP no longer have CCRC revenue included in their base rates. As such, these customers

[4] See Exhibit 1, page 4, at the end of this section.

no longer require a credit to their bills (CPA2). Customers remaining within the CIP umbrella will continue to pay for conservation through the CPA and CCRC processes without disruption. For those newly exempt customers as of January 1, 2012, under Docket No. E,G-999/CI-11-1149, a separate CIP Tracker Account was not established. According to the MPUC Order dated March 1, 2012, these newly exempt customers are not responsible for any CIP-related charges and cost recovery through both the CCRC and the CPA ceased effective January 1, 2012, with refunds issued for any amounts collected prior to the Order date. Effective January 1, 2014, two additional exemption petitions involving three customers were approved by the Department under Docket E015/CIP-13-852.

MINNESOTA POWER
New CIP Tracker #2 Account
Activity 2000 - 2015

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL YEAR
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
	2014													
1	BEGINNING OF PERIOD BALANCE	($495,816.50)	($2,076,335.81)	($3,198,386.31)	($4,218,864.18)	($5,292,990.65)	($5,775,837.93)	($6,510,807.97)	$1,292,224.42	$483,981.57	($241,067.84)	($758,840.19)	($1,158,771.93)	($495,816.50)
2	LESS: NON-DEDUCTIBLE BALANCE 3/	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	
3	PLUS: AMORT OF NON-DEDUCT BALANCE 3/	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
4	NET TAX DEDUCTIBLE PERIOD BALANCE	($495,816.50)	($2,076,335.81)	($3,198,386.31)	($4,218,864.18)	($5,292,990.65)	($5,775,837.93)	($6,510,807.97)	$1,292,224.42	$483,981.57	($241,067.84)	($758,840.19)	($1,158,771.93)	
5	COMPOSITE TAX RATE	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	
6	DEFERRED TAXES ON NET BEGIN BAL 1/	($205,119.29)	($858,980.12)	($1,323,172.42)	($1,745,344.11)	($2,189,710.23)	($2,389,464.15)	($2,693,521.26)	$534,593.24	$200,223.18	($99,729.77)	($313,932.19)	($479,383.95)	
7	NET INVESTMENT (L20 - L25)	($290,697.21)	($1,217,355.69)	($1,875,213.89)	($2,473,520.07)	($3,103,280.42)	($3,386,373.78)	($3,817,286.71)	$757,631.18	$283,758.39	($141,338.07)	($444,908.00)	($679,387.98)	
8	MONTHLY CARRYING CHARGE RATE 2/	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	
9	MONTHLY CARRYING CHARGE 0483 (L26 * L27)	($2,791.00)	($11,688.00)	($18,004.00)	($23,748.00)	($29,795.00)	($32,513.00)	($36,650.00)	$7,274.00	$2,724.00	($1,357.00)	($4,272.00)	($6,523.00)	($157,343.00)
10	CIP PROGRAM CHARGES TO DEFERRED DEBIT	$322,346.62	$513,391.52	$452,655.43	$560,074.46	$754,227.84	$557,563.81	$400,678.23	$501,319.53	$433,467.98	$627,782.07	$719,317.33	$1,358,007.75	$7,200,832.57
11	FINANCIAL INCENTIVES 4/	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$8,733,448.00	$0.00	$0.00	$0.00	$0.00	$0.00	$8,733,448.00
12	Adjust. - Prior Year Rounding correction	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
13	LESS: CIP CARRYING CHARGES RECOVERED	$55,657.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$55,657.00
14	Adjust -	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
15	LESS: CIP LOST MARGINS RECOVERED	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
16	LESS: CIP COSTS RECOVERED via CCRC 0482 5/	($514,201.53)	($457,275.43)	($433,343.54)	($436,037.97)	($357,580.46)	($317,566.23)	($335,850.47)	($334,584.75)	($373,089.15)	($364,304.28)	($333,209.90)	($370,293.85)	($4,627,337.56)
17	LESS: CIP COSTS RECOVERED via CPA 0481 6/	($1,441,530.40)	($1,166,478.59)	($1,021,785.76)	($1,174,414.96)	($849,699.66)	($942,454.62)	($958,593.37)	($982,251.63)	($788,152.24)	($779,893.14)	($781,767.17)	($938,751.45)	($11,825,772.99)
18	END OF PERIOD BALANCE (L20 + L28 + L29..L36)	($2,076,335.81)	($3,198,386.31)	($4,218,864.18)	($5,292,990.65)	($5,775,837.93)	($6,510,807.97)	$1,292,224.42	$483,981.57	($241,067.84)	($758,840.19)	($1,158,771.93)	($1,116,332.48)	($1,116,332.48)
19	TOTAL CPA & CCRC REVENUE	$1,900,074.93	$1,623,754.02	$1,455,129.30	$1,610,452.93	$1,207,280.12	$1,260,020.85	$1,294,443.84	$1,316,836.38	$1,161,241.39	$1,144,197.42	$1,114,977.07	$1,309,045.30	$16,397,453.55
	2015													
20	BEGINNING OF PERIOD BALANCE	($1,116,332.48)	($2,092,913.77)	($3,441,295.90)	($4,186,910.18)	($4,866,916.46)	($5,585,731.00)	($6,210,591.64)	($6,929,397.20)	($1,639,502.85)	($2,371,253.39)	($3,163,011.62)	($3,218,949.92)	($1,116,332.48)
21	LESS: NON-DEDUCTIBLE BALANCE 3/	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	
22	PLUS: AMORT OF NON-DEDUCT BALANCE 3/	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
23	NET TAX DEDUCTIBLE PERIOD BALANCE	($1,116,332.48)	($2,092,913.77)	($3,441,295.90)	($4,186,910.18)	($4,866,916.46)	($5,585,731.00)	($6,210,591.64)	($6,929,397.20)	($1,639,502.85)	($2,371,253.39)	($3,163,011.62)	($3,218,949.92)	
24	COMPOSITE TAX RATE	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	41.370%	
25	DEFERRED TAXES ON NET BEGIN BAL 1/	($461,826.75)	($865,838.43)	($1,423,664.11)	($1,732,124.74)	($2,013,443.34)	($2,310,816.91)	($2,569,321.76)	($2,866,691.62)	($678,262.33)	($980,987.53)	($1,308,537.91)	($1,331,679.58)	
26	NET INVESTMENT (L20 - L25)	($654,505.73)	($1,227,075.34)	($2,017,631.79)	($2,454,785.44)	($2,853,473.12)	($3,274,914.09)	($3,641,269.88)	($4,062,705.58)	($961,240.52)	($1,390,265.86)	($1,854,473.71)	($1,887,270.34)	
27	MONTHLY CARRYING CHARGE RATE 2/	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	0.9601%	0.2813%	0.2813%	0.2813%	0.2813%	
28	MONTHLY CARRYING CHARGE 0483 (L26 * L27)	($6,284.00)	($11,781.00)	($19,371.00)	($23,568.00)	($27,396.00)	($31,442.00)	($34,960.00)	($39,006.00)	($2,704.00)	($3,911.00)	($5,217.00)	($5,309.00)	($210,949.00)
29	CIP PROGRAM CHARGES TO DEFERRED DEBIT	$545,174.00	$123,572.93	$661,621.36	$640,786.60	$477,997.79	$508,606.00	$520,680.00	$422,057.67	$567,802.50	$417,044.79	$605,942.31	$1,063,264.66	$6,554,550.61
30	FINANCIAL INCENTIVES 4/	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$6,237,702.00	$0.00	$0.00	$0.00	$0.00	$6,237,702.00
31	Adjust. - Prior Year Rounding correction	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
32	LESS: CIP CARRYING CHARGES RECOVERED	$157,343.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$157,343.00
33	Adjust -	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
34	LESS: CIP LOST MARGINS RECOVERED	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
35	LESS: CIP COSTS RECOVERED via CCRC 0482 5/	($626,792.60)	($468,399.62)	($409,192.58)	($434,284.87)	($345,566.58)	($345,981.31)	($337,414.97)	($404,156.10)	($400,693.12)	($382,025.93)	($386,891.43)	($363,246.16)	($4,904,645.27)
36	LESS: CIP COSTS RECOVERED via CPA 0481 6/	($1,046,021.69)	($991,774.44)	($978,672.06)	($862,940.01)	($823,849.75)	($756,043.33)	($867,110.59)	($926,703.22)	($896,155.92)	($822,866.09)	($269,772.18)	($125,507.49)	($9,367,416.77)
37	END OF PERIOD BALANCE (L20 + L28 + L29..L36)	($2,092,913.77)	($3,441,295.90)	($4,186,910.18)	($4,866,916.46)	($5,585,731.00)	($6,210,591.64)	($6,929,397.20)	($1,639,502.85)	($2,371,253.39)	($3,163,011.62)	($3,218,949.92)	($2,649,747.91)	($2,649,747.91)
38	TOTAL CPA & CCRC REVENUE	$1,515,471.29	$1,460,174.06	$1,387,864.64	$1,297,224.88	$1,169,416.33	$1,102,024.64	$1,204,525.56	$1,330,859.32	$1,296,849.04	$1,204,892.02	$656,663.61	$488,753.65	$14,114,719.04

1/ Deferred taxes are determined based on the composite tax rate in effect at the time in question. The rate has been 41.370% since 1/1/1993.

2/ Monthly carrying charge rate of 1.0675% is applicable for the period 3/1/94-10/31/2009 0.9946% is applicable for the period 11/01/2009 - 05/31/2011 0.9601% is applicable for the period 06/01/2011 - 08/31/2015 0.2813% is applicable 9/01/2015 - present

3/ The Large Power Incentive Program is deductible for tax purposes over the life of the contract extension by IRS Ruling. Thus, no tax benefit is realized on the LPIP funds except for the amortized amount.

4/ Financial Incentives approved in Docket No. E015/M-14-233 dated 7/28/2014 and Docket No. E015/M-15-80 dated 9/16/2015.

5/ Rate of $0.001209033/kWh, effective November 2009 through May 2011 as approved in Docket No. E-015/GR-08-415. Rate of $0.001466772/kWh, effective June 2011 as approved in Docket No. E-015/GR-09-1151.

6/ CPA OF 1.08% thru Jul 1996, 1.83% Aug 96, 2.75% Jul 97, 1.62% Jul 01, 1.30% Jul 02, 0.92% Jul 03, 2.02% Jul 04, 0.86% Sep 05, 0.12% Jul 06, 0.36% Dec 07, 1.01% Nov 08, 1.22% Oct 09, $0.001448/kWh Oct 10, $0.003728/kWh Feb 12, $0.004537/kWh Jan 13; $0.004062/kWh Nov 13; $0.003425 Sep 14; $0.000442 Nov 15

7/ Year-end tracker balance may be larger than anticipated during the first year or two of the transition due to the new fiscal year calculation per MPUC Order dated September 16, 2015, Docket No. E015/M-15-80.

MINNESOTA POWER
Conservation Improvement Program
2015
Trial Balance

Sources: Hyperion & CIP Tracker

CHARGE #	DESCRIPTION	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Direct Impact Projects														
	CIP: ENERGY PARTNERS (Low Income)	$342,968.26	$14,047.06	$19,337.79	$23,153.89	$25,765.33	$13,094.65	$42,820.18	$19,339.03	$31,098.05	$20,526.27	$14,734.79	$2,096.88	$116,954.34
	CIP: ONE HOME (Residential)	$1,103,825.96	$16,157.22	$18,943.98	$110,834.27	$98,815.75	$112,702.75	$162,802.80	$92,224.21	$20,849.09	$96,256.84	$102,898.69	$78,451.62	$192,888.74
	CIP: ONE BUSINESS (C/I/Ag)	$2,575,436.90	$212,967.66	$89,940.78	$224,607.06	$276,356.03	$200,580.26	$161,182.08	$187,507.50	$175,421.76	$264,480.66	$148,105.38	$317,164.65	$317,123.08
	Total Direct Impact Projects	$4,022,231.12	$243,171.94	$128,222.55	$358,595.22	$400,937.11	$326,377.66	$366,805.06	$299,070.74	$227,368.90	$381,263.77	$265,738.86	$397,713.15	$626,966.16
Indirect Impact Projects														
	CIP: CUSTOMER ENGAGEMENT	$618,888.84	$59,683.50	($55,060.52)	$100,607.54	$120,092.20	$34,972.27	$33,378.21	$52,271.14	$46,917.06	$38,591.78	$55,414.55	$60,973.99	$71,047.12
	CIP: CUSTOMER RENEWABLE ENERGY	$300,677.93	$175,040.43	$0.00	$2,775.00	$0.00	$0.00	$0.00	$12,600.00	$14,472.50	$0.00	$0.00	$40,000.00	$55,790.00
	CIP: ENERGY ANALYSIS	$632,455.07	$23,865.11	$5,454.59	$83,359.52	$59,468.64	$46,507.01	$55,430.61	$61,978.81	$61,419.64	$56,546.70	$47,728.57	$60,795.59	$69,900.28
	CIP: EVALUATION & PLANNING	$463,940.42	$23,673.30	$24,610.11	$53,106.81	$42,561.52	$57,427.85	$39,001.67	$42,911.89	$47,039.63	$45,254.77	$46,514.83	$21,152.11	$20,685.93
	CIP: REGULATORY CHARGES	$169,356.73	$0.00	$0.00	$49,966.87	$0.00	$0.00	$1,609.17	$46,231.03	$0.00	$34,256.05	$0.00	$3,043.47	$34,250.14
	CIP: RESEARCH & DEVELOPMENT	$347,000.50	$19,739.72	$20,346.20	$13,210.40	$17,727.13	$12,713.00	$12,381.28	$5,616.39	$24,839.94	$11,889.43	$1,647.98	$22,264.00	$184,625.03
	Total Indirect Impact Projects	$2,532,319.49	$302,002.06	($4,649.62)	$303,026.14	$239,849.49	$151,620.13	$141,800.94	$221,609.26	$194,688.77	$186,538.73	$151,305.93	$208,229.16	$436,298.50
	Total Project Charges	$6,554,550.61	$545,174.00	$123,572.93	$661,621.36	$640,786.60	$477,997.79	$508,606.00	$520,680.00	$422,057.67	$567,802.50	$417,044.79	$605,942.31	$1,063,264.66
Other CIP Tracker Account Charges														
1864-0484	CIP: FINANCIAL INCENTIVES - TRACKER 2	$6,237,702.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$6,237,702.00	$0.00	$0.00	$0.00	$0.00
1864-0483	CIP: CARRYING CHARGE - TRACKER 2	($210,949.00)	($6,284.00)	($11,781.00)	($19,371.00)	($23,568.00)	($27,396.00)	($31,442.00)	($34,960.00)	($39,006.00)	($2,704.00)	($3,911.00)	($5,217.00)	($5,309.00)
	Total Charges to the Deferred Debit	$6,026,753.00	($6,284.00)	($11,781.00)	($19,371.00)	($23,568.00)	($27,396.00)	($31,442.00)	($34,960.00)	$6,198,696.00	($2,704.00)	($3,911.00)	($5,217.00)	($5,309.00)
CIP Tracker Account Recovery														
1864-0481	CIP: CPA RECOVERY - TRACKER 2	($9,367,416.77)	($1,046,021.69)	($991,774.44)	($978,672.06)	($862,940.01)	($823,849.75)	($756,043.33)	($867,110.59)	($926,703.22)	($896,155.92)	($822,866.09)	($269,772.18)	($125,507.49)
1864-0482	CIP: CCRC CLEARANCE - TRACKER 2	($4,747,302.27)	($469,449.60)	($468,399.62)	($409,192.58)	($434,284.87)	($345,566.58)	($345,981.31)	($337,414.97)	($404,156.10)	($400,693.12)	($382,025.93)	($386,891.43)	($363,246.16)
	Adj -	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
1864-0483	CIP: CARRYING CHARGE - TRACKER 2 Recovered	$157,343.00	$157,343.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Total CIP Tracker Account Recovery	($13,957,376.04)	($1,358,128.29)	($1,460,174.06)	($1,387,864.64)	($1,297,224.88)	($1,169,416.33)	($1,102,024.64)	($1,204,525.56)	($1,330,859.32)	($1,296,849.04)	($1,204,892.02)	($656,663.61)	($488,753.65)

MINNESOTA POWER
CIP Tracker Account
Carrying Charge Rate
Effective June 1, 2011

	Amount (000)	Percent	Cost	Weighted Cost	Pre-tax Cost	Pre-Tax Weighted Cost
Long Term Debt	$696,677	45.71%	5.56%	2.54%	5.56%	2.54%
Common Equity	$827,534	54.29%	10.38%	5.64%	17.70%	9.61%
Total	$1,524,211	100.00%		8.18%		**12.15%**

Composite Income Tax Rate = 41.37%
1 - Composite Income Tax Rate = 58.63%

The monthly Carrying Charge equivalent of the pre-tax weighted cost of capital is **0.9601%**

= (1 + 12.15%)^(1/12) - 1

Note: Approved Capital Structure and Weighted Cost per Docket No. E015/GR-09-1151 dated March 7, 2011.

Minnesota Power
CIP Tracker Account
Carrying Charge Rate
Effective September, 2015*

The MPUC's Order to require that Minnesota Power calculate the carrying charge using the rate from its multi-year credit facility—an agreement in place that serves as the Company's vehicle for short-term liquidity.

Schedule 1 $400 Million Credit Agreement

Status	Pricing Level I	Pricing Level II	Pricing Level III	Pricing Level IV	Pricing Level V
Senior Debt Rating	≥ A/ A/ A2	≥ A-/ A-/A3	≥ BBB+/ BBB+/ Baa1	≥ BBB/ BBB/ Baa2	< BBB/ BBB/ Baa2
Applicable for facility fees	0.100%	0.125%	0.175%	0.225%	0.275%
Applicable Margin for ABR loans	0.000%	0.000%	0. 075%	0. 275%	0. 475%

"Alternate Base Rate" means, for any day, a rate per annum equal to the greatest of (a) the Prime Rate in effect on such day, (b) the Federal Funds Effective Rate in effect on such day plus 1/2 of 1%, and (c) the Adjusted LIBO Rate for a one month Interest Period on such day (or if such day is not a Business Day, the immediately preceding Business Day) plus 1% per annum (provided that, for the avoidance of doubt, the Adjusted LIBO Rate for any day shall be based on the rate appearing on the Reuters Screen LIBOR01 Page 1 (or on any successor or substitute page of such service) at approximately 11:00 a.m. London time on such day). Any change in the Alternate Base Rate due to a change in the Prime Rate, the Federal Funds Effective Rate or the Adjusted LIBO Rate shall be effective from and including the effective date of such change in the Prime Rate, the Federal Funds Effective Rate or the Adjusted LIBO Rate, respectively.

*This rate was effective for Minnesota Power from January 30, 2014 to December 16, 2015.

The monthly Carrying Charge equivalent to the alternate base rate loan and facility fees from the multi-year credit facility is **0.2813%.**

= (Prime Rate + Facility Fees) *(1 Month/12 Months)

= (3.50%+0.125%)*(1/12)

Minnesota Power
CIP Tracker Account
Carrying Charge Rate
Proposed to be Effective July 1, 2016*

The MPUC's Order to require that Minnesota Power calculate the carrying charge using the rate from its multi-year credit facility—an agreement in place that serves as the Company's vehicle for short-term liquidity.

Schedule 1 $400 Million Credit Agreement

Status	Pricing Level I	Pricing Level II	Pricing Level III	Pricing Level IV	Pricing Level V
Senior Debt Rating	≥ A/ A/ A2	≥ A-/ A-/A3	≥ BBB+/ BBB+/ Baa1	≥ BBB/ BBB/ Baa2	< BBB/ BBB/ Baa2
Applicable for facility fees	0.100%	0.125%	0.175%	0.225%	0.275%
Applicable Margin for ABR loans	0.000%	0.000%	0. 075%	0. 275%	0. 475%

"Alternate Base Rate" means, for any day, a rate per annum equal to the greatest of (a) the Prime Rate in effect on such day, (b) the Federal Funds Effective Rate in effect on such day plus 1/2 of 1%, and (c) the Adjusted LIBO Rate for a one month Interest Period on such day (or if such day is not a Business Day, the immediately preceding Business Day) plus 1% per annum (provided that, for the avoidance of doubt, the Adjusted LIBO Rate for any day shall be based on the rate appearing on the Reuters Screen LIBOR01 Page 1 (or on any successor or substitute page of such service) at approximately 11:00 a.m. London time on such day). Any change in the Alternate Base Rate due to a change in the Prime Rate, the Federal Funds Effective Rate or the Adjusted LIBO Rate shall be effective from and including the effective date of such change in the Prime Rate, the Federal Funds Effective Rate or the Adjusted LIBO Rate, respectively.

*This rate has been effective for Minnesota Power since December 17, 2015.

The monthly Carrying Charge equivalent to the alternate base rate loan and facility fees from the multi-year credit facility is **0.3021%.**

= (Prime Rate + Facility Fees) *(1 Month/12 Months)

= (3.50%+0.125%)*(1/12)

SECTION 3

FINANCIAL INCENTIVES REPORT

As part of the MPUC's Orders dated August 21, 1992, and August 4, 1993, in Docket No. E015/M-91-458, Minnesota Power was required to file, on or before April 30 of each year, its Financial Incentives Report. In compliance with Docket No. E015/M-95-898, Minnesota Power is now required to file all CIP-related reports/requests in one submittal by April 1 of each year.

BACKGROUND

In 1989, the MPUC initiated its own investigation into methods of encouraging utilities to conduct additional and more effective conservation programs. On February 28, 1991, in Docket No. E999/CI-89-212, the MPUC ordered all Minnesota electric utilities to file financial incentive proposals by the end of 1991. Minnesota Power filed its proposal on September 30, 1991, in Docket No. E015/M-91-458, requesting the inclusion of a Double Shared Savings Incentive for large conservation projects, the removal of the lost margin disincentive, and the establishment of rates for determining lost margin revenues. The MPUC approved Minnesota Power's proposal, with modifications, on March 12, 1992, and ordered an additional filing to detail Minnesota Power's plan for measuring lost margins and a plan for evaluating the financial incentive. On April 27, 1992, Minnesota Power filed the required plans with the MPUC. An Order approving the Minnesota Power submission, with modifications, was issued on August 21, 1992. The MPUC approved continuation of Minnesota Power's Financial Incentive Pilot Project, minus the Double Shared Savings Incentive, through calendar year 1994 in Docket E015/M-93-1051, and extended its application through 1995 in Docket No. E015/M-94-1165. Finally, the Commission, after its own review of financial incentives in Minnesota, approved new financial incentives for the electric utilities in the state. Minnesota Power received approval for lost margin recovery in Docket No. E015/M-95-898, dated October 26, 1995.

In 1994, Minnesota Power participated in a statewide workgroup effort to develop recommendations as to what the future of financial incentives in Minnesota should be. Again, during late 1998 and all of 1999, the Commission reviewed the need for financial incentives and the incentive structure. As a result, financial incentives for conservation efforts were

significantly modified by Commission action on January 27, 2000, in Docket No. E015/M-99-538 and E,G-999/CI-98-1759.

On April 7, 2000, in Docket No. E015/M-99-538, the MPUC issued an Order approving a new Shared Savings financial incentive mechanism. The effective date for the new incentive was January 1, 1999. Features of the new incentive included an increasing incentive award when conservation efforts resulted in increasing energy savings. There was a cap on the incentive so as not to become so large as to dwarf the conservation spending. Before any incentive was awarded, however, the utility must have achieved at least 90% of its approved energy-savings goal.

FINANCIAL INCENTIVES—2010 AND BEYOND

2007 Minnesota Laws Chapter 136, Article 2, (also known as the Next Generation Energy Act) enacted changes to state energy conservation goals and programs, including establishing an annual energy-savings goal for each utility of 1.5% of annual retail energy sales. This law included the following addition to Minn. Stat. § 216B.241:

> Subd. 2c. Performance incentives. By December 31, 2008, the Commission shall review an incentive plan for energy conservation improvement it has approved under section 216B.16, subdivision 6c, and adjust the utility performance incentives to recognize making progress toward and meeting the energy-savings goals established in subdivision 1c.

On October 14, 2008, in Docket No. E,G-999/CI-08-133, the Commission issued a Notice of Comment period soliciting comments on: (1) whether adjustments are needed to existing conservation incentive plans; and (2) if so, what procedures the Commission should use to determine what specific adjustments are needed, including procedures for considering the nature, scope, and timing for implementation of those adjustments.

The commenting parties recommended that the Commission: (1) adopt a procedural calendar allowing time for the parties to confer and agree on recommended revisions to the incentive formula; (2) establish stakeholder workgroups to evaluate the current incentives and recommend adjustments; and (3) establish procedural guidelines for the discussion and evaluation of possible revisions in 2009, with implementation of any changes to occur in 2010.

On December 29, 2008, the Commission issued an Order Establishing Procedural Framework for Consideration of Utility Performance Incentives for Energy Conservation. The Commission required utilities to provide further information on how the current incentive model and any other proposed mechanisms would function under the new savings goal. Pursuant to the

Commission's Order, a stakeholder workgroup was established to evaluate the current incentives and recommend adjustments. Members of the workgroup included: the Center for Energy and the Environment (CEE); CenterPoint Energy; Greater Minnesota Gas; Great Plains Natural Gas; Interstate Power and Light; Izaak Walton League of America; Minnesota Energy Resource Corporation (PNG and NMU); Minnesota Power; the Department; Otter Tail Power Company; and Xcel Energy. The workgroup participants jointly requested Commission approval of a new Shared Savings DSM financial incentive to be applied voluntarily to all gas and electric utilities that participate in the CIP. The new program was intended to replace the current incentive plans and apply to CIP activities beginning with the 2010 project year. The proposal was the product of a series of workgroup meetings initiated and facilitated by the Department. Based on its review and analysis of the workgroup recommendations and the parties' comments, the Commission concluded in its January 27, 2010 Order in Docket No. E,G-999/CI-08-133 that the proposed New Shared Savings Model, as detailed by the Department and the workgroup, is a reasonable approach to achieve the requirements and purposes of the Next Generation Energy Act (Minn. Stat. § 216B.241), taking into consideration the factors listed in Minn. Stat. § 216B.16, subd. 6c and the Commission's duty under Minn. Stat. § 216B.03 to ensure just and reasonable rates. Also in its January 27, 2010 Order[5], the Commission required electric and gas utilities to submit yearly incentive proposals on or before February 1 of each year integrating the Commission's decision regarding utility performance incentives for energy conservation. Consistent with the Commission's Order, this new shared savings performance incentive shall be in operation for the length of each utility's current triennial CIP. For Minnesota Power, the approved mechanism applied to 2011–2013 program years.

On December 20, 2012, the Commission approved modifications to the incentive mechanism based on the Department's July 9, 2012 Report on the Impacts of the 2011 New Shared Savings DSM Financial Incentive on Investor-Owned Utility Conservation Achievements and Customer Costs.[6] Modifications included establishment of two caps on the incentive mechanism, one as a percent of net benefits and the other as a continuation of the existing cap of 125 percent of a utility's 1.5 percent calibration level.[7] According to the December 20, 2012 Order, the Commission required all utilities except Otter Tail Power and Minnesota Power to

[5] In the Matter of Commission Review of Utility Performance Incentives for Energy Conservation Pursuant to Minn. Stat. § 216B.241, Subd. 2C, Docket No. E,G-999/CI-08-133, January 27, 2010.

[6] Id., December 20, 2012.

[7] Per a Commission Order on November 19, 2013, in Docket No. E,G-999/CI-08-133, the incentive cap shall be at 30 percent of net benefits for Minnesota Power.

make a compliance filing on or before February 1, 2013, integrating the Commission's decision into their individual incentive proposals. The Commission required Otter Tail Power and Minnesota Power to make their compliance filings on or before February 1, 2014, under the modified incentive mechanism. The modifications apply to the 2014–2016 program years.

In this filing and as shown in Exhibit 2, Minnesota Power has calculated its financial incentives for 2015 performance consistent with the outcome of the procedures as set forth in Docket No. E,G-999/CI-08-133. For 2015, Minnesota Power adjusted its average sales to reflect the removal of newly exempt customers.[8] The adjustments to the average retail energy sales are also reflected in its 2015 financial incentive calculation.

[8] Minnesota Power's 2014-2016 CIP Triennial Filing, Docket Nos. E015/CIP-13-409, December 10, 2014.

Minnesota Power Financial Incentive for 2015 Performance

Minnesota Power - 2015 Program Performance

Inputs:

Average Sales (kWh):	3,013,600,651	
1.0% Energy Savings:	30,136,007	
Historic Average Savings:	1.92%	
Earning Threshold:	0.40%	plus one unit of energy
Earning Threshold in Energy Savings:	12,054,404	
Award zero point:	0.30%	
Award zero point in Energy Savings:	9,040,802	
Steps from zero point to 1.5%	12	
Size of steps in Energy Savings:	3,013,601	

Incentive Calibration:

Average Incentive per unit at 1.5%:	**$0.0700**	set by Commission in approval of incentive mechanism & calibration
Incentive Cap:	**$0.0875**	per kWh
Energy savings at 1.5%:	45,204,010	
Targeted incentive at 1.5%:	$3,164,281	
Multiplier:	**0.01980**	**Percent of net benefits received for every 0.1% of sales saved**

Estimated Incentive Levels:

Achievement Level (% of sales)	Energy Saved*	Percent of Benefits Awarded	Percent of Benefits Awarded w/Cap	Correction Factor	Estimated Benefits Achieved*	Adjusted Estimated Benefits Achieved*	Incentive Award	Average Incentive per unit Saved
0.0%	0	0.00%	0.00%	1.00	$0	$0	**$0**	
0.1%	3,013,601	0.00%	0.00%	1.00	$887,966	$887,966	**$0**	$0.000
0.2%	6,027,201	0.00%	0.00%	1.00	$1,775,932	$1,775,932	**$0**	$0.000
0.3%	9,040,802	0.00%	0.00%	1.00	$2,663,898	$2,663,898	**$0**	$0.000
0.4%	12,054,403	0.00%	0.00%	1.00	$3,551,864	$3,551,864	**$0**	$0.000
0.5%	15,068,003	3.96%	3.96%	1.00	$4,439,830	$4,439,830	**$175,793**	$0.012
0.6%	18,081,604	5.94%	5.94%	1.00	$5,327,797	$5,327,797	**$316,428**	$0.018
0.7%	21,095,205	7.92%	7.92%	1.00	$6,215,763	$6,215,763	**$492,221**	$0.023
0.8%	24,108,805	9.90%	9.90%	1.00	$7,103,729	$7,103,729	**$703,173**	$0.029
0.9%	27,122,406	11.88%	11.88%	1.00	$7,991,695	$7,991,695	**$949,284**	$0.035
1.0%	30,136,007	13.86%	13.86%	1.00	$8,879,661	$8,879,661	**$1,230,554**	$0.041
1.1%	33,149,607	15.84%	15.84%	1.00	$9,767,627	$9,767,627	**$1,546,982**	$0.047
1.2%	36,163,208	17.82%	17.82%	1.00	$10,655,593	$10,655,593	**$1,898,568**	$0.053
1.3%	39,176,808	19.80%	19.80%	1.10	$11,543,559	$10,494,145	**$2,077,558**	$0.053
1.4%	42,190,409	21.78%	21.78%	1.00	$12,431,525	$12,431,525	**$2,707,218**	$0.064
1.5%	45,204,010	23.76%	23.76%	1.00	$13,319,491	$13,319,491	**$3,164,281**	$0.070
Filed Goal	**46,539,000**	**24.63%**	**24.63%**	**1.00**	**$13,712,850**	**$13,712,850**	**$3,377,991**	$0.073
1.6%	48,217,610	25.74%	25.74%	1.00	$14,207,457	$14,207,457	**$3,656,502**	$0.076
1.7%	51,231,211	27.72%	27.72%	1.00	$15,095,423	$15,095,423	**$4,183,882**	$0.082
1.8%	54,244,812	29.70%	29.70%	1.00	$15,983,390	$15,983,390	**$4,746,421**	$0.088
1.9%	57,258,412	30.00%	29.70%	1.00	$16,871,356	$16,871,356	**$5,010,111**	$0.088
2.0%	60,272,013	30.00%	29.70%	1.00	$17,759,322	$17,759,322	**$5,273,801**	$0.088
2.1%	63,285,614	30.00%	29.70%	1.00	$18,647,288	$18,647,288	**$5,537,491**	$0.088
2.2%	66,299,214	30.00%	29.70%	1.00	$19,535,254	$19,535,254	**$5,801,181**	$0.088
2.3%	69,312,815	30.00%	29.70%	1.00	$20,423,220	$20,423,220	**$6,064,871**	$0.088
2.4%	72,326,416	30.00%	29.70%	1.00	$21,311,186	$21,311,186	**$6,328,561**	$0.088
2.5%	75,340,016	30.00%	29.70%	1.00	$22,199,152	$22,199,152	**$6,592,251**	$0.088
2.6%	78,353,617	30.00%	29.70%	1.00	$23,087,118	$23,087,118	**$6,855,941**	$0.088
2.7%	81,367,218	30.00%	29.70%	1.00	$23,975,084	$23,975,084	**$7,119,632**	$0.088
2.8%	84,380,818	30.00%	29.70%	1.00	$24,863,050	$24,863,050	**$7,383,322**	$0.088
2015 Results	**85,447,344**	**30.00%**	**25.23%**	**1.00**	**$29,636,057**	**$29,636,057**	**$7,476,643**	$0.0875
2.9%	87,394,419	30.00%	29.70%	1.00	$25,751,017	$25,751,017	**$7,647,012**	$0.088
3.0%	90,408,020	30.00%	29.70%	1.00	$26,638,983	$26,638,983	**$7,910,702**	$0.088

** In compliance with Order Points 1 & 2 from the July 16, 2013 Order Determining Ratemaking Treatment of Utility CIP Project Costs (Docket No. E,G-999/DI-12-1342), net benefits and energy savings resulting from MP facilities projects were excluded for the purpose of the financial incentive calculation. Made in Minnesota energy savings are not included in the above figures.*

SECTION 4

2016–2017 PROPOSED CONSERVATION PROGRAM ADJUSTMENT

CIP costs are recovered by utilities through base rates via the Conservation Cost Recovery Charge (CCRC) and through an annual CIP adjustment factor called the Conservation Program Adjustment (CPA).[9] Minnesota Power files a recalculation of its CPA each April as part of its CIP Consolidated Filing. Minnesota Power's CPA has previously been calculated by dividing the year-end CIP tracker balance of the previous year (2015 in this filing) by the forecasted sales (kWh) subject to CIP for the current year (2016 for this filing). In accordance with the MPUC Order dated September 16, 2015, Docket No. E015/M-15-80, Minnesota Power adjusted its CPA calculation to use a fiscal year approach[10] and provided calculation of a new CPA in its September 25, 2015, compliance filing.[11] The proposed CPA for the 2016–2017 period follows the new fiscal year approach which is described further in the background section below.

BACKGROUND

On October 6, 1993, Minnesota Power filed with the MPUC its request for a CPA. In its Order in Docket No. E015/M-93-996, the MPUC approved Minnesota Power's proposed CIP adjustment. In addition, the MPUC ordered Minnesota Power to address the issues surrounding the appropriate basis for calculating conservation costs in its next rate filing. Minnesota Power did so in Docket No. E015/GR-94-001. A significant portion of conservation costs are recovered from base rates. However, past expenditures, financial incentives, carrying charges, and current expenditures not recovered through base rates remain to be recovered and credit balances remain to be returned to customers through the CPA mechanism. A format for determining a CPA factor was presented in Minnesota Power's October 6, 1993, filing. That general format has been utilized herein.

In response to 1993 changes in Minnesota Statutes, the MPUC initiated a CIP Adjustment Implementation Study Group. That group prepared and filed with the MPUC, on November 8, 1993, its "Report of the CIP Adjustment Implementation Study Group." Among other things, the

[9] Also referred to as CCRA in other utility filings.
[10] Non-calendar year of July 1–June 30.
[11] Compliance Filing, Order Approving Tracker Account and Financial Incentive, Setting Rider Adjustment and Reducing Carrying Charges for Minnesota Power's 2014 Consolidated Filing, September 25, 2015, Docket No. E015/M-15-80.

group agreed that electric utilities with Conservation Program Adjustment (CPA) factors would file annually on April 1 for modification of their CPA factors. This section of the instant filing is in compliance with that agreement.

In its July 30, 2009, Comments regarding Minnesota Power's 2008 Conservation Improvement Program Consolidated Filing, the Department requested that Minnesota Power's allocation method for the CPA mechanism be changed from a percentage of revenue to a per-kWh basis, Docket No. E015/M-09-299 and E015/M-09-300. At the urging of the Department, Minnesota Power included a request to change from a percentage of revenue methodology to a per-kWh basis in the context of its general rate case filing, Docket No. E015/GR-09-1151. Subsequently, in Minnesota Power's 2009 Conservation Improvement Program Consolidated Filing, the Department again recommended that Minnesota Power's allocation method for the CPA mechanism be changed from a percentage of revenue to a per-kWh basis, Docket No. E015/M-10-266. In its September 22, 2010 Order, the MPUC approved a change in CPA allocation method to a per-kWh basis. This method has been in effect since October 1, 2010, and Minnesota Power has calculated the CPA mechanism using the per-kWh method in this filing.

On February 22, 2011, the Department requested a comparative analysis of four methods for allocation of conservation costs to customer classes, using 2008, 2009, and 2010 reference years. These methods were described in the context of Otter Tail Power's Annual CIP Adjustment Factor Filing, Docket No. E017/M-10-220, and the Commission ordered the following:

> Required OTP in its next filing to provide a comparative analysis of the four methods for allocating conservation costs to customer classes as discussed in the record of this case, including: (1) the per-kWh energy–only method; (2) the percent-of-bill method, (3) the 50/50-split method, and (4) the percent-of-net benefits method. Required OTP to show the percent-of-net-benefits method based on a weighted average of the actual benefits achieved in OTP's 2007, 2008, and 2010 CIP. Required OTP, as part of its comparative analysis, to present a large General Service (LGS) rate design (intra-class allocation) that is consistent with each of the preceding methods.

The MPUC carefully considered the methods, recommendations, and arguments pertaining to CIP cost allocation options and, in its January 12, 2012 Order, made the decision not to change Minnesota Power's current method of CIP cost allocation, thereby maintaining the per-kWh method.[12]

On September 16, 2015, in relation to Minnesota Power's CPA calculation, the MPUC ordered the following:

> Within 10 days of the date of this Order, Minnesota Power shall calculate and file in a compliance filing a CPA rate that uses a fiscal year approach, and recognizes that it has been generating revenue since July 1, 2015, at the higher rate of $0.003425.

On September 25, 2015, Minnesota Power submitted its compliance filing providing the calculation of a new CPA rate of $0.000442/kWh using a fiscal year approach, and recognizing that Minnesota Power had been generating revenue since July, 1 2015, at the higher rate of $0.003425.

2016–2017 CPA DEVELOPMENT

The CIP Tracker Account balance at year-end 2015 reflects the result of prior activity in Tracker 2, as indicated on page 1 of Exhibit 1. However, for CPA purposes, the 2015 year-end balance requires adjustments to properly calculate the proposed CPA factor. Using the new fiscal year approach, these factors have been expanded to include actual and anticipated expenditures and cost recovery through base rates and the current CPA rate for the remainder of the current CPA period (January 2016–June 2016) as well as financial incentives claimed, anticipated CIP expenditures, and anticipated cost recovery through base rates for the new CPA period (July 2016–June 2017). The new approach is designed to achieve a zero Tracker balance at the end of the CPA period (fiscal year) rather than at the end of the calendar year. Higher (calendar) year-end Tracker balances should therefore be anticipated going forward which is a deviation from Minnesota Power's recent history of low year-end Tracker balances. Minnesota Power notes that the tracker balance may be larger than anticipated at both calendar and fiscal year-end during the

[12] In its Order, the MPUC noted that it "has moved toward uniformity in its selection of the per-kWh allocation method for electric utilities. It did so for sound reasons, which remain valid. Of all the methods under consideration, the per-kWh method is the most straightforward, the easiest for customers to understand, and the most consistent with the statutory goal of reducing individual utilities' overall energy usage by a set percentage—normally 1.5%—on an annual basis. It appears to hold the greatest potential for reducing overall energy usage by sending the clearest price signal. This simplicity was and is its greatest strength." See Docket Nos. E001/M-11-244; E015/M-11-241; and E017/M-11-185.

first year or two of the transition due to the new calculation. In addition, actual program performance, expenditures and sales will lead to tracker balance fluctuation.

Minnesota Power requests MPUC approval of a proposed CPA factor of $0.002494 per kWh to be effective without proration with bills rendered on or after July 1, 2016. In accordance with the MPUC Order dated September 16, 2015, Docket No. E015/M-15-80, Minnesota Power adjusted its CPA calculation to use a fiscal year approach.[13] Minnesota Power has calculated the CPA factor using a per-kWh methodology, as recommended by the Department and approved by the MPUC in its September 22, 2010, Order, Docket No. E015/M-10-266 and as reaffirmed in its January 12, 2012 Order, Docket No. E015/M-11-241.

Minnesota Power will be filing for CPA modification on April 1, 2017, making the anticipated effective period for this request July 1, 2016 through June 30, 2017. Until subsequent MPUC approval, the existing CPA factor will remain in effect.

Minnesota Power requests a variance to Minn. Rules 7820.3500 and 7825.2600, which require that the Fuel Clause Adjustment (FCA) be stated as a separate line item on customers' bills. The requested variance would allow Minnesota Power to continue combining the CPA and FCA on one line in customer bills, known as the Resource Adjustment. The Commission has approved this variance several times in the past, most recently in Docket No. E015/M-15-80.

Minnesota Power will include a message referencing the change in the CPA in customers' bills in the month in which the new factor goes into effect. Minnesota Power proposes the following message:

> *Effective <DATE>, the Resource Adjustment line item on your bill has <increased/decreased> due to a change in the Conservation Improvement Program (CIP) billing factor. The CIP portion of the Resource Adjustment is <CPA Factor> per kilowatt-hour (kWh).*

Minnesota Power will work with the Commission's Consumer Affairs Office in advance of implementing this proposed customer message.

[13] Minnesota Power's 2014 Consolidated Filing, Order Approving Tracker Account and Financial Incentive, Setting Rider Adjustment and Reducing Carrying Charges, September 16, 2015, Docket No. E015/M-15-80.

MINNESOTA POWER
Conservation Program Adjustment
Proposed for July 2016 - June 2017

Conservation Program Adjustment:

			Jan 2016 - Jun 2016	Jul 2016 - Jun 2017
1	CIP Tracker 2 Account Balance at the end of 2015	1/	$ (2,649,748)	$ (2,602,352)
2	Financial Incentives claimed per Exhibit 2	2/	N/A	$ 7,476,643
3	CIP current year expenditures (actuals)	3/	$ 582,404	N/A
	CIP expenditures approved or budgeted		$ 2,435,880	$ 7,307,641
4	CIP Cost Recovered through Base Rates (actuals)	4/	$ (875,779)	N/A
	CIP Cost Recovered through Base Rates (estimated)		$ (1,410,696)	$ (4,511,028)
5	CIP Cost Recovery through current CPA (actuals)	5/	$ (249,913)	N/A
	CIP Cost Recovery through current CPA (estimate through Jun 16)		$ (425,102)	N/A
6	Carrying Charges (actuals through Feb 2016)	6/	$ (9,399)	N/A
7	**Recoverable Tracker Balance**	7/	**$ (2,602,352)**	**$ 7,670,904**

8	kWh sales subject to CIP	8/	**3,075,480,000**
	monthly		256,290,000

CCRC	$	0.001466772
Current CPA	$	0.000442

Conservation Program Adjustment (per kWh methodology) Line 7/Line 8	**$**	**0.002494**

1/ The prior year-end CIP Tracker Account Balance is per Exhibit 1, Page 1, line 37.

2/ Financial Incentives per Exhibit 2 reflecting the originally approved CIP projects.

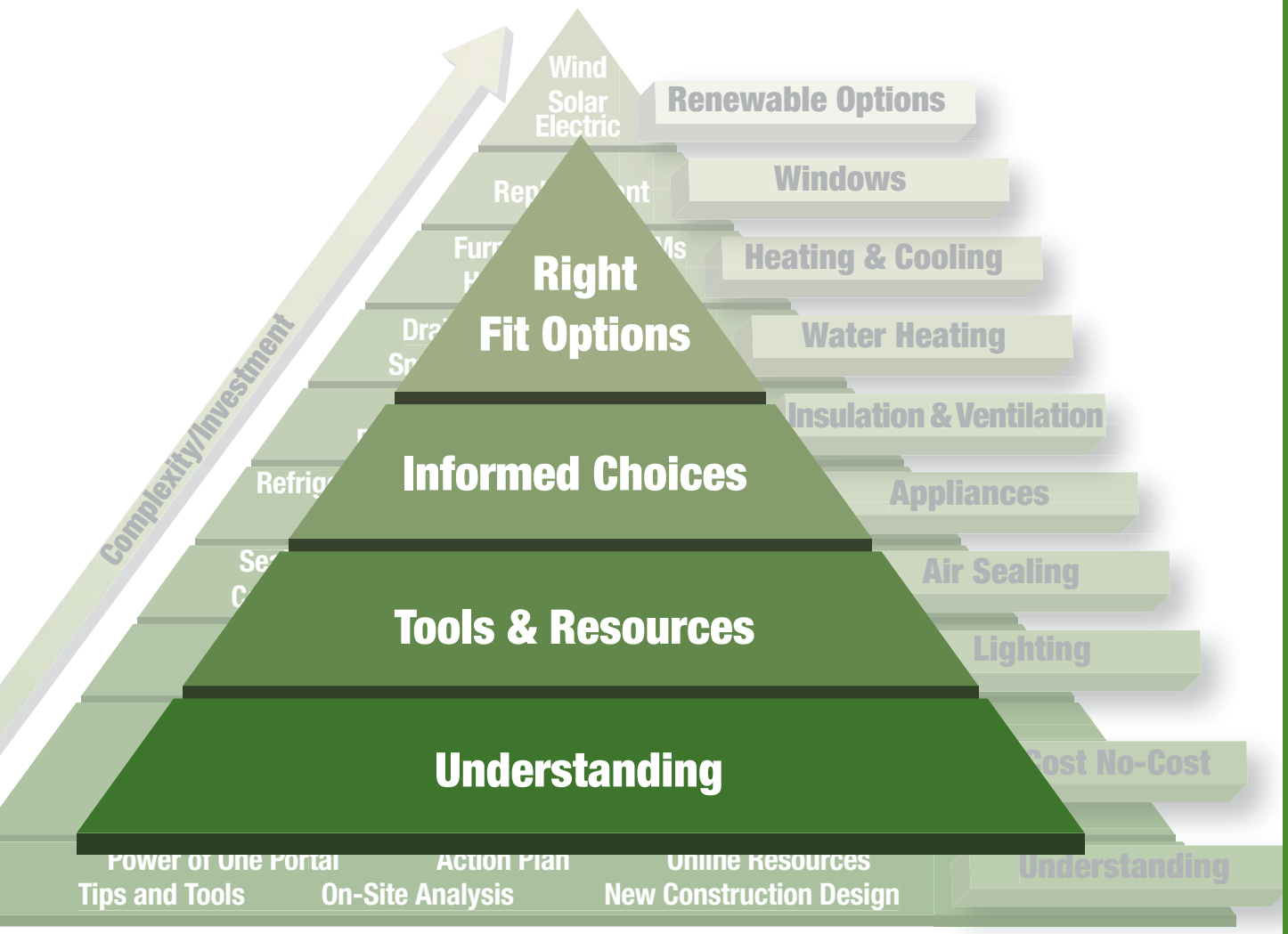
3/ Actual CIP expenditures included for Jan-Feb 2016; Estimated expenditures for Mar-Jun 2016 and Jul 2016-Jun 2017 based on 2016 approved budget in the Company's 2014-2016 Triennial CIP filing, Docket E015/CIP-13-409.

