Right Fit Options

Understanding

power of one®

Connecting through Conservation

Tools & Resources

Informed Choices

Conservation Improvement Program

2014 Consolidated Filing

April 1, 2015 | Docket No. E015/CIP-13-409.01 | E015/M-15-80

minnesota power

AN ALLETE COMPANY

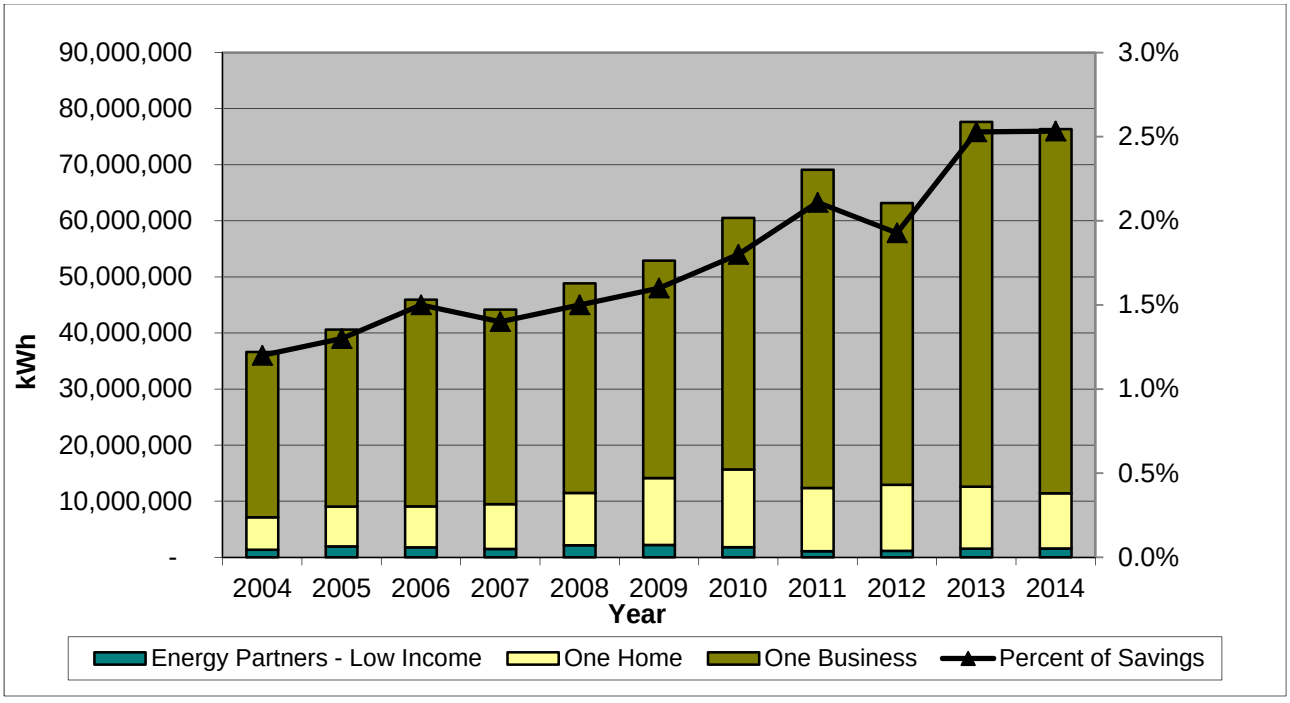
Summary

Minnesota Power
2014 Conservation Improvement Plan (CIP)
EXECUTIVE SUMMARY

Minnesota Power has a proven track record with successful conservation program performance, delivering energy savings year over year while maintaining focus on the customer experience and reinforcing targeted program objectives—quality installations, informed decisions, conservation first and safety. Minnesota Power's Power of One® conservation program remains a core service offering and is a key element of *Energy***Forward**, the company's resource strategy for providing affordable, reliable and environmentally compliant electric power through a balanced mix of one-third renewable energy, one-third natural gas and one-third coal. Through *Energy***Forward**, Minnesota Power is bringing large amounts of clean renewable energy online, diversifying its energy mix, reducing reliance on coal and further reducing emissions at existing facilities—all while continuing to deliver safe and reliable service at the lowest possible cost to customers.

Power of One® conservation program results have been at or above the 1.5% energy-savings target since the goal went into effect in 2010. In 2014, Minnesota Power continued with its exceptional program results, surpassing the state's 1.5% energy-savings goal. Figure 1 illustrates historical and recent achievements through CIP.

Figure 1: Minnesota Power's 2004–2014 CIP Achievements



As dollar savings are often cited as the primary driver for customers in terms of energy efficiency investments, it's notable that these goals have been achieved while Minnesota Power's total average retail electric rate was the second lowest in the U.S. among 169 providers surveyed.[1]

Through its conservation program efforts, Minnesota Power achieved 76,338,363 kWh and 9,215 kW in demand savings in 2014. This is equivalent to 2.5% of retail energy sales,[2] well above the 1.5% energy-savings goal established in Minn. Stat. § 216B.241, and 164% of the approved energy-savings goal for the year. Minnesota Power spent a total of $7,200,833 to achieve these results. This is 101% of the approved program budget, as modified,[3] for 2014. For a summary of Minnesota Power's 2014 CIP achievements, refer to Table 1. This strong level of performance would not be possible without the active participation of engaged customers, talented employees committed to excellence, and a strong trade ally network.

Table 1: Minnesota Power's 2014 CIP Expenditures and Energy Savings

2014	***Expenditures***	***Energy Savings (kWh)***
"Direct Savings" Programs:		
Energy Partners (Low Income)	$565,405	1,555,355
Power of One® Home (Residential)	$1,265,585	9,850,179
Power of One® Business (Business/Commercial/Industrial/Agricultural)	$2,821,421	64,932,829
"Indirect Savings" Programs:		
Customer Engagement	$769,903	
Energy Analysis	$645,052	
Customer Renewable Energy	$347,656	
Research & Development	$291,069	
Evaluation & Program Development	$307,811	
Regulatory Charges	$186,931	
Total	**$7,200,833**	**76,338,363**

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

[1] According to statistics compiled by Edison Electric Institute, Typical Bills and Average Rates Report Summer 2014, dated July 1, 2014. (The numbers and rankings relate to the 12-month time period ending June 30, 2014.)

[2] 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 2014 are calculated as a percentage of this adjusted figure.

[3] In 2014, Minnesota Power requested to modify its original budget for the Energy Partners program and received Department approval under Docket No. E015/CIP-13-409.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Minnesota Power's 2014 Conservation Improvement Program Consolidated Filing	Reporting on CIP Tracker Account Activity, Financial Incentives Report, Proposed CPA Factors and 2014 Project Evaluations Docket No. E-015/M-15-80 E-015/CIP-13-409.01

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 2014 CIP Tracker Account activity, resulting in a year-end 2014 balance of ($1,116,332). Minnesota Power also requests approval to book financial incentives in the amount of $6,237,702. In addition, Minnesota Power requests approval of a revised Conservation Program Adjustment (CPA) factor of $0.002334/kWh, to be first implemented without proration on July 1, 2015. 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 "409.01" for the number and then click on "Search." The MPUC Docket Number is "15" for the year and "80" 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 2014 Conservation Improvement Program Consolidated Filing	Reporting on CIP Tracker Account Activity, Financial Incentives Report, Proposed CPA Factors and 2014 Project Evaluations Docket No. E-015/M-15-80 E-015/CIP-13-409.01

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MPUC

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 DSM financial incentives reports into a single submittal filed annually. This is the twenty-second 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 2014. 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 2014 expenditures and cost recovery by month
3) **Financial Incentives Report**
4) **2015–2016 Proposed Conservation Program Adjustment (CPA)**

   This is the calculation of the CPA factor for the period from July 2015 through June 2016 based on estimated expenditures, cost recovery, and financial incentive.

5) **2014 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) **2014 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 analysis as well as project information sheets.

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.[4] 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.

10) **Success Stories**

11) **Appendix**

[4] 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, 2015. The revised CPA factor is proposed to take effect without proration on July 1, 2015. 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 a schedule 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 (e-mail)

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

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 2014 CIP Tracker activity, resulting in a year-end 2014 balance of ($1,116,332).
- 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, 2015.
- 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.

From the Department:

- Approval of the individual 2014 CIP Project Evaluations.
- Approval of Minnesota Power's response to various Department orders as indicated in the "Compliance" section of this filing.
- Guidance regarding the calculation, inclusion, and associated analysis of credited energy savings for Made in Minnesota payments for solar under Minn. Stat. § 216C.412, subd. 2.

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 (e-mail)

and

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

Respectfully submitted,

Date: April 1, 2015

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 2013 and 2014 and presents the tracker balance month-by-month throughout each year. During 2014, $7,200,833 of CIP expenditures were charged to Tracker 2, while base rates recovered $4,571,681, and an additional recovery of $11,825,773 occurred through the CPA factor, as seen on page 1 of the exhibit. In addition, ($157,343) in carrying charges and $8,733,448 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 2014. The resulting CIP Tracker Account balance at the end of 2014 was ($1,116,332).

During 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 $0.004062/kWh, effective November, 2013, as approved by the MPUC Order dated October 15, 2013, in Docket No. E015/M-13-215 and consistent with the subsequent compliance filing submitted January 9, 2014. The second 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 Carrying Charge rate used and reflected in Exhibit 1 utilizes the weighted cost of capital, as approved on March 7, 2011, with an effective date of June 1, 2011 in Minnesota Power's Retail Rate, Docket No. E015/GR-09-1151. The development of the monthly carrying charge factor can be seen on page 3 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 of Commerce (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 from all retail customers, as in the past, the first CIP Tracker Account balance through 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, and 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 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 were approved under Docket E015/CIP-13-852.

MINNESOTA POWER
New CIP Tracker #2 Account
Activity 2000 - 2014

		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)	
	2013														
1	BEGINNING OF PERIOD BALANCE	$4,337,461.07	$2,909,150.87	$1,534,142.54	$437,218.39	($638,529.01)	($1,736,573.87)	($2,700,884.36)	($3,869,445.20)	($4,722,280.18)	($5,752,177.23)	$500,960.89	($186,956.09)	$4,337,461.07	
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	$4,337,461.07	$2,909,150.87	$1,534,142.54	$437,218.39	($638,529.01)	($1,736,573.87)	($2,700,884.36)	($3,869,445.20)	($4,722,280.18)	($5,752,177.23)	$500,960.89	($186,956.09)		
5	COMPOSITE TAX RATE	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%		
6	DEFERRED TAXES ON NET BEGIN BAL 1/	$1,794,407.64	$1,203,515.71	$634,674.77	$180,877.25	($264,159.45)	($718,420.61)	($1,117,355.86)	($1,600,789.48)	($1,953,607.31)	($2,379,675.72)	$207,247.52	($77,343.73)		
7	NET INVESTMENT (L20 - L25)	$2,543,053.43	$1,705,635.16	$899,467.77	$256,341.14	($374,369.56)	($1,018,153.26)	($1,583,528.50)	($2,268,655.72)	($2,768,672.87)	($3,372,501.51)	$293,713.37	($109,612.36)		
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)	$24,416.00	$16,376.00	$8,636.00	$2,461.00	($3,594.00)	($9,775.00)	($15,203.00)	($21,781.00)	($26,582.00)	($32,379.00)	$2,820.00	($1,052.00)	($55,657.00)	
10	CIP PROGRAM CHARGES TO DEFERRED DEBIT	$295,110.94	$367,694.47	$535,370.07	$486,422.50	$348,882.85	$425,096.27	$292,926.32	$641,177.68	$522,767.82	$618,986.71	$651,099.23	$1,220,293.18	$6,405,828.04	
11	FINANCIAL INCENTIVES 4/	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$7,105,410.00	$0.00	$0.00	$7,105,410.00	
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	($87,535.00)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	($87,535.00)	
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/	($351,707.92)	($437,631.66)	($398,045.24)	($409,392.84)	($354,671.44)	($341,764.66)	($332,842.55)	($368,691.51)	($368,574.27)	($379,004.26)	($326,534.72)	($387,205.69)	($4,456,066.76)	
17	LESS: CIP COSTS RECOVERED via CPA 0481 6/	($1,308,594.22)	($1,321,447.14)	($1,242,884.98)	($1,155,238.06)	($1,088,662.27)	($1,037,867.10)	($1,113,441.61)	($1,103,540.15)	($1,157,508.60)	($1,059,875.33)	($1,015,301.49)	($1,140,895.90)	($13,745,256.85)	
18	END OF PERIOD BALANCE (L20 + L28 + L29..L36)	$2,909,150.87	$1,534,142.54	$437,218.39	($638,529.01)	($1,736,573.87)	($2,700,884.36)	($3,869,445.20)	($4,722,280.18)	($5,752,177.23)	$500,960.89	($186,956.09)	($495,816.50)	($495,816.50)	
19	TOTAL CPA & CCRC REVENUE	$1,747,837.14	$1,759,078.80	$1,640,930.22	$1,564,630.90	$1,443,333.71	$1,379,631.76	$1,446,284.16	$1,472,231.66	$1,526,082.87	$1,438,879.59	$1,341,836.21	$1,528,101.59	$18,288,858.61	
	2014														
20	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)	
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	($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)		
24	COMPOSITE TAX RATE	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%		
25	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)		
26	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)		
27	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%		
28	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)	
29	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	x
30	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	
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	$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	
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/	($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)	x
36	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)	x
37	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)	
38	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	

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 - 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-13-215 dated 10/15/2013 and Docket No. E015/M-14-233 dated 07/28/2014.