4/ Actual CIP Cost Recovery through Base Rates included for Jan-Feb 2016; Estimates for Mar-Jun 2016 based on the Company's approved conservation cost recovery charge (CCRC) [rate] applied to budgeted Mar-Jun 2016 sales subject to CIP*; Estimates for Jul 2016- Jun 2017 based on approved CCRC applied to 2016 budgeted sales subject to CIP*.

5/ Actual CIP Cost Recovery through current CPA included for Jan-Feb 2016; Estimates for Mar-Jun 2016 based on the current CPA applied to 2016 budgeted sales subject to CIP*.

6/ Actual Carrying Charges included for Jan-Feb 2016

8/ *Total budget sales less competitive rate, economy, opt-out & unbilled sales.

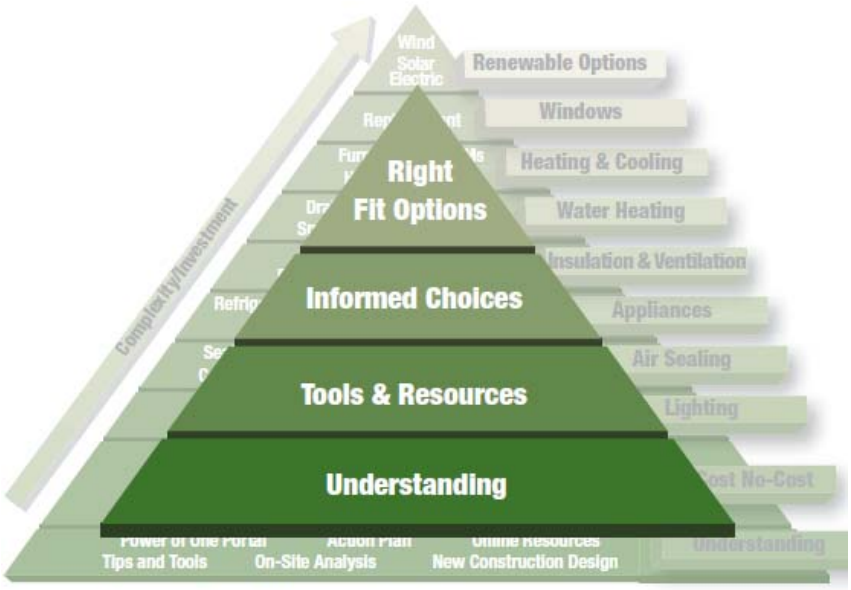


Status Report

CONNECTING THROUGH CONSERVATION

Power of One® is Minnesota Power's purpose-based strategy to empower customers to make effective energy choices that are the right fit for them and that help them get the most for their energy dollars. Together, with its customers, community stakeholders and trade allies, Minnesota Power has achieved success through its energy conservation programs, delivering energy savings at or above the 1.5% energy savings goal since 2010, all the while maintaining focus on targeted program objectives—quality installations, informed decisions, conservation first and safety. Power of One® represents the importance of individual choice by customers regarding how they use the vital energy Minnesota Power provides to maintain the quality of life, operational excellence, and overall reliability they've come to expect and value for their homes, businesses, and communities. Figure 1 represents the guiding framework for program design and delivery.

Figure 1: Minnesota Power's Conceptual Pyramid



This framework includes meaningful engagement through ***Understanding, Tools & Resources, Informed Choices,*** and ultimately ***Right Fit Options***. To help customers save energy, they must first have a better ***Understanding*** about how they use energy. Minnesota Power shares that responsibility in that it must also understand how customers use energy, what technologies or processes impact usage, and how best to deliver programs and services. Minnesota Power provides a variety of ***Tools & Resources*** to further customer understanding, help them familiarize themselves with energy-efficient options, and encourage them to develop a plan for saving energy. Tools & Resources are also provided to retailers, trade allies, program delivery experts, customer service professionals, and contractors to help them see the value in energy efficiency as part of their service offerings. This leads to ***Informed Choices***. Customers can leverage program resources to learn more about the technologies, processes, investments, and implementation alternatives that are consistent with their objectives. By collaborating with stakeholders and trade allies, Minnesota Power helps to ensure that these informed choices are

reinforced at each step in the process and that customers are confident in their choices, asking thoughtful questions along the way and defining their expectations to further that confidence. This ultimately helps customers identify ***Right Fit Options*** that are in alignment with their expectations, preferences, operational needs and decision-making processes. This includes a solid understanding about how equipment works, how it should work, and the impact of operational practices on energy usage. This approach acknowledges that customer investment decisions are complex, decision drivers are unique to their circumstances, and they are rarely a "one and done" opportunity. The Power of One® is flexible and reflective of the reality that a "one size fits all" approach is not the best approach to help customers succeed or for delivering on energy-saving objectives.

Minnesota Power exercises a mindful, balanced approach in terms of traditional program design versus less established, emerging opportunities, using a combination of "direct savings" and "indirect savings" programs that complement each other and provide for a comprehensive customer experience. Refer to Figures 2 and 3 for a breakdown of spending by direct savings and indirect savings programs.

Figure 2: Program Spending By Direct and Indirect Savings Programs

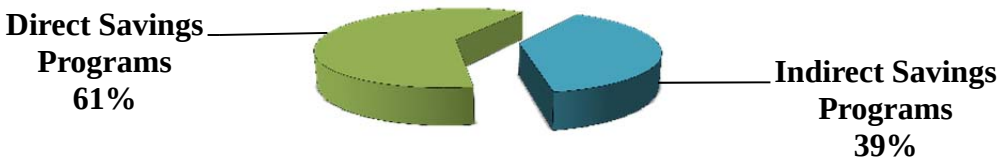
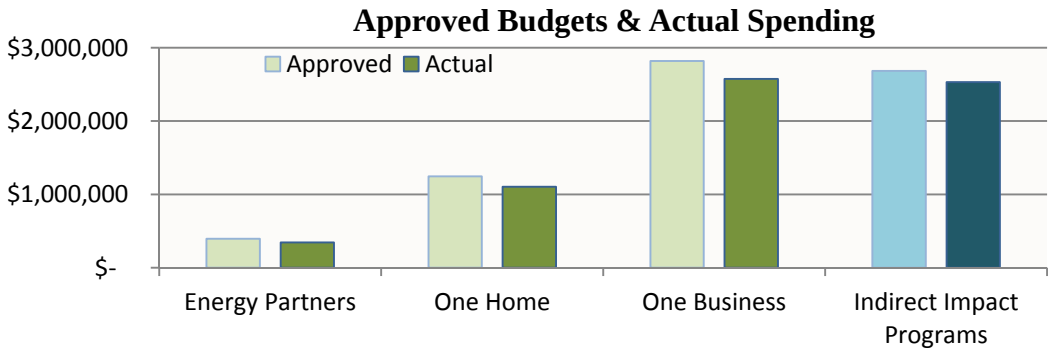


Figure 3: Approved Budgets & Actual Spending



Investing in a range of programs is essential to keep Minnesota Power's program strong well into the future. See Figures 4 and 5 for a breakdown of spending by program.

Figure 4: Direct Savings Program Spending Breakdown

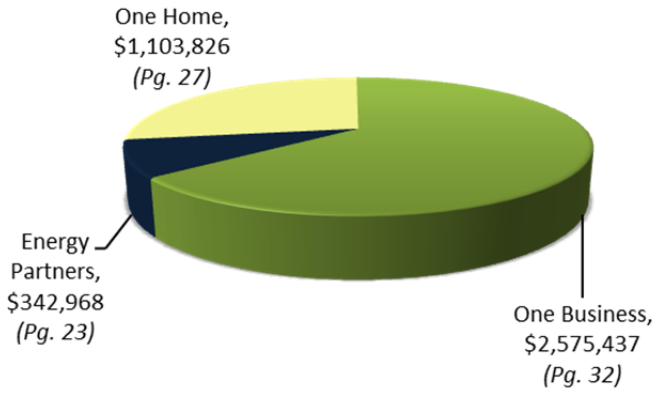
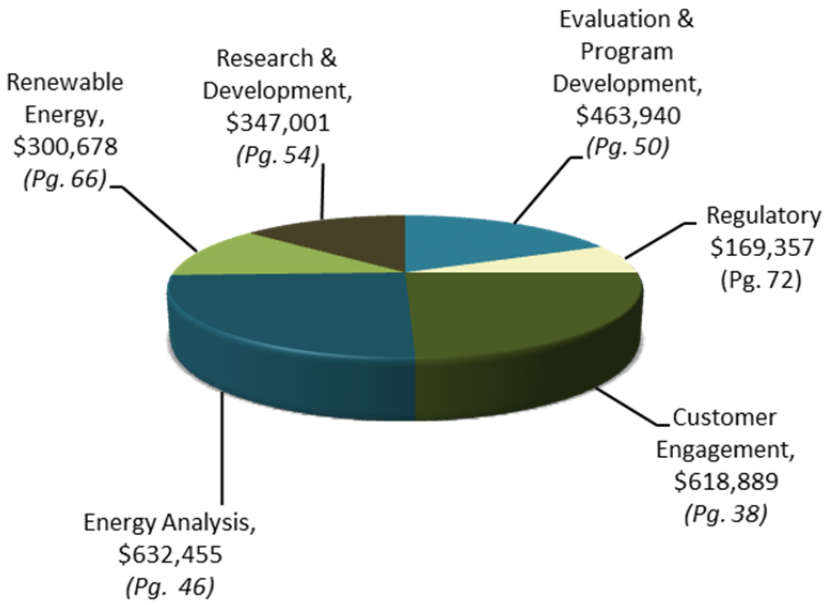
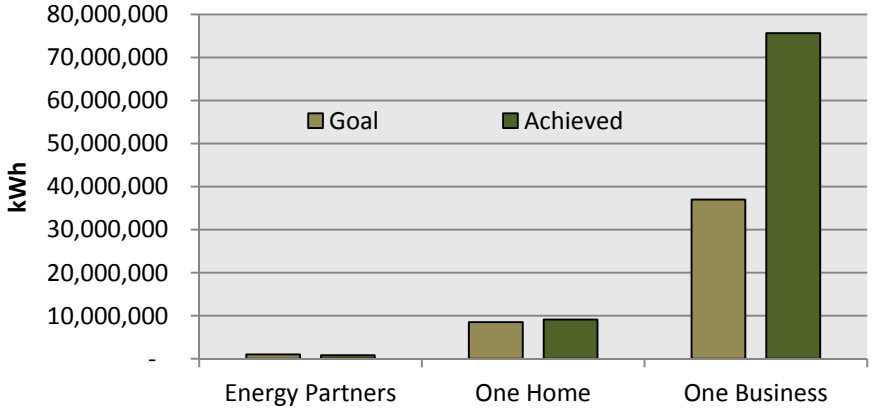


Figure 5: Indirect Savings Program Spending Breakdown



Power of One® Home, Power of One® Business, and Energy Partners remain the foundational programs that consistently deliver energy savings within the Power of One® portfolio—typically through more established methods like rebates, incentives, and/or direct installations. See Figure 6 for a breakdown of savings goals vs. achievements by program.

Figure 6: Savings Goals & Achievements



While rebates certainly remain part of the equation for success in influencing customer choices, the value of Power of One® program services and resources is not solely derived from direct rebate programs. Through a diverse range of services such as education, training, research, performance studies, energy analysis and overall energy awareness, Minnesota Power provides customers with tools and resources they need to make informed choices. These services are delivered through Minnesota Power's cross-market programs—Customer Engagement, Energy Analysis, Research & Development, Renewable Energy and Evaluation & Planning. These programs support direct savings programs and serve as a pipeline for projects that ultimately deliver on program objectives (See Figure 7).

Figure 7: Program Integration

Looking Forward

Minnesota Power has a proven track record with successful conservation program performance, delivering energy savings year over year. In 2015, Minnesota Power once again surpassed the state's 1.5% energy-savings goal. While this kind of success may give the impression that these savings levels are sustainable, it is important to recognize that sustaining historical savings levels will be challenging and require ongoing program development and increased efforts to raise program awareness and participation. The source of savings in terms of customers and technologies will inevitably change as programs continue to mature and technologies evolve. Large commercial projects that have represented a significant portion of savings will be harder to come by, as they tend to be more circumstantial in nature with a lesser degree of certainty and longer timing horizons. To illustrate, in 2015 Minnesota Power achieved 2.84% of retail energy sales, in part due to the new construction of single large industrial operation that involved working with the customer over a period of five years. Without that large project, Minnesota Power's energy-savings equate to 1.68% of retail energy savings. Further, codes and standards as well as regulatory uncertainty and alignment of policy objectives with performance-based incentives are important components that will influence the ongoing success and commitment to conservation. Major changes to these policies could significantly impact the Company's capacity to invest in new and improved programs and its ability to sustain current levels of success. As utilities strive to meet the aggressive goals set forth in statute, adaptive strategies will need to be deployed. Insights regarding customer preferences and energy consumption choices will continue to be an integral part of future program design and delivery. More broadly, the landscape for energy continues to change at an increasingly rapid pace. Minnesota Power is moving forward with its balanced approach to meet the need for energy today and tomorrow in ways that are sensible and sustainable. Power of One® is an important part of that process.

For further context regarding the Power of One® strategy, refer to the Successes section of this filing. The success stories highlight people, businesses and communities taking ownership of their energy usage and how Minnesota Power has been connecting with customers through conservation.

MINNESOTA POWER
2015 CIP Program Spending
12 Months Ended 12/31/2015

	Approved CIP Quantities			YTD Actual to Goal Tracking						
	Per Order / W/O Budget	kWh Goal Per Order	kW Goal Per Order	Actual	kWh	Actual kW	kWh % of Goal	kW % of Goal	YTD Actual WorkOrder Spending	% of CIP Approved Spending
Customer Renewable Energy 102031										
Incentives (1665972)	$150,000.00									
Other (Education)	$10,075.00									
1665957 Administration	$14,819.00								$134.43	
1822008 Renewable Incentives (includes MiM)	$174,906.00								$297,768.50	
1665972 Project & Delivery									$2,775.00	
Sub Total	**$349,800.00**				**90,474**				**$300,677.93**	86%
Customer Engagement (10243)										
Advertising	$10,000.00									
1665978 CIP Website design									$121,274.19	
1665986 Project & Delivery(Ed)	$420,000.00								$313,778.68	
1665994 Design Conference									$44,305.73	
1666000 Project & Delivery(Comm)	$305,506.00								$84,264.11	
1666001 Administration	$70,699.00								$55,266.13	
Sub Total	**$806,205.00**								**$618,888.84**	77%
Energy Analysis 102030										
1666003 Administration	$29,458.00								$20,342.56	
1666007 Proj & Del (low income)	$35,941.00								$23,405.00	
1666009 Proj & Del (Resid)	$44,250.00								$90,902.66	
1666012 Proj & Del (C/I & Ag)	$483,900.00								$497,804.85	
Sub Total	**$593,549.00**								**$632,455.07**	107%
Research/Development 100251										
1667599 Project & Delivery	$338,017.00								$344,447.03	
1667600 Administration	$11,783.00								$2,553.47	
Sub Total	**$349,800.00**								**$347,000.50**	99%
Eval & Program Develop (100247)										
1666022 Admin & Project Dev	$178,108.00								$463,940.42	
1666028 Evaluation Labor	$232,108.00									
Sub Total	**$410,216.00**								**$463,940.42**	113%
Regulatory Charges (100248)										
1666030 Regulatory Charges	$175,000.00								$169,356.73	
Sub Total	**$175,000.00**								**$169,356.73**	97%
Energy Partners (Low Income)100244										
1850622 Incentives	$295,518.00								$187,068.83	
1666032 Project & Delivery	$69,533.00								$118,376.65	
1666036 Administration	$29,658.00								$37,522.78	
Sub Total	**$394,709.00**	**1,004,262**	**130.2**	**839,768**	**115.4**	**84%**	**89%**		**$342,968.26**	87%
One Home (Residential)100245										
1850620 Incentives	$730,669.00								$607,325.50	
1857084 Advertising	$61,350.00								$18,054.55	
Evaluation	$50,000.00									
1666039 Project/Delivery	$362,686.00								$461,425.29	
1666043 Administration	$41,241.00								$17,020.62	
Sub Total	**$1,245,946.00**	**8,530,197**	**1,575.2**	**9,110,101**	**1709.6**	**107%**	**109%**		**$1,103,825.96**	89%
One Business (C/I/Ag)100246										
1666047 Incentives	$2,237,102.00								$1,932,612.32	
1666050 Administration	$47,133.00								$25,804.60	
1666053 Project & Delivery	$518,274.00								$587,732.92	
1666056 M&V	$17,685.00								$23,117.46	
1922173 CIP Utility-owned projects									$6,169.60	
Sub Total	**$2,820,194.00**	**37,004,541**	**4,289.3**	**75,660,908**	**5,400.5**	**204%**	**126%**		**$2,575,436.90**	91%
Total	**$7,145,419.00**	**46,539,000**	**5,994.7**	**85,701,251**	**7,225.6**	**184%**	**121%**		**$6,554,550.61**	92%

One Home

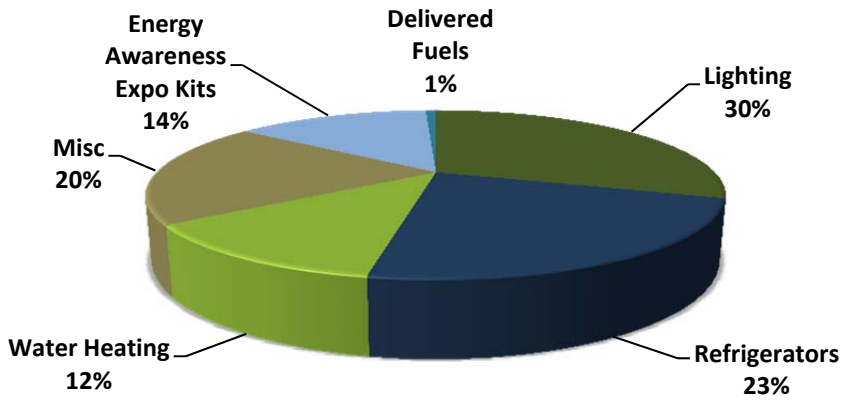
PROGRAM TITLE: ENERGY PARTNERS

PROGRAM DESCRIPTION

The Energy Partners program focuses on empowering low-income customers to save energy through educational resources, energy analysis, direct installation of energy-efficient products and replacement of inefficient appliances. This program is delivered primarily through seven local community agencies (Kootasca Community Action Council, Virginia Arrowhead Economic Opportunity Agency, Mahube Community Council, Bi-County Community Action Program, Lakes and Pines Community Action, Tri-County Community Action and Duluth Community Action). In general, the highest usage customers are targeted by the agencies; however, this usage is looked at holistically considering multiple energy sources (gas, delivered fuels and electric) and is not necessarily specifically focused on electric usage. Home energy analysis offers the unique opportunity for customers to not only gain energy-saving information from the auditors, but also to ask questions and provide feedback about the program. The customer is an active participant in the process of making energy-efficient changes to their home. At the time of the analysis, customers are also able to gather information about additional programs they can take advantage of such as weatherization assistance (if that wasn't how they were connected to Energy Partners), the Customer Affordability of Residential Electricity Rate (CARE) discount rate program, Cold Weather Rule, budget billing, etc. For multifamily buildings, prior to conducting individual apartment visits and installing measures, an energy event, or "meet and greet," is held for the entire facility to provide energy education on both the energy-efficient products and other resources available, including literature and online tools via the Power of One® website. These events are also an opportunity to answer questions and gather valuable feedback to strengthen the Energy Partners program. Measures within this program primarily focus on lighting, refrigeration and water heating. Having some measures readily available, along with the opportunity to ask the auditor questions, enhances the customer's experience and is intended to encourage additional steps toward energy saving for the long term. Some customers qualify for the replacement of ENERGY STAR® refrigerators, dehumidifiers and microwaves. In addition, custom measures are also available if auditors see site-specific opportunities for customers to save energy.

The product mix for the Energy Partners program is unique in that the measures are based on customer need and are provided free of charge for qualified customers. The bulk of Energy Partners savings is achieved through refrigerator replacement of inefficient units and through the direct installation of energy-efficient lighting products. Water heating, the Energy Awareness Expo, and miscellaneous items (dehumidifiers, engine block timers, microwaves, refrigerator thermometers, and plug load kits) add additional depth to the scope of energy-efficient products offered to this sector of customers.

Figure 1: Energy Partners Program—2015 Savings by Technology (kWh)



In 2015, the Energy Partners program was promoted via community and educational events and through the Energy Partners page on the Power of One® website. Agencies reached out to customers who currently participate in fuel assistance or weatherization programs, as well as those who do not traditionally participate in income-eligible programs (working poor and customers who are not aware of these programs or generally choose not to participate due to personal reasons). Minnesota Power representatives promoted program awareness through participation at community events and collaboration with area agencies. An intentional focus was given to promoting this program in areas in which this sector of customers felt the most comfortable and most empowered to participate.

EVALUATION METHODOLOGY

This program was evaluated based on the following items:

- Participation levels (number of measures implemented)
- Energy savings (kWh)
- Demand savings (kW)
- Net benefit/cost results (see the benefit/cost summary at the end of this section)

RESULTS

The following chart summarizes and compares the results of the Energy Partners program with goals established at the time of program approval.

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$394,709	$342,968	87%
Total Project Energy Savings (at busbar)	1,004,262 kWh	839,768 kWh	84%
Total Project Demand Savings (at busbar)	130.2 kW	115.4 kW	89%
Participants (measures)	4,651	8,536	184%

SUMMARY

Minnesota Power saw a decrease in spending and in the number of participants (measures) in 2015 compared to 2014. Historically this program has seen fluctuation from year to year, largely due to staffing and funding at agencies. The decreased numbers seen with single-family analysis (refer to the Energy Analysis section of this filing) may be a reflection of saturation of the normal pipeline for reaching customers, particularly after the large amount of participation seen in 2014. In addition, the dedicated Duluth auditor faced challenges this year with over 100 canceled appointments. As part of its Triennial planning, Minnesota Power plans to explore this cancellation trend and streamline the process as needed. Minnesota Power will also collaborate with agencies in 2016 to widen the scope of promotion for this valuable service through direct marketing to low-income customers in addition to agency promotion. Despite these challenges, Minnesota Power reached hundreds of customers, providing them with low-income analysis, meaningful engagement and the direct installation of energy-saving measures.

Minnesota Power held one multifamily event at a low-income apartment complex. This event, or "meet and greet," was held in a common space prior to auditing each individual apartment. Tenants were able to learn more about how they use energy and learn simple ways they could save energy through day-to-day choices. It also served as an opportunity to answer tenant questions, gather feedback and create relationships with customers. After learning more about the audits, customers scheduled their audits on an opt-in basis. In each of the 44 individual apartment audits, the tenant's refrigerator was metered and replaced if needed. An energy-efficient floor, desk or table lamp and CFL replacement bulbs were also provided, along with a smart power strip.

The 12th annual Energy Awareness Expo was held in October at the Duluth Salvation Army. Minnesota Power collaborated with the City of Duluth, ComfortSystems, Arrowhead Economic Opportunity Agency (AEOA), United Way, Community Action Duluth and other fuel suppliers to plan and implement the event. Community-based agencies provided low-income customers with energy education and information about available assistance, including fuel assistance. In addition, Minnesota Power staff was on hand to answer questions and raise awareness about Minnesota Power's Customer Affordability of Residential Electricity Rate (CARE) discount rate program. A separate CARE room was also staffed with representatives available to answer questions and help customers sign up for the discounted rate. An additional CARE table was added to the main tabled area staffed with CARE experts. Minnesota Power representatives wore "Ask me about the CARE rate" pins to further promote the discounted rate. The CIP team also developed a Conservation Challenge Quiz. Attendees were given a quiz on energy-efficient lighting and space heaters with corresponding educational materials. Attendees who scored 100% on the quiz had an opportunity to win an energy-efficient lamp. The event was well-attended with over 600 low-income families receiving an energy kit containing several energy-saving products and an energy conservation calendar with tips on saving energy year-round. This event continues to reach a wide variety of customers with energy information while creating a sense of community through collaboration.

For the past three years, Minnesota Power held "Listening Sessions" with all of its low-income providers to gather feedback and give program updates on the Energy Partners program and the CARE rate. Traditionally, this event was held in December as a year-end debrief and a kick-off for the upcoming year. Minnesota Power moved this session to early February of 2015 in an effort to increase attendance from agencies and avoid year-end conflicts. The resulting session had a significant increase in attendance and a noted change in perspective when speaking of program enhancements while in the program year. The bulk of this event was focused on listening and discussion. A key takeaway from this session involved the furnace replacement program introduced in 2014. In response to the guidance provided by the Department allowing inclusion of delivered fuels in CIP Programs, Minnesota Power offered the replacement of up to five inefficient propane furnaces to high efficiency ENERGY STAR® units. Minnesota Power did not receive any submissions for a furnace replacement from the agencies in 2014 and made this a focus at the Listening Session. According to feedback from the agencies, a lack of furnace replacements could be related to the funding already provided by weatherization agencies to replace furnaces. Also, since the program was in its first year it wasn't at the forefront of their minds. Minnesota Power took this feedback as an opportunity to remind agencies throughout the year of the measures available (including furnaces) and established touch-base meetings via conference calls in 2015. The added focus on communication resulted in the replacement of two furnaces in 2015 and an increased awareness in program offerings. The meeting was a great success and further strengthened Minnesota Power's belief that the partnership with these

agencies is essential to providing quality programs to low-income customers. The feedback gained through this event will enhance current and future program planning.

Energy Partners continues to be an important part of Minnesota Power's overall conservation program and is beneficial to the community at large. Through this program, customers were provided with valuable tools and resources to help them take ownership of their energy usage and get the most for their energy dollars. By working and collaborating with provider networks and communities, Minnesota Power has delivered an impactful program while connecting people with essential services and resources.

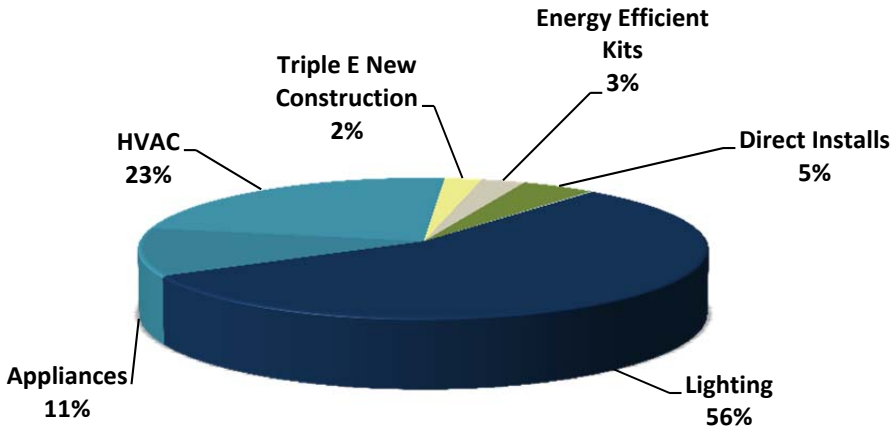
PROGRAM TITLE: POWER OF ONE® HOME

PROGRAM DESCRIPTION

Power of One® Home is Minnesota Power's portfolio-based residential program designed to help customers make informed decisions about how to save energy in their homes. Tools, rebates and resources, along with a variety of products and services, are provided to encourage customers to take ownership of how they use energy and create an action plan to achieve the long-term benefits of energy efficiency. This program includes lighting, appliances, heating and cooling, water heating, energy-efficient new construction and energy-efficient kits.

While a variety of technologies are offered through Power of One® Home, lighting continues to be a primary driver, accounting for over half of reported savings. Heating and cooling combined with appliances represent about 34% of savings. Direct installations, Triple E New Construction and energy-efficient kits represent about 10% of reported savings.

Figure 2: Power of One® Home Program 2015 Savings by Technology (kWh)



Minnesota Power strives to help customers identify investments in energy efficiency that are the right fit for their homes while educating them about the impact of day-to-day energy choices. Understanding how a house functions and uses energy is a critical step in gaining energy savings. The Pyramid of Conservation, the Power of One® Portal, and other interactive tools offered by Minnesota Power help accomplish this step, coupled with a strong retailer and heating, ventilation and air conditioning (HVAC) contractor network that provides resources for customers to attain energy-efficient products and services.

EVALUATION METHODOLOGY

Minnesota Power tracked total energy savings and savings by measure for the Power of One® Home program. In addition, individual components of this program had specific evaluative activities.

- **ENERGY STAR® Lighting and Appliances—**Minnesota Power tracked participation and energy savings by actual versus goal for its portfolio of lighting and appliances. Minnesota Power continues to experience great success in the demand for LEDs (light emitting diodes) and has far surpassed its filed goal for 2015. This success is due in part to leveraging strong relationships within the retailer network and working together to offer a variety of LED products at a reduced price. Minnesota Power promoted these specials in a variety of ways, such as bill inserts, social media and at various events like the Energy Design Conference and the Arrowhead Home and Builder Show. Many factors have contributed to the continuing success of LEDs throughout the residential market. The Energy Independence and Security Act (EISA) legislation has raised awareness of new lighting technologies as an alternative to incandescent bulbs. LED bulbs are continuing to grow in popularity and availability, even at small independent hardware stores. Many manufacturers have expanded their product lines beyond the typical 60W bulb; 75W, 100W and 3-way LEDs are now easily accessible and have gained the trusted ENERGY STAR® label. This variety, coupled with incentives, has helped customers make the switch to long-lasting LED bulbs. Additionally, LED PAR (parabolic aluminized reflector) lamps have quickly gained popularity among consumers who are bypassing comparable compact fluorescent light bulb (CFL) alternatives due to longer life expectancy and excellent performance. LED retrofit kits have seen impressive sales in remodeling and new construction projects. These offer great alternatives to traditional can lighting in new construction and fit well within home performance from both a lighting efficiency standpoint and air leakage, as they do not penetrate into attic space.

  In 2015, Minnesota Power continued to offer rebates on ENERGY STAR® clothes washers and refrigerators. While appliance savings were down in 2015 compared to the previous year, they remain an important part of the residential product mix. The Great Refrigerator/Freezer Roundup recycling program had a successful year and achieved results similar to previous years, taking 710 refrigerators, 110 freezers and 8 window air conditioners off the market in 2015.

  Minnesota Power reintroduced dehumidifiers to the product mix in 2014 and achieved strong participation. Numbers were slightly down in 2015, mainly due to the fact it was a dry year in Minnesota Power's service territory.

- **Water Heating—**Water heating is a significant portion of residential energy use, representing approximately 15% of a typical home's energy usage. As such, Minnesota Power offers the following energy-efficient products to help customers reduce water heating costs: a water- and energy-saving SmartPak (mentioned above), Drain Water Heat Recovery (DWHR) and energy-efficient electric water heaters (energy factor (EF) of .95 or greater). DWHR continues to be a part of the overall portfolio but Triple E New Construction presents the best opportunity for this technology as it allows easy access for installation. Even though there was no

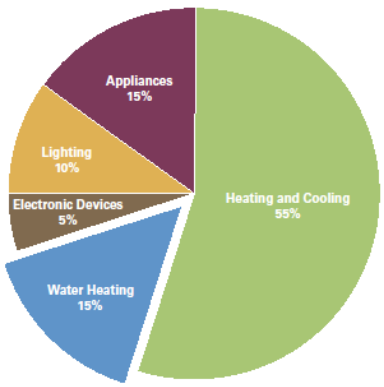


Figure 3: Typical Home Energy Use Breakdown

participation in 2015, DWHR will continue to be a promoted technology to customers. The One Home program saw good results during the second year of offering Minnesota Power rebates on electric water heaters (energy factor (EF) of .95 or greater).

- **Triple E New Construction—**Triple E New Construction is Minnesota Power's systematic approach to energy-efficient housing. Triple E stands for Energy Efficiency, Education and Evaluation and consists of a plan review followed by three onsite visits. The plan review ensures that prescriptive insulation values are being met and that energy-efficient lighting and appliances are considered. This is followed by a framing visit, which is an opportunity to help the builder identify problem areas for air sealing such as can lights, cantilevers and bonus rooms. The second visit is the pre-sheetrock evaluation. This provides an opportunity to confirm that the insulation values are correct, identify any further air sealing opportunities and check the specifications on the mechanicals. Lastly, the final test on the home consists of a blower door test, appliance check and light count to determine the home's performance level and eligible rebate amounts. Minnesota Power continues to report average actual savings from Triple E new homes based on modeling of appropriate standard conventional new homes.[14] Triple E New Construction numbers went from 6 homes in 2013 to 13 homes in 2014 and 14 homes in 2015. This is an encouraging sign that new construction is on the rise in general, although the number of homes in the program may decrease slightly as long as the price of natural gas and delivered fuels such as propane remain low. Regardless, this is one of the best opportunities to educate consumers on energy efficiency as Triple E New Construction addresses everything from lighting and appliances to HVAC and thermal integrity. Minnesota Power is undergoing changes to its Triple E New Construction Program to adapt to the new Energy Code; as of 2016, Tier I of the program will be discontinued and Tier II will be the program's minimum requirement.[15]
- **Builders—**Minnesota Power works with area builders on both a one-on-one basis and through educational outreach such as the annual Energy Design Conference & Expo. This gives Minnesota Power an opportunity to update builders on the Triple E New Construction program standards and encourage them to meet Triple E standards for new homes they build, in addition to providing them a vehicle for achieving continuing education requirements.
- **Direct Installations and Targeted Kit Offers—**This component of the Power of One® Home program was evaluated by tracking the number of each product installed by the auditor via the residential home energy analysis. Approved savings levels were used to determine direct impact savings by product, and overall. The SmartPak kit (which includes energy-saving showerhead, faucet aerators, shower timer, and water temperature card) and the Starter Kit (including three CFLs, refrigerator thermometer, shower timer and plug load information) were provided to customers upon request or by participation in the Power of One® Portal. Savings per kit were discounted by 50% based on installation levels.[16] Energy-efficient kits are a good way to promote first steps in energy conservation and help generate interest in other program offerings. In 2015, Minnesota Power promoted Starter Kits and SmartPaks through its website and through the Your Home Energy Report. Although kit numbers came in under goal, there were increased results from the previous year. Starting in 2016, Minnesota Power will make a change to the Starter Kits by replacing the CFL bulbs with 9W LEDs.

[14] Minnesota Power's 2011-2013 Triennial CIP, Docket No. E015/CIP-10-526.
[15] Minnesota Power's 2014-2016 Triennial CIP, Codes & Standards Compliance Filing, Docket No. E015/CIP-13-409. December 28, 2015.
[16] Minnesota Power's 2011-2013 Triennial CIP, Docket No. E015/CIP-10-526.

- **Heating, Cooling and Air Conditioning—**This component of the Power of One® Home program was evaluated based on the number and type of measures completed: ECM (electronically commutated motor) furnaces and air handlers with original equipment, replacement ECMs, GSHPs (ground source heat pumps)—closed and open systems, ASHPs (air source heat pumps)—standard and mini split ductless, CACs (central air conditioners)—proper installations, documented engineering estimates, and the number of trained installers (as listed on the Power of One® website). Minnesota Power is reporting average actual savings for ground source heat pump installations based on a quality installation protocol.[17]
- **Quality Installation Protocol Across Types of Ground Source Heat Pump (GSHP) Systems—**In 2015, Minnesota Power continued to fulfill the requirements established in its Triennial Compliance Filing.[18] Minnesota Power requires all contractors participating in the program to be International Ground Source Heat Pump Association (IGSHPA) Accredited Installers in order to offer rebates to customers. This provides participating ground source heat pump contractors training, continuing education requirements and exposure to best industry standards that will lead to a quality installation. Participating contractors are still required to fill out a ground source heat pump preapplication to get preapproval of the installation and calculate savings per system. The preapplication asks for detailed data that is evaluated by a third party to verify preapplication requirements are satisfied and to calculate heating and cooling savings. This process ensures a strong GSHP contractor network that promotes quality installations to provide system performance that meets customer expectations and reinforces the value of their investment for the long term.
- **Contractor Network—**Minnesota Power's contractor network has gotten smaller over the years, primarily as a result of the more stringent GSHP pre-application process. However, Minnesota Power continues to build its HVAC program through relationships with the existing contractor network. This includes working closely with them and recognizing high performing contractors that are committed to "right fit applications" for the customer. Minnesota Power continues to survey customers who participate in the HVAC program about their experience with the installation process. By asking for feedback on the customer's experience with the equipment selection, the installation process, performance of the equipment and their overall satisfaction with their contractor experience in terms of expertise and quality of service, insights are gained on program offerings. In 2015, Minnesota Power held a high performer contractor breakfast meeting in conjunction with the Energy Design Conference and Expo to recognize their work and to discuss future program offerings.
- **Retailer Engagement Network—**Minnesota Power continues to keep retailers engaged in lighting and appliance promotions through personal store visits, direct mailings, featured stories in newsletters and on its website. Minnesota Power continually strives to encourage retailers to promote energy-efficient products to customers and provide point-of-purchase and informational materials to use for promotional purposes.
- **Third-Party Implementation Contractors—**Minnesota Power works with several third-party implementation contractors as a fundamental part of its programs. Through these services, Minnesota Power helps customers understand energy efficiency and delivers savings. By tracking customer participation across these programs, Minnesota Power is able

[17] Minnesota Power's 2011-2013 Triennial CIP, Quality Installation Program for Ground Source Heat Pumps Compliance Filing, Docket No. E015/CIP-10-526, January 3, 2011.
[18] Minnesota Power's 2011-2013 Triennial CIP, Quality Installation Program for Ground Source Heat Pumps Compliance Filing, Docket No. E015/CIP-10-526, January 3, 2011.

to help customers and utilities reap the program benefits, including cumulative impact, while leveraging economies of scale these contractors can offer.

- **Plug Load Initiative**—In 2015, Minnesota Power continued to build on the Pyramid of Conservation concept, using the Plug Load Pyramid to illustrate steps for reducing plug load (plug load is the electric usage from plugged-in devices even when they're turned off). In addition, a Plug Load Toolkit was delivered and installed by auditors during a home energy analysis. The kit includes a computer power management guide, timer, power strip and a detailed action plan for addressing plug load issues in the home. Auditors reported items installed and tasks completed for each customer.

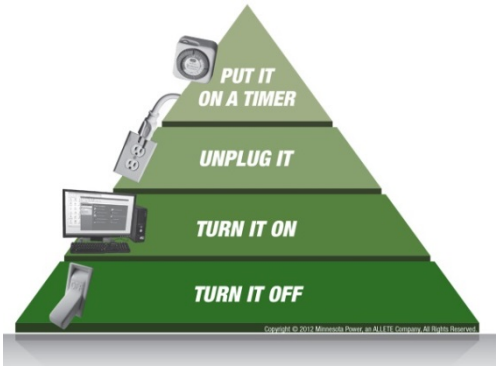


Figure 4: Plug Load Pyramid

RESULTS

The table below details the Power of One® Home 2015 approved goals versus actual results.

	Approved Goals		*Actual Results*		*% of Approved Goal*
Total Project Expenditures	$1,245,946		$1,103,826		89%
Total Project Energy Savings (at busbar)	8,530,197	kWh	9,110,101	kWh	107%
Total Project Demand Savings (at busbar)	1,575.2	kW	1,709.6	kW	109%
Participation (measures)	93,946		135,854		145%

SUMMARY

Minnesota Power was able to deliver on its Power of One® Home energy savings in large part due to the success of the LED lighting program combined with a balanced portfolio of energy-efficient products and services that are specific to customers' needs. Minnesota Power believes that this portfolio of products and services will continue to be successful for the Power of One® Home program in 2016.

One Business

PROGRAM TITLE: POWER OF ONE® BUSINESS

PROGRAM DESCRIPTION

Power of One® Business serves as the primary forum for delivering energy conservation programs to business, industrial, agricultural and public sector customers. This program provides a common platform which enables Minnesota Power to inspire a broad base of customers to make effective energy choices while also providing the flexibility required to fit within the unique circumstances of various business types. By utilizing program rebates, tools, expertise and resources, Minnesota Power is able to respond to a customer's dynamic mix of priorities, technical opportunities and specific economic factors.

When considering energy-saving opportunities, projects are reviewed with consideration toward not only energy savings, but also operating costs, effective design and technology utilization, unit output and overall productivity. By following a well-grounded model, energy conservation can become an integral part of sound investment decisions, supporting the customer's overall asset planning and informed resource considerations, and garnering buy-in from operations personnel. This model leads to identification of effective short-term projects while also providing a path toward long-term effective use of energy resources by capturing the growing number of customers that have projects spanning across multiple years as opposed to a "one-and-done" approach.

Through this program, both new and established technologies and process improvements are promoted and delivered. Other tools may include cost sharing for design assistance on a proposed new building, a compressed air study at an existing manufacturing facility, and/or monitoring facilities to identify "hot spots" to pinpoint the greatest opportunities for improvement. Power of One® Business also reinforces the importance of the commissioning process when projects are implemented, both during initial start-up and during periodic tune-up periods. The Power of One® Business delivery strategy of influencing customer choices through development of relationships with manufacturers, distributers and contractors to assist in the delivery of conservation technologies, as well as offering a wide range of services including education, training, research, performance studies, energy analysis and overall energy awareness, provides customers with tools and resources they need to make informed choices.

Minnesota Power maintains a continuous commitment to refining strategies to reach customers with meaningful programs that address their expectations, preferences, operational needs and decision-making processes. Minnesota Power anticipates a growing portion of its Power of One® Business goal to come from what is generally considered hard-to-reach sectors—small to mid-sized businesses. This will necessitate options that streamline the participation process so customers from this sector, who likely have fewer resources and staff to focus on efficiency opportunities, can realize the many benefits of energy efficiency as cost effectively as possible.

Figure 5: Power of One® Business Program 2015 Savings by Technology (kWh)

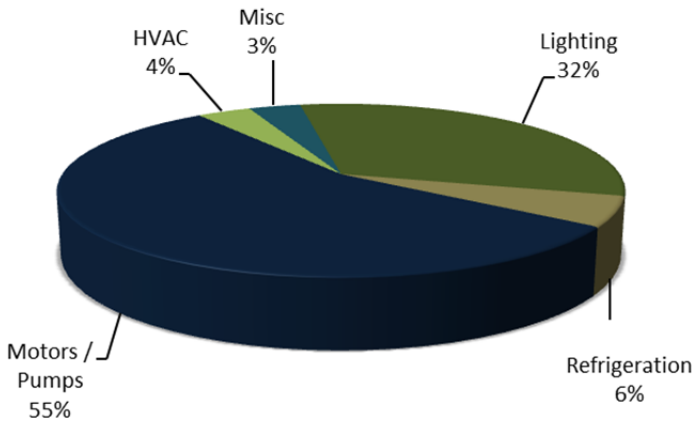
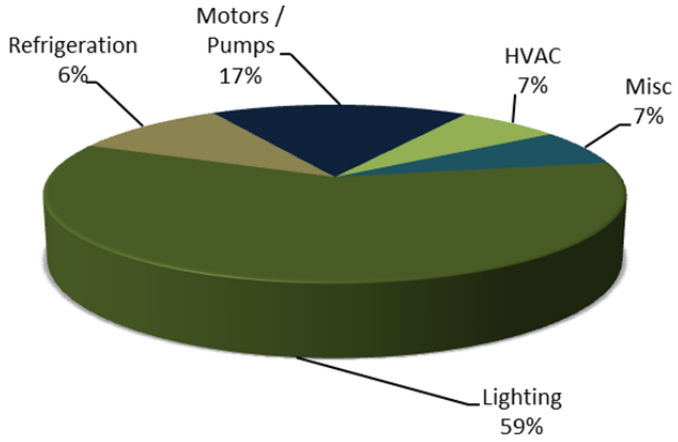


Figure 6: Power of One® Business Program 2015 Savings by Technology (kWh) (excluding large industrial)



In 2015, Minnesota Power continued to field-test less conventional delivery strategies as part of the One Business program.

- **Energy Teams**—Minnesota Power continues to work collaboratively with businesses to build upon the success of Energy Teams. The purpose of the Energy Team concept is to bring as many of the decision makers to the table as possible. Ideally a team is made up of those familiar with facility needs, operations and maintenance, those with knowledge of major assets or planned construction, financial decision makers, and upper management. It often takes time to develop an effective team, a year or more, but once in place, it serves as an effective component for ongoing business decision making and planning. The frequency of meetings varies with the customer type and project intensity, but is generally between 3 to 6 times annually, with more frequent project scoping and analysis in between. Minnesota Power program experts are available to attend all or a subset of the meetings to provide insight on the impact of energy in their operations and in their communities as well as potential technologies and/or process improvements that could increase efficiency. This

approach encourages businesses to look at energy-efficiency options as part of their culture and develop a long-term capital planning process.

- **Energy Consortium**—Minnesota Power built upon the success of Energy Teams by holding Energy Consortiums. These meetings bring together customers with the shared goal of building energy efficiency into their facilities. Operation managers are able to learn from each other by sharing both their successes and failures with implementing energy-saving projects while also developing an ongoing support system for exploring future initiatives.
- **Community Business Blitz**—This delivery strategy for reaching businesses in rural communities has shown promising results for both energy education awareness and energy savings. In 2015, Minnesota Power representatives visited five communities including International Falls, Aurora, Hoyt Lakes, Nisswa, and Pequot Lakes and provided an on-site analysis at local businesses with the direct installation of energy-saving products. By providing these products, customers gained an increased awareness of products available and started conversations regarding future projects. While visiting these businesses, Minnesota Power also gained valuable information about technologies used and identified further potential energy-saving opportunities. These visits provided insights into an overwhelming opportunity for businesses to save energy by switching from T12 lighting to more efficient LED fixtures. A T12 lighting pilot was organized with discounted products for a limited time through manufacturers. The pilot was a success and resulted in ongoing energy-saving changes.
- **Expanded Outreach**—In 2015, Minnesota Power expanded outreach to manufacturers, distributors, and contractors in order to strengthen the supply network available to customers. This expanded outreach was best seen in the International Falls and Chisholm T12 pilot aimed at bringing all parties together to deliver a target technology to an entire community.
- **Facility Updates**—Minnesota Power completed an update of its non-generating facilities in 2015, including benchmarking. In addition, there was an attempt to update facilities in ENERGY STAR® Portfolio Manager with varying results. Due to the mixed-use of many facilities, the results, although informative, don't always translate well into ENERGY STAR® ratings. In the future, as these building types expand, it will likely be more applicable.
- **Benchmarking**—Minnesota Power continues to use benchmarking with facilities to help identify energy-saving opportunities when making facility upgrades and to identify maintenance improvements. In addition, Minnesota Power continues to share information with those responsible for facility management and serve as a resource for information on new technologies and application techniques.
- **Bonus Incentives**—To further enhance participation in the Power of One® Business program and make energy-saving resources a priority in business planning, Minnesota Power continues to offer a bonus incentive to customers that agree to place the incentives they receive in a revolving account. Customers that agree to the terms of this program receive a 10% premium on top of their standard rebate as a reward to establish and maintain an account designated exclusively toward future energy-saving activities. These accounts have proved useful in funding smaller day–to-day projects as well as providing seed money for taking the next step towards even greater efficiencies.

Power of One® Business is based on three key marketing strategies with corresponding incentives that target energy-saving technologies and the customer decision-making process to maximize effective use of resources. These strategies include the following:

- **Marketing Strategy A** utilizes a prescriptive-based incentive approach to ensure the continued use of energy-saving technologies. This method targets proven technologies that need less analysis but still require incentives to encourage market acceptance.

  Incentives are paid out at fixed rebate levels for limited terms. This strategy assists in the marketing of underutilized technologies while preventing the creation of artificial markets for nonviable products.

  Manufacturers and suppliers are given the opportunity to work hand in hand with Minnesota Power to provide a quick and effective incentive process. As the dynamics of the market change, adjustments can easily be made with the ultimate objective of market transformation toward efficient and effective technologies in the agricultural, commercial and industrial markets.

- **Marketing Strategy B** is a more customized approach that encourages customers to seek assistance in evaluating newer and underutilized technologies that best fit their needs. By introducing customers to lesser-known technologies often not considered, a broader range of effective implementations will occur.

  This marketing strategy is a performance-based approach that has targeted the core of Minnesota Power's customer segments.

- **Marketing Strategy C** provides a grant for instances where the complexity of the technology or the dynamics of the project require considerations outside common parameters. Minnesota Power has worked with each customer to develop an incentive to encourage implementation. Project boundaries have been established using historical Power of One® Business experiences and through appropriate screening processes.

Minnesota Power's customer-driven marketing strategy ensures that customers' operational needs are addressed while retaining flexibility in program delivery. Customers with less complex projects are better suited to use prescriptive type rebates and delivery methods, while customers with larger or more complex processes are encouraged to potentially reach a greater level of energy savings through in-depth analysis of their facilities. In any case, customers are provided a simple preapplication to get the process started. They are assigned a field representative who can help them tap into the Power of One® Business program and identify delivery methods at the appropriate level to fulfill their needs.

EVALUATION METHODOLOGY

Minnesota Power evaluated energy and demand savings based on manufacturer end-use data, proven engineering methods, the Minnesota Technical Resource Manual and/or site-specific engineering studies. A component of all project savings and demand reduction estimates involves end-use calculations. In 2015, Minnesota Power continued its expanded emphasis on pre- and post-project analysis. This also includes measurement and verification (M&V) efforts for 5 projects that represent 44% of savings.

RESULTS

The table below details Power of One® Business 2015 goal accomplishments.

	Approved Goals	*Actual Results*	*% of Approved Goal*
Total Project Expenditures	$2,820,194	$2,575,437	91%
Total Project Energy Savings (at busbar)	37,004,541 kWh	75,660,908 kWh	204%
Total Project Demand Savings (at busbar)	4,289.3 kW	5,400.5 kW	126%
Participation (measures)	856	601	70%

2015 Power of One® Business Projects Overview by Customer Class

	Total $ Rebated	*Number of Measures*	*Total Estimated kWh Saved (meter)*
Agricultural	$28,631	14	822,487
Commercial	$1,095,257	483	24,761,149
Industrial	$814,894	104	42,891,305

SUMMARY

In 2015, Minnesota Power far exceeded its energy-savings goal for the Power of One® Business program, achieving 204%. Though the actual participation numbers (listed as measures) are lower than the approved goals, this is more indicative of the types of projects than it is of actual participation. Also, while the commercial/industrial business sectors historically have been, and will continue to be, a major source of savings within Minnesota Power's Conservation Improvement Program, it is important to note that for 2015 a significant portion of the savings realized were from the new construction of a single large industrial operation, accounting for over 46% of the total claimed savings under Power of One® Business. This level of savings from a single project is not typical and will not be sustainable in the future. This project came as a result of working with this customer for over five years on the development of a recycled ferrous mining by-product process. The opportunity for projects of this type in the future is very slim, both in project size and customer and process type. As set forth by the Department of Commerce, all large projects of this size (> 1,000,000 kWh) undergo the established M&V protocol to ensure accuracy of savings assumptions and use of sound methodologies in arriving at savings figures. This project involved both a pre- and post-project analysis.

The Power of One® Business program is designed to empower customers to make informed and effective energy choices by asking the right questions early in projects and reinforcing that energy efficiency is a multi-step process that often begins with design and goes well beyond any single isolated project. Through program tools and resources, customers can develop an energy management plan that will add value to their businesses for the long term. The detailed Success Stories in this document provide further context about how customers, in collaboration with Minnesota Power, succeeded in achieving the Power of One® in 2015.

One Community

PROGRAM TITLE: CUSTOMER ENGAGEMENT

PROGRAM DESCRIPTION

The Customer Engagement program serves as the main avenue for communicating with a broad base of customers about residential, commercial, and community-based energy conservation programs. Through this program, Minnesota Power connects with customers on multiple levels, increasing awareness about programs, creating relationships, and engaging customers through events, training, and education. Educational outreach and collaboration with local energy-conscious organizations continues to be the foundation for delivering Customer Engagement programs. Connecting with these civic organizations, businesses, schools, churches and a variety of community agencies increases the availability of tools and resources and ultimately widens the scope of choices available to customers in saving energy. Educational outreach via an interactive website, specialized trainings, advertising, literature, and participation in community events gives customers a trusted ongoing resource for their questions and a sounding board for their ideas. Minnesota Power believes the connections developed through customer engagement contribute to both the scope and design of Minnesota Power programs, ensuring that the programs offered are meaningful, useful, and relevant to evolving customer needs and an evolving energy landscape.

EVALUATION METHODOLOGY

Minnesota Power tracked the number of visitors (hits) who used online energy tools and program information via the Minnesota Power (Power of One®) website, the number of participants at community events, the number of seminars and demonstrations presented or co-sponsored, and the number of customer profiles or newsletters published.

RESULTS

The following chart summarizes and compares the results of the 2015 Customer Engagement program with goals established in the Triennial Filing.

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$806,205	$618,889	77%
Utilization of the online energy tools and materials (visitors)	75,000	112,619	150%
Participation in community energy events	6,000	11,204	187%
Number of seminars, demonstrations, and conferences *(1)*	35	116	331%
Customer profiles or newsletters completed	13	21	162%

(1) See Appendix D for a list of demonstrations, training, seminars, and presentations.

Energy Education and Outreach

Energy Education and Outreach is the cornerstone of solid program design. This is a necessary part of program infrastructure that lays the groundwork for all the other program components.

- **Energy Conservation Calendar—**Minnesota Power created an energy-saving calendar featuring energy conservation programs and energy-saving tips for every month of the year. The calendar also provided information on Duluth's efforts in the Georgetown University Energy Prize, referred to locally as Duluth Energy Wins. This calendar was distributed to attendees at the Energy Awareness Expo, at an internal employee open house, and to customers who have participated in Minnesota Power's energy conservation programs.
- **Energy Conservation Newsletter—**Minnesota Power introduced an external-facing online newsletter in 2015 for customers based on its internal energy conservation newsletter, *Conservation Counts*. This publication is produced to keep customers informed on energy conservation programs, special offers, and customer success stories. This newsletter is housed on the Power of One® website at www.mnpower.com/EnergyConservation/ConservationNewsletter.
- **Power of One® Education-Based Literature**—In an ongoing effort to provide up-to-date and relevant information to customers, Minnesota Power developed a variety of literature, brochures and fact sheets focused on energy-efficient technologies and conservation programs. These items were distributed through direct mail, bill inserts and community events. A selection of literature was also provided online for downloading or mail distribution via an online order form.
- **One Business Profiles**—One Business profiles (one-page handouts) feature area businesses that have implemented new technologies or made facility improvements through the Power of One® Business program. By featuring a wide variety of businesses ranging from the City of Duluth to Super One grocery stores, customers are exposed to the wide scope of business conservation opportunities. Profiles are distributed at community events and posted on the Power of One® website. These profiles continue to be an effective educational and marketing tool in reaching a diverse range of commercial customers. Some of these profiles are featured in the Success Stories section of this filing and can be accessed online at www.mnpower.com/onebusiness.
- **Building Up Newsletters**—The *Building Up* newsletters covered a variety of energy-related topics in 2015, including home energy analysis, Triple E New Construction, and the Solar Energy Analysis pilot program. *Building Up* is published and distributed to builders, contractors and other building professionals. It is also posted on the Power of One® website at www.mnpower.com/buildingup.
- **The *Duluthian***—In an effort to raise awareness about the Power of One® Business program, particularly for small- to mid-sized businesses, commercial-oriented ads were placed in the bi-monthly Duluth Chamber of Commerce publication, the *Duluthian.* Minnesota Power promoted the Power of One® Business preapplication (available online) and area businesses who have participated in the Power of One® Business program and made energy-efficient changes within their businesses and facilities.
- **Power of One® Website**—The Power of One® website is a widely-used destination for energy education and information. Through interactive tools, energy and appliance calculators, rebate and incentive information, the Pyramid of Conservation, and up-to-date program information, customers are able to learn how they use energy and develop an action plan based on this knowledge. The website also serves as a valuable resource for Minnesota

Power Call Center Representatives and front line personnel when answering customer questions about energy conservation programs. The Your Home Energy Report, an online survey which gives customers a customized report of their energy usage and recommendations towards developing an action plan, continues to evolve and engage customers. The Power of One® Portal gives residential customers the opportunity to understand how they specifically use energy and how their home's energy use compares to similar homes, and they are able to participate in an interactive workbook to help prioritize recommendations and monitor progress along the way. Via the Portal, customers are given continual opportunities for engagement via email campaigns and access to energy information. The Power of One® Business area of the website gives commercial, industrial, and agricultural customers a user-friendly preapplication option as a starting point to finding out more about Minnesota Power's energy conservation programs. One Business profiles featuring local businesses who have utilized Power of One® programs are posted online to visually and narratively present stories of a wide range of businesses and their experiences, giving practical context to program offerings. An additional online tool, the Business Energy Advisor, helped customers increase their understanding about energy usage, industry trends, and technology options based on specific types of businesses.

- **Power of One® Internal Communications**—In an ongoing effort to increase internal understanding and awareness of Power of One® programs, Minnesota Power employed the following efforts directed toward employees.
  - The conservation team continues to reach out to employees with *Conservation Counts*, a monthly newsletter highlighting current promotions, customer profiles, community events, team members, regulatory updates and customer testimonials. The newsletter is distributed via email to Minnesota Power employees on an opt-in basis. *Conservation Counts* gains further visibility through a posting on the company intranet home page.
  - Digital posters featuring current promotions and campaigns are integrated into a loop of company updates on screens throughout Minnesota Power's corporate office building and are also available on the intranet home page. These efforts spurred additional interest and inquiries about Minnesota Power's Power of One® conservation programs.
  - In 2015, Minnesota Power added an open house/Lunch and Learn event to its efforts in reaching employees. The event had informational tables, an interactive "Wheel of Savings" and the opportunity to win energy-saving prizes by answering questions about Power of One® programs. By educating employees, Minnesota Power gains another level of promotion as they participate in programs and increase awareness when engaging in the community at large.
  - Minnesota Power employees took part in an employee energy challenge focused on helping Duluth save energy and win the Georgetown University Energy Prize. This online contest was an "on your honor" challenge where employees logged the energy-saving actions they completed and received badges for each accomplishment. Employees who participated had the opportunity to be entered into a drawing to win energy-saving prizes. The employee challenge will enter phase two in 2016.
- **Promotion**—A multi-faceted approach was taken to promote Minnesota Power's energy conservation programs for residential customers, commercial customers and the community at large. Ads were placed in newspapers, magazines, and online, promoting energy conservation, the Power of One® Home program, community expos and events, and the Power of One® Business program. Programs were also promoted via social media and through email blasts to opt-in members of the Power of One® energy team. Facebook posts

prove to be an effective method of communicating with our customers, with a large amount of interaction through Likes, Shares and Comments.

Educational Outreach Events

Through educational outreach events, Minnesota Power is able to expand on its information sharing, raise awareness about program offers, and seek valuable input from customers, trade allies and community members.

- **Lake Superior Harvest Festival—**An official Energy Tent was removed from the Lake Superior Harvest Festival several years ago. In 2015, Minnesota Power coordinated with ComfortSystems of Duluth, Ecolibrium3, the Minnesota Department of Commerce, the Midwest Renewable Energy Association, the Minnesota Renewable Energy Society, and Clean Energy Resource Teams to bring the Energy Tent back. Festival goers were able to visit educational tables, participate in an energy-efficiency obstacle course, and learn about energy conservation programs, including Minnesota Power's recently announced community solar program.
- **Regional Economies and Renewable Energy Forum—**Minnesota Power partnered with University of Minnesota, Duluth's Natural Resource Institute to deliver a robust, daylong program on regional energy, infrastructure and revitalization as part of a policy exchange between Minnesota and Germany. The program featured facilities that Minnesota Power's One Business program has worked with to make energy-efficiency improvements including Amsoil Arena, Great Lakes Aquarium and Camp Ripley.
- **Georgetown University Energy Prize—**Duluth is one of 50 semi-finalists in the multi-year Georgetown University Energy Prize competition. A $5 million prize will be awarded to the community that demonstrates the most success in energy-saving performance, creative and replicable strategies for energy efficiency, and goals for continued community participation in the future. Minnesota Power is collaborating with ComfortSystems (Duluth's natural gas utility), Ecolibrium3 (a nonprofit focused on energy efficiency and sustainability) and the City of Duluth to promote energy conservation programs and promote the race for the Georgetown University Energy Prize, referred to locally as Duluth Energy Wins. More information is available at www.duluthenergy.org.
- **Community Energy Challenge—**As part of participation in the Georgetown University Energy Prize, a community energy challenge event was held over several weeks via a neighborhood canvas in an area of Duluth that is known for its historical housing stock. The community received a monetary contribution from Minnesota Power for each energy-saving action completed. These actions included home energy analysis, completion of the Your Home Energy Report survey, and refrigerator recycling. The community raised $3,000 to benefit their community center.
- **Northland Community Wellness Day**—The Northland Community Wellness Day (NCWD) is an annual event focused on providing education and resources to promote healthy families, healthy communities and a healthy environment. NCWD features businesses and organizations that value health, fitness, public safety, environmental and energy awareness, and financial literacy. Power of One® team members staffed a conservation-themed booth at this year's event and had the opportunity to share the Power of One® message with a wide variety of customers and community members.

- **University of Minnesota Duluth (UMD)**—Minnesota Power continues to share a partnership with UMD students, faculty, and the facilities directors. In 2015, conservation team members staffed energy conservation booths at the spring and fall sustainability fairs. The students were engaging and shared ideas, feedback, and interest in Minnesota Power's energy conservation and renewable programs.
- **Iron Range Earth Fest**—Minnesota Power sponsored and staffed a conservation-themed booth at this sustainability and environmentally focused festival. This event offers a unique opportunity to interact with customers from a wide variety of areas on the Iron Range. Minnesota Power representatives were on hand to answer questions, gather feedback, and share resources with customers about energy conservation, energy efficiency, and CIP resources.
- **25th annual Energy Design Conference & Expo**—The 25th annual Energy Design Conference & Expo, sponsored and coordinated by Minnesota Power, continues to be Minnesota Power's largest educational outreach event. This year the conference celebrated the 25th anniversary of providing quality education focused on energy-efficient building and sustainable design. The Session Advisory Committee and Planning Team, consisting of a variety of experts and stakeholders from energy conscious organizations, collaborated in producing an agenda and conference with over 40 educational sessions directed at the key players in energy-efficient building and design, including: builders, contractors, architects, engineers, weatherization professionals, utility representatives, students and homeowners. Special 25th anniversary highlights included: a keynote luncheon with Sam Rashkin, Chief Architect for the Department of Energy's Building Technologies Office, an award winning exhibit from the University of Minnesota's "Race to Zero" student competition project, and two preconference specialized sessions. This event continues to offer a unique opportunity to collaborate, learn, and share ideas with the best and the brightest in the energy-efficient building industry. More information is available at www.duluthenergydesign.com.
- **12th annual Energy Awareness Expo**—The annual Energy Awareness Expo continues to be a worthwhile and meaningful educational outreach event designed to engage and empower low-income customers. The event brings together a variety of community outreach organizations, area agencies and energy providers. Attendees had the opportunity to share ideas, learn ways to get the most for their energy dollars and receive energy-saving products along with a Minnesota Power 2016 calendar promoting energy conservation programs and energy-saving ideas. Minnesota Power representatives were on hand to answer questions about conservation, budget billing, Cold Weather Rule and help eligible customers sign up for the Customer Affordability of Residential Electricity (CARE) discount rate. Attendees could also participate in an energy conservation contest where they used educational materials as a resource to find answers to quiz questions. Those who scored 100% had the opportunity to win an energy-efficient lamp. There was a great response to the Expo and attendees enjoyed a comfortable and friendly atmosphere focused on education, community and wise energy choices.
- **Home Show**—Minnesota Power hosted an energy conservation booth at the 2015 Arrowhead Home and Builder Show. The booth display featured the Pyramid of Conservation, Your Home Energy Report, residential and commercial energy conservation programs, an interactive website station, and the opportunity to win an energy-efficient lamp. Two key features of this year's booth included an LED light bar with examples of different types of bulbs and right fit applications, and a solar panel. In addition, Minnesota Power

partnered with Batteries Plus Bulbs to offer a "buy two, get one free" coupon for LED bulbs. Representatives from Minnesota Power staffed the booth and were available to answer energy conservation questions and assist customers in navigating the website to use online tools and energy calculators and find energy information.

- **Camp Ripley Community Open House**—In 2015, Minnesota Power representatives attended an Earth Day event at Camp Ripley, helping to pick up litter, clear trails and spread mulch. In addition, Minnesota Power staff attended a community open house and staffed a conservation themed booth at Camp Ripley. Along with promoting conservation efforts on the base and energy conservation programs, Minnesota Power representatives also answered questions about the partnership between Minnesota Power and the Minnesota National Guard to build a 10 megawatt solar array on the base in 2016. Additional activities included an energy-efficiency and recycling obstacle course and Hartley Nature Center's Electron Trailer to demonstrate how electricity is produced and used. The event, hosted by the National Guard, attracted about 3,000 people. See the success story about Camp Ripley in the "Successes" section of this filing.
- **Community-Sponsored Events**—In addition to Minnesota Power-sponsored events, conservation team members staffed booths at a variety of community-based events including: Lake Superior College and Camp Ripley Earth Day Celebrations and the Climate Minnesota—Duluth Convening. These events offer an opportunity to engage with customers, provide conservation education and receive valuable feedback to strengthen community outreach programs.

Targeted Communications and Training

Targeted communications and training help customers interpret the information they've received and put it into context with respect to their own homes, businesses and communities. This is where education is translated into actionable steps that customers can take to save energy and make effective choices.

- **Product Training and Awareness**—In 2015, Minnesota Power continued to provide customers with product updates and education in the form of scholarships and sponsorships for training.
- **Renewable Energy Workshop**—Minnesota Power and the University of Minnesota-Duluth's Boulder Lake Environmental Learning Center (ELC) have partnered for several years to provide an opportunity for local educators to learn about renewable energy. Teachers of classes ranging from first grade to college level attend two days of renewable energy workshops where they learn the basics of renewable energy technologies and discuss Minnesota Power's generation mix. Minnesota Power employees offer tours of multiple renewable energy generation facilities including Bagley Nature Center (solar), Hibbard Energy Center (biomass), Thompson Hydroelectric Station (hydro) and Taconite Ridge Energy Center (wind). The workshops also provide hands-on exercises that can be used in the classroom to teach students about renewable energy.
- **Energy Teams and Business Energy Consortium—**In 2015, Minnesota Power continued to develop its Energy Team strategy by helping both large and small business customers form and maintain onsite teams. These teams meet regularly to discuss energy-efficiency improvements, how to achieve results, and how to keep energy at the forefront of facility decisions. In addition, Minnesota Power continued to hold Business Energy Consortium meetings with facility and operation managers involved with the Energy Teams. These meetings gave key energy players the opportunity to share information, lessons learned, and

the successes and challenges that result from building energy efficiency into their businesses. The Consortium currently consists of facilities staff from government, education, health care, and Minnesota Power facility management. The benefits of this Consortium extend far beyond energy savings by providing a platform for broader facility operations and management considerations.

- **Builder Operator Certification Training—**Minnesota Power continues to sponsor and promote Building Operator Certification training. This nationally recognized certification program provides education focused on building systems and energy efficiency in facilities. In 2015, a BOC Level 1 training session was held at Camp Ripley near Brainerd, Minn.
- **Retailers—**Minnesota Power values relationship building and collaborating with retailers to increase awareness about Power of One® programs. Minnesota Power provides retailers with point-of-purchase materials for lighting and appliances designed to educate both sales associates and consumers. This involves regular visits to stores to inform associates of any program changes or new promotions. Minnesota Power strives to provide retail associates with product knowledge, including the significance of the ENERGY STAR® label. To encourage the purchase of energy-efficient products, Minnesota Power offers rebates on ENERGY STAR® qualified clothes washers, refrigerators, dehumidifiers, water heaters, compact fluorescent bulbs, LED holiday lighting, LED bulbs, and fluorescent torchieres. Partnerships with more than 150 retailers have established a strong retail presence for ENERGY STAR® qualified products. Retailers are essential in helping consumers make energy-efficient choices and encouraging the right product for the right job.
- **Contractors—**An ongoing relationship with HVAC contractors continues to be an integral part of helping consumers make energy-efficient choices for heating and cooling. The HVAC program continues to focus on building and managing a high performer network of contractors throughout Minnesota Power's service territory. The goal is to make sure that contractors install equipment that is the right fit for the customers. Contractors are required to participate in ongoing product and program training, meet performance requirements, and sign an HVAC participating contract agreement with a memorandum of understanding to participate in the rebate program. In 2015, Minnesota Power held a "High Performer" breakfast at the Energy Design Conference to bring together HVAC contractors for an information sharing meeting. Minnesota Power provides a toll free number to contractors for any questions and to request materials and literature, and cooperative advertising to help their businesses promote energy efficiency. Likewise, Minnesota Power relies on the practical feedback from installers and other parties to identify changes to enhance programs. It is this open collaboration that makes the program a success. Establishing a high performer network and creating stricter standards for participation continues to result in positive customer feedback.

SUMMARY

The Customer Engagement program focuses on key drivers to empower customers to make effective energy choices. All outreach efforts begin with meaningful engagement achieved by reaching out to customers via multiple modes and touch points of communication. Marketing and educational materials, along with customer interactions at community events, help customers begin ***Understanding*** how they use energy. ***Tools and Resources*** further this understanding which leads to ***Informed Choices*** and ultimately results in finding ***Right Fit Options*** for customers. Through active participation within the community, an interactive website, internal and external promotions and specialized trainings, the Customer Engagement program serves as the communications vehicle for all of Minnesota Power's Power of One® programs. This continual and open communication with customers strengthens Minnesota Power programs and serves as a foundation for an energy-conscious community.

PROGRAM TITLE: ENERGY ANALYSIS

PROGRAM DESCRIPTION

Energy Analysis is a cross-market program that provides a pipeline for energy-efficiency projects through direct-savings programs—Power of One® Home, Power of One® Business and Energy Partners. The goal of the Energy Analysis program is to help residential, small-to-large commercial/industrial, and agricultural customers develop a core understanding of how they use energy. With this knowledge, customers are able to make informed choices about their investment in energy-saving products and services. Energy Analysis focuses on working with customers to develop an action plan that translates recommendations into measurable, achievable steps. Participants are connected with a multitude of program resources such as online calculators, baseline energy consumption data, incentives, product training, technology specifications and online information. Also, where applicable, direct installation of products may be included.

Energy Analysis consists of three major categories: informational analysis (Class I), end-use analysis (Class II), and facility analysis (Class III). In addition, Minnesota Power offers design assistance. The focus of Energy Analysis is on identifying, evaluating and delivering the benefits of total energy savings, which includes reduced operating and maintenance costs, increased productivity and comfort, and greater control over energy usage. Energy Analysis considers the unique needs of each customer and facility. Ultimately, the customer decides what their energy-saving objectives are and Minnesota Power helps them identify options and products and services to meet those requirements.

Energy auditors and selected program third-party contractors are an integral part of Minnesota Power's Energy Analysis delivery network. Auditors and/or energy analysts are uniquely qualified and have the proper tools and training to better connect their services with conservation program opportunities and incentives.

EVALUATION METHODOLOGY

Minnesota Power documents the number and type of energy analysis activities delivered.

RESULTS

The following chart summarizes and compares the results of the Energy Analysis program with goals established at the time of program approval.

	Approved Goals	*Actual Results*	*% of Approved Goal*
Total Project Expenditures	$593,549	$632,455	107%
Home Energy Analysis	250	314	126%
Triple E New Construction Home Plan Reviews	15	10	67%
Home Energy Analysis with Building Diagnostics *(1)*	250	121	48%
Design Assistance for New CAC and ASHP Installs *(2)*	275	254	92%
Electric Analysis - Low-income Multifamily (renters)	185	44	24%
Electric Analysis - Low-income Single Family Homes	275	429	156%
Business Energy Analysis *(3)*	3,998	2,085	52%
Total Participants	5,248	3,257	62%

(1) In 2011, Minnesota Power revisited its delivery strategy and definition for Home Performance Assessments. Minnesota Power has since redefined this service as Home Energy Analysis with Building Diagnostics and began delivering it as a rebate program in 2012, similar to other product offerings.

(2) This includes proper installation of central air conditioners and end-use analyses on ground source heat pumps.

(3) This includes facility reviews, new construction facility plan reviews, end-use analyses and engineering assistance. The eight analysis categories include: benchmarking; pre-project scoping; Level 1; Level II; Level III; Engineering Assistance; Agricultural Assistance; and Multifamily Analysis.

Residential Energy Analysis

Energy Analysis for the residential sector, excluding low income, is made up of Home Energy Analysis (HEA) and Home Energy Analysis with Building Diagnostics (HEA w/Building Diagnostics).

In 2015, there was an increase in traditional HEAs. A portion of the increase can be attributed to Minnesota Power's participation in the Georgetown University Energy Prize (GUEP), locally referred to as Duluth Energy Wins. A canvass was performed in a Duluth neighborhood in an effort to raise awareness in energy efficiency. This resulted in 11 additional HEAs and 30 HEAs with building diagnostics. Home Energy Analysis with Building Diagnostics decreased in 2015 compared to 2014. That may be due to the fact that northeastern Minnesota experienced a much colder winter than normal in 2013–2014, which may have encouraged customers to get building diagnostics to help combat high heating bills.

Triple E New Construction

The Triple E program continued with the increased standards from 2012, which included increased values for both prescriptive (i.e., thermal efficiency, moisture control, air quality, heating and domestic hot water) and performance (i.e., heating and air tightness) measures. Starting in 2016, as a result of changes in the Minnesota Energy Code, Minnesota Power will no longer offer the Tier I portion of the program and Tier II will be the program's minimum requirement.[19]

[19] Minnesota Power's 2014-2016 Triennial CIP, Codes & Standards Compliance Filing, Docket No. E015/CIP-13-409. December 28, 2015.

Low-income Energy Analysis

The Low-Income Energy Analysis program consists of Single Family and Multifamily (renters) Electric Analysis. This program is delivered through partnerships with seven local community agencies (Kootasca Community Action Council, Virginia Arrowhead Economic Opportunity Agency (AEOA), Mahube Community Council, Bi-County Community Action Program, Lakes and Pines Community Action, Tri-County Community Action, and Duluth Community Action). In 2015, Single Family Electric Analysis saw a decrease in activity due to several factors. Program challenges included a possible saturation in response to high numbers in 2014 and also over 100 appointments canceled. As part of its Triennial planning, Minnesota Power plans to explore this cancellation trend and streamline the process as needed. Historically, the Energy Partners program has seen fluctuation from year to year due to agency staffing and priorities. In 2016, the Energy Partners program plans to employ additional methods of promotion including direct marketing in collaboration with the agencies. Multi-family analysis stayed steady with one multi-family event serving 44 units. Despite challenges, the Energy Partners program reached hundreds of customers in 2015, providing energy-saving measures and empowering low-income customers to save energy.

Business Energy Analysis

The Business Energy Analysis program continues to utilize analysis as a tool for educating and encouraging customers to make informed energy decisions. Minnesota Power assists customers by using analysis to provide a high level, strategic means of taking action. This helps create a culture that sees energy use as a component of wise business planning and has been a critical component to Minnesota Power's and its customers' continued success. Instead of overwhelming customers with volumes of information, Minnesota Power is able to provide insight, choices, and direction that empower the customer to take action and achieve lasting, effective, energy-saving solutions.

Minnesota Power also continues to refine its highly successful Energy Team concept. The Energy Team process was once considered an effective strategy only for large customers, but Minnesota Power has realized that this is a viable concept for businesses of all sizes. The frequency of contact and the composition of the energy team may differ depending on customer size or savings potential, but the ultimate goal is assisting customers to develop a sustainable energy plan. The Energy Team concept is continuing to pay dividends to customers in the form of expanded savings options, incorporation into existing business strategies, and including other energy suppliers in the energy planning conversation.

Minnesota Power also continued the "Energy Consortium" Energy Team, bringing together business-specific building facility and operation managers to discuss energy conservation projects successes and challenges. Through this interaction and shared experiences, there is an increased comfort level with newer, energy-saving technologies and the incorporation of these technologies into their planning process.

Similar to 2014, it is important to note that, from the table on page 45, it would appear that the amount of business energy analysis has dropped off compared to filed targets; this is more a product of redefinition and categorization than divergence. Starting in 2014, the Class I analyses were classified as either a walk-through analysis or a customer contact based on the complexity of the information provided. Customer contacts are no longer included in the Business Energy Analysis numbers, which resulted in a significant drop in the total number of analyses recorded. Other changes impacting the numbers are an increase in the number of Class III analyses (multiple end uses) over Class II (single end use). This is a result of taking more of an energy plan strategy with customers including, but not exclusive to, the energy team concept. Overall, Minnesota Power continues to research and implement tools with the intention of improving recording methods and information management, exploring potential cost-saving procedures, and providing onsite information capabilities to increase engagement and increase the likelihood of a customer taking action toward project implementation.

Also for 2015, there was expanded cooperation with the local gas utility where shared program delivery resulted in implementing energy conservation into a successful project design. Since a majority of energy savings in new construction, commissioning/ recommissioning are thermal, this joint cooperation with the natural gas utility fosters a more uniform approach to delivering energy savings measures in collaboration rather than the conventional "ours and theirs" program delivery strategy.

SUMMARY

Energy Analysis is often the first step in connecting with a customer. Through this program, Minnesota Power focuses on helping customers understand how they use energy and equipping them with the tools to save energy their way through right fit options. The wide range of Energy Analysis activities enables Minnesota Power and its third-party contractors to deliver accurate and timely information for the customer's decision-making process, from awareness to interest and from action to follow-up. It helps Minnesota Power introduce new technologies, increase the saturation of existing energy-efficient products, and build relationships that enhance ongoing dialogue with customers and their provider networks. Energy Analysis is one of the most direct ways to encourage customers to take the next step toward energy efficiency, empowering them to make effective energy choices.

Evaluation & Results

PROGRAM TITLE: CIP EVALUATION AND PLANNING

PROGRAM DESCRIPTION

The Evaluation and Planning program provides the resources for Minnesota Power to plan and evaluate the Triennial Conservation Improvement Program (CIP) filing, complete the evaluation of current conservation programs, prepare the annual Consolidated Filing including the CIP Tracker and Shared Savings incentive reports, respond to data requests from the Department of Commerce, third-parties, and alternative providers, and evaluate the benefit/cost ratio of proposed modifications to existing programs or for the development of new programs. The Evaluation and Planning program is essential to addressing regulatory matters associated with CIP. These can include the following:

- Planning the strategic direction for Minnesota Power's overall Power of One® initiative
- Ensuring CIP-related regulatory compliance
- Providing benefit/cost analysis for current and future conservation programs and measures

The focus of this program is on managing all CIP regulatory filings, directing benefit/cost analysis, tracking energy conservation improvements, and analyzing and preparing cost recovery reports. This program is used to determine the effectiveness of conservation programs and to provide information on how to continuously improve those programs. This program also includes Minnesota Power's participation in various stakeholder groups and TRM workgroups.

Regulatory requirements mandate the evaluation of all direct-impact projects after the end of each year. The cost of this activity is also captured in this program.

EVALUATION METHODOLOGY

Because this program involved the evaluation of other projects, no formal evaluation plan was proposed for this project.

RESULTS

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$410,216	$463,940	113%

SUMMARY

2015 activities concentrated on reporting results, program development, measuring and evaluating the effectiveness of direct-impact conservation projects, conservation program strategy, technical assumption documentation, participation in various stakeholder groups and a multitude of collaborative efforts. Given the importance of evaluation and program design, Minnesota Power believes this program continues to serve a significant role now and for the ongoing success of its Power of One® programs.

BENEFIT/COST EVALUATIONS

METHODOLOGY

The project benefit/cost evaluations were performed using EPRI DSManager version 2.7. This model has been used to evaluate CIP projects in past Minnesota Power filings. The following projects were evaluated:

- Power of One® Business
- Power of One® Home
- Energy Partners–Low Income

The purpose of these evaluations is to determine the cost-effectiveness of the measures actually installed through CIP under the original assumptions. Thus the starting point is the evaluation performed for the 2014–2016 CIP Triennial, filed in June 2013. Actual rebate and administrative cost data are used in the present evaluations. In addition, data representative of the actual measures implemented are also used, where available. Such information includes kWh and kW saved, incremental measure cost and measure life. The projects are evaluated over the life of each major end-use group and aggregated into the primary projects listed above. The evaluations are discounted to 2015, the year of plan implementation.

Evaluations of non-impact project costs are only required for the Utility Test for use in the Shared Savings DSM Financial Incentive calculation. However, the costs associated with non-impact projects were added to evaluations of the entire plan for the other tests to illustrate the small impact that these non-impact projects would have on overall cost-effectiveness. The Regulatory Charges and Made in Minnesota assessment costs were not included in the non-impact project costs, as those costs were not under the direct control of Minnesota Power.

RESULTS

The net benefit and benefit/cost ratios are listed below for the following tests:

- Participant Test
- Utility Test
- Ratepayer Impact Measure Test (RIM)
- Societal Test

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Results of Project Benefit/Cost Evaluations

Project	Participant Test		Utility Test		RIM Test		Societal Test	
	Net Benefits ($)	B/C Ratio	Net Benefits ($)	B/C Ratio	Net Benefits ($)	B/C Ratio	Net Benefits ($)	B/C Ratio
Power of One® Business	$50,992,521	3.95	$29,359,328	12.40	($36,945,488)	0.46	$31,642,554	2.77
Power of One® Home	$11,470,242	4.36	$2,602,707	3.36	($6,736,267)	0.35	$4,152,682	2.21
Energy Partners	$1,106,707	5.33	($67,709)	0.80	($754,711)	0.27	$313,811	2.01
Total Plan (w/o non-impact projects)	$63,569,470	4.04	$31,894,327	8.93	($44,436,466)	0.45	$36,109,048	2.67
Total Plan (with non-impact projects)	$63,692,332	4.04	$29,706,270	5.78	($46,624,523)	0.44	$34,043,853	2.44

** In compliance with Order Points 1 & 2 from the July 16, 2013, Order Determining Ratemaking Treatment of Utility CIP Project Costs (Docket No. E,G-999/DI-12-1342), net benefits and energy savings resulting from MP facilities projects were excluded for the purpose of the financial incentive calculation. Utility Test Net Benefits for Total Plan and Power of One® Business used in the financial incentive calculation were $29,636,057and $29,289,115.*

*** Credited kWh energy savings of 81,881 kWh for Made in Minnesota payments, as provided for under Minn. Stat. § 216C.412, subd. 2 and calculated by the Department of Commerce, are not included in Benefit/Cost Evaluations.*

The Participant Test is important because a project must normally be cost-effective under this test if a customer is expected to implement it. If the customer does not view the project as cost-effective, the customer is not likely to implement it. A project is considered to be cost-effective under this test if the net benefits are positive and the benefit/cost ratio is greater than 1.0.

The Utility Test, or the Revenue Requirements Test, as it is also called, measures the change in the direct costs of the utility. A project with positive net benefits or a benefit/cost ratio greater than 1.0 will tend to lower utility costs over the long term.

The Ratepayer Impact Measure Test (RIM) indicates the effect on long-term system rates. A project with negative net benefits or a benefit/cost ratio less than 1.0 will tend to raise long-term rates. A project with positive net benefits or a benefit/cost ratio greater than 1.0 will tend to lower long-term rates.

The Societal Test is the benchmark for determining project cost-effectiveness in Minnesota. This test reflects the cost-effectiveness of a project from the viewpoint of society as a whole. Positive net benefits or a benefit/cost ratio greater than 1.0 indicates cost-effectiveness according to this perspective.

Power of One® Business

The Power of One® Business project is cost-effective from all perspectives except the ratepayer perspective. The major savings component in the societal perspective is the energy (kWh) savings. The major cost component is the incremental cost of the efficient measures. The benefit/cost report illustrating summary statistics, along with the benefit and cost components is shown in the Appendix.

Power of One® Home

The Power of One® Home project is also cost-effective from all perspectives except the ratepayer perspective. The reduction in energy usage is again the major component of the project benefits in the societal perspective. The major cost component is the incremental cost of the efficient measures. The benefit/cost report illustrating summary statistics, along with the benefit and cost components is shown in the Appendix.

Energy Partners–Low Income

The Energy Partners Low Income project is cost-effective from all perspectives except the ratepayer and utility perspectives. As in the Power of One® Business and Power of One® Home projects, the major benefit component in the societal perspective is the reduction in electricity usage. The major cost component is the incremental cost of the measures. However, these measures are provided at no cost to the customer. Thus, this cost was also included as a rebate cost, which is not considered in the Societal Test. The complete measure funding, as opposed to a partial rebate, contributes to the poor Utility Test result. The benefit/cost report illustrating summary statistics, along with the benefit and cost components, is shown in the Appendix.

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status
Plan Summary

	2015 Annual Energy Savings				
	Meter			Busbar	
	(KWh)	(KW)		(KWh)	(KW)
Total Power of One Home	8,244,861	2,353.1		9,110,101	1,709.6
Total Energy Partners	760,010	238.9		839,768	115.4
Total Power of One Business	68,474,942	13,256.4		75,660,908	5,400.5
Total Plan	**77,479,813**	**15,848.4**		**85,610,777**	**7,225.6**
Power of One Business Net of MP Facilities Projects	68,327,031	13,228.5		75,497,475	5,371.3
Total Plan less MP Facilities Projects*	**77,331,902**	**15,820.6**		**85,447,344**	**7,196.4**
MiM Solar Savings	81,881			90,474	
Total Plan with Solar**	**77,561,694**	**15,848.4**		**85,701,251**	**7,225.6**

* In compliance with Order Points 1 & 2 from the July 16, 2013 Order Determining Ratemaking Treatment of Utility CIP Project Costs (Docket No. E,G-999/DI-12-1342), net benefits and energy savings resulting from MP facilities projects were excluded for the purpose of the financial incentive calculation.

**Credited kWh energy savings for Made in Minnesota payments as provided for under Minn. Stat. § 216C.412, subd. 2 and calculated by the Department of Commerce, Division of Energy Resources. There are no related demand savings.

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status
Power of One Home Project

	2015 Annual Energy Savings				
	Meter			Busbar	
	(KWh)	(KW)		(KWh)	(KW)
Lighting	**4,614,731**	**960.7**		**5,099,014**	**879.6**
CFL Standard	3,344,105	687.4		3,695,045	628.5
CFL Specialty	174,428	33.6		192,733	33.1
LED Standard	522,939	107.5		577,818	98.3
LED Specialty	335,196	78.2		370,373	61.8
LED Outdoor	143,498	35.0		158,558	38.7
LED Indoor Fixtures	80,184	15.6		88,599	15.4
LED Outdoor Fixtures	14,380	3.5		15,889	3.9
Bulb Recycling					
Energy Star Appliances	**905,830**	**147.9**		**1,000,891**	**105.6**
Clothes Washers	63,726	21.2		70,414	11.6
Refrigerators	65,330	9.5		72,186	7.3
Refrigerator Turn-in	649,650	94.9		717,826	72.7
Freezer Turn-in	124,740	18.2		137,831	14.0
Window A/C Turn-in	2,384	4.1		2,634	0.0
Heating and Cooling	**1,915,957**	**992.9**		**2,117,023**	**555.4**
CAC Proper Installation	25,102	43.0		27,736	0.0
ASHP Proper Install	23,520	10.7		25,988	7.9
GHP - Open Loop	73,769	34.4		81,511	25.4
GHP - Closed Loop	691,726	324.9		764,318	240.2
GHP - Replacement	275	0.1		304	0.1
Std. Split ASHP (Estar)	9,735	4.3		10,757	3.2
Mini-split Ductless ASHP	466,334	225.7		515,272	166.9
Dehumidifier	124,696	213.6		137,782	0.0
ECM - New Furnace	499,200	135.8		551,588	111.5
ECM - Replacement Motor	1,600	0.4		1,768	0.4
Home Performance Project	**190,987**	**86.3**		**211,030**	**63.8**
Triple E - Level 1	50,024	22.6		55,274	16.7
Triple E - Level 2	140,963	63.7		155,756	47.1
Energy Efficiency Kits	**224,918**	**69.4**		**248,522**	**40.3**
Smart Pak	174,440	58.0		192,746	31.8
Starter Kit	50,478	11.4		55,775	8.5
Direct Install Measures	**379,516**	**91.7**		**419,344**	**62.7**
Pipe Wrap	23,092	7.7		25,515	4.2
Showerheads	73,254	24.4		80,941	13.3
Aerators	46,552	15.5		51,437	8.5
Water Heater Blanket Installed	1,485	0.5		1,641	0.3
Water Heater Temperature Setback	325	0.1		359	0.1
CFLs	85,306	17.5		94,258	16.0
Shower Timer	35,532	11.8		39,261	6.5
Refrigerator Thermometer	38,380	5.6		42,408	4.3
Enable Power Management	42,200	4.8		46,629	5.3
Timer & Power Strip	33,390	3.8		36,894	4.2
Water Heating - Tank Replacement	**12,922**	**4.3**		**14,278**	**2.4**
Administrative Costs	**0**	**0.0**		**0**	**0.0**
Total Power of One Home	**8,244,861**	**2,353.1**		**9,110,101**	**1,709.6**

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Energy Partners Project					
	2015 Annual Energy Savings				
	Meter			Busbar	
	(KWh)	(KW)		(KWh)	(KW)
Lighting	**227,423**	**46.4**		**251,289**	**42.8**
CFLs Installed by Contractor	170,340	35.0		188,216	32.0
CFLs Distributed	4,250	0.9		4,696	0.8
Torchieres	39,861	7.7		44,044	7.6
Table and Desk Lamps	12,972	2.8		14,333	2.4
Refrigerators	**174,896**	**25.5**		**193,250**	**19.6**
21-26 cu ft Refrigerator Replacement	2,019	0.3		2,231	0.2
18 cu ft Refrigerator Replacement	60,008	8.8		66,305	6.7
15 cu ft Refrigerator Replacement	18,375	2.7		20,303	2.1
15 cu ft Freezer Replacement	1,305	0.2		1,442	0.2
13 cu ft Freezer Replacement	240	0.0		265	0.0
5-9 cu ft Freezer Replacement	792	0.1		875	0.1
Freezer Turn-in	3,402	0.5		3,759	0.4
Refrigerator Turn-in	88,755	13.0		98,069	9.9
Metering	0	0.0		0	0.0
Water Heating	**93,913**	**30.3**		**103,769**	**17.2**
Water Heater Replacement	4,200	1.4		4,641	0.8
Showerhead - Low Flow	27,786	9.0		30,702	5.1
Aerators	27,048	8.7		29,886	5.0
Pipe Wrap Insulation Installed	4,416	1.4		4,879	0.8
Shower Timer	30,268	9.8		33,444	5.6
Water Heater Temperature Setback	195	0.1		215	0.0
Miscellaneous	**152,766**	**66.4**		**168,798**	**17.0**
Dehumidifier Replacement	28,776	49.3		31,796	0.0
Engine Block Timer	400	0.0		442	0.0
Microwave Ovens	11,000	3.0		12,154	3.3
Refrigerator Thermometer	39,330	5.7		43,457	4.4
Plug Load Package - Timer/Power Strip	73,260	8.4		80,948	9.2
Energy Awareness Expo Kits	**105,398**	**67.6**		**116,459**	**16.8**
2014 Carryover Kits	33,148	18.8		36,627	5.6
2015 Kits	72,250	48.7		79,832	11.2
Deivered Fuels	**5,614**	**2.8**		**6,203**	**2.0**
Administrative Costs	**0.00**	**0.0**		**0.00**	**0.0**
Total Energy Partners	**760,010**	**238.9**		**839,768**	**115.4**

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Power of One Business Project					
	2015 Annual Energy Savings				
	Meter			Busbar	
	(KWh)	(KW)		(KWh)	(KW)
Lighting	**21,617,696**	**4,166.7**		**23,886,322**	**4,263.6**
Energy Efficient Fluorescent	1,107,119	221.5		1,223,303	212.9
LED	4,867,866	902.8		5,378,715	926.5
LED Outdoor	1,671,649	304.2		1,847,077	336.1
Mixed Energy Efficient Lighting	13,714,202	2,690.4		15,153,412	2,788.0
Lighting Controls	256,860	47.8		283,816	0.0
Refrigeration	**3,811,219**	**795.3**		**4,211,180**	**162.2**
Refrigeration Improvement	2,730,832	599.0		3,017,413	154.0
Refigeration Controls	1,080,387	196.4		1,193,766	8.1
Motors / Pumps	**37,989,504**	**6,820.4**		**41,976,237**	**434.1**
Standard to Eff Motor	1,186,848	171.1		1,311,399	87.2
Standard to VSD Motor	34,983,569	6,407.3		38,654,850	177.6
Motor Controls	1,819,087	242.0		2,009,987	169.3
HVAC	**2,493,835**	**854.0**		**2,755,546**	**329.9**
AC Improvements	1,343,598	574.7		1,484,599	124.0
Economizer	50,945	9.5		56,291	0.0
Miscellaneous HVAC	165,763	31.6		183,159	27.8
Heat Pump - Cooling and Heating	347,511	114.2		383,980	91.7
Heat Pump - Heating	123,763	61.3		136,751	45.6
AC/HVAC/EMS Controls	462,255	62.7		510,765	40.8
Miscellaneous	**2,414,777**	**592.1**		**2,668,191**	**181.7**
Compressed Air	838,139	108.5		926,096	78.5
Process Improvements	850,544	354.8		939,803	3.3
Appliances	126,783	25.3		140,088	13.8
Shell Measures	215,484	43.5		238,098	43.6
Heat Recovery	20,732	18.4		22,907	0.0
Miscellaneous Controls	363,095	41.5		401,199	42.4
Minnesota Power Projects*	**147,911**	**27.9**		**163,433**	**29.2**
LED	142,872	27.0		157,865	28.3
Heat Pump - Cooling and Heating	5,039	0.9		5,568	0.9
Administrative Costs					
Total Power of One Business	**68,474,942**	**13,256.4**		**75,660,908**	**5,400.5**

* In compliance with Order Points 1 & 2 from the July 16, 2013 Order Determining Ratemaking Treatment of Utility CIP Project Costs (Docket No. E,G-999/DI-12-1342), net benefits and energy savings resulting from MP facilities projects were excluded for the purpose of the financial incentive calculation.