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

MINNESOTA POWER
Conservation Improvement Program
2014
Trial Balance

Sources: Hyperion & CIP Tracker

	CHARGE #	DESCRIPTION	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Direct Impact Projects															
x		CIP: ENERGY PARTNERS (Low Income)	$565,404.95	$167,084.80	$29,974.90	$33,723.89	$53,216.44	$37,866.27	$34,233.77	$32,560.31	$33,251.40	$24,413.85	$28,635.18	$47,796.25	$42,647.89
x		CIP: ONE HOME (Residential)	$1,265,585.19	$23,359.86	$47,837.32	$80,903.96	$166,080.65	$96,763.05	$125,956.36	$78,232.75	$83,470.98	$56,798.28	$156,576.61	$47,729.96	$301,875.41
x		CIP: ONE BUSINESS (C/I/Ag)	$2,821,420.83	$94,254.43	$191,998.90	$143,814.07	$131,559.32	$363,505.00	$262,446.79	$110,595.10	$226,811.13	$151,682.02	$208,162.32	$383,783.16	$552,808.59
		Total Direct Impact Projects	$4,652,410.97	$284,699.09	$269,811.12	$258,441.92	$350,856.41	$498,134.32	$422,636.92	$221,388.16	$343,533.51	$232,894.15	$393,374.11	$479,309.37	$897,331.89
Indirect Impact Projects															
x		CIP: CUSTOMER ENGAGEMENT	$769,902.82	($17,208.75)	$6,061.22	$37,730.45	$83,633.88	$122,826.74	$26,897.56	$23,099.51	$29,024.75	$27,913.47	$72,839.03	$106,671.99	$250,412.97
x		CIP: CUSTOMER RENEWABLE ENERGY	$347,655.88	$1,627.91	$183,643.19	$1,334.07	$696.31	$5,328.56	$25,608.77	$14,580.00	$51,391.20	$497.41	$30,756.69	$32,191.77	$0.00
x		CIP: ENERGY ANALYSIS	$645,051.55	$38,580.16	$34,703.82	$119,040.37	$87,475.59	$68,091.65	$12,799.52	$118,333.76	$56,106.23	$53,338.11	$55,529.51	$68,129.05	($67,076.22)
x		CIP: EVALUATION & PLANNING	$307,811.48	$9,510.21	$11,112.42	$25,817.39	$25,527.59	$14,769.64	$16,562.45	$21,301.10	$19,427.43	$15,913.94	$46,466.93	$20,561.87	$80,840.51
x		CIP: REGULATORY CHARGES	$186,930.85	$0.00	$0.00	$0.00	$0.00	$45,005.67	$45,005.67	$0.00	$0.00	$42,563.97	$0.00	$0.00	$54,355.54
x		CIP: RESEARCH & DEVELOPMENT	$291,069.02	$5,138.00	$8,059.75	$10,291.23	$11,884.68	$71.26	$8,052.92	$1,975.70	$1,836.41	$60,346.93	$28,815.80	$12,453.28	$142,143.06
		Total Indirect Impact Projects	$2,548,421.60	$37,647.53	$243,580.40	$194,213.51	$209,218.05	$256,093.52	$134,926.89	$179,290.07	$157,786.02	$200,573.83	$234,407.96	$240,007.96	$460,675.86
		Total Project Charges	$7,200,832.57	$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
Other CIP Tracker Account Charges															
	1864-0484	CIP: FINANCIAL INCENTIVES - TRACKER 2	$8,733,448.00	$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
	1864-0483	CIP: CARRYING CHARGE - TRACKER 2	($157,343.00)	($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)
		Total Charges to the Deferred Debit	$8,576,105.00	($2,791.00)	($11,688.00)	($18,004.00)	($23,748.00)	($29,795.00)	($32,513.00)	$8,696,798.00	$7,274.00	$2,724.00	($1,357.00)	($4,272.00)	($6,523.00)
CIP Tracker Account Recovery															
	1864-0481	CIP: CPA RECOVERY - TRACKER 2	($11,825,772.99)	($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)
	1864-0482	CIP: CCRC CLEARANCE - TRACKER 2	($4,571,680.56)	($458,544.53)	($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)
		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	$55,657.00	$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
		Total CIP Tracker Account Recovery	($16,341,796.55)	($1,844,417.93)	($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)

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.

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 each year its Financial Incentives Report. In compliance with Docket No. E015/M-95-898, Minnesota Power is now required to file on April 1 each year all CIP-related reports/requests in one submittal.

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.

During 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, 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 Conservation Improvement Program (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 assure 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. Per a Commission Order on November 19, 2013, the incentive cap shall be at 30 percent of net benefits for Minnesota Power. According to the December 20, 2012 Order, the Commission required all utilities except Otter Tail Power and Minnesota Power to make a compliance filing on or before February 1, 2013, integrating the Commission's decision into their individual incentive proposals. The Commission required Otter

[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.

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 2014 performance consistent with the outcome of the procedures as set forth in Docket No. E,G-999/CI-08-133. For 2014, Minnesota Power adjusted its average sales to reflect the removal of newly exempt customers and reflected adjustments to the average retail energy sales used in its 2014 financial incentive calculation.

Minnesota Power - 2014 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:	**0.02189**	**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	$802,907	$802,907	**$0**	$0.000
0.2%	6,027,201	0.00%	0.00%	1.00	$1,605,813	$1,605,813	**$0**	$0.000
0.3%	9,040,802	0.00%	0.00%	1.00	$2,408,720	$2,408,720	**$0**	$0.000
0.4%	12,054,403	0.00%	0.00%	1.00	$3,211,626	$3,211,626	**$0**	$0.000
0.5%	15,068,003	4.38%	4.38%	1.00	$4,014,533	$4,014,533	**$175,793**	$0.012
0.6%	18,081,604	6.57%	6.57%	1.00	$4,817,439	$4,817,439	**$316,428**	$0.018
0.7%	21,095,205	8.76%	8.76%	1.00	$5,620,346	$5,620,346	**$492,221**	$0.023
0.8%	24,108,805	10.95%	10.95%	1.00	$6,423,252	$6,423,252	**$703,173**	$0.029
0.9%	27,122,406	13.14%	13.14%	1.00	$7,226,159	$7,226,159	**$949,284**	$0.035
1.0%	30,136,007	15.33%	15.33%	1.00	$8,029,066	$8,029,066	**$1,230,554**	$0.041
1.1%	33,149,607	17.52%	17.52%	1.00	$8,831,972	$8,831,972	**$1,546,982**	$0.047
1.2%	36,163,208	19.71%	19.71%	1.00	$9,634,879	$9,634,879	**$1,898,568**	$0.053
1.3%	39,176,808	21.89%	21.89%	1.10	$10,437,785	$9,488,896	**$2,077,558**	$0.053
1.4%	42,190,409	24.08%	24.08%	1.00	$11,240,692	$11,240,692	**$2,707,218**	$0.064
1.5%	45,204,010	26.27%	26.27%	1.00	$12,043,598	$12,043,598	**$3,164,281**	$0.070
Filed Goal	**46,553,951**	**27.25%**	**27.25%**	**1.00**	**$12,403,260**	**$12,403,260**	**$3,380,424**	$0.073
1.6%	48,217,610	28.46%	28.46%	1.00	$12,846,505	$12,846,505	**$3,656,502**	$0.076
1.7%	51,231,211	30.00%	30.00%	1.00	$13,649,411	$13,649,411	**$4,094,823**	$0.080
1.8%	54,244,812	30.00%	30.00%	1.00	$14,452,318	$14,452,318	**$4,335,695**	$0.080
1.9%	57,258,412	30.00%	30.00%	1.00	$15,255,225	$15,255,225	**$4,576,567**	$0.080
2.0%	60,272,013	30.00%	30.00%	1.00	$16,058,131	$16,058,131	**$4,817,439**	$0.080
2.1%	63,285,614	30.00%	30.00%	1.00	$16,861,038	$16,861,038	**$5,058,311**	$0.080
2.2%	66,299,214	30.00%	30.00%	1.00	$17,663,944	$17,663,944	**$5,299,183**	$0.080
2.3%	69,312,815	30.00%	30.00%	1.00	$18,466,851	$18,466,851	**$5,540,055**	$0.080
2.4%	72,326,416	30.00%	30.00%	1.00	$19,269,757	$19,269,757	**$5,780,927**	$0.080
2.5%	75,340,016	30.00%	30.00%	1.00	$20,072,664	$20,072,664	**$6,021,799**	$0.080
2014 Results	**75,510,698**	**30.00%**	**30.00%**	**1.00**	**$20,792,339**	**$20,792,339**	**$6,237,702**	$0.083
2.6%	78,353,617	30.00%	30.00%	1.00	$20,875,570	$20,875,570	**$6,262,671**	$0.080
2.7%	81,367,218	30.00%	30.00%	1.00	$21,678,477	$21,678,477	**$6,503,543**	$0.080
2.8%	84,380,818	30.00%	30.00%	1.00	$22,481,384	$22,481,384	**$6,744,415**	$0.080
2.9%	87,394,419	30.00%	30.00%	1.00	$23,284,290	$23,284,290	**$6,985,287**	$0.080
3.0%	90,408,020	30.00%	30.00%	1.00	$24,087,197	$24,087,197	**$7,226,159**	$0.080

** 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.*

SECTION 4

2015–2016 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). The CPA is calculated by dividing the forecasted year-end CIP tracker balance by the forecasted sales (kWh). Minnesota Power files a recalculation of its CPA each April as part of its CIP Consolidated Filing.

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 State 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 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.[7]

2015–2016 CPA DEVELOPMENT

The CIP Tracker Account balance at year-end 2014 reflects the result of prior activity in Tracker 2, as indicated on page 1 of Exhibit 1. However, for CPA purposes, the 2014 year-end balance requires a few adjustments to properly calculate the proposed CPA factor. These include

[7] 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.

financial incentives claimed, approved CIP expenditures for the current year, and anticipated cost recovery through base rates.

Minnesota Power requests MPUC approval of the proposed CPA factor of $0.002334 per kWh to be effective without proration with bills rendered on or after July 1, 2015. 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 anticipates again filing for CPA modification on April 1, 2016, making the effective period for this request essentially July 1, 2015, through June 30, 2016. Until 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-13-215.

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.

MINNESOTA POWER
Conservation Program Adjustment
Proposed for July 2015 - June 2016

Conservation Program Adjustment:

				Adjustments	Requested
1	CIP Tracker 2 Account Balance at the end of the prior year	1/	($1,116,332)	$0.00	($1,116,332)
2	Financial Incentives claimed per Exhibit 2	2/	$6,237,702	$0.00	$6,237,702
3	CIP expenditures approved or budgeted for the current year	3/	$7,145,419	$0.00	$7,145,419
4	CIP Cost Recovery through Base Rates in the current year	4/	($4,733,647)	$0.00	($4,733,647)
5	CPA2 Credit for Opt-out Customers per Budget		$0.00	$0.00	$0.00
6	**Recoverable Tracker Balance**		$7,533,141	$0.00	$7,533,141
7	kWh sales subject to CIP		3,227,255,000		
8	**Conservation Program Adjustment (per kWh methodology)**Line 6/Line 7	5/			**0.002334** per kWh

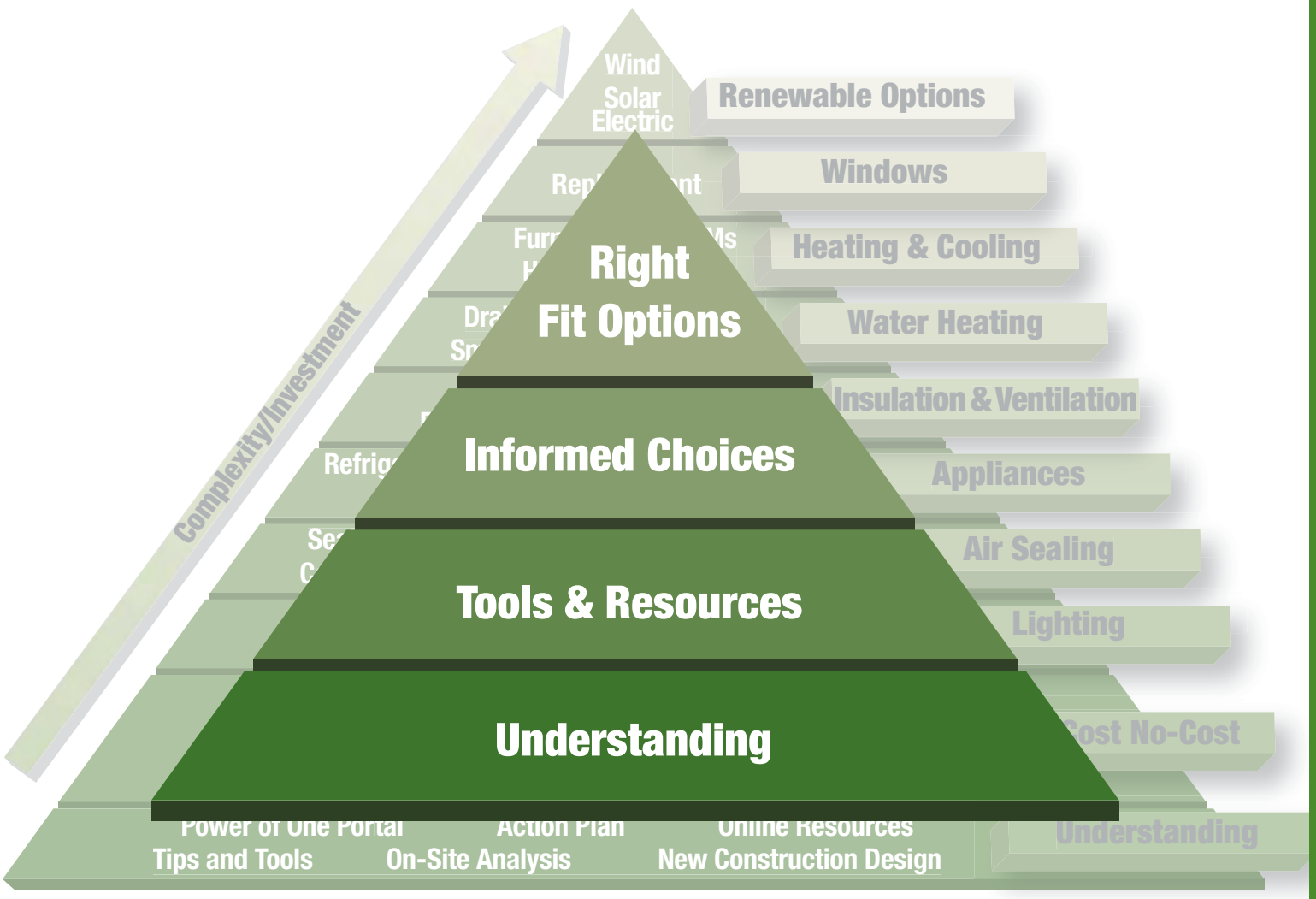
1/ The prior year-end CIP Tracker Account Balance is per Exhibit 1, Page 1, line 37.

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

3/ Current Year is defined as 2015for this purpose and the amount is that approved in the Company's 2014-2016 Triennial CIP filing, Docket E015/CIP-13-409.

4/ CIP Cost Recovery through Base Rates is estimated for 2015 based on the Company's approved conservation cost recovery charge (CCRC) [rate] applied to budgeted 2014 sales less competitive rate, economy, opt-out & unbilled sales.

5/ Per kWh methodology recommended by the Department of Commerce as part of 2008 Consolidated Filing, MPUC Docket No. E015/M-09-299, as proposed in rate case proceedings, MPUC Docket No. E015/GR-09-1151, and as approved in MPUC Docket No. E015/M-11-241.

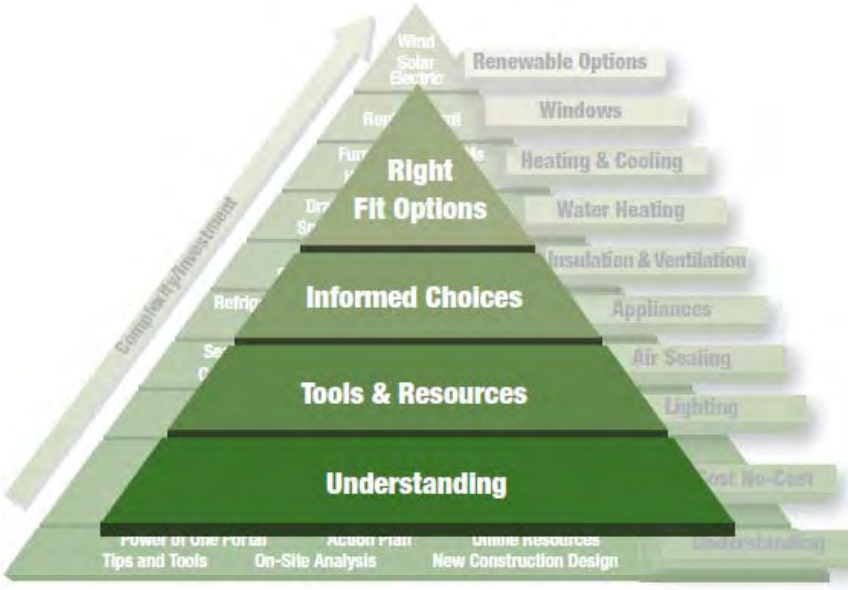


Status Report

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, 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

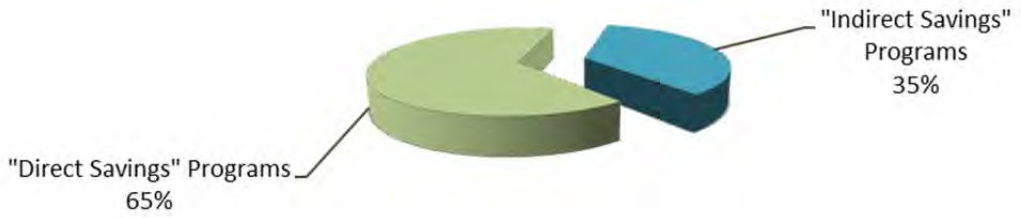


This framework entails ***Meaningful Engagement*** through ***Understanding, Tools & Resources, Informed Choices,*** and ultimately ***Right Fit Options***. To help customers save energy, they must first have a better ***Understanding*** about how they use energy. Minnesota Power shares that responsibility 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.

Figure 2: Program Spending By Direct and Indirect Savings Programs



Investing in a range of programs is essential to keep Minnesota Power's program strong well into the future. (See Figures 3 and 4 for a breakdown of spending by program.)

Figure 3: Approved Budgets & Actual Spending

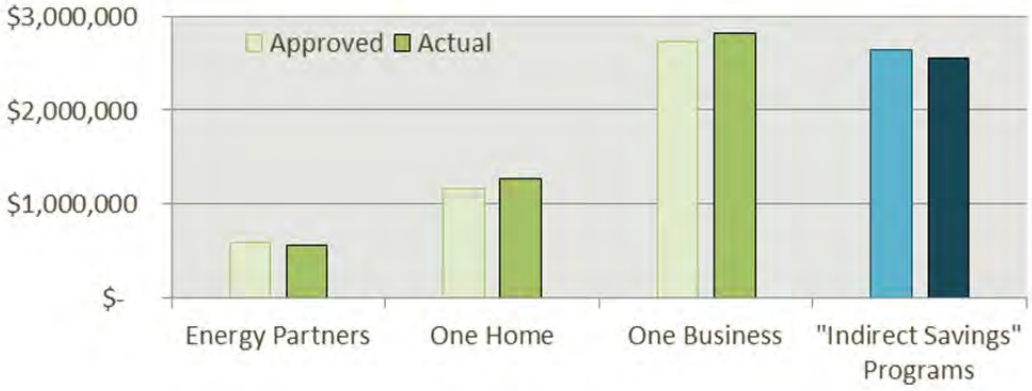
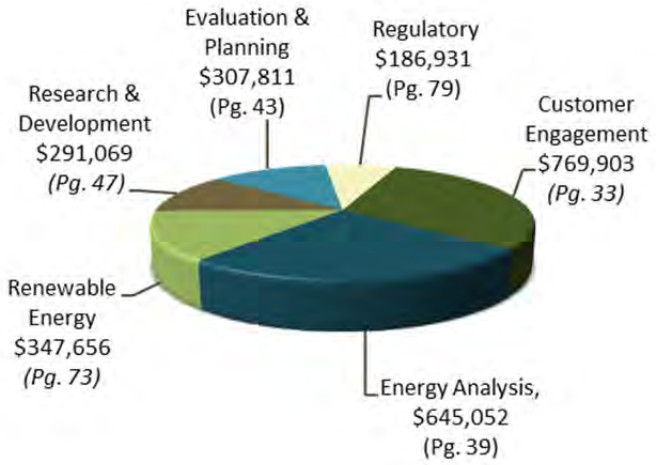


Figure 4: Indirect Savings Program Spending Breakdown



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.

Figure 5: Direct Savings Program Spending Breakdown

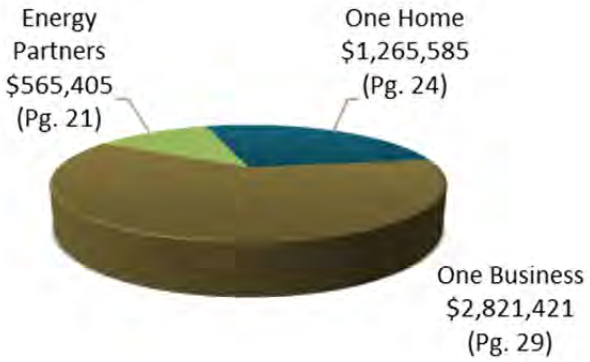
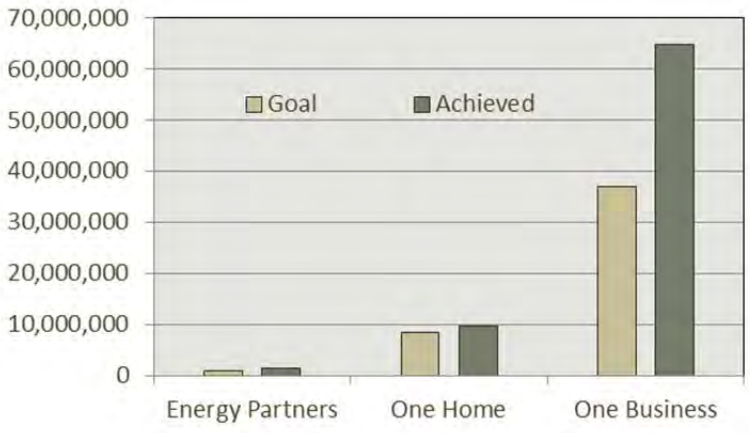


Figure 6: Savings Goals & Achievements



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 established a proven track record with successful conservation program performance, delivering energy savings year over year. In 2014, Minnesota Power once again surpassed the state's 1.5% energy-savings goal. This kind of success may give the impression that these savings levels are sustainable. While that may be true for some time to come, it is important to recognize that these results have required significantly increased investments. The Next Generation Energy Act of 2007 introduced an aggressive energy-savings goal, shifting focus from a spending requirement to energy-savings achievements. Minnesota Power has embraced this opportunity to refine its conservation program and expand upon a viable, cost-effective platform that has delivered energy savings at or above this goal. 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 such a significant portion of savings will likely be harder to come by. 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. Further, regulatory certainty is an important component that will influence the ongoing success and commitment to conservation. 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. They highlight people, businesses and communities taking ownership of their energy usage and how Minnesota Power has been connecting with customers through conservation.

MINNESOTA POWER
2014 CIP Program Spending
12 Months Ended 12/31/2014

	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
Community-focused RE/DG 102031									
1665972 Project & Delivery	$10,590.00							$7,483.89	
1665957 Administration	$17,160.00							$11,372.59	
1822008 Renewable Incentives (includes M	$322,050.00							$328,799.40	
Sub Total	**$349,800.00**							**$347,655.88**	99%
Customer Engagement (10243)									
Education & Outreach	$10,000.00							$166,694.71	
1665986 Project & Delivery(Ed)	$719,200.00							$565,523.75	
1666001 Administration	$68,640.00							$34,349.79	
1666062 Energy Smart								$3,334.57	
Sub Total	**$797,840.00**							**$769,902.82**	96%
Energy Analysis (102030)									
1666003 Administration	$28,600.00							$14,805.07	
1666007 Proj & Del (low income)	$35,255.00							$38,050.00	
1666009 Proj & Del (Resid)	$44,250.00							$113,156.14	
1666012 Proj & Del (C/I & Ag)	$461,400.00							$479,040.34	
Sub Total	**$569,505.00**							**$645,051.55**	113%
Research/Development 100251									
1507285 Research Parent Work Order	$298,360.00							$246,067.47	
1667599 Project & Delivery	$40,000.00							$44,745.81	
1667600 Administration	$11,440.00							$255.74	
Sub Total	**$349,800.00**							**$291,069.02**	83%
Evaluation & Planning (100247)									
1666020 ITS SalesLogix									
1666022 Admin & Project Dev	$174,260.00							$307,811.48	
1666028 Evaluation Labor	$228,260.00							$0.00	
Sub Total	**$402,520.00**							**$307,811.48**	76%
Regulatory Charges (100248)									
1666030 Regulatory Charges	$175,000.00							$186,930.85	
Sub Total	**$175,000.00**							**$186,930.85**	107%
Energy Partners (Low Income) (100244)									
1850622 Incentives	$497,291.00							$223,385.34	
1666032 Project & Delivery	$68,430.00							$319,324.58	
1666036 Administration	$23,415.00							$22,695.03	
Sub Total	**$589,136.00**	**1,020,444**	**133.1**	**1,555,355**	**205.0**	**152%**	**154%**	**$565,404.95**	96%
One Home (Residential) (100245)									
1850620 Incentives	$670,349.00							$679,842.54	
187084 Education & Outreach	$61,350.00							$27,796.04	
Evaluation	$50,000.00								
1666039 Project/Delivery	$348,242.00							$512,591.63	
1666043 Administration	$40,040.00							$45,354.98	
Sub Total	**$1,169,981.00**	**8,528,966**	**1,572.2**	**9,850,179**	**1,754.3**	**115%**	**112%**	**$1,265,585.19**	108%
One Business (C/I/Ag)100246									
1666047 Incentives	$2,175,758.00							$2,109,286.04	
1666050 Administration	$45,760.00							$28,913.21	
1666053Project &Delivery	$492,723.00							$669,255.83	
1666056 M&V	$13,665.00							$13,965.75	
Sub Total	**$2,727,906.00**	**37,004,541**	**4,289.3**	**64,932,829**	**7,256.0**	**175%**	**169%**	**$2,821,420.83**	103%
Total	**$7,131,488.00**	**46,553,951**	**5,994.6**	**76,338,363**	**9,215.3**	**164%**	**154%**	**$7,200,832.57**	101%

One Home

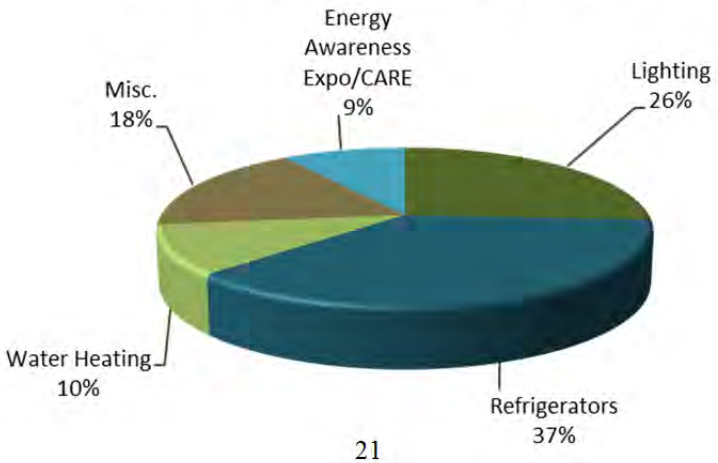
PROGRAM TITLE: ENERGY PARTNERS

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) 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.

Energy Partners Program
2014 Savings by Technology (kWh)



In 2014, the Energy Partners program was promoted via community and educational events and through the addition of an 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 that this sector of customers felt 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	$589,136 *(1)*	$565,405	96%
Total Project Energy Savings (at busbar)	1,020,444 kWh	1,555,355 kWh	152%
Total Project Demand Savings (at busbar)	133.1 kW	205.0 kW	154%
Participants (measures)	4,651	13,008	280%

(1) As modified and approved in 2014.

SUMMARY

Minnesota Power saw increases in both spending and in the number of participants (measures) in 2014. This is directly related to an increase in single family energy analysis which increases participants and in turn increases spending. The Energy Partners program continues to benefit from Arrowhead Economic Opportunity Agency in Virginia dedicating an auditor to the Duluth area to compensate for the closing of their Duluth office in late 2012. This change, along with an increase in demand for services, resulted in a 27% increase above the previous year in single family analysis and exceeding the overall energy-savings goal in 2014 by 52%.