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Plan Summary				
	Utility Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Total Power of One Home	3,706,533	1,103,826	2,602,707	3.36
Total Energy Partners	275,259	342,968	(67,709)	0.80
Total Power of One Business	31,934,765	2,575,437	29,359,328	12.40
Total Plan	**35,916,557**	**4,022,306**	**31,894,327**	**8.93**
Total Plan with Non-impact $	**35,916,557**	**6,210,287**	**29,706,270***	**5.78**

All values are discounted to 2015

* In compliance with Order Points 1 & 2 from the July 16, 2013 Order Determining Ratemaking Treatment of Utility CIP Project Costs (Docket No. E,G-999/DI-12-1342), net benefits and energy savings resulting from MP facilities projects were excluded for the purpose of the financial incentive calculation. Utility Test Net Benefits for Total Plan used in the financial incentive calculation were $29,636,057.

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Power of One Home Project				
	Utility Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**1,974,129**	**264,298**	**1,709,831**	**7.47**
CFL Standard	1,202,773	114,735	1,088,038	10.48
CFL Specialty	56,003	6,241	49,762	8.97
LED Standard	361,202	69,816	291,385	5.17
LED Specialty	234,328	42,397	191,931	5.53
LED Outdoor	60,021	7,163	52,858	8.38
LED Indoor Fixtures	54,577	12,672	41,905	4.31
LED Outdoor Fixtures	5,226	1,547	3,679	3.38
Bulb Recycling	0	9,727	(9,727)	0.00
Energy Star Appliances	**294,154**	**151,893**	**142,261**	**1.94**
Clothes Washers	26,497	22,890	3,607	1.16
Refrigerators	32,190	13,215	18,975	2.44
Refrigerator Turn-in	197,053	99,900	97,153	1.97
Freezer Turn-in	37,836	15,478	22,359	2.44
Window A/C Turn-in	578	410	168	1.41
Heating and Cooling	**1,141,015**	**229,535**	**911,480**	**4.97**
CAC Proper Installation	26,041	10,825	15,216	2.41
ASHP Proper Install	14,856	950	13,906	15.64
GHP - Open Loop	47,997	3,050	44,947	15.74
GHP - Closed Loop	450,734	39,700	411,034	11.35
GHP - Replacement	214	250	(36)	0.86
Std. Split ASHP (Estar)	6,264	4,700	1,564	1.33
Mini-split Ductless ASHP	243,987	20,500	223,487	11.90
Dehumidifier	91,427	2,860	88,567	31.97
ECM - New Furnace	258,911	146,450	112,461	1.77
ECM - Replacement Motor	584	250	334	2.34
Home Performance Project	**124,518**	**23,050**	**101,468**	**5.40**
Triple E - Level 1	32,614	4,750	27,864	6.87
Triple E - Level 2	91,904	18,300	73,604	5.02
Energy Efficiency Kits	**58,318**	**10,369**	**47,949**	**5.62**
Smart Pak	48,193	5,341	42,852	9.02
Starter Kit	10,125	5,028	5,097	2.01
Direct Install Measures	**107,419**	**25,298**	**82,121**	**4.25**
Pipe Wrap	11,108	582	10,526	19.08
Showerheads	27,997	2,920	25,078	9.59
Aerators	17,792	1,652	16,140	10.77
Water Heater Blanket Installed	299	420	(121)	0.71
Water Heater Temperature Setback	24	60	(36)	0.40
CFLs	30,682	10,877	19,805	2.82
Shower Timer	4,122	777	3,345	5.31
Refrigerator Thermometer	4,293	1,410	2,883	3.04
Enable Power Management	4,669	1,477	3,192	3.16
Timer & Power Strip	6,432	5,124	1,308	1.26
Water Heating - Tank Replacement	**6,978**	**3,600**	**3,378**	**1.94**
Administrative Costs	0	395,783	(395,783)	0.00
Total Power of One Home	**3,706,533**	**1,103,826**	**2,602,707**	**3.36**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Energy Partners Project	Utility Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**81,726**	**50,310**	**31,416**	**1.62**
CFLs Installed by Contractor	61,266	18,286	42,980	3.35
CFLs Distributed	1,529	269	1,260	5.69
Torchieres	14,247	19,145	(4,898)	0.74
Table and Desk Lamps	4,683	12,610	(7,927)	0.37
Refrigerators	**69,197**	**117,981**	**(48,784)**	**0.59**
21-26 cu ft Refrigerator Replacement	1,683	3,219	(1,536)	0.52
18 cu ft Refrigerator Replacement	29,567	77,538	(47,970)	0.38
15 cu ft Refrigerator Replacement	9,054	22,112	(13,058)	0.41
15 cu ft Freezer Replacement	524	2,654	(2,129)	0.20
13 cu ft Freezer Replacement	96	591	(494)	0.16
5-9 cu ft Freezer Replacement	318	1,053	(735)	0.30
Freezer Turn-in	1,032	255	777	4.05
Refrigerator Turn-in	26,921	8,245	18,676	3.27
Metering	0	2,315	(2,315)	0.00
Water Heating	**28,798**	**42,858**	**(14,060)**	**0.67**
Water Heater Replacement	2,261	40,354	(38,093)	0.06
Showerhead - Low Flow	10,590	1,069	9,521	9.91
Aerators	10,309	756	9,554	13.64
Pipe Wrap Insulation Installed	2,117	56	2,061	38.02
Shower Timer	3,505	588	2,918	5.97
Water Heater Temperature Setback	14	36	(22)	0.40
Miscellaneous	**44,335**	**36,789**	**7,546**	**1.21**
Dehumidifier Replacement	21,099	17,489	3,610	1.21
Engine Block Timer	119	46	73	2.59
Microwave Ovens	4,605	1,529	3,076	3.01
Refrigerator Thermometer	4,399	1,242	3,157	3.54
Plug Load Package - Timer/Power Strip	14,113	16,484	(2,370)	0.86
Energy Awareness Expo Kits	**47,582**	**18,050**	**29,532**	**2.63**
2014 Carryover Kits	13,066	0	13,066	inf
2015 Kits	34,516	18,050	16,466	1.91
Delivered Fuels	**3,622**	**6,900**	**(3,278)**	**0.52**
Administrative Costs	**0**	**70,080**	**(70,080)**	**0.00**
Total Energy Partners	**275,259**	**342,968**	**(67,709)**	**0.80**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Power of One Business Project				
	Utility Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**10,870,130**	**941,729**	**9,928,401**	**11.54**
Energy Efficient Fluorescent	567,051	48,197	518,853	11.77
LED	2,468,031	208,612	2,259,417	11.83
LED Outdoor	633,616	71,659	561,956	8.84
Mixed Energy Efficient Lighting	7,134,473	604,189	6,530,285	11.81
Lighting Controls	66,960	9,071	57,890	7.38
Refrigeration	**1,565,273**	**116,324**	**1,448,950**	**13.46**
Refrigeration Improvement	1,090,196	78,998	1,011,197	13.80
Refigeration Controls	475,078	37,325	437,752	12.73
Motors / Pumps	**16,798,758**	**624,447**	**16,174,310**	**26.90**
Standard to Eff Motor	571,371	44,110	527,261	12.95
Standard to VSD Motor	15,329,070	527,424	14,801,645	29.06
Motor Controls	898,318	52,914	845,404	16.98
HVAC	**1,490,226**	**133,593**	**1,356,633**	**11.15**
AC Improvements	855,692	88,385	767,307	9.68
Economizer	16,006	1,783	14,223	8.98
Miscellaneous HVAC	99,324	6,316	93,008	15.73
Heat Pump - Cooling and Heating	228,072	12,307	215,766	18.53
Heat Pump - Heating Only	64,245	8,218	56,027	7.82
AC/HVAC/EMS Controls	226,887	16,584	210,303	13.68
Miscellaneous	**1,133,995**	**116,519**	**1,017,476**	**9.73**
Compressed Air Upgrades	396,623	41,507	355,117	9.56
Process Improvements	367,848	38,619	329,229	9.53
Appliances	61,717	15,465	46,252	3.99
Shell Measures	108,534	7,495	101,039	14.48
Heat Recovery	15,340	725	14,614	21.16
Miscellaneous Controls	183,936	12,708	171,227	14.47
Minnesota Power Projects	**76,383**	**6,170**	**70,213**	**12.38**
LED	73,427	5,882	67,546	12.48
Heat Pump - Cooling and Heating	2,956	288	2,668	10.26
Administrative Costs	**0**	**636,655**	**(636,655)**	**0.00**
Total Power of One Business	**31,934,765**	**2,575,437**	**29,359,328**	**12.40**

All values are discounted to 2015

* In compliance with Order Points 1 & 2 from the July 16, 2013 Order Determining Ratemaking Treatment of Utility CIP Project Costs (Docket No. E,G-999/DI-12-1342), net benefits and energy savings resulting from MP facilities projects were excluded for the purpose of the financial incentive calculation. Utility Test Net Benefits for Power of One Business used in the financial incentive calculation were $29,289,115.

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Plan Summary				
	Participant Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Total Power of One Home	14,882,407	3,412,165	11,470,242	4.36
Total Energy Partners	1,362,394	255,687	1,106,707	5.33
Total Power of One Business	68,254,631	17,262,111	50,992,521	3.95
Total Plan	**84,499,433**	**20,929,963**	**63,569,470**	**4.04**
Total Plan with Non-impact $	**84,622,295**	**20,929,963**	**63,692,332**	**4.04**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Power of One Home Project				
	Participant Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Lighting	**8,523,063**	**1,966,718**	**6,556,345**	**4.33**
CFL Standard	4,696,790	815,845	3,880,945	5.76
CFL Specialty	209,132	54,279	154,853	3.85
LED Standard	1,711,609	630,570	1,081,038	2.71
LED Specialty	1,066,820	320,612	746,208	3.33
LED Outdoor	324,325	51,283	273,041	6.32
LED Indoor Fixtures	474,891	88,536	386,355	5.36
LED Outdoor Fixtures	29,770	5,592	24,177	5.32
Bulb Recycling	9,727	0	9,727	inf
Energy Star Appliances	**1,077,827**	**170,150**	**907,677**	**6.33**
Clothes Washers	115,164	27,950	87,214	4.12
Refrigerators	123,701	18,800	104,901	6.58
Refrigerator Turn-in	705,679	106,500	599,179	6.63
Freezer Turn-in	131,794	16,500	115,294	7.99
Window A/C Turn-in	1,489	400	1,089	3.72
Heating and Cooling	**4,196,694**	**1,145,567**	**3,051,127**	**3.66**
CAC Proper Installation	66,521	11,550	54,971	5.76
ASHP Proper Install	53,136	1,050	52,086	50.61
GHP - Open Loop	186,236	33,276	152,960	5.60
GHP - Closed Loop	1,754,141	555,438	1,198,703	3.16
GHP - Replacement	935	705	230	1.33
Std. Split ASHP (Estar)	26,300	8,160	18,140	3.22
Mini-split Ductless ASHP	869,898	217,300	652,598	4.00
Dehumidifier	181,676	5,720	175,956	31.76
ECM - New Furnace	1,055,712	312,000	743,712	3.38
ECM - Replacement Motor	2,140	368	1,772	5.81
Home Performance Project	**498,481**	**66,848**	**431,633**	**7.46**
Triple E - Level 1	129,277	10,148	119,129	12.74
Triple E - Level 2	369,205	56,700	312,505	6.51
Energy Efficiency Kits	**180,333**	**11,345**	**168,988**	**15.90**
Smart Pak	146,586	5,340	141,246	27.45
Starter Kit	33,747	6,005	27,742	5.62
Direct Install Measures	**378,873**	**41,455**	**337,417**	**9.14**
Pipe Wrap	36,654	582	36,071	62.94
Showerheads	89,442	2,920	86,522	30.63
Aerators	56,636	1,652	54,984	34.28
Water Heater Blanket Installed	1,265	420	845	3.01
Water Heater Temperature Setback	132	60	72	2.21
CFLs	127,762	27,034	100,728	4.73
Shower Timer	12,772	777	11,995	16.44
Refrigerator Thermometer	14,366	1,410	12,957	10.19
Enable Power Management	15,723	1,477	14,246	10.65
Timer & Power Strip	24,121	5,124	18,997	4.71
Water Heating - Tank Replacement	27,137	10,082	17,055	2.69
Total Power of One Home	**14,882,407**	**3,412,165**	**11,470,242**	**4.36**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Energy Partners Project				
	Participant Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**352,478**	**76,601**	**275,877**	**4.60**
CFLs Installed by Contractor	251,684	50,350	201,335	5.00
CFLs Distributed	6,092	1,069	5,023	5.70
Torchieres	65,379	17,157	48,222	3.81
Table and Desk Lamps	29,321	8,026	21,297	3.65
Refrigerators	**433,469**	**122,794**	**310,675**	**3.53**
21-26 cu ft Refrigerator Replacement	12,237	3,359	8,878	3.64
18 cu ft Refrigerator Replacement	240,674	82,415	158,259	2.92
15 cu ft Refrigerator Replacement	73,936	23,753	50,182	3.11
15 cu ft Freezer Replacement	6,777	2,888	3,889	2.35
13 cu ft Freezer Replacement	1,388	638	750	2.18
5-9 cu ft Freezer Replacement	4,022	1,241	2,782	3.24
Freezer Turn-in	3,427	255	3,172	13.44
Refrigerator Turn-in	91,006	8,245	82,761	11.04
Metering	0	0	0	inf
Water Heating	**132,433**	**6,980**	**125,453**	**18.97**
Water Heater Replacement	48,004	4,476	43,528	10.72
Showerhead - Low Flow	33,888	1,069	32,819	31.69
Aerators	32,703	756	31,947	43.28
Pipe Wrap Insulation Installed	6,954	56	6,898	124.89
Shower Timer	10,806	588	10,218	18.39
Water Heater Temperature Setback	79	36	43	2.21
Miscellaneous	**146,476**	**20,620**	**125,856**	**7.10**
Dehumidifier Replacement	58,754	1,320	57,434	44.51
Engine Block Timer	518	46	472	11.27
Microwave Ovens	14,521	1,529	12,992	9.50
Refrigerator Thermometer	14,519	1,242	13,277	11.69
Plug Load Package - Timer/Power Strip	58,163	16,484	41,680	3.53
Energy Awareness Expo Kits	**265,836**	**15,356**	**250,480**	**17.31**
2014 Carryover Kits	65,099	2,781	62,318	23.41
2015 Kits	200,737	12,575	188,162	15.96
Delivered Fuels	**20,875**	**2,508**	**18,367**	**8.32**
Administrative Costs	**0**	**0**	**0**	**inf**
Total Energy Partners	**1,362,394**	**255,687**	**1,106,707**	**5.33**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status
Power of One Business Project

	Participant Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Lighting	**20,768,016**	**6,207,667**	**14,560,349**	**3.35**
Energy Efficient Fluorescent	1,026,516	271,194	755,322	3.79
LED	4,656,105	1,240,103	3,416,002	3.75
LED Outdoor	1,565,758	562,029	1,003,729	2.79
Mixed Energy Efficient Lighting	13,349,102	4,075,926	9,273,176	3.28
Lighting Controls	170,535	58,415	112,120	2.92
Refrigeration	**4,067,477**	**952,747**	**3,114,730**	**4.27**
Refrigeration Improvement	2,889,391	589,256	2,300,135	4.90
Refigeration Controls	1,178,086	363,491	814,595	3.24
Motors / Pumps	**37,714,749**	**8,653,027**	**29,061,722**	**4.36**
Standard to Eff Motor	1,155,937	256,176	899,760	4.51
Standard to VSD Motor	34,847,759	8,247,098	26,600,661	4.23
Motor Controls	1,711,054	149,753	1,561,301	11.43
HVAC	**3,062,240**	**869,727**	**2,192,513**	**3.52**
AC Improvements	1,775,428	526,162	1,249,266	3.37
Economizer	48,091	9,664	38,427	4.98
Miscellaneous HVAC	165,537	89,380	76,157	1.85
Heat Pump - Cooling and Heating	405,125	46,210	358,915	8.77
Heat Pump Heating Only	165,078	32,547	132,531	5.07
AC/HVAC/EMS Controls	502,979	165,764	337,215	3.03
Miscellaneous	**2,514,862**	**540,935**	**1,973,927**	**4.65**
Compressed Air Upgrades	901,656	136,529	765,127	6.60
Process Improvements	852,868	270,833	582,035	3.15
Appliances	176,153	28,872	147,281	6.10
Shell Measures	222,358	32,179	190,179	6.91
Heat Recovery	36,529	26,400	10,129	1.38
Miscellaneous Controls	325,298	46,122	279,176	7.05
Minnesota Power Projects	**127,288**	**38,007**	**89,281**	**3.35**
LED	122,257	36,009	86,248	3.40
Heat Pump - Cooling and Heating	5,031	1,998	3,033	2.52
Administrative Costs	**0**	**0**	**0**	**inf**
Total Power of One Business	**68,254,631**	**17,262,111**	**50,992,521**	**3.95**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Plan Summary				
	Ratepayer Impact Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Total Power of One Home	3,706,533	10,442,800	(6,736,267)	0.35
Total Energy Partners	275,259	1,029,970	(754,711)	0.27
Total Powerof One Business	31,934,765	68,880,254	(36,945,488)	0.46
Total Plan	**35,916,557**	**80,353,024**	**(44,436,466)**	**0.45**
Total Plan with Non-impact $	**35,916,557**	**82,541,080**	**(46,624,523)**	**0.44**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Power of One Home Project				
	Ratepayer Impact Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Lighting	**1,974,129**	**5,211,579**	**(3,237,450)**	**0.38**
CFL Standard	1,202,773	3,101,982	(1,899,209)	0.39
CFL Specialty	56,003	146,664	(90,661)	0.38
LED Standard	361,202	953,502	(592,300)	0.38
LED Specialty	234,328	608,827	(374,499)	0.38
LED Outdoor	60,021	222,577	(162,556)	0.27
LED Indoor Fixtures	54,577	148,171	(93,593)	0.37
LED Outdoor Fixtures	5,226	20,130	(14,904)	0.26
Bulb Recycling	0	9,727	(9,727)	0.00
Energy Star Appliances	**294,154**	**928,368**	**(634,214)**	**0.32**
Clothes Washers	26,497	90,506	(64,009)	0.29
Refrigerators	32,190	97,640	(65,450)	0.33
Refrigerator Turn-in	197,053	622,901	(425,847)	0.32
Freezer Turn-in	37,836	115,899	(78,063)	0.33
Window A/C Turn-in	578	1,423	(845)	0.41
Heating and Cooling	**1,141,015**	**3,076,036**	**(1,935,021)**	**0.37**
CAC Proper Installation	26,041	50,140	(24,098)	0.52
ASHP Proper Install	14,856	37,787	(22,931)	0.39
GHP - Open Loop	47,997	127,708	(79,711)	0.38
GHP - Closed Loop	450,734	1,208,610	(757,877)	0.37
GHP - Replacement	214	715	(501)	0.30
Std. Split ASHP (Estar)	6,264	19,947	(13,683)	0.31
Mini-split Ductless ASHP	243,987	656,710	(412,723)	0.37
Dehumidifier	91,427	145,106	(53,679)	0.63
ECM - New Furnace	258,911	827,498	(568,587)	0.31
ECM - Replacement Motor	584	1,816	(1,232)	0.32
Home Performance Project	**124,518**	**345,789**	**(221,271)**	**0.36**
Triple E - Level 1	32,614	89,283	(56,669)	0.37
Triple E - Level 2	91,904	256,506	(164,602)	0.36
Energy Efficiency Kits	**58,318**	**161,280**	**(102,961)**	**0.36**
Smart Pak	48,193	129,851	(81,658)	0.37
Starter Kit	10,125	31,429	(21,304)	0.32
Direct Install Measures	**107,419**	**302,736**	**(195,317)**	**0.35**
Pipe Wrap	11,108	28,704	(17,595)	0.39
Showerheads	27,997	74,605	(46,608)	0.38
Aerators	17,792	47,207	(29,415)	0.38
Water Heater Blanket Installed	299	1,197	(898)	0.25
Water Heater Temperature Setback	24	131	(107)	0.18
CFLs	30,682	87,080	(56,398)	0.35
Shower Timer	4,122	12,271	(8,149)	0.34
Refrigerator Thermometer	4,293	13,826	(9,533)	0.31
Enable Power Management	4,669	15,129	(10,460)	0.31
Timer & Power Strip	6,432	22,587	(16,155)	0.28
Water Heating - Tank Replacement	6,978	21,229	(14,251)	0.33
Adminstrative Costs	0	395,783	(395,783)	0.00
Total Power of One Home	**3,706,533**	**10,442,800**	**(6,736,267)**	**0.35**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Energy Partners Project				
	Ratepayer Impact Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**81,726**	**253,464**	**(171,738)**	**0.32**
CFLs Installed by Contractor	61,266	170,449	(109,183)	0.36
CFLs Distributed	1,529	4,065	(2,537)	0.38
Torchieres	14,247	54,752	(40,505)	0.26
Table and Desk Lamps	4,683	24,198	(19,514)	0.19
Refrigerators	**69,197**	**300,340**	**(231,143)**	**0.23**
21-26 cu ft Refrigerator Replacement	1,683	7,614	(5,931)	0.22
18 cu ft Refrigerator Replacement	29,567	155,085	(125,517)	0.19
15 cu ft Refrigerator Replacement	9,054	45,858	(36,804)	0.20
15 cu ft Freezer Replacement	524	4,038	(3,514)	0.13
13 cu ft Freezer Replacement	96	845	(749)	0.11
5-9 cu ft Freezer Replacement	318	1,893	(1,575)	0.17
Freezer Turn-in	1,032	2,994	(1,962)	0.34
Refrigerator Turn-in	26,921	79,697	(52,776)	0.34
Metering	0	2,315	(2,315)	0.00
Water Heating	**28,798**	**117,460**	**(88,662)**	**0.25**
Water Heater Replacement	2,261	46,084	(43,823)	0.05
Showerhead - Low Flow	10,590	28,260	(17,670)	0.37
Aerators	10,309	27,224	(16,915)	0.38
Pipe Wrap Insulation Installed	2,117	5,433	(3,316)	0.39
Shower Timer	3,505	10,379	(6,874)	0.34
Water Heater Temperature Setback	14	79	(64)	0.18
Miscellaneous	**44,335**	**131,810**	**(87,475)**	**0.34**
Dehumidifier Replacement	21,099	50,315	(29,216)	0.42
Engine Block Timer	119	437	(318)	0.27
Microwave Ovens	4,605	12,293	(7,689)	0.37
Refrigerator Thermometer	4,399	13,965	(9,566)	0.32
Plug Load Package - Timer/Power Strip	14,113	54,799	(40,686)	0.26
Energy Awareness Expo Kits	**47,657**	**140,505**	**(92,848)**	**0.34**
2014 Carryover Kits	13,066	33,424	(20,358)	0.39
2015 Kits	34,516	107,007	(72,491)	0.32
Delivered Fuels	**3,622**	**16,387**	**(12,765)**	**0.22**
Administrative Costs	**0**	**70,080**	**(70,080)**	**0.00**
Total Energy Partners	**275,259**	**1,029,970**	**(754,711)**	**0.27**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Power of One Business Project				
	Ratepayer Impact Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Lighting	**10,870,130**	**20,768,016**	**(9,897,886)**	**0.52**
Energy Efficient Fluorescent	567,051	1,026,516	(459,465)	0.55
LED	2,468,031	4,656,105	(2,188,076)	0.53
LED Outdoor	633,616	1,565,758	(932,143)	0.40
Mixed Energy Efficient Lighting	7,134,473	13,349,102	(6,214,628)	0.53
Lighting Controls	66,960	170,535	(103,575)	0.39
Refrigeration	**1,565,273**	**4,067,477**	**(2,502,204)**	**0.38**
Refrigeration Improvement	1,090,196	2,889,391	(1,799,195)	0.38
Refigeration Controls	475,078	1,178,086	(703,009)	0.40
Motors / Pumps	**16,798,758**	**37,714,749**	**(20,915,992)**	**0.45**
Standard to Eff Motor	571,371	1,155,937	(584,567)	0.49
Standard to VSD Motor	15,329,070	34,847,759	(19,518,689)	0.44
Motor Controls	898,318	1,711,054	(812,736)	0.53
HVAC	**1,490,226**	**3,062,240**	**(1,572,014)**	**0.49**
AC Improvements	855,692	1,775,428	(919,737)	0.48
Economizer	16,006	48,091	(32,085)	0.33
Miscellaneous HVAC	99,324	165,537	(66,213)	0.60
Heat Pump - Cooling and Heating	228,072	405,125	(177,053)	0.56
Heat Pump - Heating Only	64,245	165,078	(100,834)	0.39
AC/HVAC/EMS Controls	226,887	502,979	(276,093)	0.45
Miscellaneous	**1,133,995**	**2,503,829**	**(1,369,833)**	**0.45**
Compressed Air Upgrades	396,623	901,656	(505,033)	0.44
Process Improvements	367,848	852,868	(485,021)	0.43
Appliances	61,717	176,153	(114,436)	0.35
Shell Measures	108,534	222,358	(113,825)	0.49
Heat Recovery	15,340	25,496	(10,157)	0.60
Miscellaneous Controls	183,936	325,298	(141,362)	0.57
Minnesota Power Projects	**76,383**	**127,288**	**(50,905)**	**0.60**
LED	73,427	122,257	(48,830)	0.60
Heat Pump - Heating and Cooling	2,956	5,031	(2,075)	0.59
Administrative Costs	**0**	**636,655**	**(636,655)**	**0.00**
Total Power of One Business	**31,934,765**	**68,880,254**	**(36,945,488)**	**0.46**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Plan Summary				
	Societal Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Total Power of One Home	7,580,785	3,428,103	4,152,682	2.21
Total Energy Partners	623,755	309,944	313,811	2.01
Total Power of One Business	49,541,320	17,898,766	31,642,554	2.77
Total Plan	**57,745,860**	**21,636,812**	**36,109,048**	**2.67**
Total Plan with Non-impact $	**57,745,860**	**23,702,007**	**34,043,853**	**2.44**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Power of One Home Project				
	Societal Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Lighting	**4,823,468**	**1,584,514**	**3,238,954**	**3.04**
CFL Standard	2,690,389	608,458	2,081,931	4.42
CFL Specialty	114,920	44,773	70,147	2.57
LED Standard	947,163	537,194	409,970	1.76
LED Specialty	583,715	263,159	320,556	2.22
LED Outdoor	120,453	51,283	69,170	2.35
LED Indoor Fixtures	354,457	74,054	280,403	4.79
LED Outdoor Fixtures	12,371	5,592	6,779	2.21
Bulb Recycling	0	0	0	inf
Energy Star Appliances	**416,658**	**170,150**	**246,508**	**2.45**
Clothes Washers	44,866	27,950	16,916	1.61
Refrigerators	49,751	18,800	30,951	2.65
Refrigerator Turn-in	269,601	106,500	163,101	2.53
Freezer Turn-in	51,766	16,500	35,266	3.14
Window A/C Turn-in	674	400	274	1.68
Heating and Cooling	**1,863,666**	**1,153,517**	**710,149**	**1.62**
CAC Proper Installation	41,108	11,550	29,558	3.56
ASHP Proper Install	24,659	1,050	23,609	23.48
GHP - Open Loop	83,022	33,726	49,296	2.46
GHP - Closed Loop	779,623	562,938	216,685	1.38
GHP - Replacement	363	705	(342)	0.51
Std. Split ASHP (Estar)	10,373	8,160	2,213	1.27
Mini-split Ductless ASHP	386,060	217,300	168,760	1.78
Dehumidifier	128,683	5,720	122,963	22.50
ECM - New Furnace	408,936	312,000	96,936	1.31
ECM - Replacement Motor	839	368	471	2.28
Home Performance Project	**215,383**	**66,848**	**148,535**	**3.22**
Triple E - Level 1	56,414	10,148	46,266	5.56
Triple E - Level 2	158,969	56,700	102,269	2.80
Energy Efficiency Kits	**76,354**	**11,044**	**65,310**	**6.91**
Smart Pak	63,889	5,340	58,549	11.96
Starter Kit	12,465	5,704	6,761	2.19
Direct Install Measures	**174,318**	**36,165**	**138,152**	**4.82**
Pipe Wrap	16,793	582	16,211	28.84
Showerheads	39,895	2,920	36,976	13.66
Aerators	25,353	1,652	23,701	15.35
Water Heater Blanket Installed	369	420	(51)	0.88
Water Heater Temperature Setback	27	60	(33)	0.44
CFLs	68,630	21,744	46,886	3.16
Shower Timer	4,793	777	4,016	6.17
Refrigerator Thermometer	5,014	1,410	3,604	3.56
Enable Power Management	5,458	1,477	3,981	3.70
Timer & Power Strip	7,987	5,124	2,863	1.56
Water Heating - Tank Replacement	10,938	10,082	856	1.08
Administrative Costs	0	395,783	(395,783)	0.00
Total Power of One Home	**7,580,785**	**3,428,103**	**4,152,682**	**2.21**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status Energy Partners Project				
	Societal Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**173,436**	**62,506**	**110,930**	**2.77**
CFL's Installed by Contractor	137,049	39,843	97,206	3.44
CFLs Distributed	3,419	807	2,613	4.24
Torchieres	23,572	14,639	8,934	1.61
Table and Desk Lamps	9,395	7,218	2,178	1.30
Refrigerators	**191,943**	**125,109**	**66,834**	**1.53**
21-26 cu ft Refrigerator Replacement	5,401	3,359	2,041	1.61
18 cu ft Refrigerator Replacement	107,349	82,415	24,934	1.30
15 cu ft Refrigerator Replacement	34,741	23,753	10,988	1.46
15 cu ft Freezer Replacement	3,184	2,888	296	1.10
13 cu ft Freezer Replacement	624	638	(13)	0.98
5-9 cu ft Freezer Replacement	2,399	1,241	1,159	1.93
Freezer Turn-in	1,412	255	1,157	5.54
Refrigerator Turn-in	36,833	8,245	28,588	4.47
Metering	0	2,315	(2,315)	0.00
Water Heating	**40,630**	**6,980**	**33,650**	**5.82**
Water Heater Replacement	3,545	4,476	(931)	0.79
Showerhead - Low Flow	15,096	1,069	14,027	14.12
Aerators	14,695	756	13,940	19.45
Pipe Wrap Insulation Installed	3,201	56	3,146	57.50
Shower Timer	4,076	588	3,489	6.94
Water Heater Temperature Setback	16	36	(20)	0.44
Miscellaneous	**59,022**	**20,620**	**38,402**	**2.86**
Dehumidifier Replacement	29,696	1,320	28,376	22.50
Engine Block Timer	175	46	129	3.81
Microwave Ovens	6,490	1,529	4,961	4.24
Refrigerator Thermometer	5,138	1,242	3,896	4.14
Plug Load Package - Timer/Power Strip	17,524	16,484	1,040	1.06
Energy Awareness Expo Kits	**152,448**	**22,140**	**130,308**	**6.89**
2014 Carryover Kits	36,655	2,781	33,874	13.18
2015 Kits	109,009	12,575	96,434	8.67
Delivered Fuels	**6,275**	**2,508**	**3,767**	**2.50**
Administrative Costs	**0**	**70,080**	**(70,080)**	**0.00**
Total Energy Partners	**623,755**	**309,944**	**313,811**	**2.01**

All values are discounted to 2015

Final Results
March 15, 2016

Minnesota Power 2015 CIP Status
Power of One Business Project

	Societal Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Lighting	**15,892,241**	**6,207,667**	**9,684,574**	**2.56**
Energy Efficient Fluorescent	828,006	271,194	556,812	3.05
LED	3,607,799	1,240,103	2,367,696	2.91
LED Outdoor	963,556	562,029	401,527	1.71
Mixed Energy Efficient Lighting	10,399,855	4,075,926	6,323,929	2.55
Lighting Controls	93,024	58,415	34,609	1.59
Refrigeration	**2,549,797**	**952,747**	**1,597,050**	**2.68**
Refrigeration Improvement	1,787,639	589,256	1,198,383	3.03
Refigeration Controls	762,158	363,491	398,667	2.10
Motors / Pumps	**26,932,713**	**8,653,027**	**18,279,686**	**3.11**
Standard to Eff Motor	907,545	256,176	651,369	3.54
Standard to VSD Motor	24,602,100	8,247,098	16,355,002	2.98
Motor Controls	1,423,067	149,753	1,273,314	9.50
HVAC	**2,302,725**	**869,727**	**1,432,998**	**2.65**
AC Improvements	1,314,283	526,162	788,121	2.50
Economizer	23,335	9,664	13,671	2.41
Miscellaneous HVAC	153,857	89,380	64,477	1.72
Heat Pump - Cooling and Heating	349,822	46,210	303,612	7.57
Heat Pump Heating Only	101,779	32,547	69,232	3.13
AC/HVAC/EMS Controls	359,648	165,764	193,884	2.17
Miscellaneous	**1,752,081**	**540,935**	**1,211,146**	**3.24**
Compressed Air Upgrades	632,264	136,529	495,735	4.63
Process Improvements	525,833	270,833	255,000	1.94
Appliances	98,185	28,872	69,313	3.40
Shell Measures	171,815	32,179	139,636	5.34
Heat Recovery	33,296	26,400	6,896	1.26
Miscellaneous Controls	290,688	46,122	244,566	6.30
Minnesota Power Projects	**111,763**	**38,007**	**73,756**	**2.94**
LED	107,176	36,009	71,167	2.98
Heat Pump - Cooling and Heating	4,587	1,998	2,589	2.30
Administrative Costs	**0**	**636,655**	**(636,655)**	**0.00**
Total Power of One Business	**49,541,320**	**17,898,766**	**31,642,554**	**2.77**

All values are discounted to 2015

Total - Minnesota Power

Spending & Savings	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Plan	2015 Actual	2016 Plan	2017
Total CIP Expenditures	$4,826,412	$5,483,232	$5,635,002	$6,295,186	$6,813,816	$6,405,828	$7,200,833	$7,145,419	$6,554,551	$7,307,641	
% Total CIP Expenditures / Adjusted GOR	2.5%	2.4%	2.4%	2.6%	3.0%	2.8%	3.1%	3.1%	2.8%	3.1%	
Conservation Expenditures	$4,826,412	$5,483,232	$5,635,002	$6,295,186	$6,813,816	$6,405,828	$7,200,833	$7,145,419	$6,554,551	$7,307,641	
% Conservation Exp / Minimum Total CIP Exp	164.8%	157.9%	162.3%	173.8%	196.7%	184.9%	205.8%	204.3%	187.4%	208.9%	
Total Low Income Expenditures	$491,968	$566,189	$518,199	$354,387	$450,102	$516,063	$618,029	$406,352	$380,409	$412,539	
% Low Income Exp / Res Gross Operating Revenue	0.7%	0.7%	0.6%	0.4%	0.5%	0.6%	0.6%	0.4%	0.4%	0.4%	
Electric Utility Infrastructure Expenditures	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Non-electric Equivalent Savings (kWh)	0	0	0	0	0	0	0	0	0	0	
Electric Utility Infrastructure Savings (kWh)	0	0	0	0	0	0	0	0	0	0	
Demand-side Savings At Generator (kWh)	43,203,851	46,788,043	53,515,099	61,111,363	55,864,309	77,630,644	76,338,706	46,539,210	85,701,641	46,545,293	
Total Credited Savings (kWh)	43,203,851	46,788,043	53,515,099	61,111,363	55,864,309	77,630,644	76,338,706	46,539,210	85,701,641	46,545,293	
% Total Credited Savings / Annual Energy Sales	1.3%	1.4%	1.6%	1.9%	1.8%	2.5%	2.5%	1.5%	2.9%	1.5%	

Sales Info	2005			2006			2007			2008			2009			2010			2011		
Category	Cust#	kWh Sales	GOR ($)	Cust#	kWh Sales	GOR ($)	Cust#	kWh Sales	GOR ($)	Cust#	kWh Sales	GOR ($)	Cust#	kWh Sales	GOR ($)	Cust#	kWh Sales	GOR ($)	Cust#	kWh Sales	GOR ($)
Residential	116,072	1,013,156,531	70,741,134	117,596	1,011,698,581	71,519,942	118,870	1,051,452,639	80,978,958	119,300	1,079,836,728	83,395,000	121,216	1,075,115,868	87,855,848	121,235	1,057,475,971	102,124,090	121,251	1,069,856,320	100,306,443
Commercial	20,040	1,200,076,538	73,149,634	20,419	1,206,606,722	74,992,384	20,630	1,244,929,681	85,614,956	20,696	1,240,324,307	84,792,564	21,287	1,212,777,928	87,960,480	21,489	1,221,753,992	101,712,253	21,603	1,226,173,895	100,399,275
Industrial	460	6,761,668,678	265,865,928	416	6,782,975,194	281,174,649	435	6,622,051,000	318,807,820	431	6,737,333,068	318,775,964	429	4,051,351,600	214,748,719	424	6,364,079,718	332,315,252	421	6,913,648,374	360,630,625
Farm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	723	74,372,063	5,053,634	746	76,713,121	5,106,127	789	82,808,000	5,950,644	831	80,894,159	5,857,381	880	78,085,301	6,010,846	2,484	77,600,667	6,707,210	1,497	78,877,470	6,810,560
Total	**137,295**	**9,049,273,810**	**414,810,330**	**139,177**	**9,077,993,618**	**432,793,102**	**140,724**	**9,001,241,320**	**491,352,378**	**141,258**	**9,138,388,262**	**492,820,909**	**143,812**	**6,417,330,697**	**396,575,893**	**145,632**	**8,720,910,348**	**542,858,805**	**144,772**	**9,288,556,059**	**568,146,903**

Program		2008 Actual						2009 Actual						2010 Actual							
Program Name	Program Design Manager	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)
Community focused RE/DG Pilot	Minnesota Power	103,090	0	0	0.000	0.000	0.000	63,724	0	0	0.000	0.000	0.000	45,307	0	0	0.000	0.000	0.000	100,302	0
Energy Analysis	Minnesota Power	331,885	0	0	0.000	0.000	0.000	431,942	0	0	0.000	0.000	0.000	215,004	0	0	0.000	0.000	0.000	518,013	0
Energy Partners	Minnesota Power	450,482	1,898,972	301	0.237	0.016	1,496.618	540,272	1,930,148	191	0.280	0.019	2,834.437	505,299	1,586,841	168	0.318	0.021	3,008.269	333,666	954,288
Energy Smart	Minnesota Power	61,780	0	0	0.000	0.000	0.000	54,900	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000	0	0
Evaluation & Planning (Program Development)	Minnesota Power	160,070	0	0	0.000	0.000	0.000	166,246	0	0	0.000	0.000	0.000	214,995	0	0	0.000	0.000	0.000	247,121	0
Integrated Energy Education & Communications	Minnesota Power	300,647	0	0	0.000	0.000	0.000	323,554	0	0	0.000	0.000	0.000	308,947	0	0	0.000	0.000	0.000	562,775	0
PowerGrant	Minnesota Power	2,143,842	33,051,587	3,137	0.065	0.004	683.355	2,039,607	34,296,309	4,511	0.059	0.004	452.146	2,614,905	39,671,212	5,060	0.066	0.004	516.802	2,823,022	50,187,689
Regulatory Charges	Minnesota Power	150,214	0	0	0.000	0.000	0.000	159,064	0	0	0.000	0.000	0.000	129,067	0	0	0.000	0.000	0.000	168,419	0
Research & Development	Minnesota Power	115,157	0	0	0.000	0.000	0.000	299,242	0	0	0.000	0.000	0.000	342,790	0	0	0.000	0.000	0.000	340,654	0
Triple E Plus	Minnesota Power	1,009,245	8,253,292	1,554	0.122	0.024	649.533	1,404,681	10,561,586	940	0.133	0.027	1,494.834	1,258,688	12,257,046	1,117	0.103	0.021	1,126.807	1,201,214	9,969,386
Total		**4,826,412**	**43,203,851**	**4,992**	**0.112**	**0.009**	**966.829**	**5,483,232**	**46,788,043**	**5,642**	**0.117**	**0.009**	**971.860**	**5,635,002**	**53,515,099**	**6,345**	**0.105**	**0.008**	**888.101**	**6,295,186**	**61,111,363**

Category	2008 Actual						2009 Actual						2010 Actual						2011 Actual		
Category Name	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator
Distributed and Renewable Energy	103,090	0	0	0.000	0.000	0.000	63,724	0	0	0.000	0.000	0.000	45,307	0	0	0.000	0.000	0.000	100,302	0	0
General Marketing and Education	300,647	0	0	0.000	0.000	0.000	323,554	0	0	0.000	0.000	0.000	308,947	0	0	0.000	0.000	0.000	562,775	0	0
Low Income Weatherization	450,482	1,898,972	301	0.237	0.016	1,496.618	540,272	1,930,148	191	0.280	0.019	2,834.437	505,299	1,586,841	168	0.318	0.021	3,008.269	333,666	954,288	157
Market Research and Product Development	160,070	0	0	0.000	0.000	0.000	166,246	0	0	0.000	0.000	0.000	214,995	0	0	0.000	0.000	0.000	247,121	0	0
Other - Indirect	447,042	0	0	0.000	0.000	0.000	731,184	0	0	0.000	0.000	0.000	557,794	0	0	0.000	0.000	0.000	858,667	0	0
Regulatory Charges	150,214	0	0	0.000	0.000	0.000	159,064	0	0	0.000	0.000	0.000	129,067	0	0	0.000	0.000	0.000	168,419	0	0
Specialty Non-Residential	2,205,622	33,051,587	3,137	0.067	0.004	703.048	2,094,507	34,296,309	4,511	0.061	0.004	464.316	2,614,905	39,671,212	5,060	0.066	0.004	516.802	2,823,022	50,187,689	4,336
Specialty Residential	1,009,245	8,253,292	1,554	0.122	0.024	649.533	1,404,681	10,561,586	940	0.133	0.027	1,494.834	1,258,688	12,257,046	1,117	0.103	0.021	1,126.807	1,201,214	9,969,386	2,100
Total	**4,826,412**	**43,203,851**	**4,992**	**0.112**	**0.009**	**966.829**	**5,483,232**	**46,788,043**	**5,642**	**0.117**	**0.009**	**971.860**	**5,635,002**	**53,515,099**	**6,345**	**0.105**	**0.008**	**888.101**	**6,295,186**	**61,111,363**	**6,593**

Plan

2012			2013			2014			2015		
Cust#	kWh Sales	GOR ($)	Cust#	kWh Sales	GOR ($)	Cust#	kWh Sales	GOR ($)	Cust#	kWh Sales	GOR ($)
120,697	1,043,281,136	95,793,788	121,314	1,086,481,000	100,503,314	121,601	1,112,579,000	102,494,971	121,601	1,112,579,000	102,494,971
21,614	1,237,386,232	100,259,094	21,915	1,256,540,000	103,685,175	22,096	1,262,464,000	104,133,609	22,096	1,262,464,000	104,133,609
411	7,037,843,297	365,647,862	402	6,873,993,000	370,024,629	394	6,946,536,000	377,006,988	394	6,946,536,000	377,006,988
0	0	0	0	0	0	0	0	0	0	0	0
442	70,027,481	6,143,238	942	67,802,000	6,170,985	942	69,637,000	6,262,396	942	69,637,000	6,262,396
143,164	**9,388,538,146**	**567,843,982**	**144,573**	**9,284,816,000**	**580,384,103**	**145,033**	**9,391,216,000**	**589,897,964**	**145,033**	**9,391,216,000**	**589,897,964**

2011 Actual				2012 Actual						2013 Actual						2014 Actual							
kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)
0	0.000	0.000	0.000	340,570	0	0	0.000	0.000	0.000	275,032	0	0	0.000	0.000	0.000	347,656	0	0	0.000	0.000	0.000	355,500	0
0	0.000	0.000	0.000	574,573	0	0	0.000	0.000	0.000	501,084	0	0	0.000	0.000	0.000	645,052	0	0	0.000	0.000	0.000	582,149	0
157	0.350	0.023	2,131.275	444,356	1,004,077	157	0.443	0.030	2,830.293	491,009	1,529,752	246	0.321	0.021	1,995.970	565,405	1,555,362	205	0.364	0.024	2,758.060	394,709	1,004,267
0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000	0	0
0	0.000	0.000	0.000	257,915	0	0	0.000	0.000	0.000	286,040	0	0	0.000	0.000	0.000	307,811	0	0	0.000	0.000	0.000	410,216	0
0	0.000	0.000	0.000	572,580	0	0	0.000	0.000	0.000	499,949	0	0	0.000	0.000	0.000	769,903	0	0	0.000	0.000	0.000	806,205	0
4,336	0.056	0.004	651.005	2,834,987	44,424,341	4,871	0.064	0.004	582.013	2,781,557	65,061,169	3,262	0.043	0.003	852.820	2,821,421	64,933,121	7,256	0.043	0.003	388.838	2,820,194	37,004,707
0	0.000	0.000	0.000	175,085	0	0	0.000	0.000	0.000	174,634	0	0	0.000	0.000	0.000	186,931	0	0	0.000	0.000	0.000	175,000	0
0	0.000	0.000	0.000	340,412	0	0	0.000	0.000	0.000	267,444	0	0	0.000	0.000	0.000	291,069	0	0	0.000	0.000	0.000	355,500	0
2,100	0.120	0.024	572.007	1,273,338	10,435,891	2,165	0.122	0.024	588.147	1,129,080	11,039,723	2,216	0.102	0.020	509.535	1,265,585	9,850,223	1,754	0.128	0.026	721.391	1,245,946	8,530,236
6,593	**0.103**	**0.008**	**954.829**	**6,813,816**	**55,864,309**	**7,193**	**0.122**	**0.009**	**947.284**	**6,405,829**	**77,630,644**	**5,724**	**0.083**	**0.006**	**1,119.118**	**7,200,833**	**76,338,706**	**9,215**	**0.094**	**0.007**	**781.425**	**7,145,419**	**46,539,210**