Minnesota Power held one multifamily event at a low-income apartment complex. This event, or "meet and greet," was held prior to auditing each individual apartment in a common space. 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 49 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 11th annual Energy Awareness Expo was held in October at the 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) program. A separate CARE room was also staffed with CARE representatives available to answer questions and help customers sign up for the discounted rate. The CIP team also developed a Conservation Challenge Quiz. Attendees were given a five-question quiz on energy-efficient lighting and an educational guide as a resource to answer the questions. Attendees who scored 100% on the quiz had an opportunity to win a "Save Energy" t-shirt and a smart power strip. The event was well-attended with over 600 low-income families receiving an energy kit containing several energy-saving products and related information and resources for long-term energy savings. This event continues to reach a wide variety of customers with energy information while creating a sense of community through collaboration.

For the past two 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 of Commerce, Division of Energy Resources 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 quarterly touch-base meetings in 2015. 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 our 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.

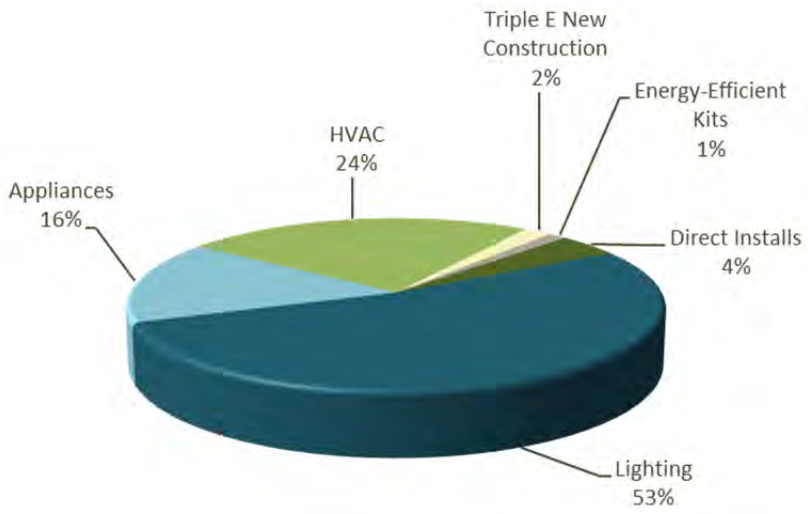
PROGRAM TITLE: POWER OF ONE® HOME

PROGRAM DESCRIPTION

Power of One® Home is Minnesota Power's portfolio-based residential sector program designed to help customers make informed decisions about how to save energy in their homes. This program offers a variety of ways for customers to engage in energy efficiency, from replacing incandescent light bulbs with light emitting diodes (LED) to building an energy-efficient home.

While a variety of technologies are offered through Power of One® Home, lighting continues to be a primary driver for savings, accounting for over half of reported savings. Heating and cooling combined with appliances represent about 40% of savings. Direct installs, Triple E New Construction and energy-efficient kits represent about 7% of reported savings. The program experienced an increase in savings in the HVAC and Appliance programs compared to 2013, helping to better balance the portfolio.

Power of One® Home Program
2014 Savings by Technology (kWh)



The Pyramid of Conservation continues to be a tool to help customers determine where to begin in the energy-efficiency process. 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 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. More details regarding this program are provided in Appendix D—ENERGY STAR® Products, HVAC and Home Energy Analysis with Building Diagnostics Year-end Summary Report.

Specific or key components to success include the following:

- Appliances attained about a 24% increase in reported savings compared to 2013.
- HVAC attained about a 21% increase in reported savings compared to 2013.
- Triple E New Construction projects more than doubled in 2014.

While lighting continues to contribute the largest amount of energy savings, a better balance was achieved in 2014 with an increase in appliances, HVAC and Triple E New Construction.

- **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 has experienced great success in the demand for LEDs and has far surpassed its filed goal. Many factors have contributed to the explosion 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. Also, several LED manufacturers have promoted their products heavily in print, internet and television advertising. Home improvement centers also gave LEDs prime shelf space in the stores to make them easily visible for consumers. LED bulbs are continuing to grow in popularity and availability. For example, 75W and 100W LEDs are now on shelves and have gained the trusted ENERGY STAR® label. Additionally, LED PAR 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.

  In 2014, Minnesota Power continued to offer rebates on ENERGY STAR® clothes washers and refrigerators. Reports on annual clothes washer savings are based on customer reported water heater fuel type, dryer fuel and average loads for washing and drying per week. The Great Refrigerator/Freezer Roundup recycling program, which started in 2009, also had a successful year, partially due to the “oldest freezer” contest. More details regarding this promotion are provided in Appendix D.

  Minnesota Power reintroduced dehumidifiers to the product mix in 2014. This measure was well received due to successful promotion by Minnesota Power and a strong retailer network.

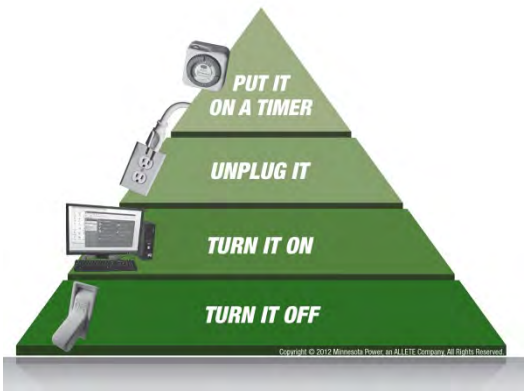
- **Triple E New Construction—**Triple E New Construction is Minnesota Power’s systematic approach to energy-efficient housing. Triple E stands for Energy Efficiency, Education and Evaluation and consists of a plan review followed by three onsite visits. The plan review ensures that prescriptive insulation values are being met and that energy-efficient lighting and appliances are considered. This is followed by a framing visit—this 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 in 2014. Triple E New Construction went from 6 homes in 2013 to 13 homes in 2014. This is an encouraging sign that new construction is on the rise and it helps spur other energy-savings measures which was evident in the number of appliances and HVAC.

- **Direct Install 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 (energy-saving showerhead, faucet aerators, shower timer, and water temperature card) and the Starter Kit (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. Energy-efficient kits are a good way to promote first steps in energy conservation and help generate interest in other program offerings. In 2014, due to the success in the LED market and other aspects of the program, less resources were used in promoting the kits than in years past. In 2015, Minnesota Power plans to more actively promote the kits to help new customers take that first step in energy efficiency.
- **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 (closed and open systems), ASHPs (standard and mini split ductless), CACs (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.
- **Water Heating—**Since water heating is a large portion of residential energy use, Minnesota Power offers several energy-efficient products to help customers reduce water heating costs, such as the SmartPak (mentioned above), Drain Water Heat Recovery (DWHR) and, new to the program this year, 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 participation in 2014, this will continue to be presented as a promoted technology to customers. The program saw good results during the first year of offering Minnesota Power rebates on electric water heaters (energy factor (EF) of .95 or greater).
- **Contractor Network—**Minnesota Power continues to build its HVAC program through a strong contractor network. This includes working closely with contractors 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 2014, Minnesota Power held a mandatory HVAC training for participating contractors at the Energy Design Conference & Expo. The full-day session focused on GSHPs, ECMs and CAC/ASHPs. The

training was recorded for those who could not attend the training in-person and was offered as an online alternative.

- **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.
- **Quality Installation Protocol Across Types of Ground Source Heat Pump (GSHP) Systems—**In 2014, Minnesota Power continued to fulfill the requirements established in its GSHP Compliance Filing. 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. The process has caused a number of GSHP installers to fall off Minnesota Power's participating contractor list; however, it has also laid the groundwork for a strong GSHP contractor network that promotes quality installations to ensure system performance meets customer expectations and reinforces the value of their investment for the long term.
- **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 to help customers and utilities reap the program benefits, including cumulative impact, while leveraging economies of scale these contractors can offer.
- **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. An entire session at the conference was dedicated to Triple E New Construction to explain program standards and building practices to ensure a tight thermal envelope. Minnesota Power experienced increased participation in the Triple E New Construction program for 2014 with 13 Triple E New Construction projects, which is more than double what was achieved in 2013.
- **Plug Load Initiative**—In 2014, 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 plus a discount coupon for a smart power strip, and a detailed action plan for addressing plug load issues in the home. Auditors reported items



Plug Load Pyramid

installed and tasks completed for each customer. Customers who participate in the Power of One® Portal could receive a free Plug Load Toolkit. This free kit includes a computer power management guide, informational materials on plug load management tools and saving energy on plugged-in devices, plus information on the benefits and operation of a smart power strip along with a discount coupon toward the purchase of one. The information kit was valuable in making customers aware of the impact of plug load on their electric usage and also provided them specific tips for addressing it. In December 2014, the discount coupon and online ordering offer for smart power strips was discontinued due to the third-party contractor's decision to shut down the online ordering system.

RESULTS

The table below details the Power of One® Home 2014 approved goals versus actual results.

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$1,169,981	$1,265,585	108%
Total Project Energy Savings (at busbar)	8,528,966 kWh	9,850,179 kWh	115%
Total Project Demand Savings (at busbar)	1,572.2 kW	1,754.3 kW	112%
Participation (measures)	90,026	130,815	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 translate into success for the Power of One® Home program for 2015 and 2016.

One Business

PROGRAM TITLE: POWER OF ONE® BUSINESS

PROGRAM DESCRIPTION

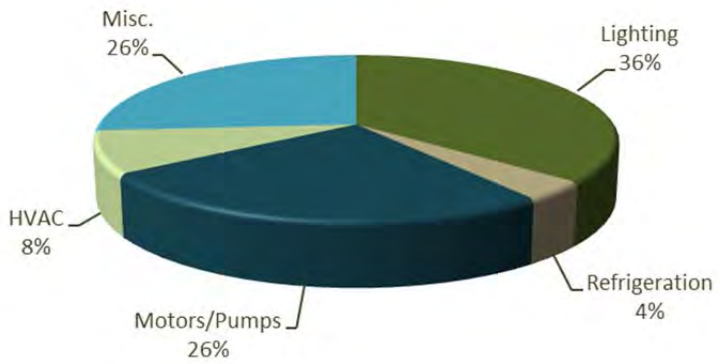
Power of One® Business serves as the primary forum for reaching and serving business, industrial, agricultural, and public sector customers. This program provides a common platform which enables Minnesota Power to inspire a broad base of customers to make effective energy choices while also providing 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, informing 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 (though underutilized) 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 flexibility of Power of One® Business is confirmed by the diversity of technologies contributing to the overall savings in 2014. This delivery strategy of influencing customer choices through offering a wide range of services such as education, training, research, performance studies, energy analysis and overall energy awareness provides customers with tools and resources they need to make informed choices. Regardless of customer size, the Power of One® Business program provides the opportunity to engage in efficiency, whether it's an incentive on a single LED lamp or multiple measures for a major new construction project.

Power of One® Business Program
2014 Savings by Technology (kWh)



In 2014, Minnesota Power continued to field-test less conventional delivery strategies. An example is the use of promotional initiatives as an educational vehicle to drive energy savings. This was particularly effective with LED lighting where emphasis was placed on design and right fit applications of LEDs. Minnesota Power also further refined and broadened the use of energy teams and implemented a community business blitz. Both have shown promising results as viable delivery strategies for both education and energy savings. With energy teams specifically, Minnesota Power is able to work collaboratively with businesses to expand their knowledge base about the impact of energy in their operations and in their communities. The energy team is contingent on a commitment of customer staff for regular participation at mutually agreeable intervals. This approach encourages businesses to look at energy-efficiency options as part of their modeling and long-term capital planning processes as opposed to something separate and distinct. Further, Minnesota Power continued to broaden the scope of energy plans to include non-electric resources, including the interplay of equipment and their energy sources (i.e., encouraging a systems approach to energy efficiency). By encouraging customers to include all resources and bring other resource suppliers to the table, the customer is able to develop a comprehensive plan, utilizing a greater number of the available programs and services in taking action to become more efficient and sustainable. With these actions, an energy management plan can take root and inform the decision-making process. The establishment of an energy team helps to ensure projects remain a high priority and that progress is made toward the savings goals established by the team for that business, thereby helping customers recognize the value of an ongoing, deliberate process. (See the "Team Approach to Energy Savings" story in the Successes section of this filing.)

To further entice participation and make energy resources a priority in business planning, Minnesota Power continues to offer a bonus incentive to customers that place the incentives they receive for energy-saving measures into a revolving account. Customers that agree to the terms of this account receive an additional 10% premium on top of their standard rebate to establish and maintain an account designated exclusively toward future energy-saving activities. These accounts are useful in providing funding for smaller day–to-day projects as well as providing seed money for taking the next step towards even greater efficiencies.

Minnesota Power expanded on the energy team concept in 2014 by developing an "energy consortium" strategy. Through energy team meetings, Minnesota Power realized that customers all had a number of similar reoccurring issues regarding energy conservation projects. So in addition to individual energy team meetings, Minnesota Power initiated group "energy consortium" meetings where customers would meet and share experiences with each other. This strategy was even more successful than imagined. Customers shared successes and failures with energy projects and developed a camaraderie to continue to share mutually beneficial experiences and reach out to each other for advice and support in both conservation and non-conservation projects.

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 incentives 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** 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 customer business operational needs are addressed while retaining flexibility in program delivery. Customers with less complex projects are better suited to use prescriptive 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 2014, Minnesota Power continued its expanded emphasis on pre- and post-project analysis. This includes measurement and verification (M&V) efforts which are further discussed below and in the Compliance section of this filing.

RESULTS

The table below details Power of One® Business 2014 goal accomplishments.

	Approved Goals	*Actual Results*	*% of Approved Goal*
Total Project Expenditures	$2,727,906	$2,821,421	103%
Total Project Energy Savings (at busbar)	37,004,541 kWh	64,932,829 kWh	175%
Total Project Demand Savings (at busbar)	4,289.3 kW	7,256.0 kW	169%
Participation (measures)	856	723	84%

2014 Power of One® Business Projects Overview by Customer Class

	Total $ Rebated	*Number of Measures*	*Total Estimated kWh Saved (meter)*
Agricultural	$18,262	19	484,385
Commercial	$1,295,084	597	27,823,726
Industrial	$795,940	107	30,457,662

SUMMARY

Minnesota Power exceeded its energy-savings goal for the Power of One® Business program. This program continues to be the major source of savings within Minnesota Power's Conservation Improvement Program, accounting for nearly 85% of claimed savings in 2014. A significant portion of the savings realized in 2014 were from four large projects where M&V protocol were applied and reviewed with the Department of Commerce, a process established to ensure accuracy of savings assumptions and use of sound methodologies in arriving at savings figures. These projects collectively account for over 29% of total claimed savings under Power of One® Business.

Through a diversified approach that includes a balance of capital and O&M projects, the Power of One® Business delivery model works and customers continue to see the value in participating. 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. For its continued success, positive customer experiences where project results deliver on expectations will remain critical. Power of One® Business 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 2014.

One Community

PROGRAM TITLE: CUSTOMER ENGAGEMENT

PROGRAM DESCRIPTION

The Customer Engagement program serves as a channel to communicate 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 contributes 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 2014 Customer Engagement program with goals established in the Triennial Filing.

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$797,840	$769,903	96%
Utilization of the online energy tools and materials (visitors)	70,000	111,414	159%
Participation in community energy events	6,000	11,097	185%
Number of seminars, demonstrations, and conferences *(1)*	35	87	249%
Customer profiles or newsletters completed	13	19	146%

(1) See Appendix E 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.

- **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 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, helps customers increase their understanding about energy usage, industry trends, and technology options based on specific types of businesses.
- **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 Gramma Polo's Bottle Shop to Magnetation, 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 via www.mnpower.com/onebusiness.
- **Building Up Newsletters**—The *Building Up* newsletters covered a variety of energy-related topics in 2014, including solar energy, water heating, and air source heat pumps. *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. In addition, Minnesota Power's conservation programs were featured in an expanded *Duluthian* article.

- **Power of One® Internal Communications**—In an ongoing effort to increase internal understanding and awareness of Minnesota Power energy conservation programs, 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. In addition, digital posters featuring current promotions and campaigns were 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 program. 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.
- **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.

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.

- **Learn & Earn**—In 2014, a Learn & Earn event was held with St. James school in Duluth, MN. Over a two-month period, teachers incorporated energy efficiency into the curriculum and students promoted saving energy to their families and the community at large. Students raised nearly $400 for an environmental-themed field trip by encouraging family members and community members to complete the Your Home Energy Report survey and to buy energy-efficient bulbs from participating local retailers. Minnesota Power contributed money to the field trip fund for every completed survey and purchased energy-efficient product.
- **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 2014, 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.
- **24th annual Energy Design Conference & Expo**—The 24th 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 continued its tradition 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. A special full-day training entitled "The Evolution of Lighting" offered an overview of commercial and residential lighting and included a special "Lighting Alley" in the exhibit hall where attendees could scope out products and speak face-to-face with lighting manufacturers. Minnesota Power also held an HVAC contractor training during the preconference for participating contractors. This training was required for contractors to be part of Minnesota Power's participating contractor network and to offer customer rebates. The day was capped off with a special reception at Great Lakes Aquarium showcasing energy-efficient upgrades made to the facility with the assistance of Minnesota Power's Power of One® Business program. 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.
- **11th 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 and tools. 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) 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 a "Save Energy" t-shirt and a smart power strip. 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 2014 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-saving kit. 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 special water heater display introducing the new water heater rebate. 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.

- **Community-Sponsored Events**—In addition to Minnesota Power-sponsored events, conservation team members staffed booths at a variety of community-based events including: Duluth Senior Expo, Lake Superior College Earth Day Celebration, and Lake Superior Harvest Festival. 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 2014, Minnesota Power continued to provide customers with product updates and education in the form of scholarships and sponsorships for training. In addition to webinar trainings, Minnesota Power also held a full-day HVAC training for contractors. With a great turnout and a very engaged discussion period, this event provided both training and an opportunity to gather feedback to strengthen future trainings and programs.
- **Energy Teams and Business Energy Consortium—**In recent years, Minnesota Power has encouraged both large and small business customers to form onsite energy 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. The success of these teams led to creating a Business Energy Consortium where all of the teams could gather together 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 St. Louis County, Minnesota Power, City of Duluth, Minnesota Air National Guard, UMD and Essentia Health. The group met three times in 2014, and it is clear that the benefits of this Consortium will extend far beyond energy savings.
- **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.
- **Renewable Energy Workshop**—The Renewable Energy Workshop was a two-day event for teachers and informal educators offered through the Minnesota Power Foundation and Boulder Lake Environmental Learning Center. It included both classroom instruction and field trips to Minnesota Power's Taconite Ridge Wind Energy Center, Thomson Hydroelectric Station and Hibbard Renewable Energy Center. The workshops provided local teachers with hands-on exercises that can be used in the classroom to teach students of all ages about renewable energy technologies. Members of the Power of One® team contributed to curriculum ideas and helped coordinate the event. The Minnesota Power renewable program team shared a presentation and assisted other instructors throughout the course.
- **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 replacement 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 2014, Minnesota Power held a mandatory HVAC training for participating contractors at the Energy Design Conference & Expo. The full-day session was recorded for those who could not attend the training in-person and was offered as an online alternative. 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. Through the development of marketing and educational materials along with customer interactions at community events, 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 (see the "Customer Engagement" story in the Successes section of this filing). 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, products and services to meet those requirements, which in turn can lead to energy-saving activities.

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	$569,505 *(1)*	$645,052	113%
Home Energy Analysis	250	269	108%
Triple E New Construction Home Plan Reviews	15	16	107%
Home Energy Analysis with Building Diagnostics *(2)*	250	163	65%
Design Assistance for New CAC and ASHP Installs *(3)*	230	198	86%
Electric Analysis - Low-income Renters	185	49	26%
Electric Analysis - Low-income Single Family Homes	275	702	255%
Business Energy Analysis *(4)*	3,808	2,089	55%
Total Participants	5,013	3,486	70%

(1) As modified and approved in 2014.

(2) 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.

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

(4) 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 2014, there was an increase in customers wanting more than the traditional walk-through home energy analysis (HEA), though not quite to the extent anticipated. This may in part be due to the cost associated with the more advanced options and the fact that it is a rebated service. The traditional HEA activity remained constant from 2013 to 2014, while requests for the more robust and detailed analysis, Home Energy Analysis with Building Diagnostics (which includes blower door testing and infrared thermal scans) increased by nearly 12% over 2013.

Triple E New Construction

Minnesota Power saw higher participation in the Triple E New Construction program in 2014. 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.

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 2014, Single Family Electric Analysis saw a significant increase in activity due to the demand for services and the continued dedication of a Duluth auditor by Virginia AEOA. In order to balance the rise in Single Family analyses, there were fewer Multifamily (renters) energy events. Minnesota Power continues to find the Low-income Energy Analysis program a valuable avenue in reaching this sector of customers and empowering them to get the most for their energy dollar.

Business Energy Analysis

The Business Energy Analysis program continues to utilize energy analysis as a tool for both educating and encouraging customers to take well-informed and meaningful action. Minnesota Power assists customers by using analysis to provide a high level look at the bigger picture, while at the same time providing a strategic means of taking action. This helps create a culture that sees energy and its use as a component of a wise business planning process with virtually no end. This has been a critical component to Minnesota Power's success and that of its customers. Instead of overwhelming customers with volumes of information, Minnesota Power is able to provide insight, choices, and direction in a way that empowers the customer to take action. This reinforces Minnesota Power's belief that in order to achieve lasting, effective, energy-saving solutions, energy conservation needs to be part of the customer's ongoing business decision-making process.

Minnesota Power also continued to refine its highly successful "energy team" concept. The energy team process was once considered an effective strategy only for large customers; however, 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 and opportunities, incorporation into existing business strategies, and drawing in other energy suppliers to the energy planning conversation.

It is important to note that, from the table above, it would appear that the amount of business energy analysis has dropped off; this is more a product of redefinition and categorization than divergence. 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 analysis (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.

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 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 issues 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

Its focus 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.

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	$402,520	$307,811	76%

SUMMARY

2014 activities concentrated on reporting results, program development, measuring and evaluating the effectiveness of direct-impact conservation projects, conservation program strategy, technical assumption documentation, 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 2014, 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	40,645,102	3.84	21,022,526*	8.45	(31,207,582)	0.43	21,019,154	2.40
Power of One® Home	11,123,955	4.39	2,328,109	2.84	(6,951,303)	0.34	3,620,316	2.07
Energy Partners	1,861,472	4.90	(113,886)	0.80	(1,302,942)	0.26	508,216	1.97
Total Plan (w/o non-impact projects)	53,630,529	3.96	23,236,749	5.99	(39,461,828)	0.41	25,147,685	2.33
Total Plan (with non-impact projects)	53,778,214	3.97	21,056,372*	4.08	(41,642,205)	0.40	23,114,994	2.10

** 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 $20,792,339 and $20,758,493.*

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
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Minnesota Power 2014 CIP Status
Plan Summary

	2014 Annual Energy Savings				
	Meter			Busbar	
	(KWh)	(KW)		(KWh)	(KW)
Total Power of One Home	8,914,649	2,911.8		9,850,179	1,754.3
Total Energy Partners	1,407,634	363.1		1,555,355	205.0
Total Power of One Business	58,765,773	9,936.3		64,932,829	7,256.0
Total Plan	**69,088,056**	**13,211.2**		**76,338,363**	**9,215.3**
Power of One Business Net of MP Facilities Projects	58,016,716	9,841		64,105,164	7,164
Total Plan less MP Facilities Proj	**68,338,999**	**13,116**		**75,510,698**	**9,123**

* 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 18, 2015

Minnesota Power 2014 CIP Status Power of One Home Project					
	2014 Annual Energy Savings				
	Meter			Busbar	
	(KWh)	(KW)		(KWh)	(KW)
Lighting	**4,710,693**	**1,229.9**		**5,205,047**	**884.1**
CFL Standard	3,639,640	713.5		4,021,595	688.5
CFL Specialty	348,008	66.9		384,529	66.1
CFL Fixture	2,808	0.6		3,103	0.6
LED Standard	339,400	78.2		375,018	62.7
LED Specialty	176,852	41.3		195,411	32.6
LED Outdoor	78,177	18.8		86,381	20.8
LED Indoor Fixtures	45,738	8.9		50,538	8.8
LED Outdoor Fixtures	15,390	3.7		17,005	4.1
LED Holiday Lighting	64,680	298.1		71,468	0.0
Bulb Recycling	0	0.0		0	0.0
Energy Star Appliances	**1,387,968**	**241.7**		**1,533,626**	**162.7**
Clothes Washers	121,578	40.4		134,337	22.2
Refrigerators	100,219	14.6		110,736	11.2
Refrigerator Turn-in	714,615	104.4		789,609	80.0
Freezer Turn-in	441,126	64.4		487,419	49.4
Window A/C Turn-in	10,430	17.9		11,525	0.0
Heating and Cooling	**2,138,417**	**1,233.4**		**2,362,829**	**563.7**
CAC Proper Installation	23,309	39.9		25,755	0.0
ASHP Proper Install	40,320	18.3		44,551	13.5
GHP - Open Loop	98,660	46.2		109,014	34.2
GHP - Closed Loop	687,987	319.7		760,186	236.4
GHP - Replacement	3,636	1.6		4,018	1.2
Std. Split ASHP (Estar)	13,629	6.0		15,059	4.4
Mini-split Ductless ASHP	363,968	176.2		402,164	130.2
Dehumidifier	262,908	450.4		290,498	0.0
ECM - New Furnace	641,600	174.5		708,931	143.2
ECM - Replacement Motor	2,400	0.7		2,652	0.5
Home Performance Project	**171,590**	**77.5**		**189,597**	**57.3**
Triple E - Level 1	45,510	20.6		50,286	15.2
Triple E - Level 2	126,080	57.0		139,311	42.1
High Performance Air Sealing					
Energy Efficiency Kits	**110,576**	**36.0**		**122,180**	**20.1**
Smart Pak	103,880	34.5		114,781	18.9
Starter Kit	6,696	1.5		7,399	1.1
Direct Install Measures	**384,485**	**89.6**		**424,834**	**64.6**
Pipe Wrap	21,574	7.2		23,838	3.9
Showerheads	63,150	21.0		69,777	11.5
Aerators	46,552	15.5		51,437	8.5
Water Heater Blanket Installed	2,178	0.7		2,407	0.4
CFLs	124,146	24.3		137,174	23.5
Shower Timer	23,500	7.8		25,966	4.3
Refrigerator Thermometer	38,665	5.7		42,723	4.3
Enable Power Management	46,000	5.3		50,827	5.8
Timer & Power Strip	18,720	2.1		20,685	2.4
Water Heating - Tank Replacement	**10,920**	**3.6**		**12,066**	**2.0**
Administrative Costs	**0**	**0.0**		**0**	**0.0**
Total Triple E Plus	**8,914,649**	**2,911.8**		**9,850,179**	**1,754.3**

Final Results
March 18, 2015

Minnesota Power 2014 CIP Status Energy Partners Project					
	2014 Annual Energy Savings				
	Meter			Busbar	
	(KWh)	(KW)		(KWh)	(KW)
Lighting	**365,502**	**71.4**		**403,859**	**69.3**
CFLs Installed by Contractor	289,484	56.8		319,863	54.8
CFLs Distributed	3,724	0.7		4,115	0.7
Torchieres	46,762	9.0		51,669	8.9
Lighting Fixtures	25,532	5.0		28,211	4.9
Refrigerators	**520,088**	**75.9**		**574,668**	**58.2**
21-26 cu ft Refrigerator Replacement	3,365	0.5		3,718	0.4
18 cu ft Refrigerator Replacement	72,702	10.6		80,332	8.1
15 cu ft Refrigerator Replacement	106,575	15.6		117,759	11.9
10 cu ft Refrigerator Replacement	17,082	2.5		18,875	1.9
15 cu ft Freezer Replacement	2,349	0.3		2,596	0.3
5-9 cu ft Freezer Replacement	1,980	0.3		2,188	0.2
Freezer Turn-in	11,340	1.7		12,530	1.3
Refrigerator Turn-in	304,695	44.5		336,671	34.1
Metering	0	0.0		0	0.0
Water Heating	**143,148**	**46.2**		**158,170**	**26.2**
Water Heater Replacement	7,035	2.3		7,773	1.3
Showerhead - Low Flow	33,259	10.7		36,749	6.1
Aerators	41,216	13.3		45,541	7.6
Pipe Wrap Insulation Installed	12,006	3.9		13,266	2.2
Shower Timer	49,632	16.0		54,841	9.1
Miscellaneous	**247,187**	**97.6**		**273,128**	**29.0**
Dehumidifier Replacement	40,112	68.7		44,321	0.0
Engine Block Timer	2,800	0.0		3,094	0.0
Microwave Ovens	23,000	6.3		25,414	7.0
Refrigerator Thermometer	60,135	8.8		66,446	6.7
Plug Load Package - Timer/Power Strip	121,140	13.8		133,853	15.3
Energy Awareness Expo Kits	**131,709**	**71.8**		**145,531**	**22.3**
2013 Carryover Kits	8,976	2.2		9,918	1.6
2014 Kits	122,733	69.6		135,613	20.7
Administrative Costs	**0.00**	**0.0**		**0.00**	**0.0**
Total Energy Partners	**1,407,634**	**363.1**		**1,555,355**	**205.0**