			2012 Actual						2013 Actual						2014 Actual						2015 Plan	
Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator
0.000	0.000	0.000	340,570	0	0	0.000	0.000	0.000	275,032	0	0	0.000	0.000	0.000	347,656	0	0	0.000	0.000	0.000	355,500	0	0
0.000	0.000	0.000	572,580	0	0	0.000	0.000	0.000	499,949	0	0	0.000	0.000	0.000	769,903	0	0	0.000	0.000	0.000	806,205	0	0
0.350	0.023	2,131.275	444,356	1,004,077	157	0.443	0.030	2,830.293	491,009	1,529,752	246	0.321	0.021	1,995.970	565,405	1,555,362	205	0.364	0.024	2,758.060	394,709	1,004,267	130
0.000	0.000	0.000	257,915	0	0	0.000	0.000	0.000	286,040	0	0	0.000	0.000	0.000	307,811	0	0	0.000	0.000	0.000	410,216	0	0
0.000	0.000	0.000	914,985	0	0	0.000	0.000	0.000	768,527	0	0	0.000	0.000	0.000	936,121	0	0	0.000	0.000	0.000	937,649	0	0
0.000	0.000	0.000	175,085	0	0	0.000	0.000	0.000	174,634	0	0	0.000	0.000	0.000	186,931	0	0	0.000	0.000	0.000	175,000	0	0
0.056	0.004	651.005	2,834,987	44,424,341	4,871	0.064	0.004	582.013	2,781,557	65,061,169	3,262	0.043	0.003	852.820	2,821,421	64,933,121	7,256	0.043	0.003	388.838	2,820,194	37,004,707	4,289
0.120	0.024	572.007	1,273,338	10,435,891	2,165	0.122	0.024	588.147	1,129,080	11,039,723	2,216	0.102	0.020	509.535	1,265,585	9,850,223	1,754	0.128	0.026	721.391	1,245,946	8,530,236	1,575
0.103	**0.008**	**954.829**	**6,813,816**	**55,864,309**	**7,193**	**0.122**	**0.009**	**947.284**	**6,405,829**	**77,630,644**	**5,724**	**0.083**	**0.006**	**1,119.118**	**7,200,833**	**76,338,706**	**9,215**	**0.094**	**0.007**	**781.425**	**7,145,419**	**46,539,210**	**5,994**

2015 Plan				2015 Actual						2016 Plan						2017 Plan					
kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator
0	0.000	0.000	0.000	300,678	90,474	0	3.323	0.166	0.000	349,800	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
0	0.000	0.000	0.000	632,455	0	0	0.000	0.000	0.000	615,630	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
130	0.393	0.026	3,032.012	342,968	839,771	264	0.408	0.027	1,299.042	400,226	1,008,521	131	0.397	0.026	3,057.472	0	0	0	0.000	0.000	0.000
0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
0	0.000	0.000	0.000	463,940	0	0	0.000	0.000	0.000	418,142	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
0	0.000	0.000	0.000	618,889	0	0	0.000	0.000	0.000	814,821	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
4,289	0.076	0.005	657.498	2,575,437	75,661,253	14,648	0.034	0.002	175.826	2,882,865	37,004,707	4,289	0.078	0.005	672.103	0	0	0	0.000	0.000	0.000
0	0.000	0.000	0.000	169,357	0	0	0.000	0.000	0.000	175,000	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
0	0.000	0.000	0.000	347,001	0	0	0.000	0.000	0.000	349,800	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
1,575	0.146	0.029	790.993	1,103,826	9,110,142	2,600	0.121	0.024	424.533	1,301,357	8,532,064	1,583	0.153	0.031	822.235	0	0	0	0.000	0.000	0.000
5,994	**0.154**	**0.012**	**1,192.095**	**6,554,550**	**85,701,640**	**17,512**	**0.076**	**0.005**	**374.289**	**7,307,641**	**46,545,292**	**6,003**	**0.157**	**0.012**	**1,217.332**	**0**	**0**	**0**	**0.000**	**0.000**	**0.000**

			2015 Actual						2016 Plan						2017 Plan					
Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator	Spend ($)	Annual Credited Savings (kWh)	kW Savings @ Generator	Spend/Annual Credited Savings (kWh)	Spend/Lifetime Credited Savings	Spend/kW Savings @ Generator
0.000	0.000	0.000	300,678	90,474	0	3.323	0.166	0.000	349,800	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
0.000	0.000	0.000	618,889	0	0	0.000	0.000	0.000	814,821	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
0.393	0.026	3,032.012	342,968	839,771	264	0.408	0.027	1,299.042	400,226	1,008,521	131	0.397	0.026	3,057.472	0	0	0	0.000	0.000	0.000
0.000	0.000	0.000	463,940	0	0	0.000	0.000	0.000	418,142	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
0.000	0.000	0.000	979,456	0	0	0.000	0.000	0.000	965,430	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
0.000	0.000	0.000	169,357	0	0	0.000	0.000	0.000	175,000	0	0	0.000	0.000	0.000	0	0	0	0.000	0.000	0.000
0.076	0.005	657.498	2,575,437	75,661,253	14,648	0.034	0.002	175.826	2,882,865	37,004,707	4,289	0.078	0.005	672.103	0	0	0	0.000	0.000	0.000
0.146	0.029	790.993	1,103,826	9,110,142	2,600	0.121	0.024	424.533	1,301,357	8,532,064	1,583	0.153	0.031	822.235	0	0	0	0.000	0.000	0.000
0.154	**0.012**	**1,192.095**	**6,554,550**	**85,701,640**	**17,512**	**0.076**	**0.005**	**374.289**	**7,307,641**	**46,545,292**	**6,003**	**0.157**	**0.012**	**1,217.332**	**0**	**0**	**0**	**0.000**	**0.000**	**0.000**

Exemptions - Minnesota Power

2017		
Year	kWh Sales	GOR ($)
2013	5,795,881,932	
2014	6,281,954,516	
2015	6,304,511,220	334,635,970
2017 Adjustment	**6,127,449,222**	**334,635,970**

2016		
Year	kWh Sales	GOR ($)
2010	5,795,881,932	
2011	6,281,954,516	
2012	6,304,511,220	334,635,970
2016 Adjustment	**6,127,449,222**	**334,635,970**

2015		
Year	kWh Sales	GOR ($)
2010	5,795,881,932	
2011	6,281,954,516	
2012	6,304,511,220	334,635,970
2015 Adjustment	**6,127,449,222**	**334,635,970**

2014		
Year	kWh Sales	GOR ($)
2010	5,795,881,932	
2011	6,281,954,516	
2012	6,304,511,220	334,635,970
2014 Adjustment	**6,127,449,222**	**334,635,970**

2013		
Year	kWh Sales	GOR ($)
2007	5,864,000,000	
2008	5,987,135,000	
2009	3,463,804,000	165,642,630
2013 Adjustment	**5,104,979,666**	**165,642,630**

2012		
Year	kWh Sales	GOR ($)
2007	5,864,000,000	
2008	5,987,135,000	
2009	3,463,804,000	165,642,630
2012 Adjustment	**5,104,979,666**	**165,642,630**

2011		
Year	kWh Sales	GOR ($)
2007	5,661,499,000	
2008	5,780,108,000	
2009	3,258,098,000	155,090,000
2011 Adjustment	**4,899,901,666**	**155,090,000**

2010		
Year	kWh Sales	GOR ($)
2005	5,769,407,000	
2006	5,787,265,000	
2007	5,661,499,000	259,837,000
2010 Adjustment	**5,739,390,333**	**259,837,000**

2009		
Year	kWh Sales	GOR ($)
2005	5,769,407,000	
2006	5,787,265,000	
2007	5,661,499,000	259,837,000
2009 Adjustment	**5,739,390,333**	**259,837,000**

2008		
Year	kWh Sales	GOR ($)
2004	5,712,885,000	224,030,000
2005	5,769,407,000	
2006	5,787,265,000	
2008 Adjustment	**5,756,519,000**	**224,030,000**

Program Name: Community focused RE/DG Pilot
Program Design Manager: Minnesota Power
Category: Distributed and Renewable Energy

	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Plan	2015 Actual	2016 Plan	2017 Plan
	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Inactive
Utility Metrics											
kWh Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
kW Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
Utility Cost Components											
Delivery and Administration (2008-2010)	$35,324.00	$9,600.00	$14,487.00								
Delivery (2011-present)				$187.00	$5,894.00	$5,737.96	$2,577.93	$0.00	$0.00	$18,205.00	
Administration (2011-present)				$23,486.00	$22,309.00	$28,421.10	$14,156.03	$17,675.00	$134.43	$0.00	
Evaluation, Measurement & Verification	$0.00	$0.00	$0.00	$16,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Advertising & Promotion	$6,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Incentives	$58,766.00	$48,124.00	$27,820.00	$56,629.00	$307,847.00	$236,373.16	$328,799.40	$327,750.00	$297,768.50	$322,050.00	
Other	$3,000.00	$6,000.00	$3,000.00	$3,500.00	$4,520.00	$4,500.00	$2,122.52	$10,075.00	$2,775.00	$9,545.00	
Total Utility Costs	**$103,090.00**	**$63,724.00**	**$45,307.00**	**$100,302.00**	**$340,570.00**	**$275,032.22**	**$347,655.88**	**$355,500.00**	**$300,677.93**	**$349,800.00**	**$0.00**
Program Participants											
Total Participants	34	16	10	9	22	15	17	19	14	19	
% of Spending by Customer Segments											
Residential	100%	100%	100%	100%	100%	58%	82%	0%	75%	0%	
Commerical	0%	0%	0%	0%	0%	42%	18%	0%	25%	0%	
Industrial	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Farm	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Other	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	
Total % of Spending	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**
Low-Income Participation											
Participant % (% of Total Participants)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Budget % (% of Total Utility Costs)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Energy Savings											
Annual kWh Savings @ Meter	0	0	0	0	0	0	0	0	81,881	0	
Annual kWh Savings @ Generator	0	0	0	0	0	0	0	0	90,474	0	
Cost per Annual kWh Saved @ Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$3.3234	$0.0000	$0.0000
Peak kW Savings @ Meter	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Peak kW Savings @ Generator	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Cost per Peak kW Saved @ Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Benefit/Cost Ratios											
Utility Ratio						0.00	0.00	0.00	0.00	0.00	
Utility NPV						$0	$0	$0	$0	$0	
Ratepayer Ratio						0.00	0.00	0.00	0.00	0.00	
Ratepayer NPV						$0	$0	$0	$0	$0	
Participant Ratio						0.00	0.00	0.00	0.00	0.00	
Participant NPV						$0	$0	$0	$0	$0	
Societal Ratio						0.00	0.00	0.00	0.00	0.00	
Societal NPV						$0	$0	$0	$0	$0	
Narrative											

Program Name: Energy Analysis
Program Design Manager: Minnesota Power
Category: Other - Indirect

	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Plan	2015 Actual	2016 Plan	2017 Plan
	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Inactive
Utility Metrics											
kWh Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
kW Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
Utility Cost Components											
Delivery and Administration (2008-2010)	$21,933.00	$43,486.00	$50,128.00								
Delivery (2011-present)				$33,705.00	$497,788.00	$413,195.73	$630,246.48	$552,691.00	$612,112.51	$585,314.00	
Administration (2011-present)				$22,960.00	$43,053.00	$46,820.51	$14,805.07	$29,458.00	$20,342.56	$30,316.00	
Evaluation, Measurement & Verification	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Advertising & Promotion	$0.00	$0.00	$0.00	$0.00	$0.00	$990.00	$0.00	$0.00	$0.00	$0.00	
Incentives	$0.00	$0.00	$0.00	$0.00	$27,572.00	$16,000.00	$0.00	$0.00	$0.00	$0.00	
Other	$309,952.00	$388,456.00	$164,876.00	$461,348.00	$6,160.00	$24,077.50	$0.00	$0.00	$0.00	$0.00	
Total Utility Costs	**$331,885.00**	**$431,942.00**	**$215,004.00**	**$518,013.00**	**$574,573.00**	**$501,083.74**	**$645,051.55**	**$582,149.00**	**$632,455.07**	**$615,630.00**	**$0.00**
Program Participants											
Total Participants	3,897	3,082	2,912	4,563	6,180	4,158	3,486	5,248	3,227	5,498	
% of Spending by Customer Segments											
Residential	54%	54%	74%	50%	21%	24%	24%	20%	19%	20%	
Commerical	46%	46%	26%	50%	79%	76%	76%	80%	81%	80%	
Industrial	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Farm	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Total % of Spending	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**
Low-Income Participation											
Participant % (% of Total Participants)	51.0%	28.0%	28.0%	15.0%	11.0%	26.0%	22.0%	9.0%	15.0%	8.0%	
Budget % (% of Total Utility Costs)	12.5%	6.0%	6.0%	4.0%	1.0%	5.0%	6.0%	2.0%	4.0%	2.0%	
Energy Savings											
Annual kWh Savings @ Meter	0	0	0	0	0	0	0	0	0	0	0
Annual kWh Savings @ Generator	0	0	0	0	0	0	0	0	0	0	0
Cost per Annual kWh Saved @ Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings @ Meter	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peak kW Savings @ Generator	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved @ Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Benefit/Cost Ratios											
Utility Ratio						0.00	0.00	0.00	0.00	0.00	
Utility NPV						$0	$0	$0	$0	$0	
Ratepayer Ratio						0.00	0.00	0.00	0.00	0.00	
Ratepayer NPV						$0	$0	$0	$0	$0	
Participant Ratio						0.00	0.00	0.00	0.00	0.00	
Participant NPV						$0	$0	$0	$0	$0	
Societal Ratio						0.00	0.00	0.00	0.00	0.00	
Societal NPV						$0	$0	$0	$0	$0	
Narrative											

Program Name: Energy Partners
Program Design Manager: Minnesota Power
Category: Low Income Weatherization

	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Plan	2015 Actual	2016 Plan	2017 Plan
	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Inactive
Utility Metrics											
kWh Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
kW Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
Utility Cost Components											
Delivery and Administration (2008-2010)	$111,254.00	$135,250.00	$105,842.00								
Delivery (2011-present)				$15,570.00	$66,065.00	$90,705.07	$49,583.22	$69,533.00	$34,872.16	$70,416.00	
Administration (2011-present)				$22,897.00	$25,531.00	$28,562.42	$22,695.03	$29,658.00	$37,522.78	$30,542.00	
Evaluation, Measurement & Verification	$0.00	$0.00	$0.00	$0.00	$439.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Advertising & Promotion	$4,119.00	$0.00	$280.00	$1,716.00	$4,144.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Incentives	$335,109.00	$405,022.00	$399,177.00	$293,483.00	$348,177.00	$371,741.03	$493,126.70	$295,518.00	$270,573.32	$299,268.00	
Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Total Utility Costs	**$450,482.00**	**$540,272.00**	**$505,299.00**	**$333,666.00**	**$444,356.00**	**$491,008.52**	**$565,404.95**	**$394,709.00**	**$342,968.26**	**$400,226.00**	**$0.00**
Program Participants											
Total Participants	13,680	11,847	6,324	4,557	4,824	8,164	13,008	4,651	8,536	4,651	
% of Spending by Customer Segments											
Residential	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Commerical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Industrial	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Farm	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Total % of Spending	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**
Low-Income Participation											
Participant % (% of Total Participants)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Budget % (% of Total Utility Costs)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Energy Savings											
Annual kWh Savings @ Meter	1,898,972	1,930,148	1,586,841	954,288	1,004,077	1,353,066	1,407,634	908,882	760,010	912,732	
Annual kWh Savings @ Generator	1,898,972	1,930,148	1,586,841	954,288	1,004,077	1,529,752	1,555,362	1,004,267	839,771	1,008,521	
Cost per Annual kWh Saved @ Generator	$0.2372	$0.2799	$0.3184	$0.3496	$0.4426	$0.3210	$0.3635	$0.3930	$0.4084	$0.3968	$0.0000
Peak kW Savings @ Meter	301.000	190.610	167.970	156.557	157.000	217.587	185.530	117.816	238.940	118.468	
Peak kW Savings @ Generator	301.000	190.610	167.970	156.557	157.000	246.000	205.001	130.181	264.016	130.901	
Cost per Peak kW Saved @ Generator	$1,496.62	$2,834.44	$3,008.27	$2,131.27	$2,830.29	$1,995.97	$2,758.06	$3,032.01	$1,299.04	$3,057.47	$0.00
Delivered Fuel Savings											
Gallons of #2 Fuel Oil	0	0	0	0	0	0	0	0	0	0	0
Gallons of LPG	0	0	0	0	0	0	0	0	0	0	0
Dekatherms Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Savings (Derived)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	0.0	**0.0**	**0.0**
Total Energy Savings	**1,898,972.0**	**1,930,148.0**	**1,586,841.0**	**954,288.0**	**1,004,077.0**	**1,529,752.4**	**1,555,362.3**	**1,004,267.3**	**839,771.5**	**1,008,521.4**	**0.0**
Benefit/Cost Ratios											
Utility Ratio						0.90	0.80	0.73	0.80	0.73	
Utility NPV						($47,209)	($113,886)	($295,641)	($67,709)	($295,641)	
Ratepayer Ratio						0.31	0.26	0.26	0.27	0.26	
Ratepayer NPV						($976,594)	($1,302,942)	($2,378,685)	($754,711)	($2,378,685)	
Participant Ratio						4.36	4.90	6.25	5.33	6.25	
Participant NPV						$1,191,496	$1,861,472	$3,829,293	$1,106,707	$3,829,293	
Societal Ratio						1.33	1.97	1.72	2.01	1.72	
Societal NPV						$156,546	$508,216	$667,958	$313,811	$667,958	
Narrative											

Program Name: Evaluation & Planning (Program Development)
Program Design Manager: Minnesota Power
Category: Market Research and Product Development

	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Plan	2015 Actual	2016 Plan	2017 Plan
	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Inactive
Utility Metrics											
kWh Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
kW Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
Utility Cost Components											
Delivery and Administration (2008-2010)	$104,849.00	$147,960.00	$152,656.00								
Delivery (2011-present)				$130,084.00	$133,448.00	$147,941.42	$12,977.25	$46,000.00	$14,246.84	$46,000.00	
Administration (2011-present)				$3,043.00	$0.00	$4,338.07	$95,778.07	$132,108.00	$155,330.66	$136,071.00	
Evaluation, Measurement & Verification	$54,321.00	$18,286.00	$62,339.00	$113,852.00	$121,892.00	$132,290.45	$192,738.74	$232,108.00	$282,968.26	$236,071.00	
Advertising & Promotion	$0.00	$0.00	$0.00	$142.00	$300.00	$1,470.00	$0.00	$0.00	$0.00	$0.00	
Incentives	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Other	$900.00	$0.00	$0.00	$0.00	$2,275.00	$0.00	$6,317.42	$0.00	$11,394.67	$0.00	
Total Utility Costs	**$160,070.00**	**$166,246.00**	**$214,995.00**	**$247,121.00**	**$257,915.00**	**$286,039.94**	**$307,811.48**	**$410,216.00**	**$463,940.43**	**$418,142.00**	**$0.00**
Program Participants											
Total Participants	0	0	0	0	0	0	0	0	0	0	
% of Spending by Customer Segments											
Residential	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Commerical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Industrial	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Farm	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Other	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Total % of Spending	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**
Low-Income Participation											
Participant % (% of Total Participants)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Budget % (% of Total Utility Costs)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Energy Savings											
Annual kWh Savings @ Meter	0	0	0	0	0	0	0	0	0	0	
Annual kWh Savings @ Generator	0	0	0	0	0	0	0	0	0	0	
Cost per Annual kWh Saved @ Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings @ Meter	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Peak kW Savings @ Generator	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Cost per Peak kW Saved @ Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Benefit/Cost Ratios											
Utility Ratio						0.00	0.00	0.00	0.00	0.00	
Utility NPV						$0	$0	$0	$0	$0	
Ratepayer Ratio						0.00	0.00	0.00	0.00	0.00	
Ratepayer NPV						$0	$0	$0	$0	$0	
Participant Ratio						0.00	0.00	0.00	0.00	0.00	
Participant NPV						$0	$0	$0	$0	$0	
Societal Ratio						0.00	0.00	0.00	0.00	0.00	
Societal NPV						$0	$0	$0	$0	$0	
Narrative											

Program Name: Integrated Energy Education & Communications
Program Design Manager: Minnesota Power
Category: General Marketing and Education

	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Plan	2015 Actual	2016 Plan	2017 Plan
	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Inactive
Utility Metrics											
kWh Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
kW Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
Utility Cost Components											
Delivery and Administration (2008-2010)	$166,271.00	$238,790.00	$177,991.00								
Delivery (2011-present)				$261,375.00	$461,501.00	$339,326.65	$235,190.14	$305,506.00	$177,454.92	$312,063.00	
Administration (2011-present)				$80,973.00	$57,576.00	$79,320.75	$71,851.32	$70,699.00	$127,618.20	$72,758.00	
Evaluation, Measurement & Verification	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Advertising & Promotion	$64,443.00	$41,215.00	$46,183.00	$69,452.00	$17,050.00	$14,046.86	$35,358.08	$10,000.00	$37,680.29	$10,000.00	
Incentives	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Other	$69,933.00	$43,549.00	$84,773.00	$150,975.00	$36,453.00	$67,254.84	$427,503.28	$420,000.00	$276,135.44	$420,000.00	
Total Utility Costs	**$300,647.00**	**$323,554.00**	**$308,947.00**	**$562,775.00**	**$572,580.00**	**$499,949.10**	**$769,902.82**	**$806,205.00**	**$618,888.85**	**$814,821.00**	**$0.00**
Program Participants											
Total Participants	0	72,896	97,631	112,168	102,803	111,789	122,511	81,000	123,823	76,000	
% of Spending by Customer Segments											
Residential	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Commerical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Industrial	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Farm	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Other	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Total % of Spending	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**
Low-Income Participation											
Participant % (% of Total Participants)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Budget % (% of Total Utility Costs)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Energy Savings											
Annual kWh Savings @ Meter	0	0	0	0	0	0	0	0	0	0	0
Annual kWh Savings @ Generator	0	0	0	0	0	0	0	0	0	0	0
Cost per Annual kWh Saved @ Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings @ Meter	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peak kW Savings @ Generator	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved @ Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Benefit/Cost Ratios											
Utility Ratio						0.00	0.00	0.00	0.00	0.00	
Utility NPV						$0	$0	$0	$0	$0	
Ratepayer Ratio						0.00	0.00	0.00	0.00	0.00	
Ratepayer NPV						$0	$0	$0	$0	$0	
Participant Ratio						0.00	0.00	0.00	0.00	0.00	
Participant NPV						$0	$0	$0	$0	$0	
Societal Ratio						0.00	0.00	0.00	0.00	0.00	
Societal NPV						$0	$0	$0	$0	$0	
Narrative											

Program Name: PowerGrant
Program Design Manager: Minnesota Power
Category: Specialty Non-Residential

	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Plan	2015 Actual	2016 Plan	2017 Plan
	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Inactive
Utility Metrics											
kWh Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
kW Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
Utility Cost Components											
Delivery and Administration (2008-2010)	$597,174.00	$535,262.00	$940,210.00								
Delivery (2011-present)				$685,041.00	$563,512.00	$874,361.66	$681,899.98	$518,274.00	$609,716.00	$516,902.00	
Administration (2011-present)				$46,330.00	$21,441.00	$14,946.92	$27,473.21	$47,133.00	$25,804.60	$48,505.00	
Evaluation, Measurement & Verification	$82,263.00	$59,564.00	$16,093.00	$45,982.00	$11,859.00	$33,994.19	$0.00	$0.00	$0.00	$0.00	
Advertising & Promotion	$2,638.00	$8,285.00	$7,616.00	$4,528.00	$2,226.00	$90.00	$0.00	$17,685.00	$0.00	$21,222.00	
Incentives	$1,456,172.00	$1,430,611.00	$1,642,286.00	$2,035,873.00	$2,231,079.00	$1,854,397.12	$2,109,286.04	$2,237,102.00	$1,938,781.92	$2,296,236.00	
Other	$5,595.00	$5,885.00	$8,700.00	$5,268.00	$4,870.00	$3,767.55	$2,761.60	$0.00	$1,134.38	$0.00	
Total Utility Costs	**$2,143,842.00**	**$2,039,607.00**	**$2,614,905.00**	**$2,823,022.00**	**$2,834,987.00**	**$2,781,557.44**	**$2,821,420.83**	**$2,820,194.00**	**$2,575,436.90**	**$2,882,865.00**	**$0.00**
Program Participants											
Total Participants	240	545	664	880	904	525	723	856	601	856	
% of Spending by Customer Segments											
Residential	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Commerical	34%	34%	34%	34%	34%	100%	61%	100%	57%	100%	
Industrial	33%	33%	33%	33%	33%	0%	38%	0%	42%	0%	
Farm	33%	33%	33%	33%	33%	0%	1%	0%	1%	0%	
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Total % of Spending	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**
Low-Income Participation											
Participant % (% of Total Participants)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Budget % (% of Total Utility Costs)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Energy Savings											
Annual kWh Savings @ Meter	33,051,587	34,296,309	39,671,212	50,187,689	44,424,341	57,546,604	58,765,773	33,490,000	68,474,947	33,490,000	
Annual kWh Savings @ Generator	33,051,587	34,296,309	39,671,212	50,187,689	44,424,341	65,061,169	64,933,121	37,004,707	75,661,253	37,004,707	
Cost per Annual kWh Saved @ Generator	$0.0649	$0.0595	$0.0659	$0.0562	$0.0638	$0.0428	$0.0435	$0.0762	$0.0340	$0.0779	$0.0000
Peak kW Savings @ Meter	3,137.230	4,510.950	5,059.780	4,336.403	4,871.000	2,884.885	6,566.855	3,881.884	13,256.400	3,881.920	
Peak kW Savings @ Generator	3,137.230	4,510.950	5,059.780	4,336.403	4,871.000	3,261.600	7,256.033	4,289.280	14,647.632	4,289.320	
Cost per Peak kW Saved @ Generator	$683.36	$452.15	$516.80	$651.01	$582.01	$852.82	$388.84	$657.50	$175.83	$672.10	$0.00
Benefit/Cost Ratios											
Utility Ratio						8.15	8.45	5.93	12.40	5.93	
Utility NPV						$19,889,843	$21,022,526	$38,778,814	$29,359,328	$38,778,814	
Ratepayer Ratio						0.55	0.43	0.46	0.46	0.46	
Ratepayer NPV						($18,641,387)	($31,207,582)	($54,366,575)	($36,945,488)	($54,366,575)	
Participant Ratio						3.07	3.84	3.13	3.95	3.13	
Participant NPV						$26,350,229	$40,645,102	$67,625,344	$50,992,521	$67,625,344	
Societal Ratio						2.03	2.40	2.12	2.77	2.12	
Societal NPV						$14,054,722	$21,019,154	$38,963,754	$31,642,554	$38,963,754	
Narrative											

Program Name: Regulatory Charges
Program Design Manager: Minnesota Power
Category: Regulatory Charges

	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Plan	2015 Actual	2016 Plan	2017 Plan
	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Inactive
Utility Metrics											
kWh Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
kW Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
Utility Cost Components											
Delivery and Administration (2008-2010)	$150,214.00	$159,064.00	$129,067.00								
Delivery (2011-present)		$0.00	$0.00	$168,419.00	$175,085.00	$174,634.00	$186,930.85	$175,000.00	$169,356.73	$175,000.00	
Administration (2011-present)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Evaluation, Measurement & Verification	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Advertising & Promotion	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Incentives	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Total Utility Costs	**$150,214.00**	**$159,064.00**	**$129,067.00**	**$168,419.00**	**$175,085.00**	**$174,634.00**	**$186,930.85**	**$175,000.00**	**$169,356.73**	**$175,000.00**	**$0.00**
Program Participants											
Total Participants	0	0	0	0	0	0	0	0	0	0	
% of Spending by Customer Segments											
Residential	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Commerical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Industrial	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Farm	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Other	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Total % of Spending	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**
Low-Income Participation											
Participant % (% of Total Participants)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Budget % (% of Total Utility Costs)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Energy Savings											
Annual kWh Savings @ Meter	0	0	0	0	0	0	0	0	0	0	0
Annual kWh Savings @ Generator	0	0	0	0	0	0	0	0	0	0	0
Cost per Annual kWh Saved @ Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings @ Meter	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peak kW Savings @ Generator	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved @ Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Benefit/Cost Ratios											
Utility Ratio						0.00	0.00	0.00	0.00	0.00	
Utility NPV						$0	$0	$0	$0	$0	
Ratepayer Ratio						0.00	0.00	0.00	0.00	0.00	
Ratepayer NPV						$0	$0	$0	$0	$0	
Participant Ratio						0.00	0.00	0.00	0.00	0.00	
Participant NPV						$0	$0	$0	$0	$0	
Societal Ratio						0.00	0.00	0.00	0.00	0.00	
Societal NPV						$0	$0	$0	$0	$0	
Narrative											

Program Name: Research & Development
Program Design Manager: Minnesota Power
Category: Other - Indirect

	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Plan	2015 Actual	2016 Plan	2017 Plan
	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Inactive
Utility Metrics											
kWh Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
kW Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
Utility Cost Components											
Delivery and Administration (2008-2010)	$24,343.00	$20,204.00	$31,350.00								
Delivery (2011-present)	$0.00	$0.00	$0.00	$1,258.00	$30,223.00	$25,765.66	$74,090.49	$40,000.00	$53,620.25	$40,000.00	
Administration (2011-present)				$18,513.00	$0.00	$0.00	$514.46	$11,783.00	$2,698.84	$12,137.00	
Evaluation, Measurement & Verification	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Advertising & Promotion	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Incentives	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$297,663.00	
Other	$90,814.00	$279,038.00	$311,440.00	$320,883.00	$310,189.00	$241,677.92	$216,464.07	$303,717.00	$290,681.41	$0.00	
Total Utility Costs	**$115,157.00**	**$299,242.00**	**$342,790.00**	**$340,654.00**	**$340,412.00**	**$267,443.58**	**$291,069.02**	**$355,500.00**	**$347,000.50**	**$349,800.00**	**$0.00**
Program Participants											
Total Participants	0	0	0	0	0	0	0	0	0	0	
% of Spending by Customer Segments											
Residential	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Commerical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Industrial	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Farm	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Other	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Total % of Spending	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**
Low-Income Participation											
Participant % (% of Total Participants)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Budget % (% of Total Utility Costs)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Energy Savings											
Annual kWh Savings @ Meter	0	0	0	0	0	0	0	0	0	0	0
Annual kWh Savings @ Generator	0	0	0	0	0	0	0	0	0	0	0
Cost per Annual kWh Saved @ Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings @ Meter	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peak kW Savings @ Generator	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved @ Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Benefit/Cost Ratios											
Utility Ratio						0.00	0.00	0.00	0.00	0.00	
Utility NPV						$0	$0	$0	$0	$0	
Ratepayer Ratio						0.00	0.00	0.00	0.00	0.00	
Ratepayer NPV						$0	$0	$0	$0	$0	
Participant Ratio						0.00	0.00	0.00	0.00	0.00	
Participant NPV						$0	$0	$0	$0	$0	
Societal Ratio						0.00	0.00	0.00	0.00	0.00	
Societal NPV						$0	$0	$0	$0	$0	
Narrative											

Program Name: Triple E Plus
Program Design Manager: Minnesota Power
Category: Specialty Residential

	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Plan	2015 Actual	2016 Plan	2017 Plan
	Active	Active	Active	Active	Active	Active	Active	Active	Active	Active	Inactive
Utility Metrics											
kWh Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
kW Line Loss Factor						11.550%	9.498%	9.498%	9.498%	9.498%	
Utility Cost Components											
Delivery and Administration (2008-2010)	$315,171.00	$365,186.00	$336,922.00								
Delivery (2011-present)				$260,436.00	$336,830.00	$331,624.39	$368,801.84	$362,686.00	$367,457.44	$377,826.00	
Administration (2011-present)				$64,564.00	$42,799.00	$42,233.84	$47,455.43	$41,241.00	$17,020.62	$42,442.00	
Evaluation, Measurement & Verification	$0.00	$0.00	$0.00	$0.00	$0.00	$438.75	$0.00	$50,000.00	$0.00	$50,000.00	
Advertising & Promotion	$58,034.00	$34,128.00	$13,118.00	$13,191.00	$24,432.00	$14,739.37	$16,821.04	$61,350.00	$19,254.55	$61,350.00	
Incentives	$631,211.00	$1,002,529.00	$908,648.00	$863,023.00	$869,152.00	$740,043.51	$832,506.88	$730,669.00	$700,093.38	$769,739.00	
Other	$4,829.00	$2,838.00	$0.00	$0.00	$125.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Total Utility Costs	**$1,009,245.00**	**$1,404,681.00**	**$1,258,688.00**	**$1,201,214.00**	**$1,273,338.00**	**$1,129,079.86**	**$1,265,585.19**	**$1,245,946.00**	**$1,103,825.99**	**$1,301,357.00**	**$0.00**
Program Participants											
Total Participants	67,076	70,913	111,098	127,701	151,513	177,928	130,815	93,946	135,854	90,891	
% of Spending by Customer Segments											
Residential	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Commerical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Industrial	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Farm	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Total % of Spending	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**
Low-Income Participation											
Participant % (% of Total Participants)	0.0%	0.0%	0.0%	0.0%	0.0%		7.8%		7.8%	0.0%	
Budget % (% of Total Utility Costs)	0.0%	0.0%	0.0%	0.0%	0.0%		1.1%		1.1%	0.0%	
Energy Savings											
Annual kWh Savings @ Meter	8,253,292	10,561,586	12,257,046	9,969,386	10,435,891	9,764,635	8,914,649	7,720,034	8,244,861	7,721,689	
Annual kWh Savings @ Generator	8,253,292	10,561,586	12,257,046	9,969,386	10,435,891	11,039,723	9,850,223	8,530,236	9,110,142	8,532,064	
Cost per Annual kWh Saved @ Generator	$0.1223	$0.1330	$0.1027	$0.1205	$0.1220	$0.1023	$0.1285	$0.1461	$0.1212	$0.1525	$0.0000
Peak kW Savings @ Meter	1,553.800	939.690	1,117.040	2,100.000	2,165.000	1,959.964	1,587.738	1,425.558	2,353.140	1,432.382	
Peak kW Savings @ Generator	1,553.800	939.690	1,117.040	2,100.000	2,165.000	2,215.901	1,754.368	1,575.167	2,600.097	1,582.708	
Cost per Peak kW Saved @ Generator	$649.53	$1,494.83	$1,126.81	$572.01	$588.15	$509.54	$721.39	$790.99	$424.53	$822.23	$0.00
Benefit/Cost Ratios											
Utility Ratio						3.62	2.84	2.78	3.36	2.78	
Utility NPV						$2,961,118	$2,328,109	$6,172,892	$2,602,707	$6,172,892	
Ratepayer Ratio						0.43	0.34	0.35	0.35	0.35	
Ratepayer NPV						($5,477,101)	($6,951,303)	($17,888,895)	($6,736,267)	($17,888,895)	
Participant Ratio						5.54	4.39	4.93	4.93	4.93	
Participant NPV						$9,012,950	$11,123,955	$30,364,707	$11,470,242	$30,364,707	
Societal Ratio						2.22	2.07	2.16	2.21	2.16	
Societal NPV						$2,890,400	$3,620,316	$9,957,967	$4,152,682	$9,957,967	
Narrative											

Research & Development

PROGRAM TITLE: RESEARCH & DEVELOPMENT

PROGRAM DESCRIPTION

The Research and Development (R&D) program continues to be a successful proactive program to help identify and implement new markets, products and underutilized energy-saving technologies. As customers determine where to allocate their limited resources, the R&D program helps shoulder the risk of implementing innovative and ready-for-market technologies by identifying solutions that are the right fit for customers. The R&D program provides information on the feasibility, market acceptance and economic justification of new products and energy-saving strategies and helps continue to enhance the CIP program by identifying new initiatives.

EVALUATION METHODOLOGY

Although each project has its own set of deliverables, the overall R&D function should be evaluated in terms of ability to identify new energy-efficient technologies, markets and delivery strategies that enhance existing CIP initiatives in multiple sectors. This helps create dynamic CIP projects that deliver the valued outcomes of energy efficiency—successful customers and communities, sustainable energy savings and long-term market transformation—to benefit communities, the region and Minnesota as a whole.

Potential projects are evaluated through a defined set of criteria that evaluates each of the projects for its potential for overall energy savings, the number of customers that could be impacted by the measure, delivery strategy, and the technology type.

RESULTS

The R&D program is designed to take advantage of a broad base of technologies across customer classes—residential and low-income, commercial, public and agricultural, and industrial—to ensure that each customer class benefits from participation in technology development, application, and market-based research.

The results of the 2015 R&D projects are detailed below:

Advanced RTU—Catalyst
($1,793)

Project Description

The purpose of this project is to research energy-efficient technologies for roof top units (RTUs), specifically retrofit controls to optimize existing equipment. Through extensive research of innovative energy-efficient technologies for RTU optimization, Minnesota Power has chosen to test the Catalyst control system manufactured by Transformative Wave. Catalyst has been identified as the ideal retrofit device for RTUs greater than 7.5 tons. The Catalyst can be integrated into the existing building management systems or be applied as a building management system itself. The manufacturer claims that installing Catalyst saves 25% to 50% of total HVAC energy through VFD (variable frequency drive) fan controls, economizer controls, additional temperature sensors, and fault detection capabilities.

Current Status

In 2014, data loggers were installed on five existing RTUs at three separate locations for establishing a baseline electrical usage of the unit motors. Temperature sensors were also installed inside gas fired units to help quantify this usage by determining when the system calls for heating or cooling. In 2015, Minnesota Power worked with Transformative Wave and their partner Yale Mechanical to design custom retrofit Catalyst control systems at two Minnesota Power customer sites, as one of the original participants opted out. Minnesota Power is currently coordinating with Transformative Wave, Yale Mechanical and participating customers to install Catalyst controls at the chosen sites. Yale Mechanical will also be working with a local contractor, Gartner Refrigeration, who is interested in being trained on Catalyst installation. Baseline energy usage of the original equipment has been quantified and the system's capabilities will be assessed once Catalyst installation is complete. Annual energy savings and demand limiting, indoor comfort and air quality, fault detection and diagnostics, remote access of HVAC equipment, compatibility with BMS controls, and overall customer satisfaction will be assessed. Also, as part of this research, demand control strategies incorporating CO_2 sensors will be implemented to further enhance energy savings and customer comfort.

Community Energy Challenge
($24,371)

Project Description

Due to a rising interest in community-based initiatives and an overall desire within communities to save energy and benefit the environment, Minnesota Power continued its research with Community Energy Challenge events. The first Community Energy Challenge Pilot took place in 2014 in the Royalton community, and in 2015 a challenge was completed in Morgan Park–Duluth, Minn. It is important to pilot this type of project in a variety of different neighborhoods with different populations, interests, and dynamics to get a diverse and well-represented study selection. In addition, this community involvement strategy is part of the larger R&D initiative involved with participating in the Georgetown University Energy Prize competition.

Current Status

Minnesota Power, in collaboration with ComfortSystems and Ecolibrium3, completed a Community Energy Challenge in Morgan Park–Duluth at the end of July 2015. The effort resulted in 102 completed Your Home Energy Report surveys, 11 Home Energy Analyses performed, and 30 Advanced Home Energy Analyses with Building Diagnostics completed. Locations for the next Community Energy Challenge are currently under consideration. It is likely that the location will be in Duluth since Community Energy Challenges are a starting point for community involvement, which is crucial for Duluth during the next year as part of the Georgetown University Energy Prize competition, locally referenced as Duluth Energy Wins.

Community Outreach/Direct Installation
($59,207)

Project Description

Minnesota Power developed this research project to focus on reaching out to businesses in rural and isolated communities that often do not have adequate resources available to help with energy efficiency. Through customer interaction, energy audits, and direct installation of energy-

efficient products, Minnesota Power was able to educate and assist these business customers in achieving energy cost savings. While visiting these businesses, Minnesota Power is also gaining valuable information about technologies used and potential energy-saving opportunities for these customers.

Current Status

Minnesota Power sent representatives to five remote customer service areas through this initiative in 2015. There was a total of 143 site visits in the communities of International Falls, Aurora, Hoyt Lakes, Nisswa, and Pequot Lakes. The visits included sharing energy conservation information as well as providing them with useful resources available through Minnesota Power's Power of One® Business program, including rebates and incentives. In addition, the representatives performed free onsite energy audits and included direct installation of various energy-efficient products. This resulted in over 160,000 kWh in savings through the implementation of energy-efficient direct installation measures. The visits were then followed up with detailed reports of the findings of the audit, customized recommendations to promote energy efficiency, and further information on Minnesota Power's available incentives and rebate programs.

E Source DSM & Carbon Potential Study
($45,000)

Project Description

E Source Consulting Solutions developed the Carbon & DSM Potential Study as a lower-cost and shorter-timeline alternative to traditional potential studies. Since the DSM & Carbon Potential Study is a new E Source offering that as a whole has not been comprehensively deployed to date, E Source proposed a "pilot development project" with Minnesota Power. In turn for participating in the pilot development project, E Source offered a significant price discount to Minnesota Power.

Current Status

Minnesota Power has been working with E Source in providing information and inputs for the potential study and bi-weekly meetings have been established to discuss progress and next steps. The outcome of the potential study will provide Minnesota Power with economic and achievable energy- and carbon-saving potential by customer segment and program/technology category. This will help inform the 2017–2019 Triennial planning which is due to be filed June 1, 2016. Minnesota Power expects to have preliminary results of the study by mid-April 2016.

E Source PV/DG Multi-Client Research Study
($8,168)

Project Description

The E Source Photovoltaic/Distributed Generation Multi-Client Research Study provides utilities with unbiased, critical, timely information about customer behavior, market barriers and industry trends. The PV/DG study is aimed at helping utilities understand what motivates large and mid-size business customers to acquire PV and other DG technologies.

Current Status

Minnesota Power funded a portion of the E Source PV/DG Multi-Client Research Study through CIP to further inform Minnesota Power's SolarSense rebate program in 2015. Insights gleaned through the study were used to support changes to the SolarSense program, along with Minnesota Power's larger solar strategy. Minnesota Power provided an oversampling of customers to complement the national survey conducted by E Source, allowing for a comparison between customer perceptions of PV/DG in northern Minnesota to those of customers nationwide. The final qualitative and quantitative reports were shared with Minnesota Power in 2015.

E Source Services
($163,500)

Project Description

E Source is an online professional service that provides a database of information on energy efficiency along with staff assistance for content inquiries. The E Source database includes information on the best practices in the energy-efficiency industry, technology assessments, and professional reports that are recognized as being credible and unbiased information.

Current Status

In 2015, Minnesota Power purchased a 12-month E Source subscription for a bundle of the following seven services: Demand Side Management, Technology Assessment Service, Business Energy Advisor, Regulatory Trends, DSM Insights, Residential Marketing and Business Marketing. E Source services have been utilized for obtaining information through research and data inquiry submittal followed by delivery of information and reports delivered by E Source staff. The information gained has been used for complex customer projects involving new technologies and for Minnesota Power research pilots, along with best practices for customer marketing and insights into trends in the industry. All inquiries sent in to E Source, along with the quality of information delivered by E Source staff, are being documented and tracked.

Energy Benchmarking Tools
($16,602)

Project Description

Minnesota Power has chosen to utilize energy benchmarking programs to provide tools to customers for becoming more energy efficient and achieving energy-saving goals. Benchmarking programs such as B3 and ENERGY STAR® Portfolio Manager are tools that can help property owners and facility managers identify and prioritize energy-saving opportunities and reduce their operating costs. The programs offer resources to help facilities manage their energy bills, share information with others, and set goals for their energy usage. ENERGY STAR Portfolio Manager and B3 generate weather-normalized reports of energy use intensity and greenhouse gas emissions, along with a 1–100 ENERGY STAR performance score which compares the property to other similar property types and their energy usage. Voluntary, beyond-code programs such as B3 and ENERGY STAR Portfolio Manager help drive energy-efficiency improvements and design for new construction and existing buildings.

Current Status

ENERGY STAR Portfolio Manager and B3 Benchmarking are currently being used by Minnesota Power for customer energy usage tracking, project identification, goal establishment, energy reporting and to obtain certifications for customer energy efficiency such as ENERGY STAR Certification.

In 2015, Minnesota Power assisted several customers with getting their properties set up in ENERGY STAR Portfolio Manager, either to determine an EUI (Energy Use Intensity) value or an ENERGY STAR score. Those customers with scores 75 or above have been able to apply for ENERGY STAR Certification. Additionally, energy benchmarking has been integrated with customer involvement in Minnesota Power's SolarSense program to help drive customers toward energy efficiency when thinking about implementing renewables. This is ongoing research and currently Minnesota Power finds these tools to be useful in increasing customer involvement in tracking their energy usage, and for identifying energy-efficiency projects to help meet customer goals.

Government Services Center (GSC) Solar Project
($18,878)

Project Description

Working with Minnesota Power and University of Minnesota Duluth, Natural Resources Research Institute (UMD NRRI), the county purchased and installed photovoltaic panels from three different manufacturers for a test site on the GSC building. NRRI, as a neutral agency, is leading this qualitative and quantitative study. They are monitoring energy output, weather, and other data regarding the three systems' operations, which includes measuring and calculating relative system performance. At the end of 2013, the first two of three separate solar arrays were installed on the GSC. The final array was installed in March of 2014. The combined arrays have a total capacity of 30.5 kilowatts (kW). They are all of similar size at 9.84 kW, 10kW, and 10.66 kW. Two of the three systems used modules that are qualified as "Made in Minnesota." The third system is a commodity panel currently prevalent in the marketplace.

Minnesota Power will use the insights gained as part of this ongoing effort to provide educational resources for customers about solar energy installations. The research is being conducted over a three-year period, which began in August 2014. Quarterly reports will be made from that date for three years. These reports will supply direct, objective findings for using PV solar in regional residential and community settings, while providing valuable supplemental information to existing solar studies from around the nation by using region-specific results. A public report will be made on the project at the conclusion of the research efforts.

Current Status

All PV arrays are functioning and are monitored by both eGauge and utility production meters. Technical issues experienced during the first 18 months of system operations concerning the weather station have been resolved. St. Louis County and Minnesota Power are now able to share this data for research purposes.

The first year of reporting for the three-year study has been made by NRRI. The report includes information on production performance of the PV systems, economic analysis, and some information on the installation challenges the project has faced thus far. A year-end report is in

progress and this report is meant to convey first-year findings, with a public-facing summary of findings. Refinement of the project research and findings will continue with updates reported as part of CIP annual filings.

High User Study CARD (Conservation Applied Research & Development) Grant—SeventhWave
($2,035)

Project Description

Minnesota Power, along with ComfortSystems, Rochester Public Utilities and Minnesota Energy Resources, participated in a CARD-funded High User Study conducted by SeventhWave. The research was designed to help Minnesota utilities understand high users better and identify program strategies that tap into the unique energy-saving opportunities of this market segment. There were two phases to this research. In 2014, SeventhWave conducted a characterization study to identify common factors that cause households to have high energy usage. A primary objective was determining which factors could be effectively targeted through efficiency program offerings. Site visits at 100 Minnesota homes included a walk-through audit, a blower door test, and an in-depth interview with the homeowner. Armed with the information gathered from these audits, along with each home's electric and natural gas data, SeventhWave calculated energy-savings potential from both the technical perspective (measures such as furnace upgrades or air sealing) as well as from the behavioral side (encompassing measures like thermostat setbacks or using space heaters less often).

The second phase focused on identifying efficiency program strategies that could effectively target the high user market. A series of stakeholder discussions with Minnesota utilities were conducted to identify program strategies that could effectively target the efficiency opportunities identified through the characterization study. The utilities identified specific strategies that would be feasible to test through a small pilot study. This pilot focused on marketing energy audits (either online or on-site) to high-using households. The audits were marketed through postcard mailings in November 2015. The utilities employed different messaging to test whether informing customers about their high usage would drive a greater level of interest in the audits.