Final Results
March 18, 2015

Minnesota Power 2014 CIP Status Power of One Business Project					
	2014 Annual Energy Savings				
	Meter			Busbar	
	(KWh)	(KW)		(KWh)	(KW)
Lighting	**20,477,385**	**4,075.1**		**22,626,343**	**4,135.9**
Cfls	161,632	24.7		178,594	26.9
Energy Efficient Fluorescent	2,528,799	472.2		2,794,179	501.6
LED	4,175,918	720.0		4,614,151	775.0
LED Outdoor	1,742,916	479.9		1,925,823	530.2
Mixed Energy Efficient Lighting	11,045,590	2,223.6		12,204,747	2,302.1
Lighting Controls	822,530	153.8		908,849	0.0
Refrigeration	**2,167,484**	**337.2**		**2,394,946**	**113.7**
Refrigeration Improvement	1,892,871	285.9		2,091,515	113.7
Refigeration Controls	274,613	51.3		303,432	0.0
Motors / Pumps	**15,129,278**	**2,650.0**		**16,716,990**	**340.3**
Standard to Eff Motor	1,518,427	184.9		1,677,775	203.3
Standard to VSD Motor	12,784,544	2,314.7		14,126,192	130.1
Motor Controls	826,307	150.4		913,022	7.0
HVAC	**4,864,396**	**765.2**		**5,374,880**	**706.2**
AC Improvements	3,366,800	467.2		3,720,122	502.2
Economizer	573,644	107.2		633,844	0.0
Heat Pump - Cooling and Heating	127,934	37.8		141,360	39.6
Heat Pump - Heating	436,520	99.9		482,330	109.1
AC/HVAC/EMS Controls	359,498	53.1		397,224	55.4
Miscellaneous	**15,378,173**	**2,014.1**		**16,992,005**	**1,867.6**
Process Improvements	11,040,833	1,275.5		12,199,491	1,365.6
Appliances	471,001	108.4		520,429	82.8
Shell Measures	503,084	102.8		555,879	85.0
Heat Recovery	53,858	8.5		59,510	2.6
Compressed Air	1,266,223	214.4		1,399,104	201.6
Miscellaneous Controls	2,043,174	304.5		2,257,591	130.0
Minnesota Power Projects*	**749,057**	**95.7**		**827,665**	**92.4**
Administrative Costs					
Total PowerGrant	**58,765,773**	**9,936.3**		**64,932,829**	**7,256.0**

* 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 18, 2015

Minnesota Power 2014 CIP Status Plan Summary				
	Societal Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Total Power of One Home	7,019,169	3,398,853	3,620,316	2.07
Total Energy Partners	1,034,737	526,521	508,216	1.97
Total Power of One Business	36,062,400	15,043,246	21,019,154	2.40
Total Plan	**44,116,306**	**18,968,621**	**25,147,685**	**2.33**
Total Plan with Non-impact $	**44,116,306**	**21,001,312**	**23,114,994**	**2.10**

All values are discounted to 2014

Final Results
March 18, 2015

Minnesota Power 2014 CIP Status Power of One Home Project				
	Societal Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**4,052,957**	**1,323,282**	**2,729,675**	**3.06**
CFL Standard	2,661,740	675,359	1,986,381	3.94
CFL Specialty	216,454	89,220	127,233	2.43
CFL Fixture	928	540	388	1.72
LED Standard	565,947	309,525	256,422	1.83
LED Specialty	297,682	137,975	159,707	2.16
LED Outdoor	65,264	27,939	37,325	2.34
LED Indoor Fixtures	199,626	42,004	157,622	4.75
LED Outdoor Fixtures	13,133	5,985	7,148	2.19
LED Holiday Lighting	32,183	27,636	4,547	1.16
Bulb Recycling	0	7,099	(7,099)	0.00
Energy Star Appliances	**590,383**	**263,367**	**327,016**	**2.24**
Clothes Washers	82,660	44,050	38,610	1.88
Refrigerators	71,203	28,840	42,363	2.47
Refrigerator Turn-in	268,503	125,577	142,926	2.14
Freezer Turn-in	165,745	62,695	103,050	2.64
Window A/C Turn-in	2,273	2,205	68	1.03
Heating and Cooling	**1,969,791**	**1,207,260**	**762,531**	**1.63**
CAC Proper Installation	35,769	10,725	25,044	3.34
ASHP Proper Install	40,050	1,800	38,250	22.25
GHP - Open Loop	105,955	57,567	48,388	1.84
GHP - Closed Loop	739,627	537,492	202,136	1.38
GHP - Replacement	4,068	5,040	(972)	0.81
Std. Split ASHP (Estar)	13,752	11,424	2,328	1.20
Mini-split Ductless ASHP	284,020	169,600	114,420	1.67
Dehumidifier	249,268	12,060	237,208	20.67
ECM - New Furnace	496,113	401,000	95,113	1.24
ECM - Replacement Motor	1,170	552	618	2.12
Home Performance Project	**184,029**	**123,755**	**60,274**	**1.49**
Triple E - Level 1	48,809	25,725	23,084	1.90
Triple E - Level 2	135,220	98,030	37,190	1.38
Energy Efficiency Kits	**35,982**	**4,062**	**31,920**	**8.86**
Smart Pak	34,526	3,318	31,209	10.41
Starter Kit	1,455	744	712	1.96
Direct Install Measures	**177,290**	**43,329**	**133,961**	**4.09**
Pipe Wrap	14,726	272	14,454	54.14
Showerheads	31,987	3,021	28,966	10.59
Aerators	23,580	1,217	22,363	19.38
Water Heater Blanket Installed	479	616	(137)	0.78
CFLs	90,790	29,668	61,122	3.06
Shower Timer	2,659	521	2,138	5.10
Refrigerator Thermometer	4,172	1,620	2,552	2.58
Enable Power Management	4,939	1,610	3,329	3.07
Timer & Power Strip	3,958	4,784	(826)	0.83
Water Heating - Tank Replacement	8,736	8,520	216	1.03
Administrative Costs	0	425,278	(425,278)	0.00
Total Triple E Plus	**7,019,169**	**3,398,853**	**3,620,316**	**2.07**

All values are discounted to 2014

Final Results
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Minnesota Power 2014 CIP Status Energy Partners Project				
	Societal Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**259,562**	**107,924**	**151,638**	**2.41**
CFL's Installed by Contractor	211,696	68,028	143,668	3.11
CFLs Distributed	2,723	704	2,020	3.87
Torchieres	25,866	15,383	10,483	1.68
Lighting Fixtures	19,276	23,810	(4,533)	0.81
Refrigerators	**496,392**	**302,898**	**193,494**	**1.64**
21-26 cu ft Refrigerator Replacement	5,382	8,284	(2,902)	0.65
18 cu ft Refrigerator Replacement	126,934	98,267	28,667	1.29
15 cu ft Refrigerator Replacement	196,920	130,064	66,856	1.51
10 cu ft Refrigerator Replacement	35,394	20,782	14,612	1.70
15 cu ft Freezer Replacement	5,640	5,017	623	1.12
5-9 cu ft Freezer Replacement	5,921	2,720	3,201	2.18
Freezer Turn-in	4,313	1,000	3,313	4.31
Refrigerator Turn-in	115,888	33,300	82,588	3.48
Metering	0	3,465	(3,465)	0.00
Water Heating	**57,031**	**9,750**	**47,281**	**5.85**
Water Heater Replacement	5,612	5,748	(136)	0.98
Showerhead - Low Flow	16,807	1,304	15,504	12.89
Aerators	20,828	1,680	19,148	12.40
Pipe Wrap Insulation Installed	8,172	55	8,117	149.09
Shower Timer	5,611	964	4,647	5.82
Miscellaneous	**83,854**	**22,221**	**61,633**	**3.77**
Dehumidifier Replacement	38,031	1,840	36,191	20.67
Engine Block Timer	1,169	322	847	3.63
Microwave Ovens	12,556	4,507	8,048	2.79
Refrigerator Thermometer	6,489	760	5,729	8.54
Plug Load Package - Timer/Power Strip	25,610	14,793	10,817	1.73
Energy Awareness Expo Kits	**134,002**	**11,019**	**122,983**	**12.16**
2013 Carryover Kits	3,267	723	2,544	4.52
2014 Kits	130,735	10,296	120,439	12.70
Administrative Costs	**0**	**68,813**	**(68,813)**	**0.00**
Total Energy Partners	**1,034,737**	**526,521**	**508,216**	**1.97**

All values are discounted to 2014

Final Results
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Minnesota Power 2014 CIP Status Power of One Business Project				
	Societal Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**13,612,425**	**5,284,376**	**8,328,049**	**2.58**
Cfls	37,100	23,056	14,044	1.61
Energy Efficient Fluorescent	1,763,831	539,208	1,224,623	3.27
LED	2,854,416	914,756	1,939,659	3.12
LED Outdoor	940,830	656,696	284,134	1.43
Mixed Energy Efficient Lighting	7,854,317	2,993,360	4,860,957	2.62
Lighting Controls	161,932	157,300	4,632	1.03
Refrigeration	**1,406,997**	**885,138**	**521,859**	**1.59**
Refrigeration Improvement	1,234,617	827,130	407,487	1.49
Refigeration Controls	172,380	58,008	114,372	2.97
Motors / Pumps	**9,447,363**	**3,208,480**	**6,238,883**	**2.94**
Standard to Eff Motor	751,697	749,679	2,018	1.00
Standard to VSD Motor	8,169,261	2,084,500	6,084,761	3.92
Motor Controls	526,405	374,301	152,104	1.41
HVAC	**3,689,243**	**1,449,335**	**2,239,908**	**2.55**
AC Improvements	2,738,829	1,008,272	1,730,557	2.72
Economizer	237,471	144,912	92,559	1.64
Heat Pump - Cooling and Heating	97,852	44,304	53,548	2.21
Heat Pump Heating Only	317,549	84,900	232,649	3.74
AC/HVAC/EMS Controls	297,542	166,947	130,595	1.78
Miscellaneous	**7,474,523**	**3,338,476**	**4,136,047**	**2.24**
Compressed Air Upgrades	681,370	60,005	621,365	11.36
Process Improvements	5,356,582	2,119,050	3,237,532	2.53
Appliances	276,980	191,970	85,010	1.44
Shell Measures	259,122	191,093	68,029	1.36
Heat Recovery	33,936	12,798	21,138	2.65
Miscellaneous Controls	866,532	763,560	102,972	1.13
Minnesota Power Projects	**431,848**	**165,306**	**266,542**	**2.61**
Administrative Costs	**0**	**712,135**	**(712,135)**	**0.00**
Total PowerGrant	**36,062,400**	**15,043,246**	**21,019,154**	**2.40**

All values are discounted to 2014

Final Results
March 18, 2015

Minnesota Power 2014 CIP Status Plan Summary				
	Participant Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Total Power of One Home	14,407,584	3,283,630	11,123,955	4.39
Total Energy Partners	2,338,305	476,833	1,861,472	4.90
Total Power of One Business	54,976,213	14,331,111	40,645,102	3.84
Total Plan	**71,722,103**	**18,091,574**	**53,630,529**	**3.96**
Total Plan with Non-impact $	**71,869,788**	**18,091,574**	**53,778,214**	**3.97**

All values are discounted to 2014

Final Results
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Minnesota Power 2014 CIP Status Power of One Home Project				
	Participant Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Lighting	**7,393,201**	**1,634,123**	**5,759,078**	**4.52**
CFL Standard	4,830,674	879,515	3,951,159	5.49
CFL Specialty	405,088	105,887	299,201	3.83
CFL Fixture	2,574	540	2,034	4.77
LED Standard	1,059,532	364,024	695,507	2.91
LED Specialty	555,091	165,887	389,204	3.35
LED Outdoor	171,795	27,939	143,856	6.15
LED Indoor Fixtures	266,598	49,611	216,987	5.37
LED Outdoor Fixtures	31,006	5,985	25,021	5.18
LED Holiday Lighting	63,745	27,636	36,109	2.31
Bulb Recycling	7,099	7,099	0	1.00
Energy Star Appliances	**1,617,964**	**263,367**	**1,354,597**	**6.14**
Clothes Washers	208,648	44,050	164,598	4.74
Refrigerators	182,124	28,840	153,284	6.31
Refrigerator Turn-in	763,803	125,577	638,226	6.08
Freezer Turn-in	456,664	62,695	393,969	7.28
Window A/C Turn-in	6,724	2,205	4,519	3.05
Heating and Cooling	**4,458,476**	**1,199,460**	**3,259,016**	**3.72**
CAC Proper Installation	56,922	10,725	46,197	5.31
ASHP Proper Install	87,296	1,800	85,496	48.50
GHP - Open Loop	239,748	56,967	182,781	4.21
GHP - Closed Loop	1,680,578	530,292	1,150,286	3.17
GHP - Replacement	8,964	5,040	3,924	1.78
Std. Split ASHP (Estar)	35,402	11,424	23,978	3.10
Mini-split Ductless ASHP	653,974	169,600	484,374	3.86
Dehumidifier	368,423	12,060	356,363	30.55
ECM - New Furnace	1,323,998	401,000	922,998	3.30
ECM - Replacement Motor	3,170	552	2,618	5.74
Home Performance Project	**434,532**	**123,755**	**310,777**	**3.51**
Triple E - Level 1	112,069	25,725	86,344	4.36
Triple E - Level 2	322,463	98,030	224,433	3.29
Energy Efficiency Kits	**88,034**	**4,112**	**83,922**	**21.41**
Smart Pak	83,778	3,318	80,460	25.25
Starter Kit	4,256	794	3,462	5.36
Direct Install Measures	**390,750**	**50,293**	**340,457**	**7.77**
Pipe Wrap	32,657	272	32,385	120.05
Showerheads	74,585	3,021	71,564	24.69
Aerators	53,971	1,217	52,754	44.35
Water Heater Blanket Installed	1,804	616	1,188	2.93
CFLs	174,210	36,632	137,579	4.76
Shower Timer	8,064	521	7,543	15.47
Refrigerator Thermometer	14,059	1,620	12,439	8.68
Enable Power Management	16,409	1,610	14,799	10.19
Timer & Power Strip	14,991	4,784	10,207	3.13
Water Heating - Tank Replacement	24,627	8,520	16,107	2.89
Total Triple E Plus	**14,407,584**	**3,283,630**	**11,123,955**	**4.39**

All values are discounted to 2014

Final Results
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Minnesota Power 2014 CIP Status Energy Partners Project				
	Participant Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**538,680**	**128,496**	**410,184**	**4.19**
CFLs Installed by Contractor	404,929	84,327	320,602	4.80
CFLs Distributed	5,038	913	4,124	5.52
Torchieres	72,902	18,001	54,902	4.05
Lighting Fixtures	55,811	25,255	30,556	2.21
Refrigerators	**1,132,272**	**299,433**	**832,839**	**3.78**
21-26 cu ft Refrigerator Replacement	16,646	8,284	8,363	2.01
18 cu ft Refrigerator Replacement	285,921	98,267	187,654	2.91
15 cu ft Refrigerator Replacement	419,941	130,064	289,876	3.23
10 cu ft Refrigerator Replacement	71,106	20,782	50,324	3.42
15 cu ft Freezer Replacement	12,154	5,017	7,137	2.42
5-9 cu ft Freezer Replacement	9,953	2,720	7,234	3.66
Freezer Turn-in	11,128	1,000	10,128	11.13
Refrigerator Turn-in	305,424	33,300	272,124	9.17
Metering	0	0	0	inf
Water Heating	**195,849**	**9,750**	**186,099**	**20.09**
Water Heater Replacement	73,459	5,748	67,711	12.78
Showerhead - Low Flow	38,994	1,304	37,690	29.91
Aerators	48,387	1,680	46,707	28.80
Pipe Wrap Insulation Installed	18,077	55	18,022	329.82
Shower Timer	16,931	964	15,967	17.57
Miscellaneous	**213,752**	**22,221**	**191,531**	**9.62**
Dehumidifier Replacement	78,737	1,840	76,897	42.79
Engine Block Timer	3,495	322	3,173	10.85
Microwave Ovens	30,571	4,507	26,064	6.78
Refrigerator Thermometer	20,106	760	19,346	26.47
Plug Load Package - Timer/Power Strip	80,843	14,793	66,050	5.47
Energy Awareness Expo Kits	**251,838**	**11,019**	**240,819**	**22.85**
2013 Carryover Kits	7,919	723	7,196	9.95
2014 Kits	243,919	10,296	233,623	23.69
Administrative Costs	**0**	**0**	**0**	**inf**
Total Energy Partners	**2,338,305**	**476,833**	**1,861,472**	**4.90**

All values are discounted to 2014

Final Results
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Minnesota Power 2014 CIP Status Power of One Business Project				
	Participant Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**21,726,604**	**5,284,376**	**16,442,228**	**4.11**
Cfls	80,555	23,056	57,499	3.49
Energy Efficient Fluorescent	2,683,668	539,208	2,144,460	4.98
LED	4,464,626	914,756	3,549,869	4.88
LED Outdoor	2,327,294	656,696	1,670,598	3.54
Mixed Energy Efficient Lighting	11,758,894	2,993,360	8,765,534	3.93
Lighting Controls	411,568	157,300	254,268	2.62
Refrigeration	**2,715,586**	**885,138**	**1,830,448**	**3.07**
Refrigeration Improvement	2,371,602	827,130	1,544,472	2.87
Refigeration Controls	343,985	58,008	285,977	5.93
Motors / Pumps	**14,156,194**	**3,208,480**	**10,947,714**	**4.41**
Standard to Eff Motor	965,229	749,679	215,550	1.29
Standard to VSD Motor	12,155,147	2,084,500	10,070,647	5.83
Motor Controls	1,035,818	374,301	661,517	2.77
HVAC	**5,568,222**	**1,449,335**	**4,118,887**	**3.84**
AC Improvements	4,267,207	1,008,272	3,258,935	4.23
Economizer	404,621	144,912	259,709	2.79
Heat Pump - Cooling and Heating	162,681	44,304	118,377	3.67
Heat Pump Heating Only	404,914	84,900	320,014	4.77
AC/HVAC/EMS Controls	328,798	166,947	161,851	1.97
Miscellaneous	**9,877,517**	**3,338,476**	**6,539,041**	**2.96**
Compressed Air Upgrades	854,004	60,005	793,999	14.23
Process Improvements	6,829,048	2,119,050	4,709,998	3.22
Appliances	426,503	191,970	234,533	2.22
Shell Measures	339,498	191,093	148,405	1.78
Heat Recovery	67,670	12,798	54,872	5.29
Miscellaneous Controls	1,360,792	763,560	597,232	1.78
Minnesota Power Projects	**932,090**	**165,306**	**766,784**	**5.64**
Administrative Costs	**0**	**0**	**0**	**inf**
Total PowerGrant	**54,976,213**	**14,331,111**	**40,645,102**	**3.84**

All values are discounted to 2014

Final Results
March 18, 2015

Minnesota Power 2014 CIP Status Plan Summary				
	Ratepayer Impact Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Total Power of One Home	3,593,694	10,544,997	(6,951,303)	0.34
Total Energy Partners	451,519	1,754,461	(1,302,942)	0.26
Total Powerof One Business	23,843,947	55,051,529	(31,207,582)	0.43
Total Plan	**27,889,160**	**67,350,988**	**(39,461,828)**	**0.41**
Total Plan with Non-impact $	**27,889,160**	**69,531,364**	**(41,642,205)**	**0.40**

All values are discounted to 2014

Final Results
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Minnesota Power 2014 CIP Status Power of One Home Project				
	Ratepayer Impact Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Lighting	**1,733,618**	**4,735,020**	**(3,001,402)**	**0.37**
CFL Standard	1,199,241	3,238,463	(2,039,222)	0.37
CFL Specialty	102,249	282,256	(180,007)	0.36
CFL Fixture	705	2,316	(1,611)	0.30
LED Standard	223,260	610,181	(386,920)	0.37
LED Specialty	116,477	318,440	(201,963)	0.37
LED Outdoor	32,473	117,991	(85,518)	0.28
LED Indoor Fixtures	29,358	81,523	(52,164)	0.36
LED Outdoor Fixtures	5,521	20,913	(15,392)	0.26
LED Holiday Lighting	24,333	55,838	(31,505)	0.44
Bulb Recycling	0	7,099	(7,099)	0.00
Energy Star Appliances	**410,593**	**1,388,689**	**(978,096)**	**0.30**
Clothes Washers	46,234	159,465	(113,231)	0.29
Refrigerators	45,559	143,595	(98,036)	0.32
Refrigerator Turn-in	195,925	676,445	(480,520)	0.29
Freezer Turn-in	120,943	402,739	(281,796)	0.30
Window A/C Turn-in	1,932	6,445	(4,513)	0.30
Heating and Cooling	**1,207,825**	**3,290,273**	**(2,082,448)**	**0.37**
CAC Proper Installation	22,386	42,251	(19,865)	0.53
ASHP Proper Install	23,920	61,918	(37,998)	0.39
GHP - Open Loop	60,754	164,254	(103,500)	0.37
GHP - Closed Loop	424,197	1,157,149	(732,952)	0.37
GHP - Replacement	2,344	6,160	(3,816)	0.38
Std. Split ASHP (Estar)	8,231	26,824	(18,593)	0.31
Mini-split Ductless ASHP	178,200	493,581	(315,380)	0.36
Dehumidifier	175,273	294,176	(118,903)	0.60
ECM - New Furnace	311,708	1,041,257	(729,549)	0.30
ECM - Replacement Motor	812	2,702	(1,890)	0.30
Home Performance Project	**105,480**	**302,189**	**(196,709)**	**0.35**
Triple E - Level 1	27,976	76,968	(48,992)	0.36
Triple E - Level 2	77,504	225,220	(147,716)	0.34
Energy Efficiency Kits	**27,433**	**78,198**	**(50,765)**	**0.35**
Smart Pak	26,252	74,237	(47,985)	0.35
Starter Kit	1,181	3,960	(2,780)	0.30
Direct Install Measures	**103,214**	**305,536**	**(202,321)**	**0.34**
Pipe Wrap	9,673	25,502	(15,828)	0.38
Showerheads	22,377	62,284	(39,907)	0.36
Aerators	16,495	44,903	(28,408)	0.37
Water Heater Blanket Installed	386	1,707	(1,321)	0.23
CFLs	40,905	119,901	(78,996)	0.34
Shower Timer	2,314	7,748	(5,434)	0.30
Refrigerator Thermometer	3,613	13,538	(9,925)	0.27
Enable Power Management	4,275	15,790	(11,515)	0.27
Timer & Power Strip	3,176	14,163	(10,987)	0.22
Water Heating - Tank Replacement	5,531	19,815	(14,284)	0.28
Adminstrative Costs	0	425,278	(425,278)	0.00
Total Triple E Plus	**3,593,694**	**10,544,997**	**(6,951,303)**	**0.34**

All values are discounted to 2014

Final Results
March 18, 2015

Minnesota Power 2014 CIP Status Energy Partners Project				
	Ratepayer Impact Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**120,327**	**386,385**	**(266,058)**	**0.31**
CFLs Installed by Contractor	95,383	278,290	(182,907)	0.34
CFLs Distributed	1,227	3,409	(2,181)	0.36
Torchieres	15,372	60,734	(45,362)	0.25
Lighting Fixtures	8,345	43,952	(35,607)	0.19
Refrigerators	**181,563**	**788,995**	**(607,433)**	**0.23**
21-26 cu ft Refrigerator Replacement	1,551	12,389	(10,838)	0.13
18 cu ft Refrigerator Replacement	33,504	183,279	(149,775)	0.18
15 cu ft Refrigerator Replacement	49,113	258,631	(209,517)	0.19
10 cu ft Refrigerator Replacement	7,872	41,420	(33,548)	0.19
15 cu ft Freezer Replacement	876	7,245	(6,369)	0.12
5-9 cu ft Freezer Replacement	739	4,649	(3,910)	0.16
Freezer Turn-in	3,154	9,742	(6,587)	0.32
Refrigerator Turn-in	84,754	268,176	(183,422)	0.32
Metering	0	3,465	(3,465)	0.00
Water Heating	**40,119**	**173,591**	**(133,472)**	**0.23**
Water Heater Replacement	3,552	70,359	(66,807)	0.05
Showerhead - Low Flow	11,754	32,515	(20,761)	0.36
Aerators	14,566	40,359	(25,793)	0.36
Pipe Wrap Insulation Installed	5,366	14,095	(8,729)	0.38
Shower Timer	4,881	16,263	(11,382)	0.30
Miscellaneous	**62,587**	**191,234**	**(128,647)**	**0.33**
Dehumidifier Replacement	26,741	67,409	(40,668)	0.40
Engine Block Timer	797	2,950	(2,152)	0.27
Microwave Ovens	8,878	26,091	(17,213)	0.34
Refrigerator Thermometer	5,619	19,296	(13,677)	0.29
Plug Load Package - Timer/Power Strip	20,551	75,487	(54,936)	0.27
Energy Awareness Expo Kits	**46,923**	**145,443**	**(98,520)**	**0.32**
2013 Carryover Kits	2,055	5,680	(3,625)	0.36
2014 Kits	44,868	139,763	(94,895)	0.32
Administrative Costs	**0**	**68,813**	**(68,813)**	**0.00**
Total Energy Partners	**451,519**	**1,754,461**	**(1,302,942)**	**0.26**

All values are discounted to 2014

Final Results
March 18, 2015

Minnesota Power 2014 CIP Status Power of One Business Project				
	Ratepayer Impact Test			
	Benefits ($)	**Costs ($)**	**Net Benefits ($)**	**B/C Ratio**
Lighting	**9,266,369**	**21,269,360**	**(12,002,991)**	**0.44**
Cfls	30,054	80,555	(50,501)	0.37
Energy Efficient Fluorescent	1,199,710	2,683,668	(1,483,959)	0.45
LED	1,937,226	4,464,626	(2,527,399)	0.43
LED Outdoor	616,092	1,870,050	(1,253,957)	0.33
Mixed Energy Efficient Lighting	5,353,983	11,758,894	(6,404,911)	0.46
Lighting Controls	129,304	411,568	(282,263)	0.31
Refrigeration	**863,752**	**2,715,586**	**(1,851,834)**	**0.32**
Refrigeration Improvement	757,569	2,371,602	(1,614,033)	0.32
Refigeration Controls	106,183	343,985	(237,801)	0.31
Motors / Pumps	**5,890,493**	**14,156,194**	**(8,265,701)**	**0.42**
Standard to Eff Motor	523,305	965,229	(441,924)	0.54
Standard to VSD Motor	5,042,382	12,155,147	(7,112,765)	0.41
Motor Controls	324,805	1,035,818	(711,012)	0.31
HVAC	**2,346,855**	**5,568,222**	**(3,221,366)**	**0.42**
AC Improvements	1,736,872	4,267,207	(2,530,335)	0.41
Economizer	162,076	404,621	(242,545)	0.40
Heat Pump - Cooling and Heating	61,224	162,681	(101,457)	0.38
Heat Pump - Heating Only	197,553	404,914	(207,361)	0.49
AC/HVAC/EMS Controls	189,130	328,798	(139,668)	0.58
Miscellaneous	**5,186,228**	**9,877,517**	**(4,691,289)**	**0.53**
Compressed Air Upgrades	479,800	854,004	(374,204)	0.56
Process Improvements	3,718,538	6,829,048	(3,110,511)	0.54
Appliances	197,257	426,503	(229,246)	0.46
Shell Measures	181,256	339,498	(158,242)	0.53
Heat Recovery	20,702	67,670	(46,968)	0.31
Miscellaneous Controls	588,674	1,360,792	(772,118)	0.43
Minnesota Power Projects	**290,250**	**752,516**	**(462,266)**	**0.39**
Administrative Costs	**0**	**712,135**	**(712,135)**	**0.00**
Total PowerGrant	**23,843,947**	**55,051,529**	**(31,207,582)**	**0.43**

All values are discounted to 2014

Final Results
March 18, 2015

Minnesota Power 2014 CIP Status Plan Summary				
	Utility Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Total Power of One Home	3,593,694	1,265,585	2,328,109	2.84
Total Energy Partners	451,519	565,405	(113,886)	0.80
Total Power of One Business	23,843,947	2,821,421	21,022,526*	8.45
Total Plan	**27,889,160**	**4,652,411**	**23,236,749**	**5.99**
Total Plan with Non-impact $	**27,889,160**	**6,832,787**	**21,056,372***	**4.08**

All values are discounted to 2014

* 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 $20,792,339.