Current Status

In 2015, Minnesota Power created two postcards to mail out to high energy users in its service territory. One postcard specifically mentioned that the customer was identified as a high user of energy compared to other similar homes. They were encouraged to fill out a Your Home Energy Report survey online and to request a Home Energy Analysis. The other postcard was sent out simply promoting the Your Home Energy Report and Home Energy Analysis, without mentioning they were identified as high energy users. The results were sent to SeventhWave and Minnesota Power is awaiting their final report.

Innovative Lighting
($16,591)

Project Description

Minnesota Power has been researching and staying current with new and innovative lighting products and technologies. By educating and informing customers with the information gained from this research, they will be able to choose from the newest energy-efficient lighting products and lighting controls.

Current Status

Minnesota Power has worked with several customers and provided them information on new lighting products and technologies on the market. Lighting samples are acquired through local suppliers and provided through Minnesota Power for trial use, and customer input has been recorded in a spreadsheet along with the sample product model number and information. This is ongoing research that has been useful to Minnesota Power and their customers for making informed energy-efficient product choices.

Innovative Lighting Design
($13,306)

Project Description

Minnesota Power is involved with numerous energy-efficient customer lighting projects as part of CIP. By incorporating new lighting technologies through innovative lighting research, Minnesota Power is not only encouraging energy-efficient lighting but also efficient lighting design. This often requires the need for services by an experienced lighting designer to assist in finding improved ways of lighting a space for the least amount of energy needed.

Current Status

In 2014, independent consulting services from ON2 Solutions were utilized for providing independent advice, information, recommendations, and knowledge to assist with complex customer lighting projects. As part of being an energy partner of Minnesota Power, ON2 Solutions was asked to work under specific consultation and design services framework which is detailed in the 2014 "Independent Consulting Services" Executive Summary. In 2015, the services from ON2 Solutions have continued to be utilized along with the help of additional consultants from Energy Insight Inc. The tool Visual Basic 2012 was used for project lighting redesign for both retrofit and new construction projects. By modeling lighting design for customers, cost savings and rebate estimates are able to be calculated for each designed lighting scenario.

Micro-Aerial Rooftop Thermal Inspection
($9,345)

Project Description

According to the U.S. Department of Energy, 42% of energy loss occurs through the building envelope. A comprehensive thermal scan using aerial imaging can provide a complete picture of this phenomenon and help managers best spend allocated resources to improve energy efficiency. While some organizations have started using unmanned aerial vehicles (UAV) equipped with thermal sensors to conduct roof and sidewall inspections of buildings and have demonstrated the ability to collect usable data in a time-saving manner, there is a lack of quantifiable data when it comes to energy savings and return on investment (ROI) for UAV thermal infrared data collection.

The advancement of UAV technology has provided a cheaper, safer, more effective method for aerial data collection. The use of thermography to analyze a structure's energy efficiency is an emerging industry standard. Advancements in technology have allowed for the development of

thermal sensors able to provide rich data in a small lightweight body, allowing them to be flown with small affordable UAVs.

Minnesota Power is utilizing UAV technology to collect thermal information on buildings that could be used by building managers to better identify thermal loss, moisture intrusion and equipment failure. Accurate determination of these issues can reduce costs through a reduction in energy use, early detection of maintenance issues, and by providing a complete picture of the entire extent of an issue.

Current Status

Minnesota Power is currently in the process of identifying customer sectors that this research would benefit and reaching out to customers who may be interested in participating in the study. The customer identification process is based on the square footage of rooftops, potential for energy savings, and location (to minimize the need for additional Federal Aviation Administration (FAA) approval). Customers who opt in to this study will have their buildings scanned using a DJI Phantom and fixed FLIR VUE (forward-looking infrared imaging system) thermal sensor. The data will be processed to create a seamless image of the subject area and analyzed. The end objective of this research is to determine the variables that would indicate the use of UAV-based thermal imaging to maximize ROI.

MyMeter Commercial Pilot
($1,241)

Project Description

The MyMeter tool is an enhanced web portal that allows commercial customers to view detailed usage information including daily and/or hourly energy usage and demand when applicable. The usage information is paired with various other location/customer-specific data that can impact energy usage including temperature data, property/building characteristics, and recent energy-efficiency improvements including equipment upgrades and process/production changes. The tool also includes widgets for comparing usage over time or across properties. Overall, the portal can provide customers with a more detailed picture of their usage patterns leading to more insight about what factors are affecting their electric consumption and how recent improvements or changes have impacted the customers' energy use. Minnesota Power believes the combination of features offered by this service will also create more effective interactions between energy analysts and customers during site visits and energy audits.

Current Status

In 2015, Minnesota Power began piloting the portal with the City of Duluth to better understand how the tool functions and how it can address large customer needs, and to begin modifying the tool based on customer feedback. The Company has been working with the City, receiving feedback and tweaking the tool in anticipation of a broader pilot launch in 2016.

Qualitative Analysis of Mobile Energy Auditing Residential Software
($7,390)

Project Description

Minnesota Power evaluated the capabilities of Mobile Energy Auditing Software to be used for residential customers and will use this information to determine the best software vendor that

meets Minnesota Power's requirements. Three software vendors agreed to be evaluated as part of this study. They were: HEAT from Hancock, Snuggpro and Cake Systems. Each of the three softwares serve the same goal of providing data capturing and analyzing capabilities at the fingertips of the auditor, yet they differ in many ways. Each software can be used remotely through a mobile phone and tablet, making it easy for the auditor to enter data, click pictures and write notes on site. In addition, project management features like project status tracking, quantifying energy savings calculation, etc., were evaluated.

Current Status

In 2015, the three software vendors were contacted and access was obtained on a trial basis. Three trial walkthroughs were performed using the three software systems and the pros and cons were tabulated. More recently, follow up questions from Minnesota Power regarding privacy, data access, and additional features were presented to each vendor and their responses were received and documented. A demonstration of Franklin Energy's clipboard was also presented and the pros and cons of that software/app have been included in this report. Minnesota Power has an additional tablet trial set up in early 2016 with Apogee tools. Following that, review of the multiple software options will begin and next steps will be determined based on the most viable option.

Recommissioning—Cloquet Service Center
($50,183)

Project Description

Minnesota Power is researching and implementing the systematic approach of recommissioning at its Cloquet Service Center to address issues with outdated HVAC, control, and electrical building systems. Building equipment systems operation and maintenance can be examined through the recommissioning process and used to develop improved energy management procedures. Minnesota Power is interested in not only the design improvement process of the system, but also in the possibility of using the information gained through the process in a feasibility study for the application of this particular type of system in northern climates.

Current Status

The recommissioning process began at Minnesota Power's Cloquet Service Center in 2011. It has been an ongoing process and the building systems have been evaluated and redesigned to include more energy-efficient HVAC equipment and temperature management controls to help improve system performance and indoor comfort. In 2015, Minnesota Power continued to move forward with the recommissioning process following a variety of recommendations provided by the consultant Class 5 Energy. A local contractor, Jamar, will also be involved in implementing the planned upgrades at the Cloquet Service Center through 2016.

Redwood Technologies
($361)

Project Description

The purpose of this research is to understand how to utilize network-centric lighting systems and identify the benefits and possible applications for commercial customers. The Redwood System is a centralized power control platform for LED lighting "networks" that utilizes an internetworked DC grid. Lighting fixtures that are part of the grid are connected by adapters and are controlled using an array of sensors. The Redwood engine is in turn tied to an Ethernet switch that sends a signal to a PC via the internet. Lighting fixtures that are part of the network are then controlled from the Redwood dashboard online. The system can be accessed and customized to user preferences for scheduling and occupancy, dimming and task tuning, and/or daylight harvesting. An additional component called the Redwood Director can also be installed for tighter management, controllability, and data collection purposes.

Status of Project:
Minnesota Power staff has gained access and has been trained to use the Redwood System. Lighting levels for separate desk areas at the Cloquet Service Center have been successfully customized as needed and occupancy sensors have also been installed in the offices to accompany the controls.

A final conclusion from this technology is comparable to AC LED lighting systems with some advanced control capabilities. In applications where flexibility in design and layout are required, the Redwood System's DC low voltage wiring capabilities provide cost savings for remodel and new construction applications.

Refrigerant Additives—IceCold
($9,067)

Project Description

The purpose of this research is to evaluate refrigerant oil additives to test their energy savings potential as it is claimed by manufacturers. The product IceCold is a "refrigerant catalyst" that claims to reduce oil-fouling within refrigeration systems leading to improved heat transfer and reduced compressor runtime. This has resulted in an estimated 35% system energy savings according to current research.

Current Status

Minnesota Power has completed testing IceCold at one customer site on a variety of refrigeration and air conditioning equipment. A local supplier and installer of IceCold has been working with Minnesota Power to conduct two rounds of product testing in 2015 on a variety of refrigeration and HVAC equipment at a local meat market. The overall results indicate that IceCold works well for certain types of equipment and customers can expect to see at least 10% energy savings by installing the product in their equipment.

T12 Pilot
($2,531)

Project Description

As a follow-up to information gained in the Community Outreach/Direct Installation initiative in Chisholm and International Falls in 2014–2015, Minnesota Power made the decision to develop a new pilot to address areas of energy efficiency need in these communities. Driving this effort is the state's decision to phase out T12 lighting as a baseline at the end of 2016. Minnesota Power discovered that T12 lighting is still a very prevalent technology in many areas throughout its service territory, especially with small commercial businesses. In an effort to eliminate this inefficient technology, Minnesota Power teamed up with lighting manufacturers, distributors, and contractors to come up with the best price possible on select LED equivalents for interested businesses in the cities of Chisholm and International Falls. Special manufacturer pricing, along with an increased rebate realized as a mid-stream buy-down from the distributor, have proven to be great incentives for businesses to take action and move toward LED technologies. Participating contractors are awarded a spiff for every qualified fixture they install as motivation for them to encourage their regular customers to take advantage of this special pilot offer.

Current Status

The T12 pilot kicked off in September 2015, and due to strong involvement near the end of the pilot, was extended from an end date of December 31, 2015, to January 31, 2016, for those projects with a preapplication submitted before the end of 2015. Five manufacturers, two distributors, and five contractors have decided to participate since the kickoff. A Minnesota Power representative was assigned to each city, and each has been involved in spreading the word and following up with customers who are interested in the offer. Several projects have been initiated since the beginning of the pilot and many are still in the works. Minnesota Power has been pleased with the outcome thus far, and is considering doing a much broader application of this pilot moving forward into 2016.

Time-of-Day Rate Pilot
($13,463)

Project Description

The purpose of this research project is to gauge residential customer interest in and responsiveness to dynamic pricing structures. This project is the second and final phase of Minnesota Power's multi-year Consumer Behavior Study Pilot (CBSP). The overall purpose of the CBSP project was to focus on integrating technology, information and tools to help customers make informed choices about how they use energy.

Current Status

In August 2014, Minnesota Power began recruiting and enrolling participants from the Duluth/Hermantown area in the Time-of-Day Rate Pilot. Participants were required to remain on the pilot rate for 12 months. In October 2015, the one-year participation requirement was fulfilled and the pilot is now in the evaluation phase. Participants may request to be removed at this time or may continue on the rate through the evaluation phase. Minnesota Power has surveyed participants for feedback about their experience and for data related to behavioral impacts of the pilot. Over the next several months Minnesota Power will be gathering and

analyzing data and feedback which will inform recommendations regarding the future of the pilot. Minnesota Power will review and submit a report to the Department of Energy (DOE) in spring 2016, meeting the Company's obligations as part of the Smart Grid Investment Grant (SGIG), which was partially funded by the DOE. Also, under the conditions of approval for the Time-of-Day Rate, Minnesota Power recently reported findings to the Minnesota Public Utilities Commission.[20]

RESULTS

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$349,800	$347,001	99%

SUMMARY

Minnesota Power funded numerous R&D projects in 2015. They involved a cross-section of customer classes and will help guide future conservation program design, outreach and offerings. New technologies, delivery methods and pilot programs are ways Minnesota Power helps strengthen its overall portfolio offering and prepare for the ever-changing CIP landscape. Overall, Minnesota Power finds this research to be valuable and informative to program design and delivery techniques, particularly as it relates to developing effective CIP market strategies.

[20] In the Matter of Minnesota Power's Compliance Filing for its Temporary Rider for Residential Time-of-Day Rate for Participants of the Smart Grid Advanced Metering Infrastructure Pilot Project, Docket No. E015/M-12-233, March 25, 2016.

Renewable Energy

Renewable Energy

PROGRAM TITLE: CUSTOMER RENEWABLE ENERGY (RE)

PROGRAM DESCRIPTION

Minnesota Power has offered the Customer Renewable Energy (RE) program as a part of its comprehensive CIP portfolio since 2004.[21] The Customer RE program helps customers adopt renewable technologies such as photovoltaics (PV), wind turbines, biomass and solar thermal. Continually modifying and expanding the program by connecting and collaborating with a variety of stakeholders and trade allies over the last several years has been instrumental in the pursuit of the shared goal of expanding the availability and customer adoption of renewable energy technologies.

In a market-building approach, Minnesota Power has increased focus on opportunities to educate customers, communities and contractors about small scale renewable energy applications in Northern Minnesota. In general, Minnesota Power stresses the importance of "conservation first," as is graphically represented in the Pyramid of Conservation, a tool to help customers understand efficiency options and how to prioritize the steps to increased energy efficiency. Through its annual Energy Design Conference & Expo, Minnesota Power regularly features educational sessions about solar energy with an emphasis on proper installation and design. In addition to the regular solar energy sessions, the 2015 Expo boasted a full-day preconference session geared towards solar contractors.

In addition to providing educational opportunities, Minnesota Power continues to work diligently to further enhance the customer experience by clarifying and streamlining the interconnection process. By increasing customer communication efforts, Minnesota Power is helping to align customer expectations with achieved results. Efforts to streamline the interconnection process coupled with increased transparency and communication will help to ensure that distributed generation systems continue to be installed in a safe and reliable manner in the future.

In 2015, Minnesota Power made slight modifications to the SolarSense program. Modifications included implementing a lottery process to award rebate funds, increasing the amount of incentives available by eliminating administration costs in the program and initiating a solar renewable energy credit contract for compliance with the state Solar Energy Standard.[22] These changes are critical in helping Minnesota Power understand and monitor the pent-up demand for renewable energy rebates in Northern Minnesota and aligning the SolarSense program with additional offerings in the state, such as the Made in Minnesota incentive program.

[21] The Solar Energy Standard (SES) was introduced during the 2013 legislative session and requires 1.5 percent of a public utility's sales, net of customer exclusions, to come from solar energy resources by 2020. The SES exemption process was approved in 2015, with implementation occurring in 2016. Although the CIP program also includes a statutory provision for customer exemptions, the exempt customers between the two statutes do not align perfectly. Minnesota Power continues to see value in offering a customer renewable energy program, though it is the view of the Company that the introduction of the Solar Energy Standard and associated customer exemptions suggest renewable programs are better administered outside of CIP. This issue will be further explored in the upcoming CIP Triennial planning and SES progress report processes.

[22] Minn. Stat. 216B.1691, Subd. 2f.

The 2015 SolarSense incentive tiers remained unchanged from 2014:

	2015
Base Rebate	$1,000 kW
Bonus Incentive	
NABCEP Certified Installer	$500 kW
Non-profit/Tax Exempt	$500 kW
Total Possible Incentive	$2,000 kW

EVALUATION METHODOLOGY

Minnesota Power tracked the number of participants, technology type, capacity, estimated energy generated and utility incentives for each project. This information is detailed in Appendix C of this filing.

RESULTS

The following chart summarizes and compares the results of the Customer Renewable Energy program, with goals established in the program filing.

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$349,800	$300,678 *(1)*	86%
Number of Participants			
PV—Solar Electric (SolarSense) *(2)*		8	
PV—Solar Electric (Made in Minnesota)		5	
Combined Total PV—Solar Electric	15	13	87%
Wind Turbine	0	0	0%
Solar Thermal Water Heating	4	1	25%

(1) Minnesota Power was assessed $174,906 in 2015 for the Made in Minnesota solar incentive program. Credited energy savings for Made in Minnesota payments as provided for under Minn. Stat. § 216C.412, subd. 2 and calculated by the Department of Commerce are 81,881 kWh at the meter and not inclusive of demand savings.

(2) Minnesota Power awarded SolarSense funds to 13 customers for solar PV projects in 2015. Due to time constraints, 5 of the 13 total SolarSense projects were granted an extension by the Minnesota Department of Commerce in an email dated December 24, 2015. Those projects will be reported in the 2016 CIP Consolidated.

SUMMARY

While the incentives and tiers of incentives remained unchanged in 2015, the following outcomes were observed:

- The costs for solar equipment and installations continue to decrease year after year.
- The incentive for using a NABCEP certified installer remained the same in 2015 as in 2014 and the percentage of installations using a NABCEP certified installer continued to be 100%.
- The Solar Renewable Energy Credit contract was implemented in 2015 and did not appear to have an effect on participation rates as the program continued to be 100% subscribed.

Minnesota Power's experience in renewables, specifically solar, mirrors what has been seen nationally—decreased panel and installation costs are resulting in an increased number of installations from a segment other than early adopters. Over time, and if costs continue to decrease, there will be less dependence on upfront incentives. Additionally, as the number of installations continue to increase, there are a few emerging trends that are becoming more prevalent in Minnesota Power's service territory. This includes installation of systems with the intent to expand, installation of multiple systems on a single site, and larger, more complex systems, some of which include battery back-up. In order to balance costs and maintain safety and reliability as the number of installations continues to grow, consistency and transparency will become increasingly important.

Minnesota Power views renewable energy as an important and growing part of the energy landscape. Through its Conservation Improvement Program, Minnesota Power strives to provide customers with the tools and resources to make informed choices about their investments in energy efficiency and small-scale renewable technology such as solar. When considering program design and budgets, it is important to balance the encouragement of technologies such as solar with energy efficiency to ensure that the overall program remains consistent with CIP objectives.

Compliance

COMPLIANCE REPORTING

Minnesota Rules 7690 contains the requirements and procedures for CIP filings. Minn. Stat. §§ 216B.2401, 216B.241, and 216B.2411 contain provisions the Company must meet in its CIP. Compliance points are addressed in this section.

STATUTORY REQUIREMENTS

2015 Minimum Spending Requirement

Minn. Stat. § 216B.241 requires that 1.5% of Minnesota Power's Retail Revenues (net of exempt customers) be spent on CIP. The following table shows 2015 spending in relation to the approved minimum spending requirement.

Minimum Spending Requirement	*Approved Spending*	*Actual Spending*	*Variance of Actual to Minimum Spending*
$3,498,000	$7,145,419	$6,554,551	$3,056,551

2015 Achievements as a Percentage of Sales

The Next Generation Energy Act of 2007 established an energy-saving goal of 1.5% of Gross Annual Retail Energy Sales (net of exempt customers). The table below shows Minnesota Power's achievements as a percent of 2010–2012 weather-normalized retail sales.

Year	*Energy Savings Achieved (kWh)* [23]	*Total Adjusted Sales (kWh)*	*Savings as % of Retail Sales*
2015	85,701,251	3,013,600,651	2.84%

[23] Minnesota Power had three customers that qualified as newly-exempt effective January 1, 2014, Docket No. E015/CIP-13-852. Minnesota Power submitted an informal notification to the Department dated November 26, 2014. Minnesota Power did not request to modify its originally approved budgets as a result of newly-exempt customers, but because the spending limitation for Renewable Energy and Research & Development changed, Minnesota Power requested reallocating dollars originally budgeted to these programs to the Energy Analysis Program. This did not impact overall benefit/cost analysis as it was transferring dollars from indirect program to indirect program.

2015 Low-Income Spending Requirement

Minn. Stat. § 216B.241, subd. 7, requires utilities to spend 0.2% of residential electric Gross Operating Revenue (GOR) on low-income electric programs, unless otherwise approved by the Commissioner. In its 2013 Decision,[24] the Department of Commerce approved Staff's proposal to use a three-year average for electric revenues under the low income requirement on a prospective basis, beginning in 2015 for investor-owned utilities. This was referred to as the "New Method" and is reflected in the table below.

Minimum Spending Requirement using Three-year Average	*Approved Spending*	*Actual Spending*	*Variance of Actual to Minimum Spending Requirement using Three-year Average*
$198,816	$394,709	$342,968	$144,152

2015 Research & Development 10% Maximum Spending

Minnesota Power complied with Minn. Stat. § 216B.241, subd. 2(c), which limits spending for Research & Development to 10% of the minimum spending requirement.

Annual Spending Cap	*Approved Spending*	*Actual Spending*	*Variance of Actual to Cap*
$349,800	$349,800	$347,001	($2,799)

[24] In the Matter of Minnesota Power's 2013 Conservation Improvement Program Status Report, Docket No. E015/CIP-10-526.03, January 9, 2015.

2015 Renewables Spending 10% Maximum Spending

Minn. Stat. § 216B.2411, subd. 1(a) allows utilities to spend up to 5% of the utility's minimum spending requirement on distributed generation projects. Minn. Stat. § 216B.2411, subd. 1(b), allows utilities to request authority to exceed the 5% limit, up to a 10% cap, to meet customer demand for installation of qualifying solar energy projects. Beginning in 2014, "each electric public utility subject to section Minn. Stat. § 216B.241 must annually pay to the commissioner of commerce five percent of the minimum amount it is required to spend on energy conservation improvements under § 216B.241, subdivision 1. A public utility subject to this paragraph must be credited energy-savings for the purpose of satisfying its energy savings requirement under § 216B.241, subdivision 1c, based on its payment to the commissioner."[25]

Annual Spending Cap	***Approved Spending***	***Actual Spending***	***Variance of Actual to Cap***
$349,800	$349,800	$125,771 (Customer Renewable Energy Program)	($49,122)
		$174,906 (Made in Minnesota) *(1)*	

(1) Credited kWh energy savings for Made in Minnesota payments as provided for under Minn. Stat. § 216C.412, subd. 2 and calculated by the Department of Commerce. They are 81,881 kWh at the meter and not inclusive of demand savings.

Lighting Use and Recycling Programs

Minn. Stat. § 216B.241 requires utilities to invest in projects that encourage the use of energy-efficient lighting and reclamation or recycling of spent fluorescent and high intensity discharge lamps. Public utilities with 200,000 or fewer customers may establish a collection system as part of conservation improvement activities. Minnesota Power promotes energy-efficient lighting measures to all customer classes. Minnesota Power also facilitates proper management of spent lamps by partnering with hardware stores in its service area to provide free CFL recycling and discounted fluorescent tube and lamp recycling.

[25] Minn. Stat. § 216C.412, subd. 2

TRIENNIAL DECISION REQUIREMENTS

Minnesota Power has complied with the 2014–2016 Triennial Decision requirements as summarized below.

Budget Flexibility

New in 2010, Minnesota Power is required to submit a letter to request permission to exceed a program's approved budget by more than 25% at the segment level. The table below shows the approved budgets for 2015, actual spending, and the percentage of approved budgets, as modified where applicable.

Program	***Approved Budget***	***Actual Spending***	***Percentage of Approved Budget***
Segment: Low Income			
Energy Partners Low-Income	$394,709	$342,968	87%
Segment: Residential			
Power of One® Home	$1,245,946	$1,103,826	89%
Segment: Commercial/Industrial			
Power of One® Business	$2,820,194	$2,575,437	91%
Segment: General Indirect			
Customer Engagement	$806,205	$618,889	77%
Energy Analysis	$593,549 *(modified)*	$632,455	107%
Customer Renewable Energy	$349,800 *(modified)*	$300,678	86%
Research & Development	$349,800 *(modified)*	$347,001	99%
Evaluation & Planning	$410,216	$463,940	113%
Segment TOTAL:	**$2,509,570**	**$2,362,963**	**94%**
Segment: Regulatory Charges			
Regulatory Charges	$175,000	$169,357	97%

2014–2016 CIP Triennial Approval Provisions

The Deputy Commissioner approved Minnesota Power's 2014–2016 Triennial CIP[26] with the following specific determinations:

1. MP's proposed CIP plan for 2014–2016 is in compliance with the following statutory requirements:
   a. annual savings goals of at least 1.5 percent of gross annual retail energy sales(§216B.241, subd. 1c), equal to 46,067,700 kWh;
   b. annual minimum spending requirement of 1.5 percent of annual gross operating revenues (§216B.241, subd. 1a), equal to $3,575,353;
   c. annual minimum low-income spending requirement of 0.2 percent of residential gross operating revenues (§216B.241, subd. 7), equal to $191,588;
   d. an annual cap on research and development spending of ten percent of MP's annual minimum spending requirement (§216B.241, subd. 2(c)), equal to $357,353;
   e. an annual cap on distributed and renewable generation spending on qualified solar energy projects of ten percent of MP's annual minimum spending requirement (§216B.2411, subd. 1), equal to $357,353;
   f. a requirement to promote energy efficient lighting and proper management of spent lamps (§216B.241, subd. 5 (a));
   g. a provision requiring inclusion of programs that facilitate ENERGY STAR labeling, LEED certification, or Green Globes certification of buildings (§216B.241, subd. 1f(c)); and
   h. a provision requiring utilities to develop CIP projects to support attainment of SB2030 standards (§216B.241, subd. 9(e)).

2. MP has complied with all relevant decisions by the Deputy Commissioner and Director of the Office of Energy Security in MP's previous triennial CIP plan (Docket No. E015/CIP-10-526, et al).

3. The Deputy Commissioner has authority to order additional CIP spending by MP so long as the additional spending passes the Utility Cost Test.

4. MP's proposed program designs and policies are generally reasonable.

5. MP is required to track and report participation by customer class (commercial, industrial, and farm) in the Power of One® Business program in its annual consolidated filings.

   Response:
   In compliance, Minnesota Power included a project overview by customer class in the Power of One® Business section of the 2014 and 2015 Consolidated filings.

6. The Deputy Commissioner approves the following budgets and goals for MP's 2014–2016 CIP. *(Listed at the beginning of this section in table format.)*

[26] Docket No. E015/CIP-13-409

7. Although MP's budgets and goals are approved at the segment level, the Company must continue to report spending and achievements by program in its annual consolidated filings.

8. MP is granted flexibility to exceed its annual budget, savings, and participation goals for the Residential, Low Income, and Commercial/Industrial segments so long as the additional spending does not result in the segment becoming non-cost effective from the Societal perspective. MP is also granted flexibility to exceed the approved Regulatory Charges budget.

9. MP is required to file a letter with the Department requesting authorization to exceed the approved Residential, Low Income, and Commercial/Industrial segment budgets by 25 percent or more. The letter should provide an explanation for the increase, an indication of the total magnitude of the additional spending, and the expected impact on energy savings, demand savings, and program cost-effectiveness as a result of the additional spending.

   Response:
   Minnesota Power did not exceed the approved budget by 25% or more for any of these programs in 2015.

10. MP is required to file a formal CIP modification request, pursuant to Minnesota Rules part 7690.1400, in the following instances:
    a. proposing a new program;
    b. discontinuing an existing program;
    c. reducing the minimum qualifying efficiency level of a conservation measure or technology; and
    d. decreasing segment budgets, savings, or participation goals.

11. MP is required to submit modification updates annually in its status reports to keep the Department and all other interested parties informed of any modifications to its CIP, including those modifications not requiring specific approval.

    Response:
    Minnesota Power did not submit any program modifications in 2015.

12. MP is required to submit a compliance filing up to 45 days after the new energy codes are adopted analyzing the impact of the new codes on its approved energy savings methodologies. The analysis must identify any changes needed to the baseline assumptions, incremental costs, or other parameters in its approved energy savings methodologies as a result of the code changes.

    Response:
    In compliance, Minnesota Power submitted its filing on December 28, 2015, Docket No. E015/CIP-13-409, reporting impacts to its Triple E New Construction and One Business programs.

OTHER REGULATORY REQUIREMENTS

Measurement and Verification Processes

On July 23, 2008, the Department of Commerce Director approved the Measurement and Verification (M&V) Protocols for Large Custom CIP Projects, Version 1.0. Minnesota Power participated in the M&V workgroup that collaborated with the Department on the development of this protocol. In anticipation of and in addition to the above-referenced evaluation methodologies, Minnesota Power implemented increased measurement and verification processes in 2007, throughout 2008, and into 2009, to provide further assurance of energy and demand savings. In 2009, 58 M&V projects (measures), one of which exceeded the 1,000,000 kWh threshold, were completed. A total of 10.5% of all 2009 projects involved M&V and covered a variety of technologies/uses ranging in size in terms of kWh savings.

Based on the confidence and experience gained in 2009, Minnesota Power shifted its M&V efforts in 2010 to be more in line with the prescribed parameter set forth by the Department, that being custom CIP projects with estimated annual savings greater than 1,000,000 kilowatt-hours (kWh). Minnesota Power continued to learn from and develop this area of expertise by utilizing new techniques, equipment, strategies, and select projects/technologies below the 1,000,000 kWh threshold. This includes the monitoring of equipment and processes in order to verify effective implementations as well as impacts of behavioral/process improvements.

Minnesota Power continues to expand upon its M&V experience as part of a good faith effort to refine and identify effective M&V methods and gain a better sense for the energy-saving potential, operational effectiveness and persistency, and as a customer confidence tool to encourage efficient, practical, and effective use of electricity. Minnesota Power continues to find the process valuable and appropriate, so long as it continues to carefully balance the value of the information gained with the disruption to customer operations and increased costs. Minnesota Power has worked with the Department over the last several years to refine the M&V reporting process and ensure the Department has information it needs to conduct a proper review. The M&V results to date have generally confirmed initial savings estimates are accurate and even conservative. This is consistent with the findings of the Office of the Legislative Auditor in its January 2005 Evaluation Report, Report No. 05-04, where reviewers indicated “the utilities’ energy-savings estimates were generally reasonable.” In 2015, five projects involved the M&V process.

Electric Utility Infrastructure Projects and Utility Owned Building Improvements

In 2010, the Department sponsored and participated in the Minnesota Environmental Initiative's 1.5% Energy Efficiency Solutions Project. The workgroup for this project was charged with identifying barriers to achieving the 1.5% statewide energy-efficiency goal, and to identify areas where consensus or majority recommendations could be developed. During the project workgroup sessions, questions were raised regarding whether utilities could only invest in energy efficiency through the Electric Utility Infrastructure Cost (EUIC) provision or if utilities could also participate in CIP through the programs they offered to customers (i.e., participate in their own program offerings). In keeping with that goal, the Department created an addendum that provided an explanation of their viewpoint on the electric utility infrastructure (EUI) definition, attribution and to address statutory questions that arose during the course of the project. This addendum is included in the Final Report which was issued in March of 2011.

The Final Report specifically states that:

"… relying instead on the fact that these projects would meet the definition of an energy conservation improvement because they increase energy efficiency and are not an EUI project that has been approved by the Commission. The OES would consider these projects as counting towards the 1% bucket, eligible for both cost recovery and a financial incentive. This is based both on historical practices, and the fact that utilities can participate in their own customer offerings. However, a utility would not be able to seek cost recovery under both the EUI Cost Recovery Rider and under the utility's conservation improvement program." And that "energy efficiency improvements to a utility's buildings count as part of the utility's regular CIP and count toward the first 1% portion of the energy-savings goal."

In Xcel Energy's Natural Gas CIP Docket[27], a conflicting position was expressed by the Department regarding the inclusion of these projects within CIP, leaving uncertainty about how utilities should proceed with CIP planning and investment pertaining to their own facilities. On January 4, 2013, the Department filed comments recommending that the Commission adopt ratemaking standards for recovering the costs of energy-efficiency improvements to utility facilities. On July 16, 2013, the Commission issued an Order finding that utilities may participate in CIP projects at the own facilities.[28] Further details regarding Minnesota Power's compliance with this Order can be found in the section titled "2015 Compliance with Department and MPUC Decisions and Orders," which is immediately following this section.

Under Minn. Stat. § 216B.1636 there is an EUIC provision with a separate filing process. Minnesota Power has not pursued this option to date.

[27] Docket No. G002/M-11-279

[28] In the Matter of the Minnesota Department of Commerce's Request that the Commission Adopt Ratemaking Standards for Utility-Owned CIP Projects. Docket No. E,G-999/DI-12-1342, July 16, 2013.

2015 COMPLIANCE WITH DEPARTMENT AND MPUC DECISIONS AND ORDERS

A. In its September 16, 2015, ORDER Approving Tracker Account and Financial Incentive, Setting Rider Adjustment, and Reducing Carrying Charges for Minnesota Power's 2014 Consolidated Filing, Docket No. E015/M-15-80, the MPUC issued the following Order points:

4. Minnesota Power shall calculate the carrying charge on its CIP tracker account using the rate from its multi-year credit facility. The modification shall be effective as of the date of this order.
5. Within 10 days of the date of this Order, Minnesota Power shall calculate and file in a compliance filing a CPA rate that uses a fiscal year approach, and recognizes that it has been generating revenue since July 1, 2015, at the higher rate of $0.003425.
6. This order shall become effective immediately.

Response:

4. Effective as of the date of this Order, Minnesota Power modified the CIP tracker account to calculate the carrying charge using the rate from its multi-year credit facility.
5. On September 25, 2015, Minnesota Power submitted a compliance filing in this matter, providing calculation of a new CPA rate of $0.000442, using a fiscal year approach and recognizing that it has been generating revenue since July 1, 2015, at a higher rate of $0.003425.[29]

B. In its July 16, 2013, ORDER in the Matter of the Minnesota Department of Commerce's Request that the Commission Adopt Ratemaking Standards for Utility-Owned CIP Projects, Docket No. E, G-999/DI-12-1342, the MPUC issued the following Order points:

1. The Commission hereby finds that utilities may participate in CIP projects at their own facilities and that the associated customer and/or vendor incentives, program delivery, evaluation, marketing, and administrative costs may be recovered through the CIP ratemaking process if the costs are approved by the Department as part of CIP and provided a utility demonstrates that its participation in CIP does not result in double recovery of ratepayer funds. This finding does not extend to electric utility infrastructure projects governed by Minnesota Statutes section 216B.1636.
2. The Commission further finds that energy savings and net benefits resulting from utility participation in CIP projects at their own facilities shall not count toward the determination of the utility's DSM financial incentive.
3. The Commission requests that the Department work with the utilities to address issues raised by its recommissioning-study proposal, such as
   a. what type of analysis (e.g., recommissioning, energy audits) should be used for different types of energy facilities;
   b. under what conditions a utility will be required to contract with a third-party energy auditor or recommissioning firm to perform the recommissioning studies and audits;

[29] Compliance Filing, Minnesota Power's 2014 Consolidated Filing, Order Approving Tracker Account and Financial Incentive, Setting Rider Adjustment and Reducing Carrying Charges, September 25, 2015, Docket No. E015/M-15-80.

c. the definition of a "facility" and other terms that need clarification;
d. how a utility will demonstrate that it has already gone through a systemic process to identify energy efficiency improvements at its facilities; and
e. the benchmarking analysis that the utility must provide.

The Department shall file a compliance report in this docket by April 15, 2014.

4. By June 15, 2014, each electric and natural gas investor-owned utility subject to CIP shall submit to the Department for its review and analysis a scoping plan for recommissioning studies or audits that may be appropriate. The scoping plan must include at least the following:
   a. a list of the facilities to be studied in Minnesota;
   b. the proposed type of analysis for each facility (e.g., an energy audit or recommissioning study);
   c. the proposed party to conduct the analysis (i.e., utility staff or third party);
   d. for the studies or audits that would be appropriate, a proposed schedule for completing the studies and audits, taking into account the identification of a utility's least efficient facilities, and the time and cost of the studies and audits.
5. This Order shall become effective immediately.

Response:

The Department conducted a meeting and a conference call with the impacted utilities to discuss issues that were raised in the Commission's Order. Minnesota Power participated in this process. On April 15, 2014, the Department filed a compliance report through eDockets and amended that report on April 23, 2014. Minnesota Power worked with the Department on the above-referenced process and submitted a scoping plan for its facilities in June 2014. On August 5, 2014, the Department issued a letter indicating it had received scoping plans and determined that they met all requirements outlined in its compliance report. In this letter, the Department approved the scoping plans and indicated intent to work with utilities and interested parties on additional processes. In accordance with Order Points 1 and 2 of the Commission's Order, Minnesota Power did have two projects at its facilities in 2014. These projects were separately tracked. The energy savings and net benefits resulting from participation in CIP projects at Minnesota Power's own facilities have not been counted toward the determination of the DSM financial incentive. This is noted accordingly in calculations and benefit/cost analysis.

B. In its January 12, 2012, ORDER in the Matter of a Request by Minnesota Power for Approval of its 2010 CIP Tracker Account, DSM Financial Incentive, and CIP Adjustment, Docket No. E-015/M-11-241 the MPUC issued the following Order point regarding behavioral savings:

4. Minnesota Power shall work with the Department to implement a new method for counting the energy savings from behavioral programs that reflects the concerns raised by the Department in this docket. These changes should be applied to the calculation of the Company's 2012 DSM financial incentive. The Commission asks the Department to report back to the Commission on the approach to be taken in the determination of Minnesota Power's 2012 DSM financial incentive.

Response:
Minnesota Power actively participated in this dialogue through eDockets via Docket Nos. E,G999/CI-08-133 and E015/CIP-10-526. The Department issued a Proposed Decision on February 1, 2012 followed by Supplemental Comments on February 27, 2012, and an Errata to Supplemental Comments on March 8, 2012. On October 17, 2012, the MPUC issued an Order stating that "beginning with the 2013 incentive, all utilities with approved DSM financial incentives shall use the Average Savings Method (ASM) for measuring energy savings from CIP behavioral programs in the calculation of their DSM financial incentive." On January 30, 2015, the Department issued a letter proposing to solicit proposals regarding the ASM beginning June 1, 2015 and to defer any changes to the ASM for investor-owned utilities to no sooner than 2017. The Department also cited research that is under way with an independent consultant regarding a behavioral programs study and workshop series with plans for stakeholder forums. The first workshop is anticipated to occur in May 2015. Minnesota Power does not currently offer any behavioral savings programs and fully intends to participate in the upcoming Department workshops and forums.

C. In its August 13, 2010, Comments in the Matter of Minnesota Power's 2009 CIP Consolidated Filing (Docket No. E015/M-10-266), the Department provided guidelines regarding employee expenses in the categories of travel, meals, entertainment, and employee awards. Minnesota Power provides the following summary in response to those guidelines.

Response:
Minnesota Power summarizes the 2015 expenses that fall within the categories outlined by the Department as follows:

Category	***2015 Amount***	***Description***
Meals	$14,291	This includes meals for refreshments at CIP-related meetings, working lunches and dinners, and meals while traveling for training, conferences, offsite meetings with regulators and/or workgroups, and customer site visits. These are an essential part of promoting and delivering CIP.
Travel	$27,697	This includes travel expenses such as mileage, rental vehicles, taxi services, and air travel for offsite meetings, customer site visits, and travel to training/conferences. These are directly related to CIP program design and delivery.
Employee Awards	$11,549	This includes awards tied to the successful delivery of conservation program energy-savings goals and outreach objectives.
TOTAL	$53,536	This represents 0.8% of the total annual CIP expenditures, with over 78% of employees expenses related to meals and travel as part of promoting and delivering CIP.

Minnesota Power's total employee expenses exceeded the Department's recommended guideline of 0.5% of total CIP expenditures. Minnesota Power believes its CIP expenses are still within reason and represent a small proportionate share of overall spending. In addition to an expansive service territory of 26,000 square miles in northeastern Minnesota, other factors affecting the expenses include frequent travel to stakeholder meetings, Commission hearings, and regulatory consultation, all of which typically occur in the Minneapolis/St. Paul area. In addition, Minnesota Power employees routinely travel to customer sites and as part of the development and promotion of CIP. Minnesota Power respectfully requests that the Department consider these circumstances when reviewing its employee expenses. All CIP-related activities have designated accounts to ensure that these charges are distinct and appropriately included within the CIP tracker. The Company is currently recovering CIP expenditures through a combination of base rates and the Conservation Program Adjustment (CPA). The Commission approved a deferred debit accounting mechanism and established a Conservation Cost Tracker Account (Tracker Account) in the Company's 1987 general rate case (Docket No. E-015/GR-87-223). Conservation expenditures and costs recovered through rates are entered into the Tracker Account. The Company plans to continue utilizing the CIP Tracker Account and CPA mechanism to correct for over- and under-collections on an ongoing basis. Pursuant to the Commission's decision in Docket E-015/GR-94-001, no prior tracker balances are included in the test year for recovery in base rates.

Successes

2015 Success Stories

"Even though we are adding more square footage to installations across the state, total energy consumption was reduced last year for the first time in 15 years."

Colonel Larry Herke
Construction and Facilities Management Officer
Minnesota Army National Guard

BOC Training

Helps Duluth Public Schools Make the Grade

David Spooner sees the value of Building Operator Certification (BOC) training every day. Spooner is supervisor of maintenance and construction for Duluth Public Schools–ISD 709. In spring 2014, he enrolled six building operators in BOC Level 1 training sponsored by Minnesota Power's Power of One® Business conservation improvement program (CIP). That decision had immediate benefits and continues to pay off in greater comfort, improved energy efficiency and lower operating costs for the district.

New Energy-Efficient Schools Require Knowledge of Building Science

Building Operator Certification (BOC) is a program of the Midwest Energy Efficiency Alliance. This competency-based training and certification program educates facilities personnel about the complexities of critical building systems—heating, ventilation and air conditioning (HVAC), electric, lighting, etc.—and how they interact to achieve their most efficient levels of operation. ISD 709 officials were interested in BOC training after completing a multi-year, comprehensive program of new school construction and facility upgrades that impacted all 13 of the district's educational sites.

The $314 million Duluth Long Range Facilities Plan constructed four new schools and renovated nine existing schools to meet 21st-century educational standards. It also incorporated complex building technologies and cutting-edge energy-efficiency measures into facilities. These include computerized energy management systems, energy-efficient lighting and lighting controls, energy recovery units, NEMA premium motors, variable frequency drives, high performance HVAC systems and more. Combined, these choices qualified for hundreds of thousands of dollars in conservation rebates from Minnesota Power and have helped the school district save more than 10 million kWh in electricity to date.

Operating all of this new equipment and systems for maximum performance and efficiency requires an understanding of building science. That led to the BOC training for ISD 709 facility and maintenance personnel.

"BOC training is an effective and cost-wise way to ensure that our personnel understand the new building technologies and operate equipment and systems properly for occupant comfort as well as energy conservation," Spooner said. "With Minnesota Power's participation, we can provide this excellent training at a low cost to the district."

BOC Training Brings Immediate and Long-Term Energy Savings

One of Minnesota Power's requirements for BOC tuition reimbursement is that participants apply the training to identify and implement actual energy-saving facility improvements that qualify for the utility's Power of One Business rebates. In ISD 709, this resulted in new LED pool lighting at Ordean East Middle School and reduced runtime for 37 air handling units and 50 exterior building lights over multiple locations.

"Hands-on experience is required," said Craig Kedrowski, energy efficiency analyst–lead, Minnesota Power. "We believe benefits are gained by translating knowledge into action."

Those benefits multiply over time. According to Spooner, the BOC training has changed mindsets and impacted how participants approach their work.

"The BOC training has provided our employees with good knowledge and perspectives on how to use the new technology," Spooner said. "They think about how to operate equipment and controls in ways that manage energy more effectively. They understand that simple actions, such as scheduling start and stop times for equipment or programming temperatures just a little differently, can impact energy use."

District Officials Recommend BOC Training

District officials hope the BOC training and benchmarking will help keep equipment and building systems performing optimally over time.

"Our goal with BOC was to provide help and training to our employees," said Spooner, adding that it empowers employees and positions them for future advancement. "The more knowledge and awareness they have, the more conservation efforts can be accomplished."

In 2015, Minnesota Power sponsored another session of BOC Level I training, this one at Camp Ripley near Brainerd. Building operators and facilities personnel from across the region were invited to attend. As someone who has seen the impact, Spooner highly recommends the BOC training.

"The BOC curriculum is very impressive, and our employees who attended all felt it was valuable," Spooner said. "That doesn't always happen with training. This is a good program, and we are grateful that Minnesota Power makes it available and affordable."

"With Minnesota Power's participation, we can provide this excellent training at a low cost to the district."

David Spooner
Supervisor of Maintenance and Construction, Duluth Public Schools–ISD 709

Minnesota Power's Long-Term Relationship with ISD 709 Continues

Like many of Minnesota Power's large, multi-facility customers, ISD 709 has formed an Energy Team to keep energy efficiency at the forefront of project decisions. CIP representatives meet quarterly with Spooner and Kerry Leider, the district's property and risk manager.

"Minnesota Power is a great resource for knowledge and expertise in energy efficiency," Spooner said, noting that the district has a 10-year plan that includes many energy conservation projects, including a transition to LED as the standard for lighting. "We keep Minnesota Power apprised of what we are planning and what we hope to accomplish. They let us know how they can help in project design, rebates or recommissioning support."

Now that many of the projects completed through the Long Range Facilities Plan have been operating several years, the district is planning to recommission them.

"Sometimes changes or adjustments are made over time that impact how equipment performs or systems interrelate," said Matt Haley, Energy Insight, Inc., a Minnesota Power CIP consultant. "Recommissioning is a very detailed, systematic way to identify and correct those issues so buildings operate as designed."

Meanwhile, regular maintenance and upgrades continue throughout the district. In 2015, LED lights were installed in the district's bus barn as well as in the pool area and gymnasium at Ordean East Middle School. Minnesota Power CIP consultants provided lighting design for these projects, analyzed energy savings and payback, and helped the district secure rebates. They also recommended that the district maintain Minnesota B3 Benchmarking as a way to track, monitor and compare how well buildings perform in terms of energy efficiency.

TRIPLE E BUILDS ON 25 YEARS OF SUCCESS

There is one question general contractor Kevin Middleton always asks people who want him to bid on a home construction project: "How long do you plan to live in the house?" The answer lets him know if they might be a good fit for the high performance, energy-efficient homes that his company specializes in constructing.

"As a contractor, I steer people toward energy efficiency," said Middleton, manager of P&M Quality Builders (P&M). "A lot of people just want a new house and don't think about how it is built. We build to the best of our ability so they save energy and money in the long run."

"Triple E is really about building quality over quantity."

Kevin Middleton
P&M Quality Builders

That commitment to quality home construction has helped P&M earn a place on Minnesota Power's list of Triple E Builders—building professionals who construct energy-efficient homes to the rigorous prescriptive and performance standards of the utility's Triple E New Home Construction program. Triple E stands for Energy Efficiency, Education and Evaluation—a formula that has raised the bar for homebuilding professionals in the Upper Midwest over the past 25 years.

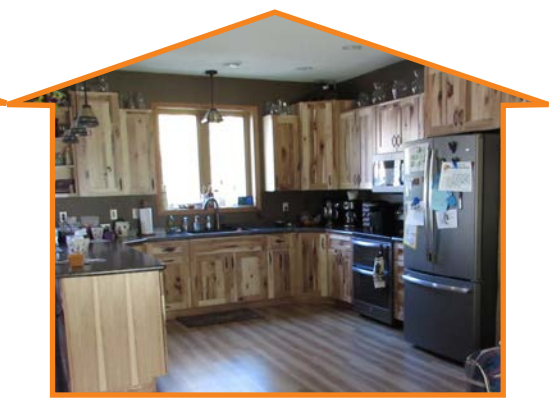
Minnesota Power launched Triple E in 1990 to improve the insulation and airtightness of homes being built in the cold-climate region and help customers conserve electricity and lower their heating bills. The program works in partnership with homeowners, builders, architects, suppliers and manufacturers to ensure that people building new homes have up-to-date information and resources to achieve their energy-efficiency goals.

At its heart is a set of stringent guidelines for thermal integrity, airtight construction, moisture control, ventilation, space and water heating, appliances and lighting that exceed conventional building codes and practices. A three-phase inspection process and final performance-based evaluation ensure the standards are met. Over the years, rebates were added to incentivize participation. Since 1990, nearly 1,000 homes have received Triple E designation.

Triple E homes average a 25% reduction in space heating costs compared to conventional new homes. That is because the program's rigorous standards continually evolve to stay ahead of industry norms. For example, program changes have been made in response to the new 2015 Minnesota Energy Code. Starting in 2016, Triple E no longer offers two tiers of standards. Achieving the higher level (Tier 2) is now the minimum requirement for Triple E designation. Program officials dropped Tier 1 from the program because state residential building codes had risen too close to that level.

"Triple E changes as energy codes and industry standards change," said Chad Trebilcock, energy efficiency analyst-residential and member of Minnesota Power's Power of One® conservation improvement program (CIP), noting that the recent changes have tightened both prescriptive and performance measures. "We keep upping the game and pushing Triple E forward to move the industry along."

Minnesota Power posts current Triple E standards and the Triple E New Construction Guide on its website. There also is a tool called The Pyramid of Conservation–New Construction Version, developed by Minnesota Power as a "roadmap to achieve Triple E New Construction designation." Participating contractors, such as Kevin Middleton of P&M, work with the utility and its program consultants to guide homeowners through the process.



Jill and Tim Helmer recently moved into their new 3,600-square-foot Triple E home in rural Duluth. They chose P&M as the builder in part because Middleton promoted Triple E New Construction and its lasting advantages. The Helmers both work at Minnesota Power and wanted to "walk the talk" of energy efficiency with their new home.

"We got three or four bids, and Kevin was the only one who brought up Triple E or even asked us how long we planned to live in the house," said Jill Helmer. "He really stressed the long-term value of energy-efficient construction."

That value takes many forms, from greater comfort and energy performance to improved air quality, durability, marketability, operating efficiency and cost control. Before the house was designed, Jill Helmer sat down with Trebilcock and Triple E program consultant Doug Manthey.

"We talked about Triple E and how it works," said Trebilcock, "The Helmers wanted to use Kevin (Middleton) as the builder, which was good, because he is familiar with the Triple E program from other projects."

Middleton also attends the Energy Design Conference (EDC) in Duluth, an annual event hosted by Minnesota Power to help construction professionals learn about the latest innovations in green building and network with peers who are passionate about sustainable design and construction. The EDC was launched in 1991 as an educational component of Triple E and has grown to attract over 700 attendees, presenters and vendors each year.

"Kevin knew which subcontractors to use in order to meet specific requirements—ones who were knowledgeable about the Triple E program," Jill Helmer said. "It saved us time because we didn't have to be out asking hundreds of questions."

Triple E program consultant Doug Manthey was involved through the design and construction process. He reviewed plans, inspected the work and conducted final blower door testing. The Helmers' home earned the prestigious Triple E Tier II designation and qualified for maximum rebates ($2,100) from Minnesota Power.

Its key energy-saving features included:

- Blown Cellulose Insulation: Attic (R-60), Walls (R-27), Rim Joist (R-25)
- Foam Insulation: 4" Under Slab (R-20)
- Windows: Triple Pane (U-Value .19), South Facing (40%)
- Lighting: Mixed Energy Efficient, Including LED
- Appliances: ENERGY STAR®
- Water Heater: Marathon Electric (high efficiency)
- Blower Door Test: One Air Exchange Per Hour

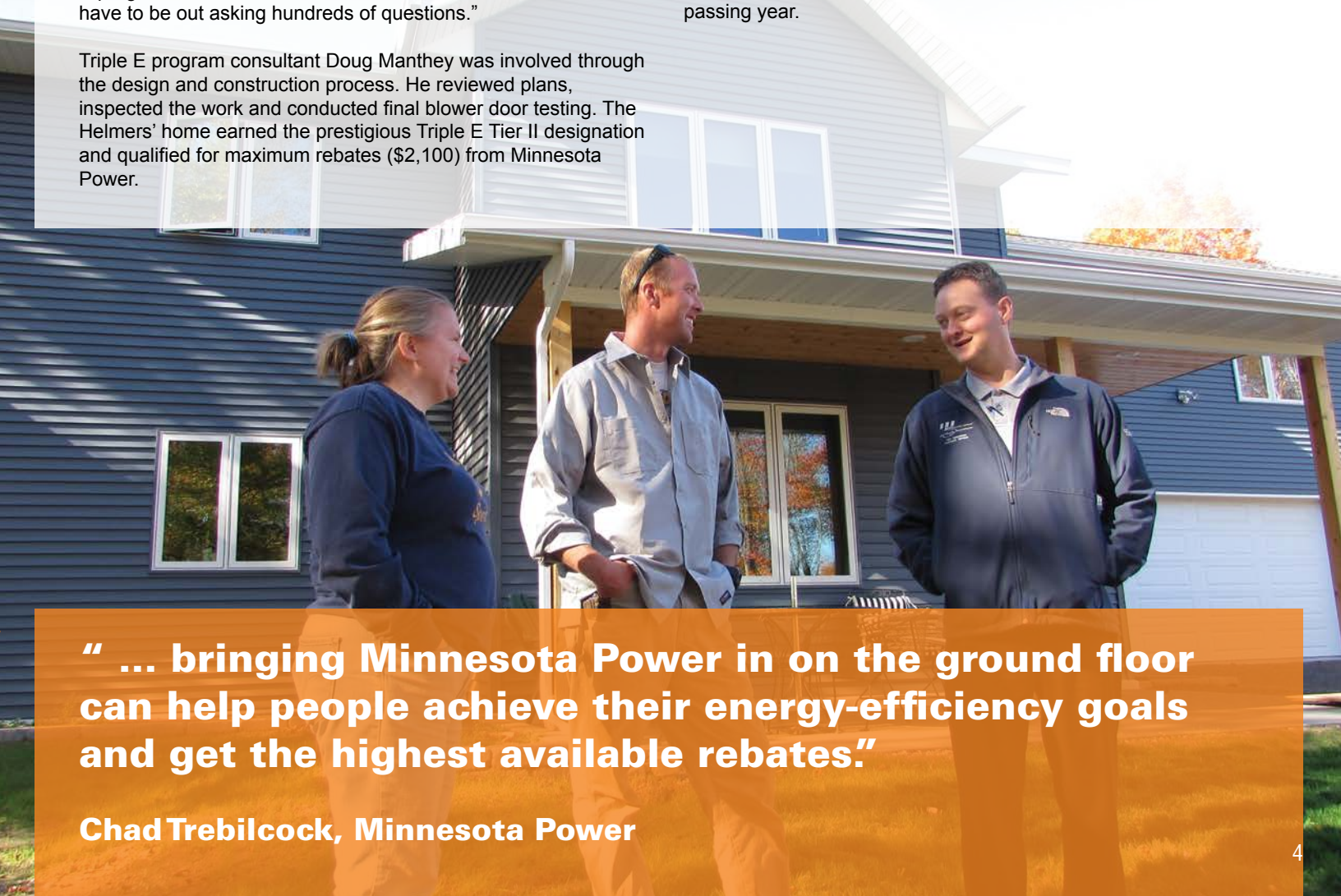
"This house was a good example of how bringing Minnesota Power in on the ground floor can help people achieve their energy-efficiency goals and get the highest available rebates," Trebilcock said. "Homeowners don't always know where to turn. The Triple E program and participating contractors offer a valuable service."

They help homeowners understand the value of investing up front on insulation and high performance systems to enjoy lower home operating costs for years to come.

"I really enjoy working with customers like the Helmers," Trebilcock continued. "They were engaged and demonstrated their commitment to building the right way and achieving optimal home energy performance."

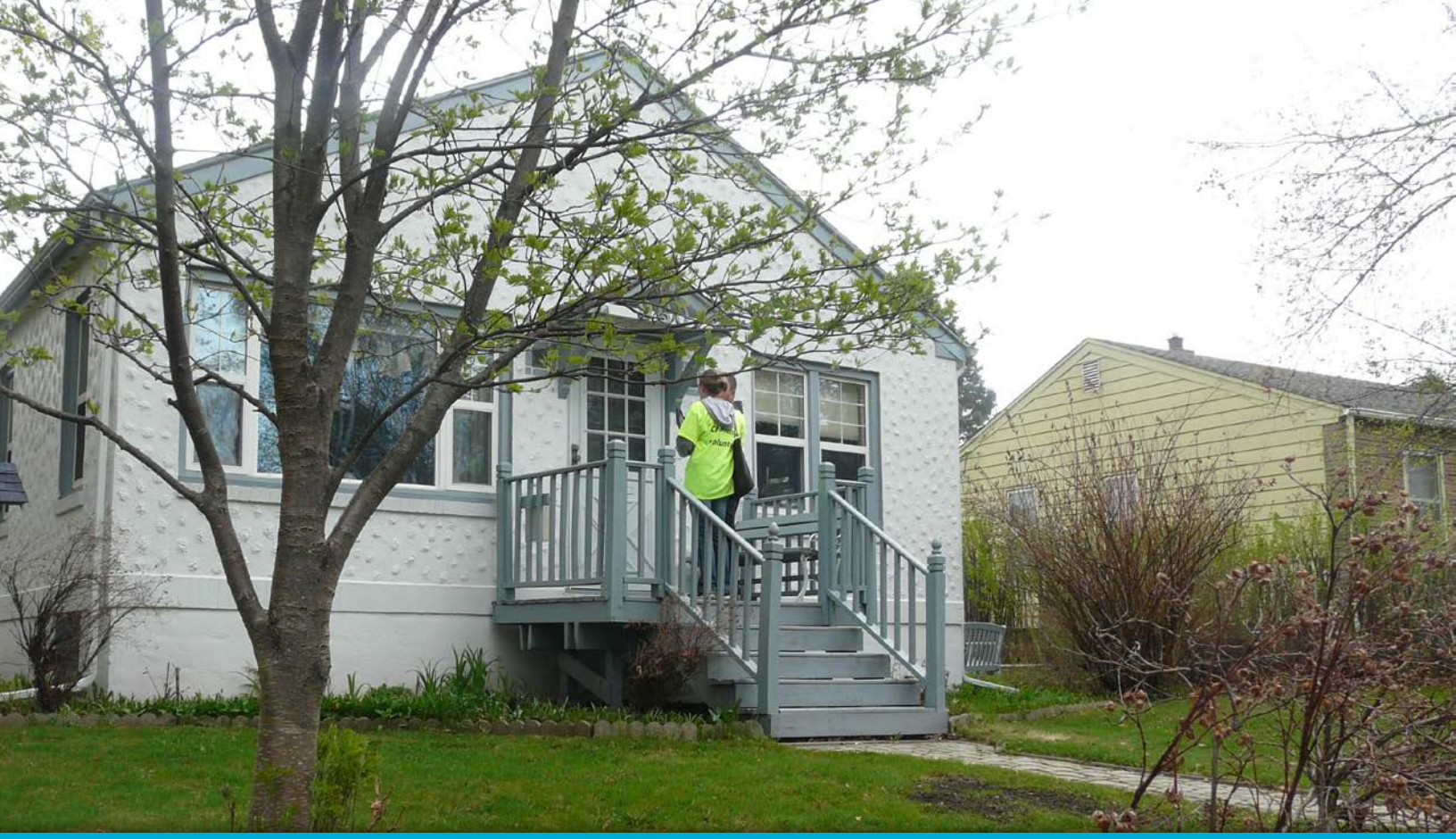
"Triple E is really about building quality over quantity," Middleton said. "(Working with the program) also helps build our reputation."

As Triple E heads into its second quarter century, the program's own reputation as a valued resource grows stronger with each passing year.



" ... bringing Minnesota Power in on the ground floor can help people achieve their energy-efficiency goals and get the highest available rebates."

Chad Trebilcock, Minnesota Power



Morgan Park Energy Challenge

"It is a first step toward energy savings and lower costs."

Bill Majewski
Morgan Park Energy Champion

Pilot Effort Could Help Duluth Win $5 Million Georgetown Energy Prize

Minnesota's walleye fishing opener traditionally is spent trying to land a lunker, but volunteers in Duluth's Morgan Park neighborhood devoted Saturday, May 9, 2015, to a different effort—hoping to hook friends and neighbors on energy efficiency.

Dressed in fluorescent green T-shirts emblazoned with "Energy Challenge Volunteer" and armed with clipboards, teams of two went door to door. They chatted with neighborhood residents about energy efficiency, signed up homeowners who were interested in having a combined electric and natural gas Home Energy Analysis (HEA) or Advanced Home Energy Analysis (AHEA) with building diagnostics, and left information packets at homes where no one answered the door.

This day of canvassing kicked off the Morgan Park Energy Challenge, a collaborative effort between Minnesota Power, ComfortSystems (Duluth's natural gas utility), Ecolibrium3 (a nonprofit focused on energy efficiency and sustainability), and the Morgan Park Community Club. It was part of the larger Duluth Energy Challenge, a community-wide effort to win the $5 million Georgetown University Energy Prize. Duluth is one of 50 small- to medium-sized communities nationwide competing for the Georgetown award. It has two years to design and implement innovative, scalable, measurable programs that significantly reduce household and municipal energy consumption across the community.

One program tested in 2015 with great success was a focused neighborhood energy challenge. Minnesota Power and its partners selected Morgan Park as the pilot site. The neighborhood was built by U. S. Steel in the early 1900s, and many of its original concrete block homes still stand. The aging structures have plenty of room for energy improvements. Morgan Park also is a tight knit community where people know and trust each other. A key component of the initiative was identifying local Energy Champions who were passionate about energy efficiency and had credibility in the neighborhood.

"It is all about trust when you are trying to introduce people to an unknown product," said Bret Pence, director of community programs, Ecolibrium3. "If the message comes from a neighbor or a community leader, people tend to listen rather than shut the door. It is a more effective approach."

Bill Majewski was an Energy Champion for the Morgan Park pilot. The longtime neighborhood resident has spent years improving the energy performance of his home by upgrading lighting, heating equipment, insulation, windows and doors. His personal experiences with utility conservation improvement programs have resulted in both electric and natural gas energy savings—lowering his utility bills. That is a message he was eager to share with neighbors.

"It makes sense to try to reduce your cost of energy for heating and lighting," Majewski said, noting this is especially true in low-income neighborhoods like Morgan Park. "Most neighborhood residents would not likely take it upon themselves to make arrangements to have an energy audit performed on their home. This brings it to their doorsteps. It is a first step toward energy savings and lower costs."

On the first day of canvassing, volunteers arrived at the Morgan Park Community Club in the morning for training. They learned to identify different types of residential heating systems and to estimate the size and age of homes. They practiced engaging residents in scripted conversations that included questions from Minnesota Power's Your Home Energy Report survey—the gateway to resources available through the utility's Power of One® Home conservation improvement program. In addition to Energy Champions and Morgan Park Community Club members, canvassers included Minnesota Power staff and others with connections to the neighborhood or the Duluth Energy Challenge.

"I went to Morgan Park Middle School, and now I am working as a conservation program assistant at Minnesota Power," said Alyssa Kresky, one of the canvassers. "I want to help spread the word about energy-saving tools and resources. I think a lot of people don't know what is available."

"I lived in Morgan Park for almost a decade, and my parents still live in the neighborhood," said Matt Turner, another volunteer. "I went to school for environmental science, and I'm passionate about energy conservation. Having spent a good chunk of time in the neighborhood, it feels good to participate."

The entire neighborhood was canvassed over three weekends, including follow-up visits. A total of 102 households completed Minnesota Power's Your Home Energy Report. Eleven (11) completed HEAs and 30 completed AHEAs with building diagnostics. Two energy-inefficient refrigerators were recycled. The Morgan Park Community Club received a contribution from Minnesota Power for each energy-saving action completed. The community club used the earnings for a new stereo system for the community center.

"Morgan Park was a perfect spot for the energy challenge because many of the homes are near 100 years old and can greatly benefit from an energy audit," said resident John Strongitharm, one of the neighborhood's Energy Champions. "I was very pleased with my audit and the suggestions given. By understanding what you can do to make your home more energy efficient, you can plan for improvements and have a quick return on investment."

"The Morgan Park Energy Challenge was a pilot, so we will take what we learn and improve upon it as we go through the city and accomplish the goals of the Georgetown competition," said Tim Gallagher, program manager, Minnesota Power. "Every neighborhood has unique strengths and challenges."

"One of the things happening with the Duluth Energy Challenge is that the community itself is embracing energy efficiency," said Eric Schlacks, gas and energy coordinator, ComfortSystems. "People want to reduce energy to benefit their community now and in the future."

In addition to planning new neighborhood challenges, Minnesota Power's conservation improvement team is encouraging all Duluth residents to "take the challenge" and rethink how they use energy. It is collaborating with local faith congregations, schools, city and county facility managers, and businesses to reduce the community's total energy consumption in meaningful, replicable ways so Duluth can win the $5 million Georgetown University Energy Prize—and persist in energy conservation beyond the contest.

"Even the best efforts will wane unless we build a culture of energy conservation," Gallagher said. "At Minnesota Power, we work to meet people where they are, provide options, and help them make energy efficiency a lifetime choice."

"This is a model of sustainable design and construction. Minnesota Power is proud to have played a role in it."

- Craig Kedrowski
Energy Efficiency Analyst
Minnesota Power

There is a growing trend in the newly renovated St. Louis County Government Services Center in downtown Duluth. People are taking the stairs for quick trips between floors instead of the elevators, saving energy, lowering costs and feeling good about the choice. One small change—putting glass on the stairwell doors—made a dramatic difference.

The glass doors are just a tiny piece of a multi-year, $21-million Government Services Center reconstruction project, completed in 2015. Yet they serve as an analogy for the "integrated design" approach that guided the entire project. Like the more inviting stairwells, integrated design draws many people in on the ground floor, while also improving energy efficiency and heightened comfort every step of the way.

A Window into Integrated Design Process

Tony Mancuso, property management director for St. Louis County, is a passionate advocate for energy efficiency and an avid believer in integrated design. He led the Government Services Center project with an inclusive process that brought contractors, architects, engineers, energy experts, department heads, building occupants and other stakeholders together from start to finish.

"Everyone was involved from the beginning so we didn't forget anything, and we got a design that was buildable, functional and met our sustainability goals," Mancuso said. "It took a year of planning and design."

Minnesota Power's Power of One® Business conservation improvement program (CIP) was among those at the table early and remained a valuable resource through construction and beyond. CIP staff and program consultants helped County officials identify, justify and implement innovative mechanical, electrical and lighting system improvements that are expected to reduce energy costs for the 166,000-square-foot building by up to 60 percent.

"St. Louis County's Government Services Center project exemplifies how remodeling and new construction should be done," said Craig Kedrowski, CIP energy efficiency analyst-lead, Minnesota Power. "They hit it out of the park in terms of energy efficiency and performance."

Building Could Not Meet Current Demands

The seven-story Government Services Center is a hub of activity with around 600 employees and 12,000 to 15,000 county residents stopping by each month to do business. It houses a full range of county service offices, including Public Health and Human Services, Planning and Community Development, Land and Minerals, Environmental Services, County Attorney, Human Resources, Information Technology, Property and Management and Arrowhead Regional Corrections.

Reconstructing the office complex was the largest construction project ever completed by St. Louis County. The makeover took several years and refurbished much of the building's interior, while consolidating County operations from five facilities into one.

The Government Services Center was built in the early 1980s as a joint facility for local programs of County, City, and State agencies. In 2002, St. Louis County reached an agreement to purchase the building for $3.2 million—with a 10-year plan to take over the entire facility. The last State of Minnesota office moved out in 2012, and County officials began planning the reconstruction.

"The structure itself was well designed, but the mechanical and electrical systems were not equipped to handle the advent of computers or the volume of people using the building," Mancuso said. "Indoor air quality was also a major issue."

Shared Goals Shaped Priorities

Project priorities included renovating the building to efficiently meet customer service needs; providing a healthy, productive and efficient work environment for County employees; and creating a new life for the building by updating mechanical and electrical systems for improved performance and energy efficiency. Property management officials, architects and engineers hosted workshops with stakeholders to define the needs of individual departments and establish goals.

County officials had worked with Minnesota Power's CIP team on numerous conservation improvements for over a decade and contacted the utility early in the planning process. Minnesota Power and its CIP consultants conducted an

energy analysis and worked with the project's mechanical and electrical engineers on a comprehensive energy study. They assessed the building's electrical infrastructure and analyzed options for heating, ventilation and air conditioning (HVAC); energy management; lighting and lighting controls; and other areas that could yield savings in electric energy.

HVAC Technology Was New to the Region

One of the options identified for HVAC was variable refrigerant flow (VRF) zoning, an innovative, energy-efficient technology used extensively in other parts of the world, that Minnesota Power was helping to introduce in Northern Minnesota.

VRF systems control indoor climate by capturing heat from areas that are too warm and transferring it to those that are too cold using environmentally friendly refrigerant piped through thin tubes. They are quiet, highly efficient and require minimal ductwork so they are easy to retrofit into existing buildings.

"VRF was not only the most efficient option but also the least expensive, and we were comfortable with it because Minnesota Power had vetted the technology," Mancuso said. "Minnesota Power brought in VRF experts and presented an informational session for local mechanical engineers, contractors and architects. It calmed fears of the unknown and got contractors to sign up and become certified installers."

LED and Other Transformational Changes

Minnesota Power's CIP team also assisted the County with lighting design—testing lights and fixtures from various manufacturers to see what worked best for the occupants.

"We put in all LED lights and lighting controls," Mancuso said. "This was the first government building in Minnesota to be all LED. It has daylight sensing, occupancy sensors and dimmers. All of that was done through the help of Minnesota Power."

To maximize daylighting, offices and cubicles were moved away from the outside walls, and rows were aligned to provide everyone with natural light. Lights by the windows were placed on different photo sensors than interior lights for maximum efficiency.

Another area in which Minnesota Power helped was a transformer study that resulted in the installation of new premium efficiency transformers that ensured each floor's energy requirements were met.

"The core electrical wiring did not have to be replaced or upgraded as the electrical load to all of the areas was significantly reduced," Mancuso said. "Even with all of the new equipment in the building, we are using less electricity."

Powerful Partnership Adds Up

St. Louis County's choices qualified for more than $140,000 in energy conservation rebates from Minnesota Power over two years. They will reduce the facility's energy use by an estimated 50 to 60 percent, even as services within the building continue to grow.

The relationship between St. Louis County and Minnesota Power's CIP program goes back many years and is built on trust.

"We bring Tony (Mancuso) ideas, and he takes them on," said Tanuj Gulati, senior energy analyst, Energy Insight, Inc., a Minnesota Power CIP consultant. "He forwards information from vendors about new products and systems so we can help him make informed choices."

The County has an onsite Energy Team that meets quarterly with Minnesota Power CIP representatives to discuss facility plans and ensure energy efficiency is at the forefront of any planning. County property and maintenance personnel participate in a peer group of large Minnesota Power customers with multiple facilities who share information and insights into energy efficiency and renewable energy.

In addition, Minnesota Power is testing several types of solar arrays on the roof of the Government Services Center through a partnership with St. Louis County and the University of Minnesota Duluth's Natural Resources Research Institute. The renewable energy generated is used to help power the building.

St. Louis County is seeking Leadership in Energy and Environmental Design (LEED) Platinum certification for the Government Services Center project through the U.S. Green Building Council. Meanwhile, Minnesota Power's CIP program is heralding the project and the integrated design process that elevated it from start to finish.

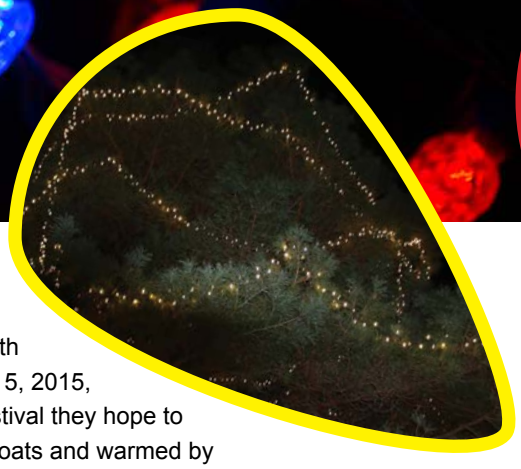
"The flow of the building is so much more efficient and user friendly because every department came together," Kedrowski said. "The County Board had a vision, and Tony delivered on it big time. This is a model of sustainable design and construction. Minnesota Power is proud to have played a role in it."

"Everyone was involved from the beginning so we didn't forget anything, and we got a design that was buildable, functional and met our sustainability goals."

- Tony Mancuso
Property Management Director
St. Louis County

Community Energy Challenge

An EnLIGHTening Experience



Residents of tiny Royalton, Minn., beamed with community pride as they gathered December 5, 2015, for Christmas on the Platte, a new holiday festival they hope to make an annual tradition. Bundled in winter coats and warmed by hot cocoa, families and friends cheered the lighting of Royalton's holiday tree in Memorial Park. Their faces lit up as the towering pine was illuminated with bright, colorful LED (light emitting diode) lights.

The festive tree and LED holiday lights strung up along Royalton's main street reflect Royalton's community-wide commitment to energy efficiency and conservation. The City earned funding to update its holiday lighting display by participating in a Community Energy Challenge. The pilot program, launched by Power of One®, Minnesota Power's conservation improvement program (CIP) in 2015, engages businesses, schools and households in a community-wide effort to reduce energy use and promote conservation.

Royalton is a shining example of how a Community Energy Challenge can work. During a five-month challenge, this Central Minnesota community of just over 1,200 residents successfully cut its energy usage by more than 232,000 kilowatt hours. That is equivalent to avoiding the annual greenhouse gas emissions from over 33 passenger vehicles or the CO_2 emissions of 22 homes' electricity use for one year (Source: EPA Greenhouse Gas Equivalencies Calculator).

Minnesota Power's CIP team hopes the process Royalton followed and results it achieved will pave the way for other communities interested in saving energy and increasing awareness of energy conservation. The process included an energy analysis blitz at local businesses, a Minnesota Power Learn & Earn campaign at Royalton schools, energy-efficient lighting sales, and coordinated public awareness and energy education.

"After being a part of the challenge, students felt a sense of accomplishment and a connection with the community."

Marty Bratsch

Teacher and YES Team Advisor

"Representatives from Minnesota Power came to Royalton and asked if we would be willing to participate in a pilot Community Energy Challenge," said Royalton Mayor Andrea Lauer, who has long promoted energy efficiency in City operations.

"Once I learned it would include both the City and the school, I was totally on board with participating."

Royalton has been a voluntary participant in the Minnesota Pollution Control Agency's GreenStep City program since 2010 and has made great strides toward sustainability under Mayor Lauer's leadership. The mayor's passion for energy conservation and renewable energy made her a perfect Energy Champion to marshal forces within the community and make this new challenge a success.

"I love to spread the word about ways to save energy and at the same time save people money. As mayor, I have a voice that allows me to share that type of message," Lauer said. "The Community Energy Challenge was a natural fit."

"I love to spread the word about ways to save energy and at the same time save people money."

Andrea Lauer, Royalton Mayor

As the Energy Champion, Lauer agreed to visit Royalton businesses and nonprofits with representatives of Minnesota Power's CIP program.

"I wanted to make the introductions and explain why we were participating in the Community Energy Challenge," Lauer said. "I felt it was important and allowed me to open the dialog to discuss the City's efforts to be more sustainable."

During the business visits, consultants installed faucet aerators, energy-efficient light bulbs and devices that cut down on the energy used in small refrigeration units. The blitz resulted in more than 20 energy analyses that will help business owners save energy and money for the long term. This strong business participation resulted in a Minnesota Power contribution of $3,359 to the community. The money was used to purchase LED holiday lights.

"It was an easy process," said Deb Wenner, owner of the 10 Spot Bar and Grill, who was skeptical of the program at first. "The utility came in and helped make changes to refrigeration and installed a programmable thermostat. The thermostat has made a big difference for our business because staff doesn't always remember to turn it down."

Businesses were not the only ones challenged to save energy. Minnesota Power's CIP team brought Learn & Earn to the Royalton School District. Students learned about energy efficiency in their classrooms and encouraged their parents and neighbors to get home energy analyses, purchase energy-efficient lighting products, and install them in their homes.

"Our students are very involved with energy conservation activities tied to both classroom curriculum and extracurricular projects," said Marty Bratsch, high school technology teacher and advisor to the local Youth Energy Summit (YES) team. "They went door to door passing out flyers encouraging our community to participate in the energy audits … we attempted to make contact with all of the households in (Royalton) and made other district residents aware through our school newsletter."

For each home energy audit completed, the schools received $10. Royalton Lumber and Hardware carried LED bulbs and LED holiday lighting and kept track of purchases. The school earned $2 for each LED purchase. It paid off with residents purchasing 166 LED bulbs and Minnesota Power making a $1,080 contribution to the school.

"Our students were already highly aware of energy conservation through their involvement with YES," Bratsch said, noting that the Community Energy Challenge added another dimension. "After being a part of the challenge, students felt a sense of accomplishment and a connection with the community."

A Green Fair at the Royalton High School in mid-May 2015 celebrated the community's accomplishments. While the fair formally ended the pilot project, Minnesota Power CIP team members hope residents will build on what they have done in their homes and businesses.

"It was awesome to see this small community come together to save energy and make a difference," said Amanda Oja, energy efficiency analyst with the CIP team. "Their success is a testament to what folks can do when they work toward a common goal."

The CIP team is reviewing the Royalton experience to see how other cities might tailor Community Energy Challenges to meet the needs of their own residents and businesses.

"We learned CIP's role is to support the effort, but a community has to take ownership in order for a Community Energy Challenge to be successful," Oja said. "This was really Royalton's success."

Months later, cheered by new LED holiday lights, Royalton residents recognize energy efficiency as a gift to the community that just keeps giving.

“It All Adds Up”

as Camp Ripley and Minnesota Power March Toward Energy Effectiveness

Troops of volunteers from Minnesota Power and the Minnesota National Guard (MNNG) fanned out across Camp Ripley Training Center April 22, 2015, to pick up litter, clear trails and spread mulch. The joint mission, held on Earth Day, was just one of several opportunities in 2015 for Minnesota Power employees and Camp Ripley soldiers and staff to deepen a relationship that is helping both the utility and MNNG meet their energy efficiency and renewable energy goals.

Saluting A Powerful Partnership

Minnesota Power has provided electric energy to Camp Ripley, a 53,000-acre regional training facility near Little Falls, Minn., for decades and currently is partnering with MNNG to construct a 10-megawatt, utility-scale solar energy array at the camp in 2016.

Over the past five years (2010–2015), the utility’s Power of One® Business conservation improvement program (CIP) has helped Camp Ripley save more than 5.3 million kWh of electricity by identifying and incentivizing ways to integrate energy-efficient technologies and systems into new and existing facilities. That translates to 3,667 metric tons of carbon dioxide—the equivalent of avoiding the annual greenhouse gas emissions from 772 passenger vehicles or the carbon dioxide emissions from 335 homes’ energy use for one year (Source: EPA Greenhouse Gas Equivalencies Calculator).

"We have a great partnership with Minnesota Power," said Col. Larry Herke, construction and facilities management officer, Minnesota Army National Guard (MNARNG), who is based at Camp Ripley. During the Earth Day event, Col. Herke toured Minnesota Power CIP managers, staff and consultants through the camp's recently expanded Education Center.

Camp Ripley Education Center a Model of Efficiency

The $19.5 million, 58,000-square-foot Education Center addition houses interactive classrooms and lecture halls, guest rooms, community space and a cafeteria. It is a showcase for energy-effective technologies. The new building features 100 percent light emitting diode (LED) lighting with occupancy and photo controls, solar tubes to draw natural light into interior spaces, a high efficiency ground source heat pump system to heat and cool the building, and a sophisticated key-card energy management system in guest rooms. It also incorporates high-efficiency variable frequency drive (VFD) motors into air-handling fans, kitchen ventilation equipment and water circulation pumps.

Minnesota Power estimates these technologies will save more than 878,000 kWh per year and help the military installation avoid nearly $50,000 per year in utility and operations and maintenance costs. They qualified for almost $33,700 in conservation program rebates from Minnesota Power in 2015 and will pay for themselves in less than four years. Along with energy-saving innovations, the Education Center has low-flow water fixtures and faucets, solar thermal water heating, a system to capture and store rainwater for irrigation, and recycling stations to reduce the flow of waste to the landfill.

"The Education Center is a demonstration site for technologies we are trying to work into other buildings statewide," said Col. Herke, whose job includes trying to achieve a U. S. Army goal of Net Zero installations. "Even though we are adding more square footage to installations across the state, total energy consumption was reduced last year for the first time in 15 years. The buildings we are taking down are being replaced with much more efficient facilities."

Dozens of Other Projects Completed in Last Five Years

Camp Ripley is on the front line of this campaign. In addition to the Education Center, dozens of energy conservation and renewable energy projects have been completed at the military and civilian training camp since 2010, many with technical support and incentives from Minnesota Power's CIP team. Installed technologies that have contributed to the 5.3 million kWh of electric savings include energy-efficient lighting with lighting controls, high performance HVAC equipment, VFD motors and controls, geothermal heating and cooling, and solar thermal hot water. Building Operator Certification training, held at Camp Ripley in December 2015, will help ensure that new and updated facilities achieve their energy performance targets.

All of this success helped the MNARNG Sustainability Team, which manages environmental stewardship for Camp Ripley, earn the 2015 Secretary of Defense Sustainability Individual/Team Award. The award recognizes significant progress in implementing sustainable practices on an installation and honors those who demonstrate outstanding achievements and innovative work that protects the environment while sustaining mission readiness.

Planned Solar Installation Will Improve Energy Security

The joint 10-megawatt solar installation being developed by Minnesota Power and MNNG will advance those goals, as well. The project will cover 80 acres and be the largest solar energy installation on military

" … our success is dependent on the relationship we have with our utility provider, Minnesota Power."

Joshua Pennington
eMS and Sustainability Coordinator
Minnesota Army National Guard

“Even though we are adding more square footage to installations across the state, total energy consumption was reduced last year for the first time in 15 years.”

Col. Larry Herke
Construction and Facilities Management Officer
Minnesota Army National Guard

property in Minnesota, generating roughly enough electricity to meet Camp Ripley’s needs. The solar farm, combined with additional backup generation, will increase energy security at the military camp while helping MNNG achieve energy-related targets set by the Federal Administration and U.S. Department of Defense (DOD). The DOD is the largest consumer of energy in the Federal Government and has set aggressive energy conservation goals as well as a target of producing or procuring 25 percent of its electricity from renewable sources by 2025.

The solar electricity generated will flow onto Minnesota Power’s electric grid, advancing the utility’s EnergyForward strategy for a balanced energy future and position Minnesota Power to meet a state solar mandate, which requires that Minnesota’s investor-owned utilities generate 1.5 percent of their power from the sun by 2020. In the event of a military emergency or grid interruption, the system could be isolated to power Camp Ripley.

“This will meet approximately one third of our solar requirement and help MNNG fulfill its national security mission,” said Kris Spenningsby, project development leader, Minnesota Power. “We work with customers to find solutions that are mutually beneficial.”

“It is important to have power generation capacity on installations like ours,” said Col. Herke. “The resiliency of the electric grid is about 90 percent, but if it went down for even a few hours during a critical mission, that would be a problem. Officials at the state and federal levels are looking at this solar model. We should be proud.”

Sharing Camp Ripley’s Energy Advances with Community

That pride was on display Sept. 20, 2015, at Camp Ripley’s Community Appreciation Day. Minnesota Power CIP and Solar Program representatives were on hand to talk about energy efficiency efforts at Camp Ripley and answer questions about the upcoming solar installation. About 3,000 people attended the open house, hosted by MNNG.

“We are aggressively pursuing energy resiliency and conservation at Camp Ripley, and our success is dependent on the relationship we have with our utility provider, Minnesota Power,” said Joshua Pennington, eMS and sustainability coordinator for the Minnesota Army National Guard. “We were extremely appreciative to have Minnesota Power employees attend the Camp Ripley Community Appreciation Day to share our message about the importance of using energy wisely and planning for a future of energy resiliency.”

Minnesota Power and Camp Ripley worked together on an energy efficiency and recycling obstacle course for the open house. The 70 participants who completed the course received an energy-saving kit from Minnesota Power that included faucet aerators, LED light bulbs, shower timers and other energy-saving products.

“It all adds up,” said Tina Koecher, manager of customer solutions for Minnesota Power, who attended both the Earth Day and Community Appreciation Day events. “The energy conservation improvements, renewable energy projects, and behavioral changes at Camp Ripley are making a significant impact, and the savings continue to grow.”

Appendix

Appendix A

Filing Cover Letter, Filing Summary,
Affidavit of Service and Service List

minnesota power / 30 west superior street / duluth, minnesota 55802-2093 / 218-722-5642 / www.mnpower.com

April 1, 2016

Mr. Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

Mr. William Grant, Deputy Commissioner
Minnesota Department of Commerce
Division of Energy Resources
85 7th Place East, Suite 500
St. Paul, MN 55101-2198

Re: **2015 Conservation Improvement Program Consolidated Filing**
MPUC Docket No. E015/M-16-226
DOC Docket No. E015/CIP-13-409.02

Dear Mr. Wolf and Deputy Commissioner Grant:

Attached please find via eFiling Minnesota Power's 2015 Conservation Improvement Program (CIP) Consolidated Filing. This submittal includes a CIP Tracker Activity Report, a Financial Incentives Report, a Proposed Conservation Program Adjustment Factor, 2015 CIP Project Evaluations and a compliance with Department of Commerce (DOC) orders section. Minnesota Power is filing this information pursuant to Minn. Stat. §§ 216B.241, 216B.16, subd, 6c, 216B.2401, and 216B.2411 and in compliance with Minnesota Public Utilities Commission (MPUC) and DOC rules and orders relating to annual filings associated with Company-sponsored conservation program activities, including Minn. Rule 7690.0550.

Minnesota Power requests that the MPUC review the filed material and approve Minnesota Power's 2015 CIP Tracker Activity, Financial Incentives, proposed Conservation Program Adjustment (CPA) factor, and a variance of Minn. Rules 7820.3500 and 7825.2600 to permit Minnesota Power to continue to combine the CPA factor with the Fuel Clause Adjustment on customer bills. Further, Minnesota Power requests that the DOC review and approve the evaluations of the various CIP projects included herein and the compliance with prior DOC orders.

Minnesota Power has electronically filed this document and copies of this Cover Letter along with the Summary of Filing have been served on the parties on the attached service list.

Please direct any questions relating to the enclosed project evaluations to me at (218) 355-3805 or tkoecher@mnpower.com.

Sincerely,

Tina S. Koecher
Manager – Customer Solutions
Minnesota Power

c: All parties on Minnesota Power's CIP Service List

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Minnesota Power's 2015 Conservation Improvement Program Consolidated Filing	Reporting on CIP Tracker Account Activity, Financial Incentives Report, Proposed CPA Factors and 2015 Project Evaluations Docket No. E-015/M-16-226 E-015/CIP-13-409.02

SUMMARY OF FILING

Minnesota Power hereby files with the Minnesota Public Utilities Commission (MPUC or Commission) its annual Conservation Improvement Program Consolidated Filing in compliance with Minn. Stat. § 216B.241. Minnesota Power requests approval of 2015 CIP Tracker Account activity, resulting in a year-end 2015 balance of ($2,649,748). Minnesota Power also requests approval to book financial incentives in the amount of $7,476,643. In addition, Minnesota Power requests approval of a revised Conservation Program Adjustment (CPA) factor of $0.002494/kWh, to be first implemented without proration on July 1, 2016. Minnesota Power requests a variance of Minn. Rules 7820.3500 and 7825.2600 to permit the continued combination of the Conservation Program Adjustment with the Fuel and Purchased Power Clause Adjustment on customer bills.

Minnesota Power submits its Conservation Improvement Program (CIP) Consolidated Filing via eFiling with the Department of Commerce, Division of Energy Resources (Department) to comply with annual CIP project evaluation filing requirements. Please note that this filing is available through the eDockets system maintained by the Department and the MPUC. Access this document by going to eDockets at https://www.edockets.state.mn.us/EFiling/home.jsp and selecting "Search documents." For Docket Number, insert "13" for the year and "409.02" for the number and then click on "Search." The MPUC Docket Number is "16" for the year and "226" for the number. A paper copy of this filing is available upon request.

STATE OF MINNESOTA	)	**AFFIDAVIT OF SERVICE VIA**
	) ss	**E-FILING AND U.S. MAIL**
COUNTY OF ST. LOUIS	)	

Susan Romans of the City of Duluth, County of St. Louis, State of Minnesota, says that on the **1st** day of **April, 2016**, she served Minnesota Power's 2015 Consolidated Filing in Docket No's E015/M-13-409.02 and E015/M-16-226 on the Minnesota Public Utilities Commission and the Minnesota Department of Commerce via e-Filing. The persons on the attached Minnesota Power's CIP Service List and CIP Special Service List were served the Summary of Filing.

Susan Romans

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
George	Agriesti	gagriesti@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Julia	Anderson	Julia.Anderson@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota St St. Paul, MN 551012134	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Tom	Balster	tombalster@alliantenergy.com	Interstate Power & Light Company	PO Box 351 200 1st St SE Cedar Rapids, IA 524060351	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Christina	Brusven	cbrusven@fredlaw.com	Fredrikson Byron	200 S 6th St Ste 4000 Minneapolis, MN 554021425	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Gary	Connett	gconnett@grenergy.com	Great River Energy	12300 Elm Creek Blvd N Maple Grove, MN 553694718	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
George	Crocker	gwillc@nawo.org	North American Water Office	PO Box 174 Lake Elmo, MN 55042	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Jeffrey A.	Daugherty	jeffrey.daugherty@centerpointenergy.com	CenterPoint Energy	800 LaSalle Ave Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Steve	Downer	sdowner@mmua.org	MMUA	3025 Harbor Ln N Ste 400 Plymouth, MN 554475142	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Jim	Erchul		Daytons Bluff Neighborhood Housing Sv.	823 E 7th St St. Paul, MN 55106	Paper Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Greg	Ernst	gaernst@q.com	G. A. Ernst & Associates, Inc.	2377 Union Lake Trl Northfield, MN 55057	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Melissa S	Feine	melissa.feine@semcac.org	SEMCAC	PO Box 549 204 S Elm St Rushford, MN 55971	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 500 Saint Paul, MN 551012198	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Pat	Green	N/A	N Energy Dev	City Hall 401 E 21st St Hibbing, MN 55746	Paper Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Stephan	Gunn	sgunn@appliedenergygroup.com	Applied Energy Group	1941 Pike Ln De Pere, WI 54115	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Burl W.	Haar	burl.haar@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 551012147	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Randy	Hoffman	rhoffman@eastriver.coop	East River Electric Power Coop	121 SE 1st St PO Box 227 Madison, SD 57042	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Karolanne	Hoffman	kmh@dairynet.com	Dairyland Power Cooperative	PO Box 817 La Crosse, WI 54602-0817	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Tom	Holt	tholt@eastriver.coop	East River Electric Power Coop., Inc.	PO Box 227 Madison, SD 57042	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Michael	Hoy	mhoy@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024-9583	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Eric	Jensen	ejensen@iwla.org	Izaak Walton League of America	Suite 202 1619 Dayton Avenue St. Paul, MN 55104	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Dave	Johnson	dave.johnson@aeoa.org	Arrowhead Economic Opportunity Agency	702 3rd Ave S Virginia, MN 55792	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Joel	Johnson	joel@mrea.org	Minnesota Rural Electric Association	11640 73rd Ave N Maple Grove, MN 55369	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Paula	Johnson	paulajohnson@alliantenergy.com	Alliant Energy-Interstate Power and Light Company	P.O. Box 351 200 First Street, SE Cedar Rapids, IA 524060351	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Larry	Johnston	lw.johnston@smmpa.org	SMMPA	500 1st Ave SW Rochester, MN 55902-3303	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Tina	Koecher	tkoecher@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Kelly	Lady	kellyl@austinutilities.com	Austin Utilities	400 4th St NE Austin, MN 55912	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Martin	Lepak	N/A	Arrowhead Economic Opportunity	702 S 3rd Ave Virginia, MN 55792	Paper Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Allan	Lian	alian@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
John	Lindell	agorud.ecf@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Nick	Mark	nick.mark@centerpointenergy.com	CenterPoint Energy	800 LaSalle Ave Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
John	McWilliams	jmm@dairynet.com	Dairyland Power Cooperative	3200 East Ave SPO Box 817 La Crosse, WI 54601-7227	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Brian	Meloy	brian.meloy@stinsonleonard.com	Stinson,Leonard, Street LLP	150 S 5th St Ste 2300 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Gary	Myers	garym@hpuc.com	Hibbing Public Utilities	1902 E 6th Ave Hibbing, MN 55746	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Carl	Nelson	cnelson@mncee.org	Center for Energy and Environment	212 3rd Ave N Ste 560 Minneapolis, MN 55401	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Kim	Pederson	kpederson@otpco.com	Otter Tail Power Company	215 S Cascade St PO Box 496 Fergus Falls, MN 565380496	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Lisa	Pickard	lpickard@minnkota.com	Minnkota Power Cooperative	1822 Mill Rd PO Box 13200 Grand Forks, ND 582083200	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Ken	Smith	ken.smith@districtenergy.com	District Energy St. Paul Inc.	76 W Kellogg Blvd St. Paul, MN 55102	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Richard	Szydlowski	rszydlowski@mncee.org	Center for Energy & Environment	212 3rd Ave N Ste 560 Minneapolis, MN 55401-1459	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
SaGonna	Thompson	Regulatory.Records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Steve	Tomac	stomac@bepc.com	Basin Electric Power Cooperative	1717 E Interstate Ave Bismarck, ND 58501	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Jim	Walters	bademailjwalters@border-states.com	Border States Electric	1787 36th Ave SE Rochester, MN 55904	Paper Service	No	GEN_SL_Minnesota Power_MP's CIP Service List
Robyn	Woeste	robynwoeste@alliantenergy.com	Interstate Power and Light Company	200 First St SE Cedar Rapids, IA 52401	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Julia	Anderson	Julia.Anderson@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota St St. Paul, MN 551012134	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Tom	Balster	tombalster@alliantenergy.com	Interstate Power & Light Company	PO Box 351 200 1st St SE Cedar Rapids, IA 524060351	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Lisa	Beckner	lbeckner@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Mathias	Bell	mathias.bell@opower.com	Opower	1515 N Courthouse Rd Arlington, VA 22201	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
William	Black	bblack@mmua.org	MMUA	Suite 400 3025 Harbor Lane North Plymouth, MN 554475142	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Christina	Brusven	cbrusven@fredlaw.com	Fredrikson Byron	200 S 6th St Ste 4000 Minneapolis, MN 554021425	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Ray	Choquette	rchoquette@agp.com	Ag Processing Inc.	12700 West Dodge Road PO Box 2047 Omaha, NE 68103-2047	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Gary	Connett	gconnett@grenergy.com	Great River Energy	12300 Elm Creek Blvd N Maple Grove, MN 553694718	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
George	Crocker	gwillc@nawo.org	North American Water Office	PO Box 174 Lake Elmo, MN 55042	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Jill	Curran	jcurran@mnchamber.com	Minnesota Waste Wise	400 Robert Street North Suite 1500 St. Paul, Minnesota 55101	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Leigh	Currie	lcurrie@mncenter.org	Minnesota Center for Environmental Advocacy	26 E. Exchange St., Suite 206 St. Paul, Minnesota 55101	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Jeffrey A.	Daugherty	jeffrey.daugherty@centerpointenergy.com	CenterPoint Energy	800 LaSalle Ave Minneapolis, MN 55402	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Steve	Downer	sdowner@mmua.org	MMUA	3025 Harbor Ln N Ste 400 Plymouth, MN 554475142	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Charles	Drayton	charles.drayton@enbridge.com	Enbridge Energy Company, Inc.	7701 France Ave S Ste 600 Edina, MN 55435	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Chris	Duffrin	chrisd@thenec.org	Neighborhood Energy Connection	624 Selby Avenue St. Paul, MN 55104	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Jim	Erchul	jerchul@dbnhs.org	Daytons Bluff Neighborhood Housing Sv.	823 E 7th St St. Paul, MN 55106	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Greg	Ernst	gaernst@q.com	G. A. Ernst & Associates, Inc.	2377 Union Lake Trl Northfield, MN 55057	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Emma	Fazio	emma.fazio@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Melissa S	Feine	melissa.feine@semcac.org	SEMCAC	PO Box 549 204 S Elm St Rushford, MN 55971	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 500 Saint Paul, MN 551012198	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Kelsey	Genung	kelsey.genung@xcelenergy.com	Xcel Energy	414 Nicollet Mall, Fl. 6 Minneapolis, MN 55401	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Angela E.	Gordon	angela.e.gordon@lmco.com	Lockheed Martin	1000 Clark Ave. St. Louis, MO 63102	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Pat	Green	N/A	N Energy Dev	City Hall 401 E 21st St Hibbing, MN 55746	Paper Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Jason	Grenier	jgrenier@otpco.com	Otter Tail Power Company	215 South Cascade Street Fergus Falls, MN 56537	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Stephan	Gunn	sgunn@appliedenergygroup.com	Applied Energy Group	1941 Pike Ln De Pere, WI 54115	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Tony	Hainault	anthony.hainault@co.hennepin.mn.us	Hennepin County DES	701 4th Ave S Ste 700 Minneapolis, MN 55415-1842	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Patty	Hanson	phanson@rpu.org	Rochester Public Utilities	4000 E River Rd NE Rochester, MN 55906	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Norm	Harold	N/A	NKS Consulting	5591 E 180th St Prior Lake, MN 55372	Paper Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Jared	Hendricks	hendricksj@owatonnautilities.com	Owatonna Public Utilities	PO Box 800 208 S Walnut Ave Owatonna, MN 55060-2940	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Holly	Hinman	holly.r.hinman@xcelenergy.com	Xcel Energy	414 Nicollet Mall, 7th Floor Minneapolis, MN 55401	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Karolanne	Hoffman	kmh@dairynet.com	Dairyland Power Cooperative	PO Box 817 La Crosse, WI 54602-0817	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Randy	Hoffman	rhoffman@eastriver.coop	East River Electric Power Coop	121 SE 1st St PO Box 227 Madison, SD 57042	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Tom	Holt	tholt@eastriver.coop	East River Electric Power Coop., Inc.	PO Box 227 Madison, SD 57042	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Jim	Horan	Jim@MREA.org	Minnesota Rural Electric Association	11640 73rd Ave N Maple Grove, MN 55369	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Anne	Hunt	anne.hunt@ci.stpaul.mn.us	City of St. Paul	390 City Hall 15 West Kellogg Boulevard Saint Paul, MN 55102	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Dave	Johnson	dave.johnson@aeoa.org	Arrowhead Economic Opportunity Agency	702 3rd Ave S Virginia, MN 55792	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Joel W.	Kanvik	joel.kanvik@enbridge.com	Enbridge Energy Company, Inc.	4628 Mike Colalillo Dr Duluth, MN 55807	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Deborah	Knoll	dknoll@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Tina	Koecher	tkoecher@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Kelly	Lady	kellyl@austinutilities.com	Austin Utilities	400 4th St NE Austin, MN 55912	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Martin	Lepak	Martin.Lepak@aeoa.org	Arrowhead Economic Opportunity	702 S 3rd Ave Virginia, MN 55792	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
John	Lindell	agorud.ecf@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Nick	Mark	nick.mark@centerpointenergy.com	CenterPoint Energy	800 LaSalle Ave Minneapolis, MN 55402	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Scot	McClure	scotmcclure@alliantenergy.com	Interstate Power And Light Company	4902 N Biltmore Ln PO Box 77007 Madison, WI 537071007	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
John	McWilliams	jmm@dairynet.com	Dairyland Power Cooperative	3200 East Ave SPO Box 817 La Crosse, WI 54601-7227	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Brian	Meloy	brian.meloy@stinson.com	Stinson,Leonard, Street LLP	150 S 5th St Ste 2300 Minneapolis, MN 55402	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Andrew	Moratzka	apmoratzka@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Gary	Myers	garym@hpuc.com	Hibbing Public Utilities	1902 E 6th Ave Hibbing, MN 55746	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Susan K	Nathan	snathan@appliedenergygroup.com	Applied Energy Group	2215 NE 107th Ter Kansas City, MO 64155-8513	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Carl	Nelson	cnelson@mncee.org	Center for Energy and Environment	212 3rd Ave N Ste 560 Minneapolis, MN 55401	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Samantha	Norris	samanthanorris@alliantenergy.com	Interstate Power and Light Company	200 1st Street SE PO Box 351 Cedar Rapids, IA 524060351	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Gary	Oetken	goetken@agp.com	Ag Processing, Inc.	12700 West Dodge Road P.O. Box 2047 Omaha, NE 681032047	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Audrey	Partridge	audrey.peer@centerpointenergy.com	CenterPoint Energy	800 Lasalle Avenue - 14th Floor Minneapolis, Minnesota 55402	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Lisa	Pickard	lpickard@minnkota.com	Minnkota Power Cooperative	1822 Mill Rd PO Box 13200 Grand Forks, ND 582083200	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Bill	Poppert		Technology North	2433 Highwood Ave St. Paul, MN 55119	Paper Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Dave	Reinke	dreinke@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024-9583	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Christopher	Schoenherr	cp.schoenherr@smmpa.org	SMMPA	500 First Ave SW Rochester, MN 55902-3303	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Cindy	Schweitzer Rott	cindy.schweitzer@clearesult.com	CLEAResult's	S12637A Merrilee Rd. Spring Green, WI 53588	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Anna	Sherman	anna.sherman@centerpointenergy.com	CenterPoint Energy	505 Nicollet Mall PO Box 59038 Minneapolis, MN 55459	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Ken	Smith	ken.smith@districtenergy.com	District Energy St. Paul Inc.	76 W Kellogg Blvd St. Paul, MN 55102	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Leo	Steidel	N/A	The Weidt Group	5800 Baker Rd Minnetonka, MN 55345	Paper Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Richard	Szydlowski	rszydlowski@mncee.org	Center for Energy & Environment	212 3rd Ave N Ste 560 Minneapolis, MN 55401-1459	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
SaGonna	Thompson	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Steve	Tomac	stomac@bepc.com	Basin Electric Power Cooperative	1717 E Interstate Ave Bismarck, ND 58501	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Sharon N.	Walsh	swalsh@shakopeeutilities.com	Shakopee Public Utilties	255 Sarazin St Shakopee, MN 55379	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Robyn	Woeste	robynwoeste@alliantenergy.com	Interstate Power and Light Company	200 First St SE Cedar Rapids, IA 52401	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST

Appendix B

DSManager Evaluation Computer Runs

Plan: RES15 - Residential Aggregation - 2015 Eval

Summary Parameters Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
B/C Ratio	4.36	3.36	0.35	1.61	2.21
Internal Rate of Ret. (%)	0.00	0.00	0.00	0.00	0.00
Level Benefits ($/kW)	0.49	0.17	0.17	0.24	0.25
Level Benefits ($/kWh)	0.00	0.00	0.00	0.00	0.00
Level Costs ($/kW)	0.11	0.05	0.49	0.15	0.11
Level Costs ($/kWh)	0.00	0.00	0.00	0.00	0.00
Net Benefits	11,470.24	2,602.71	(6,736.27)	2,004.41	4,152.68
Payback (in years)	0.00	0.00	0.00	0.00	0.00
Total Benefits	14,882.41	3,706.53	3,706.53	5,287.64	7,580.78
Total Costs	3,412.17	1,103.83	10,442.80	3,283.23	3,428.10

Plan: RES15 - Residential Aggregation - 2015 Eval

Benefit Components Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
Cust Electric Bill Decrease	12,242.06	0.00	0.00	0.00	0.00
Cust Non-electric Bill Decrease	8.98	0.00	0.00	0.00	0.00
Customer Rebates Received	700.09	0.00	0.00	0.00	0.00
Cust Invest Dec - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Invest Dec - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Dec - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Dec - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Dec - Net of FR	0.00	0.00	0.00	1,520.99	1,931.27
Cust O&M & Oth Cst Dec - Grs of FR	1,931.27	0.00	0.00	0.00	0.00
Cust CHP/Cogen Net Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Operating Cost	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Oper Cst	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Rcv from TP	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Rcv from Util	0.00	0.00	0.00	0.00	0.00
Cust Elec Rev from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust E. Rev Net from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust Shrd Svngs Rcv from Util	0.00	0.00	0.00	0.00	0.00
PS Base Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Cap. Part. Charges Received	0.00	0.00	0.00	0.00	0.00
PS Distribution Cap. Credit	0.00	51.68	51.68	52.41	67.33
PS Elec Prod Cost Decrease	0.00	2,739.30	2,739.30	2,776.88	3,542.30
External Environmental Benefit	0.00	0.00	0.00	0.00	753.36
PS Adj Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Fixed Admin Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Fixed Cap. Admin Decrease	0.00	0.00	0.00	0.00	0.00
PS Fixed Other Ann Benefits Inc	0.00	0.00	0.00	0.00	0.00
PS Generation Cap. Credit	0.00	858.26	858.26	874.35	1,205.94
Internal Environmental Benefit	0.00	0.00	0.00	0.00	0.00
PS Non-Elec Acq. Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Non-electric Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Part. Based Admin Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Part. Based Cap Admin Dec	0.00	0.00	0.00	0.00	0.00
PS Part. Other Ann Benefits Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Charges Received	0.00	0.00	0.00	0.00	0.00
PS Sales Tax Decrease	0.00	0.00	0.00	0.00	0.00
PS Transmission Cap. Credit	0.00	57.29	57.29	58.10	74.64
TP Non-Elec Acq Cost Decrease	0.00	0.00	0.00	4.92	5.95
Cust shared svngs Rcv from TP	0.00	0.00	0.00	0.00	0.00
PS Loan/Lease Rcv	0.00	0.00	0.00	0.00	0.00
PS Shared Savings Rcv	0.00	0.00	0.00	0.00	0.00

Plan: RES15 - Residential Aggregation - 2015 Eval

Cost Components Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
Cust Electric Bill Increase	0.00	0.00	0.00	0.00	0.00
Cust Non-electric Bill Increase	1,113.94	0.00	0.00	0.00	0.00
Customer Participation Charges	0.00	0.00	0.00	0.00	0.00
Cust Invest Inc - Net of FR	0.00	0.00	0.00	2,298.23	2,298.23
Cust Invest Inc - Gross of FR	2,298.23	0.00	0.00	0.00	0.00
Cust Inc Tax Inc - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Inc - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Inc - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Inc - Grs of FR	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Net Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Operating Cost	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Oper Cst	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Paid to TP	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Paid to Util	0.00	0.00	0.00	0.00	0.00
Cust Elec Rev from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust E. Rev Net from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust Shrd Svngs Paid to Util	0.00	0.00	0.00	0.00	0.00
PS Base Revenue Decrease	0.00	0.00	9,338.97	0.00	0.00
PS Cap Rebates Paid	0.00	0.00	0.00	0.00	0.00
PS Distribution Cap. Debit	0.00	0.00	0.00	0.00	0.00
PS Elec Prod Cost Increase	0.00	0.00	0.00	0.00	0.00
External Environmental Cost	0.00	0.00	0.00	0.00	0.00
PS Adj Revenue Decrease	0.00	0.00	0.00	0.00	0.00
PS Fixed Admin Cost Inc	0.00	395.78	395.78	395.78	395.78
PS Fixed Cap. Admin Increase	0.00	0.00	0.00	0.00	0.00
PS Fixed Other Ann Benefits Dec	0.00	0.00	0.00	0.00	0.00
PS Generation Cap. Debit	0.00	0.00	0.00	0.00	0.00
Internal Environmental Cost	0.00	0.00	0.00	0.00	0.00
PS Non-Elec Acq. Cost Inc	0.00	0.00	0.00	0.00	0.00
PS Non-electric Revenue Decrease	0.00	0.00	0.00	0.00	0.00
PS Part. Based Admin Cost Inc	0.00	7.95	7.95	7.95	7.95
PS Part. Based Cap Admin Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Other Ann Benefits Dec	0.00	0.00	0.00	0.00	0.00
PS Rebates Paid	0.00	700.09	700.09	0.00	0.00
PS Sales Tax Increase	0.00	0.00	0.00	0.00	0.00
PS Transmission Cap. Debit	0.00	0.00	0.00	0.00	0.00
TP Non-Elec Acq Cost Increase	0.00	0.00	0.00	581.27	726.14
Cust Shared Savings Paid to TP	0.00	0.00	0.00	0.00	0.00
PS Loan/Lease Paid	0.00	0.00	0.00	0.00	0.00
PS Shared Savings Paid	0.00	0.00	0.00	0.00	0.00

Plan: LI15 - Energy Partners Aggregation - 2015 Eval

Summary Parameters Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
B/C Ratio	5.33	0.80	0.27	1.53	2.01
Internal Rate of Ret. (%)	0.00	0.00	0.00	0.00	0.00
Level Benefits ($/kW)	0.05	0.01	0.01	0.02	0.02
Level Benefits ($/kWh)	0.00	0.00	0.00	0.00	0.00
Level Costs ($/kW)	0.01	0.02	0.05	0.01	0.01
Level Costs ($/kWh)	0.00	0.00	0.00	0.00	0.00
Net Benefits	1,106.71	(67.71)	(754.71)	160.14	313.81
Payback (in years)	0.00	0.00	0.00	0.00	0.00
Total Benefits	1,362.39	275.26	275.26	464.10	623.76
Total Costs	255.69	342.97	1,029.97	303.96	309.94

Plan: LI15 - Energy Partners Aggregation - 2015 Eval

Benefit Components Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
Cust Electric Bill Decrease	842.55	0.00	0.00	0.00	0.00
Cust Non-electric Bill Decrease	52.78	0.00	0.00	0.00	0.00
Customer Rebates Received	270.57	0.00	0.00	0.00	0.00
Cust Invest Dec - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Invest Dec - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Dec - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Dec - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Dec - Net of FR	0.00	0.00	0.00	153.22	193.71
Cust O&M & Oth Cst Dec - Grs of FR	193.71	0.00	0.00	0.00	0.00
Cust CHP/Cogen Net Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Operating Cost	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Oper Cst	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Rcv from TP	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Rcv from Util	0.00	0.00	0.00	0.00	0.00
Cust Elec Rev from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust E. Rev Net from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust Shrd Svngs Rcv from Util	0.00	0.00	0.00	0.00	0.00
PS Base Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Cap. Part. Charges Received	0.00	0.00	0.00	0.00	0.00
PS Distribution Cap. Credit	0.00	3.71	3.71	3.75	4.52
PS Elec Prod Cost Decrease	0.00	205.41	205.41	207.56	249.08
External Environmental Benefit	0.00	0.00	0.00	0.00	55.22
PS Adj Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Fixed Admin Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Fixed Cap. Admin Decrease	0.00	0.00	0.00	0.00	0.00
PS Fixed Other Ann Benefits Inc	0.00	0.00	0.00	0.00	0.00
PS Generation Cap. Credit	0.00	62.03	62.03	62.95	80.97
Internal Environmental Benefit	0.00	0.00	0.00	0.00	0.00
PS Non-Elec Acq. Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Non-electric Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Part. Based Admin Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Part. Based Cap Admin Dec	0.00	0.00	0.00	0.00	0.00
PS Part. Other Ann Benefits Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Charges Received	0.00	0.00	0.00	0.00	0.00
PS Sales Tax Decrease	0.00	0.00	0.00	0.00	0.00
PS Transmission Cap. Credit	0.00	4.11	4.11	4.16	5.01
TP Non-Elec Acq Cost Decrease	0.00	0.00	0.00	29.68	35.25
Cust shared svngs Rcv from TP	2.78	0.00	0.00	2.78	0.00
PS Loan/Lease Rcv	0.00	0.00	0.00	0.00	0.00
PS Shared Savings Rcv	0.00	0.00	0.00	0.00	0.00

Plan: LI15 - Energy Partners Aggregation - 2015 Eval

Cost Components Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
Cust Electric Bill Increase	0.00	0.00	0.00	0.00	0.00
Cust Non-electric Bill Increase	53.84	0.00	0.00	0.00	0.00
Customer Participation Charges	0.00	0.00	0.00	0.00	0.00
Cust Invest Inc - Net of FR	0.00	0.00	0.00	201.84	201.84
Cust Invest Inc - Gross of FR	201.84	0.00	0.00	0.00	0.00
Cust Inc Tax Inc - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Inc - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Inc - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Inc - Grs of FR	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Net Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Operating Cost	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Oper Cst	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Paid to TP	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Paid to Util	0.00	0.00	0.00	0.00	0.00
Cust Elec Rev from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust E. Rev Net from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust Shrd Svngs Paid to Util	0.00	0.00	0.00	0.00	0.00
PS Base Revenue Decrease	0.00	0.00	687.00	0.00	0.00
PS Cap Rebates Paid	0.00	0.00	0.00	0.00	0.00
PS Distribution Cap. Debit	0.00	0.00	0.00	0.00	0.00
PS Elec Prod Cost Increase	0.00	0.00	0.00	0.00	0.00
External Environmental Cost	0.00	0.00	0.00	0.00	0.00
PS Adj Revenue Decrease	0.00	0.00	0.00	0.00	0.00
PS Fixed Admin Cost Inc	0.00	72.39	72.39	72.39	72.39
PS Fixed Cap. Admin Increase	0.00	0.00	0.00	0.00	0.00
PS Fixed Other Ann Benefits Dec	0.00	0.00	0.00	0.00	0.00
PS Generation Cap. Debit	0.00	0.00	0.00	0.00	0.00
Internal Environmental Cost	0.00	0.00	0.00	0.00	0.00
PS Non-Elec Acq. Cost Inc	0.00	0.00	0.00	0.00	0.00
PS Non-electric Revenue Decrease	0.00	0.00	0.00	0.00	0.00
PS Part. Based Admin Cost Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Based Cap Admin Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Other Ann Benefits Dec	0.00	0.00	0.00	0.00	0.00
PS Rebates Paid	0.00	270.57	270.57	0.00	0.00
PS Sales Tax Increase	0.00	0.00	0.00	0.00	0.00
PS Transmission Cap. Debit	0.00	0.00	0.00	0.00	0.00
TP Non-Elec Acq Cost Increase	0.00	0.00	0.00	29.72	35.71
Cust Shared Savings Paid to TP	0.00	0.00	0.00	0.00	0.00
PS Loan/Lease Paid	0.00	0.00	0.00	0.00	0.00
PS Shared Savings Paid	0.00	0.00	0.00	0.00	0.00

Plan: CI15 - C&I Aggregation - 2015 Eval

Summary Parameters Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
B/C Ratio	3.95	12.40	0.46	1.81	2.77
Internal Rate of Ret. (%)	0.00	0.00	0.00	0.00	0.00
Level Benefits ($/kW)	3.21	1.50	1.50	1.49	1.65
Level Benefits ($/kWh)	0.00	0.00	0.00	0.00	0.00
Level Costs ($/kW)	0.81	0.12	3.24	0.83	0.60
Level Costs ($/kWh)	0.00	0.00	0.00	0.00	0.00
Net Benefits	50,992.52	29,359.33	(36,945.49)	14,513.46	31,642.55
Payback (in years)	0.00	0.00	0.00	0.00	0.00
Total Benefits	68,254.63	31,934.77	31,934.77	32,412.22	49,541.32
Total Costs	17,262.11	2,575.44	68,880.25	17,898.77	17,898.77

Plan: CI15 - C&I Aggregation - 2015 Eval

Benefit Components Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
Cust Electric Bill Decrease	66,304.82	0.00	0.00	0.00	0.00
Cust Non-electric Bill Decrease	11.03	0.00	0.00	0.00	0.00
Customer Rebates Received	1,938.78	0.00	0.00	0.00	0.00
Cust Invest Dec - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Invest Dec - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Dec - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Dec - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Dec - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Dec - Grs of FR	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Net Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Operating Cost	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Oper Cst	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Rcv from TP	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Rcv from Util	0.00	0.00	0.00	0.00	0.00
Cust Elec Rev from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust E. Rev Net from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust Shrd Svngs Rcv from Util	0.00	0.00	0.00	0.00	0.00
PS Base Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Cap. Part. Charges Received	0.00	0.00	0.00	0.00	0.00
PS Distribution Cap. Credit	0.00	274.52	274.52	278.33	353.54
PS Elec Prod Cost Decrease	0.00	26,072.79	26,072.79	26,442.06	33,797.05
External Environmental Benefit	0.00	0.00	0.00	0.00	7,763.66
PS Adj Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Fixed Admin Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Fixed Cap. Admin Decrease	0.00	0.00	0.00	0.00	0.00
PS Fixed Other Ann Benefits Inc	0.00	0.00	0.00	0.00	0.00
PS Generation Cap. Credit	0.00	5,283.14	5,283.14	5,376.01	7,225.66
Internal Environmental Benefit	0.00	0.00	0.00	0.00	0.00
PS Non-Elec Acq. Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Non-electric Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Part. Based Admin Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Part. Based Cap Admin Dec	0.00	0.00	0.00	0.00	0.00
PS Part. Other Ann Benefits Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Charges Received	0.00	0.00	0.00	0.00	0.00
PS Sales Tax Decrease	0.00	0.00	0.00	0.00	0.00
PS Transmission Cap. Credit	0.00	304.32	304.32	308.54	391.91
TP Non-Elec Acq Cost Decrease	0.00	0.00	0.00	7.29	9.49
Cust shared svngs Rcv from TP	0.00	0.00	0.00	0.00	0.00
PS Loan/Lease Rcv	0.00	0.00	0.00	0.00	0.00
PS Shared Savings Rcv	0.00	0.00	0.00	0.00	0.00

Plan: CI15 - C&I Aggregation - 2015 Eval

Cost Components Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
Cust Electric Bill Increase	0.00	0.00	0.00	0.00	0.00
Cust Non-electric Bill Increase	0.00	0.00	0.00	0.00	0.00
Customer Participation Charges	0.00	0.00	0.00	0.00	0.00
Cust Invest Inc - Net of FR	0.00	0.00	0.00	17,262.11	17,262.11
Cust Invest Inc - Gross of FR	17,262.11	0.00	0.00	0.00	0.00
Cust Inc Tax Inc - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Inc - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Inc - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Inc - Grs of FR	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Net Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Operating Cost	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Oper Cst	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Paid to TP	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Paid to Util	0.00	0.00	0.00	0.00	0.00
Cust Elec Rev from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust E. Rev Net from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust Shrd Svngs Paid to Util	0.00	0.00	0.00	0.00	0.00
PS Base Revenue Decrease	0.00	0.00	66,304.82	0.00	0.00
PS Cap Rebates Paid	0.00	0.00	0.00	0.00	0.00
PS Distribution Cap. Debit	0.00	0.00	0.00	0.00	0.00
PS Elec Prod Cost Increase	0.00	0.00	0.00	0.00	0.00
External Environmental Cost	0.00	0.00	0.00	0.00	0.00
PS Adj Revenue Decrease	0.00	0.00	0.00	0.00	0.00
PS Fixed Admin Cost Inc	0.00	636.66	636.66	636.66	636.66
PS Fixed Cap. Admin Increase	0.00	0.00	0.00	0.00	0.00
PS Fixed Other Ann Benefits Dec	0.00	0.00	0.00	0.00	0.00
PS Generation Cap. Debit	0.00	0.00	0.00	0.00	0.00
Internal Environmental Cost	0.00	0.00	0.00	0.00	0.00
PS Non-Elec Acq. Cost Inc	0.00	0.00	0.00	0.00	0.00
PS Non-electric Revenue Decrease	0.00	0.00	0.00	0.00	0.00
PS Part. Based Admin Cost Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Based Cap Admin Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Other Ann Benefits Dec	0.00	0.00	0.00	0.00	0.00
PS Rebates Paid	0.00	1,938.78	1,938.78	0.00	0.00
PS Sales Tax Increase	0.00	0.00	0.00	0.00	0.00
PS Transmission Cap. Debit	0.00	0.00	0.00	0.00	0.00
TP Non-Elec Acq Cost Increase	0.00	0.00	0.00	0.00	0.00
Cust Shared Savings Paid to TP	0.00	0.00	0.00	0.00	0.00
PS Loan/Lease Paid	0.00	0.00	0.00	0.00	0.00
PS Shared Savings Paid	0.00	0.00	0.00	0.00	0.00

Plan: TOT_DIR - Total Aggregation - Direct Impact - 2015

Summary Parameters Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
B/C Ratio	4.04	8.93	0.45	1.78	2.67
Internal Rate of Ret. (%)	0.00	0.00	0.00	0.00	0.00
Level Benefits ($/kW)	3.97	1.69	1.69	1.76	1.92
Level Benefits ($/kWh)	0.00	0.00	0.00	0.00	0.00
Level Costs ($/kW)	0.98	0.19	3.77	0.99	0.72
Level Costs ($/kWh)	0.00	0.00	0.00	0.00	0.00
Net Benefits	63,569.47	31,894.33	(44,436.47)	16,678.01	36,109.05
Payback (in years)	0.00	0.00	0.00	0.00	0.00
Total Benefits	84,499.43	35,916.56	35,916.56	38,163.96	57,745.86
Total Costs	20,929.96	4,022.23	80,353.02	21,485.96	21,636.81

Plan: TOT_DIR - Total Aggregation - Direct Impact - 2015

Benefit Components Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
Cust Electric Bill Decrease	79,389.43	0.00	0.00	0.00	0.00
Cust Non-electric Bill Decrease	72.79	0.00	0.00	0.00	0.00
Customer Rebates Received	2,909.45	0.00	0.00	0.00	0.00
Cust Invest Dec - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Invest Dec - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Dec - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Dec - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Dec - Net of FR	0.00	0.00	0.00	1,674.21	2,124.98
Cust O&M & Oth Cst Dec - Grs of FR	2,124.98	0.00	0.00	0.00	0.00
Cust CHP/Cogen Net Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Operating Cost	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Oper Cst	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Rcv from TP	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Rcv from Util	0.00	0.00	0.00	0.00	0.00
Cust Elec Rev from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust E. Rev Net from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust Shrd Svngs Rcv from Util	0.00	0.00	0.00	0.00	0.00
PS Base Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Cap. Part. Charges Received	0.00	0.00	0.00	0.00	0.00
PS Distribution Cap. Credit	0.00	329.90	329.90	334.48	425.38
PS Elec Prod Cost Decrease	0.00	29,017.51	29,017.51	29,426.50	37,588.43
External Environmental Benefit	0.00	0.00	0.00	0.00	8,572.25
PS Adj Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Fixed Admin Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Fixed Cap. Admin Decrease	0.00	0.00	0.00	0.00	0.00
PS Fixed Other Ann Benefits Inc	0.00	0.00	0.00	0.00	0.00
PS Generation Cap. Credit	0.00	6,203.43	6,203.43	6,313.31	8,512.57
Internal Environmental Benefit	0.00	0.00	0.00	0.00	0.00
PS Non-Elec Acq. Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Non-electric Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Part. Based Admin Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Part. Based Cap Admin Dec	0.00	0.00	0.00	0.00	0.00
PS Part. Other Ann Benefits Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Charges Received	0.00	0.00	0.00	0.00	0.00
PS Sales Tax Decrease	0.00	0.00	0.00	0.00	0.00
PS Transmission Cap. Credit	0.00	365.72	365.72	370.79	471.56
TP Non-Elec Acq Cost Decrease	0.00	0.00	0.00	41.89	50.70
Cust shared svngs Rcv from TP	2.78	0.00	0.00	2.78	0.00
PS Loan/Lease Rcv	0.00	0.00	0.00	0.00	0.00
PS Shared Savings Rcv	0.00	0.00	0.00	0.00	0.00

Plan: TOT_DIR - Total Aggregation - Direct Impact - 2015

Cost Components Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
Cust Electric Bill Increase	0.00	0.00	0.00	0.00	0.00
Cust Non-electric Bill Increase	1,167.78	0.00	0.00	0.00	0.00
Customer Participation Charges	0.00	0.00	0.00	0.00	0.00
Cust Invest Inc - Net of FR	0.00	0.00	0.00	19,762.18	19,762.18
Cust Invest Inc - Gross of FR	19,762.18	0.00	0.00	0.00	0.00
Cust Inc Tax Inc - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Inc - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Inc - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Inc - Grs of FR	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Net Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Operating Cost	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Oper Cst	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Paid to TP	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Paid to Util	0.00	0.00	0.00	0.00	0.00
Cust Elec Rev from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust E. Rev Net from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust Shrd Svngs Paid to Util	0.00	0.00	0.00	0.00	0.00
PS Base Revenue Decrease	0.00	0.00	76,330.79	0.00	0.00
PS Cap Rebates Paid	0.00	0.00	0.00	0.00	0.00
PS Distribution Cap. Debit	0.00	0.00	0.00	0.00	0.00
PS Elec Prod Cost Increase	0.00	0.00	0.00	0.00	0.00
External Environmental Cost	0.00	0.00	0.00	0.00	0.00
PS Adj Revenue Decrease	0.00	0.00	0.00	0.00	0.00
PS Fixed Admin Cost Inc	0.00	1,104.83	1,104.83	1,104.83	1,104.83
PS Fixed Cap. Admin Increase	0.00	0.00	0.00	0.00	0.00
PS Fixed Other Ann Benefits Dec	0.00	0.00	0.00	0.00	0.00
PS Generation Cap. Debit	0.00	0.00	0.00	0.00	0.00
Internal Environmental Cost	0.00	0.00	0.00	0.00	0.00
PS Non-Elec Acq. Cost Inc	0.00	0.00	0.00	0.00	0.00
PS Non-electric Revenue Decrease	0.00	0.00	0.00	0.00	0.00
PS Part. Based Admin Cost Inc	0.00	7.95	7.95	7.95	7.95
PS Part. Based Cap Admin Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Other Ann Benefits Dec	0.00	0.00	0.00	0.00	0.00
PS Rebates Paid	0.00	2,909.45	2,909.45	0.00	0.00
PS Sales Tax Increase	0.00	0.00	0.00	0.00	0.00
PS Transmission Cap. Debit	0.00	0.00	0.00	0.00	0.00
TP Non-Elec Acq Cost Increase	0.00	0.00	0.00	610.99	761.85
Cust Shared Savings Paid to TP	0.00	0.00	0.00	0.00	0.00
PS Loan/Lease Paid	0.00	0.00	0.00	0.00	0.00
PS Shared Savings Paid	0.00	0.00	0.00	0.00	0.00

Plan: TOT_NIMP - Total with Nonimpact Costs - 2015 Eval

Summary Parameters Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
B/C Ratio	4.04	5.78	0.44	1.62	2.44
Internal Rate of Ret. (%)	0.00	0.00	0.00	0.00	0.00
Level Benefits ($/kW)	3.97	1.69	1.69	1.76	1.92
Level Benefits ($/kWh)	0.00	0.00	0.00	0.00	0.00
Level Costs ($/kW)	0.98	0.29	3.88	1.09	0.79
Level Costs ($/kWh)	0.00	0.00	0.00	0.00	0.00
Net Benefits	63,692.33	29,706.27	(46,624.52)	14,612.81	34,043.85
Payback (in years)	0.00	0.00	0.00	0.00	0.00
Total Benefits	84,622.30	35,916.56	35,916.56	38,163.96	57,745.86
Total Costs	20,929.96	6,210.29	82,541.08	23,551.15	23,702.01

Plan: TOT_NIMP - Total with Nonimpact Costs - 2015 Eval

Benefit Components Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
Cust Electric Bill Decrease	79,389.43	0.00	0.00	0.00	0.00
Cust Non-electric Bill Decrease	72.79	0.00	0.00	0.00	0.00
Customer Rebates Received	3,032.31	0.00	0.00	0.00	0.00
Cust Invest Dec - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Invest Dec - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Dec - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Dec - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Dec - Net of FR	0.00	0.00	0.00	1,674.21	2,124.98
Cust O&M & Oth Cst Dec - Grs of FR	2,124.98	0.00	0.00	0.00	0.00
Cust CHP/Cogen Net Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Operating Cost	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Oper Cst	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Rcv from TP	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Rcv from Util	0.00	0.00	0.00	0.00	0.00
Cust Elec Rev from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust E. Rev Net from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust Shrd Svngs Rcv from Util	0.00	0.00	0.00	0.00	0.00
PS Base Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Cap. Part. Charges Received	0.00	0.00	0.00	0.00	0.00
PS Distribution Cap. Credit	0.00	329.90	329.90	334.48	425.38
PS Elec Prod Cost Decrease	0.00	29,017.51	29,017.51	29,426.50	37,588.43
External Environmental Benefit	0.00	0.00	0.00	0.00	8,572.25
PS Adj Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Fixed Admin Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Fixed Cap. Admin Decrease	0.00	0.00	0.00	0.00	0.00
PS Fixed Other Ann Benefits Inc	0.00	0.00	0.00	0.00	0.00
PS Generation Cap. Credit	0.00	6,203.43	6,203.43	6,313.31	8,512.57
Internal Environmental Benefit	0.00	0.00	0.00	0.00	0.00
PS Non-Elec Acq. Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Non-electric Revenue Increase	0.00	0.00	0.00	0.00	0.00
PS Part. Based Admin Cost Dec	0.00	0.00	0.00	0.00	0.00
PS Part. Based Cap Admin Dec	0.00	0.00	0.00	0.00	0.00
PS Part. Other Ann Benefits Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Charges Received	0.00	0.00	0.00	0.00	0.00
PS Sales Tax Decrease	0.00	0.00	0.00	0.00	0.00
PS Transmission Cap. Credit	0.00	365.72	365.72	370.79	471.56
TP Non-Elec Acq Cost Decrease	0.00	0.00	0.00	41.89	50.70
Cust shared svngs Rcv from TP	2.78	0.00	0.00	2.78	0.00
PS Loan/Lease Rcv	0.00	0.00	0.00	0.00	0.00
PS Shared Savings Rcv	0.00	0.00	0.00	0.00	0.00

Plan: TOT_NIMP - Total with Nonimpact Costs - 2015 Eval

Cost Components Data discounted to 2015 NPV Method: Midyear	Participant Test	Utility Test	Ratepayer Impact Test	Total Resource Test	Societal Test (Revised)
Discount Rates:	Mkt.Seg.	7.12	7.12	6.86	2.68
Units:	$ Thousands	$ Thousands	$ Thousands	$ Thousands	$ Thousands
Cust Electric Bill Increase	0.00	0.00	0.00	0.00	0.00
Cust Non-electric Bill Increase	1,167.78	0.00	0.00	0.00	0.00
Customer Participation Charges	0.00	0.00	0.00	0.00	0.00
Cust Invest Inc - Net of FR	0.00	0.00	0.00	19,762.18	19,762.18
Cust Invest Inc - Gross of FR	19,762.18	0.00	0.00	0.00	0.00
Cust Inc Tax Inc - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust Inc Tax Inc - Gross of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Inc - Net of FR	0.00	0.00	0.00	0.00	0.00
Cust O&M & Oth Cst Inc - Grs of FR	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Net Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Investment	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Operating Cost	0.00	0.00	0.00	0.00	0.00
Cust CHP/Cogen Grs Oper Cst	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Paid to TP	0.00	0.00	0.00	0.00	0.00
Cust Loan/Lease Paid to Util	0.00	0.00	0.00	0.00	0.00
Cust Elec Rev from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust E. Rev Net from CHP/Cogen	0.00	0.00	0.00	0.00	0.00
Cust Shrd Svngs Paid to Util	0.00	0.00	0.00	0.00	0.00
PS Base Revenue Decrease	0.00	0.00	76,330.79	0.00	0.00
PS Cap Rebates Paid	0.00	0.00	0.00	0.00	0.00
PS Distribution Cap. Debit	0.00	0.00	0.00	0.00	0.00
PS Elec Prod Cost Increase	0.00	0.00	0.00	0.00	0.00
External Environmental Cost	0.00	0.00	0.00	0.00	0.00
PS Adj Revenue Decrease	0.00	0.00	0.00	0.00	0.00
PS Fixed Admin Cost Inc	0.00	3,170.03	3,170.03	3,170.03	3,170.03
PS Fixed Cap. Admin Increase	0.00	0.00	0.00	0.00	0.00
PS Fixed Other Ann Benefits Dec	0.00	0.00	0.00	0.00	0.00
PS Generation Cap. Debit	0.00	0.00	0.00	0.00	0.00
Internal Environmental Cost	0.00	0.00	0.00	0.00	0.00
PS Non-Elec Acq. Cost Inc	0.00	0.00	0.00	0.00	0.00
PS Non-electric Revenue Decrease	0.00	0.00	0.00	0.00	0.00
PS Part. Based Admin Cost Inc	0.00	7.95	7.95	7.95	7.95
PS Part. Based Cap Admin Inc	0.00	0.00	0.00	0.00	0.00
PS Part. Other Ann Benefits Dec	0.00	0.00	0.00	0.00	0.00
PS Rebates Paid	0.00	3,032.31	3,032.31	0.00	0.00
PS Sales Tax Increase	0.00	0.00	0.00	0.00	0.00
PS Transmission Cap. Debit	0.00	0.00	0.00	0.00	0.00
TP Non-Elec Acq Cost Increase	0.00	0.00	0.00	610.99	761.85
Cust Shared Savings Paid to TP	0.00	0.00	0.00	0.00	0.00
PS Loan/Lease Paid	0.00	0.00	0.00	0.00	0.00
PS Shared Savings Paid	0.00	0.00	0.00	0.00	0.00

Appendix C

Customer Renewable Energy (RE) Project Data

2015 Solar Electric

Residential or Commercial

R or C	Location	kW	On-line date	CIP Incentive
C	Duluth	13.44	10/22/2015	$20,000.00
C	Duluth	13.44	12/21/2015	$20,000.00
R	Royalton	6.33	7/28/2015	$9,495.00
R	Duluth	10.26	11/18/2015	$15,390.00
R	Saginaw	5.75	11/5/2015	$8,625.00
R	Pierz	20	10/1/2015	$20,000.00
R	Duluth	8.4	6/11/2015	$12,600.00
R	Silver Bay	7.85	10/14/2015	$11,775.00
	Total	85.47		$117,885.00
	Average	10.68375		

This list is specific to SolarSense rebated installations and is not inclusive of Made in Minnesota incentive installations.

2015 Solar Thermal

Residential or Commercial

R or C	Location	kW	On-line date	CIP Incentive
R	Pierz			$4,977.50
				$4,977.50

There were no wind installations rebated in 2015.

Appendix D

List of Demonstrations, Training,
Seminars and Presentations

2015 Presentations, Trainings, and Conferences

Description of Training	Category	Date	Location
E Source Training	Training	January	Duluth
Better Buildings Better Plant	Webinar	January	Online
CARD Grant - Stakeholder Meetings	Webinar	January	Online
USGBC	Meeting	January	Duluth
E Source Training	Training	January	Duluth
AHR Conference	Conference	January	Chicago
MEEA Conference	Conference	January	Chicago
MN Energy Code Update	Training	January	Duluth
EM&V from AESP	Webinar	January	Online
Certified Energy Manager	Training	February	Maple Grove
Tower Tech Webinar	Webinar	February	Online
38 Zeros	Webinar	February	Online
AESP Conference	Conference	February	Orlando
ASHRAE Refrigeration Seminar	Seminar	February	Roseville
UMD Engineering Community Energy Project	Training	February	Duluth
Thermography Training	Training	February	Chanhassen
Modern Hydronic Designs, Controls, & Condensing Boilers (Energy Design Conference (PRE))	Seminar	February	Duluth
Energy Design Conference	Conference	February	DECC
Border States Trade Show	Conference	March	Duluth
ENERGY STAR Portfolio Manager 101/201	Webinar	March	Online
ECW Grocery and C-Store Energy Eff.	Webinar	March	Online
CERTS Conference	Conference	March	St. Cloud
CARD Grant - Stakeholder Meetings	Meeting	March	St. Paul
ECW B4 Conference	Conference	March	Wisconsin Dells
Boiler Controls Lunch & Learn	Meeting	March	Chanhassen
USGBC	Seminar	March	Duluth
ESP Training - Smart Measures	Training	March	Webinar
Electric Metering Fundamentals Training	Meeting	March	Minneapolis
TRMAC Meeting	Meeting	March	St. Paul
Residential A/C and Heating System	Training	March	St. Paul
AESP Spring Meeting	Meeting	March	Minneapolis
Mitsubishi Product Update	Training	March	Superior

2015 Presentations, Trainings, and Conferences

Description of Training	Category	Date	Location
UPS Systems	Webinar	March	Webinar
WUFI Moisture Modeling	Training	April	Duluth
Solution Expo	Expo	April	St. Paul
Building America Technology-to-Market Roadmaps	Webinar	April	Webinar
Advanced RTU Control (ARC) Strategies	Webinar	April	Online
Lake Superior College Earth Day Celebration	Event	April	Duluth
Arrowhead Home and Builder Show	Event	April	Duluth
Iron Range Earth Fest	Event	April	Duluth
Apogee Webinar	Webinar	April	Duluth
UMD Spring Sustainability Fair	Event	April	Duluth
Classroom Lighting Design & Control Options	Meeting	April	Cloquet/Conference Call
Camp Ripley Earth Day Event	Meeting	April	Little Falls
CEE Multi-Family Ventilation Assessment	Training	April	Minneapolis
Lead Generation	Webinar	April	Webinar
Variable Flow Pumping	Webinar	April	Online
VRF Systems for Commercial Application	Meeting	May	Chanhassen/Conference Call
IceCOLD Technology	Training	May	Cloquet/Conference Call
The ABCs of Comfort	Webinar	May	Webinar
Energy Efficiency & Technology Conference	Conference	May	Minnetonka
Northland Community Wellness Day	Event	May	Duluth
Royalton Green Fair Celebration	Meeting	May	Royalton
MEEA Advanced Lighting	Webinar	May	Online
CIP Behavioral Program Workshop	Meeting	May	St. Paul
Environmental Initiative Awards	Meeting	May	Minneapolis
VFA Asset Management	Training	May	Duluth
Center Point Tech Recap	Meeting	June	Chanhassen
Radiant Heating Project Estimating & Install	Webinar	June	Webinar
Viking Trade Show	Expo	June	Duluth
TRMAC Meeting	Meeting	June	St. Paul
Jay Jacobson	Meeting	June	Chanhassen
Lunch and Learn- Grocery Stores and C-stores Presentation	Meeting	June	Chanhassen/Online
Energy Management-Low Hanging Fruit	Training	June	Chanhassen

2015 Presentations, Trainings, and Conferences

Description of Training	Category	Date	Location
MEEA Regional Conference	Meeting	June	Minneapolis
League of MN Cities Annual Conference	Seminar	June	Duluth
Lunch and Learn-Hormel Foods	Meeting	June	Chanhassen
Snuggpro	Training	July	Cloquet
SB2030 - Charlotte 9 day, 9 week course	Training	July	Minneapolis
Fred Drexler Presentation	Training	July	Chanhassen
USGBC Quarterly Meeting	Meeting	July	Minneapolis
Accelerated Energy Productivity 2030	Meeting	July	St. Paul
SB2030 Recap	Meeting	July	Chanhassen/Conference Call
Exterior Insulation Options	Training	July	Minneapolis
Human Centric Lighting	Seminar	July	Chanhassen
Human Centric Lighting Part 2	Webinar	July	Webinar
Utility-Only Multifamily Webinar: Whole Bldg Data Aggregation and Utility/Landlord Portals	Webinar	August	Online
State Fair	Event	August	St. Paul
TRM Meeting	Meeting	August	St. Paul
Low Hanging Fruit	Training	August	Chanhassen
MMUA	Conference	August	Brainerd
ESP Advisory Meeting - COUs Meeting #1	Seminar	August	St. Paul
Ventilation Strategies for High Performance Homes	Webinar	August	Webinar
The Clean Power Plan and What It Means for Energy Efficiency	Webinar	September	Online
Energy Models 101 for Building Owners, Managers & Tenants: Strategies for Using Iterative Energy Models to Drive Project Savings	Webinar	September	Online
Minnesota Energy Code	Training	September	Roseville
Energy Wise Expo	Expo	September	Lakeville
AESP Regional Meeting	Meeting	September	Duluth
Compressed Air Best Practices	Webinar	September	Online/Office
Lake Superior Harvest Festival	Event	September	Duluth
Minnesota Blue Flame Gas Association	Expo	September	St. Paul
Building Green Conference	Conference	September	Duluth
ASHRAE/AEE Energy Expo	Expo	September	Bloomington
WEEC Conference	Conference	September	Orlando, FL
Benchmark Your Portfolio Results: Insights from 50 Utilities	Webinar	September	Online

2015 Presentations, Trainings, and Conferences

Description of Training	Category	Date	Location
Next Gen Commercial Water Heating: How to Double Efficiency and Eliminate Bulky Storage	Webinar	October	Online
EEBA Conference	Conference	October	Denver
Energy Awareness Expo	Event	October	Duluth
E Source Conference	Conference	October	Denver
CIP Research Group Meeting	Meeting	October	Eau Claire
Multifamily 2015 Fall Convention and Products Show	Expo	October	St. Paul
Integrating ISO 8573-1 Compressed Air Quality Classes into SQF Food Safety Certification	Webinar	October	Webinar
Innovations in Multifamily Building	Webinar	October	Online
TRM Advisory Meeting	Meeting	October	St Paul
CHP Action Plan	Webinar	October	Online
Economic Benefit of CIP	Webinar	October	Online
Simuwatt Webinar	Webinar	October	Cloquet
MEEA Fall Conference	Meeting	November	Minneapolis
Liquid Pool Covers	Seminar	November	Chanhassen
DER Behavioral CARD Grant	Seminar	November	St Paul
Reaching New Heights in Building Efficiency	Webinar	December	Webinar
Drones and Energy Efficiency	Seminar	December	Duluth
Luma Sales	Seminar	December	Shakopee
Open Forum - Clean Power Plan	Seminar	December	Minneapolis
BOC Training	Training	December	Little Falls
Georgetown	Meeting	Weekly	Duluth