Final Results
March 18, 2015

Minnesota Power 2014 CIP Status Power of One Home Project				
	Utility Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**1,733,618**	**253,859**	**1,479,760**	**6.83**
CFL Standard	1,199,241	122,678	1,076,563	9.78
CFL Specialty	102,249	13,992	88,257	7.31
CFL Fixture	705	399	306	1.72
LED Standard	223,260	58,547	164,713	3.81
LED Specialty	116,477	30,999	85,478	3.76
LED Outdoor	32,473	5,174	27,299	6.28
LED Indoor Fixtures	29,358	7,184	22,174	4.09
LED Outdoor Fixtures	5,521	1,808	3,713	3.05
LED Holiday Lighting	24,333	5,979	18,354	4.07
Bulb Recycling	0	7,099	(7,099)	0.00
Energy Star Appliances	**410,593**	**245,353**	**165,240**	**1.67**
Clothes Washers	46,234	35,690	10,544	1.30
Refrigerators	45,559	19,185	26,374	2.37
Refrigerator Turn-in	195,925	125,579	70,346	1.56
Freezer Turn-in	120,943	62,694	58,249	1.93
Window A/C Turn-in	1,932	2,205	(273)	0.88
Heating and Cooling	**1,207,825**	**281,105**	**926,720**	**4.30**
CAC Proper Installation	22,386	7,150	15,236	3.13
ASHP Proper Install	23,920	1,200	22,720	19.93
GHP - Open Loop	60,754	3,900	56,854	15.58
GHP - Closed Loop	424,197	38,950	385,247	10.89
GHP - Replacement	2,344	250	2,094	9.38
Std. Split ASHP (Estar)	8,231	6,300	1,931	1.31
Mini-split Ductless ASHP	178,200	16,450	161,750	10.83
Dehumidifier	175,273	6,280	168,993	27.91
ECM - New Furnace	311,708	200,175	111,533	1.56
ECM - Replacement Motor	812	450	362	1.80
Home Performance Project	**105,480**	**23,300**	**82,180**	**4.53**
Triple E - Level 1	27,976	3,000	24,976	9.33
Triple E - Level 2	77,504	20,300	57,204	3.82
Energy Efficiency Kits	**27,433**	**3,923**	**23,509**	**6.99**
Smart Pak	26,252	3,318	22,934	7.91
Starter Kit	1,181	606	575	1.95
Direct Install Measures	**103,214**	**27,267**	**75,948**	**3.79**
Pipe Wrap	9,673	272	9,401	35.56
Showerheads	22,377	3,021	19,356	7.41
Aerators	16,495	1,217	15,278	13.56
Water Heater Blanket Installed	386	616	(230)	0.63
CFLs	40,905	13,623	27,282	3.00
Shower Timer	2,314	504	1,810	4.59
Refrigerator Thermometer	3,613	1,620	1,993	2.23
Enable Power Management	4,275	1,610	2,665	2.66
Timer & Power Strip	3,176	4,784	(1,608)	0.66
Water Heating - Tank Replacement	5,531	5,500	31	1.01
Administrative Costs	0	425,278	(425,278)	0.00
Total Triple E Plus	**3,593,694**	**1,265,585**	**2,328,109**	**2.84**

All values are discounted to 2014

Final Results
March 18, 2015

Minnesota Power 2014 CIP Status Energy Partners Project				
	Utility Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**120,327**	**73,490**	**46,837**	**1.64**
CFLs Installed by Contractor	95,383	30,472	64,911	3.13
CFLs Distributed	1,227	220	1,007	5.56
Torchieres	15,372	20,702	(5,330)	0.74
Lighting Fixtures	8,345	22,095	(13,750)	0.38
Refrigerators	**181,563**	**293,037**	**(111,474)**	**0.62**
21-26 cu ft Refrigerator Replacement	1,551	8,212	(6,661)	0.19
18 cu ft Refrigerator Replacement	33,504	93,028	(59,525)	0.36
15 cu ft Refrigerator Replacement	49,113	126,331	(77,217)	0.39
10 cu ft Refrigerator Replacement	7,872	20,214	(12,342)	0.39
15 cu ft Freezer Replacement	876	4,854	(3,978)	0.18
5-9 cu ft Freezer Replacement	739	2,633	(1,895)	0.28
Freezer Turn-in	3,154	1,000	2,154	3.15
Refrigerator Turn-in	84,754	33,300	51,454	2.55
Metering	0	3,465	(3,465)	0.00
Water Heating	**40,119**	**65,139**	**(25,019)**	**0.62**
Water Heater Replacement	3,552	61,137	(57,585)	0.06
Showerhead - Low Flow	11,754	1,304	10,451	9.02
Aerators	14,566	1,680	12,886	8.67
Pipe Wrap Insulation Installed	5,366	55	5,312	97.91
Shower Timer	4,881	964	3,917	5.07
Miscellaneous	**62,587**	**43,866**	**18,721**	**1.43**
Dehumidifier Replacement	26,741	23,485	3,257	1.14
Engine Block Timer	797	322	475	2.48
Microwave Ovens	8,878	4,507	4,371	1.97
Refrigerator Thermometer	5,619	760	4,860	7.40
Plug Load Package - Timer/Power Strip	20,551	14,793	5,758	1.39
Energy Awareness Expo Kits	**46,923**	**21,060**	**25,863**	**2.23**
2013 Carryover Kits	2,055	0	2,055	inf
2014 Kits	44,868	21,060	23,808	2.13
Administrative Costs	**0**	**68,813**	**(68,813)**	**0.00**
Total Energy Partners	**451,519**	**565,405**	**(113,886)**	**0.80**

All values are discounted to 2014

Final Results
March 18, 2015

Minnesota Power 2014 CIP Status Power of One Business Project				
	Utility Test			
	Benefits ($)	Costs ($)	Net Benefits ($)	B/C Ratio
Lighting	**9,266,369**	**983,334**	**8,283,035**	**9.42**
Cfls	30,054	5,337	24,718	5.63
Energy Efficient Fluorescent	1,199,710	111,436	1,088,274	10.77
LED	1,937,226	216,984	1,720,242	8.93
LED Outdoor	616,092	97,198	518,894	6.34
Mixed Energy Efficient Lighting	5,353,983	523,591	4,830,392	10.23
Lighting Controls	129,304	28,789	100,516	4.49
Refrigeration	**863,752**	**76,033**	**787,719**	**11.36**
Refrigeration Improvement	757,569	66,471	691,098	11.40
Refigeration Controls	106,183	9,562	96,621	11.10
Motors / Pumps	**5,890,493**	**381,763**	**5,508,730**	**15.43**
Standard to Eff Motor	523,305	54,081	469,225	9.68
Standard to VSD Motor	5,042,382	298,138	4,744,244	16.91
Motor Controls	324,805	29,544	295,261	10.99
HVAC	**2,346,855**	**230,016**	**2,116,839**	**10.20**
AC Improvements	1,736,872	167,132	1,569,740	10.39
Economizer	162,076	20,078	141,998	8.07
Heat Pump - Cooling and Heating	61,224	6,883	54,340	8.89
Heat Pump - Heating Only	197,553	21,129	176,424	9.35
AC/HVAC/EMS Controls	189,130	14,794	174,336	12.78
Miscellaneous	**5,186,228**	**411,923**	**4,774,305**	**12.59**
Compressed Air Upgrades	479,800	29,101	450,699	16.49
Process Improvements	3,718,538	273,599	3,444,939	13.59
Appliances	197,257	15,945	181,312	12.37
Shell Measures	181,256	17,006	164,251	10.66
Heat Recovery	20,702	2,082	18,620	9.94
Miscellaneous Controls	588,674	74,190	514,484	7.93
Minnesota Power Projects	**290,250**	**26,217**	**264,033**	**11.07**
Administrative Costs	**0**	**712,135**	**(712,135)**	**0.00**
Total PowerGrant	**23,843,947**	**2,821,421**	**21,022,526***	**8.45**

All values are discounted to 2014

* 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 $20,758,493.

ID	68

Investor Owned Electric Utility 2014-16 CIP Report
Overview

GENERAL UTILITY INFORMATION

2014-16
Electric

1. Utility Information

Utility Name	Minnesota Power
Street Address	30 W Superior Street
Street Address	
City	Duluth
State	MN
Zip Code	55802

2. Contact Information

Contact Name	Tina S. Koecher
Contact Title	Manager - Customer Solutions
Telephone	(218) 355-3805
Fax	(218) 723-3984
Email Address	tkoecher@mnpower.com

3. Utility Type

Indicate utility type by entering an "X" below.

Municipal	
Cooperative	
Investor Owned	X

4. Data Type

Indicate data type by entering an "X" below.

Public Information	X
Trade secret	

5. Customer Profile (Reference Year 2012)

Category	# of Customers	kWh Sales
Residential	120,697	1,043,281,000
Commercial	21,614	1,237,386,000
Industrial	411	7,037,843,000
Farm	incl above	incl above
Other	6,689	70,029,000
Total	149,411	9,388,539,000
*Total Net of Exempt	149,397	3,102,197,607

*reflecting newly exempt customers in 2014 & weather normalization

6. 2012 Adjusted Gross Operating Revenue (GOR)

Gross Operating Revenue 2012	$567,843,982
Less Exempt Facility Revenue 2012	$329,487,106
Adjusted GOR 2012	$238,356,876

6b. 2012 Adjusted Gross Operating Revenue (GOR)

Gross Operating Revenue 2012	$567,843,982
Less Exempt Facility Revenue 2012*	$334,635,970
Adjusted GOR 2012	$233,208,012

*reflecting newly exempt customers in 2014

CIP SPENDING REPORT

7. Annual CIP Minimum Spending Requirement

2014	$3,498,000
2015	$3,498,000
2016	$3,498,000

8. 2014 CIP Actual

Annual Total Expenditures	$7,200,833
Annual Energy Savings - (Gen kWh)	76,338,363
Annual Demand Savings - (Gen kW)	9,215

9. 2014 CIP Plan

Annual Total Expenditures	$6,935,345
Annual Energy Savings - (Gen kWh)	46,553,951
Annual Demand Savings - (Gen kW)	5,994

10. 2015 CIP Actual

Annual Total Expenditures	
Annual Energy Savings - (Gen kWh)	
Annual Demand Savings - (Gen kW)	

11. 2015 CIP Plan

Annual Total Expenditures	$7,145,419
Annual Energy Savings - (Gen kWh)	46,539,000
Annual Demand Savings - (Gen kW)	5,994

12. 2016 CIP Actual

Annual Total Expenditures	
Annual Energy Savings - (Gen kWh)	
Annual Demand Savings - (Gen kW)	

13. 2016 CIP Plan

Annual Total Expenditures	$7,307,641
Annual Energy Savings - (Gen kWh)	$46,545,084
Annual Demand Savings - (Gen kW)	6,002

14. # of Projects: 9

	Project Name	Status (indicate with "X" below) New	Existing
1	Power of One Home - Residential		X
2	Energy Partners - Low Income		X
3	Power of One Business - C/I/Ag		X
4	Solar Sense		X
5	Customer Engagement		X
6	Energy Analysis		X
7	Research & Development		X
8	CIP Evaluation & Program Development		X
9	Regulatory Charges		X
10			
11			

	A	B	C	D	E	F	G	H	I	J
1	**Electric Conservation Project Information Sheet**				2014/2015/2016 Cons1 BudgtSavgs					
2	**Utility Name:**	Minnesota Power							ID 68	
3	**Project Name:**	Power of One Home - Residential								
4	**Project Description:**	This Project provides a comprehensive package of products and services to residential customers.								
5	(Note changes)	Added: CFL Specialty, LED standard, specialty & outdoor,LED indoor & outdoor fixture, dehumidifiers,								
6		ASHP quality installation, water heaters.								
7		Removed: Ceiling fans, miscellaneous lighting, all-climate heat pump								
8										
9	**Type**	Conservation								
10	**Status:**	Existing								
11		**2014 Proposed**	**2014 Approved**	**2014 Actual**	**2015 Proposed**	**2015 Approved**	**2015 Actual**	**2016 Proposed**	**2016 Approved**	**2016 Actual**
12										
13	**Project Type -- Enter "X"**									
14	**Indirect (No kWh or kW Savings)**									
15	Audit/Info									
16	Education									
17	Classroom Training/Instructional									
18	R&D									
19	Renewable									
20	Other									
21	**Direct (kWh or kW Savings)**	X	X	X	X	X		X	X	
22	**Cost Components -- Enter Dollars**									
23	Project Delivery	348,242		368,802	362,686			377,826		
24	Utility Administration	40,040		47,455	41,241			42,442		
25	Evaluation Labor	50,000		0	50,000			50,000		
26	Advertising & Promotion	61,350		16,821	61,350			61,350		
27	Participant Incentives	670,349		832,507	730,669			769,739		
28	R&D									
29	Other									
30	**Total Costs**	$1,169,981	$1,169,981	$1,265,585	$1,245,946	$1,245,946	$0	$1,301,357	$1,301,357	$0
31	**Project Participants**									
32	Total Participants (Measures)	90,026	90,026	130,815	93,946	93,946		90,891	90891	
33	**% of Spending by Customer Segment**									
34	Residential	100.0	100.0	100.0	100.0	100.0		100.0	100.0	
35	Commercial									
36	Industrial									
37	Farm									
38	Other									
39	**Total % of Spending (must equal 100%)**	100.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	0.0
40	**Low-Income & Renter Participation**									
41	Participants % (% of Row 31)									
42	Budget % (% of Row 29)									
43	**End-Use Target -- Enter "X" or %**									
44	Building Efficiency	X		X	X			X		
45	Compressed Air									
46	Energy Star Appliances	X		X	X			X		
47	Lighting	X		X	X			X		
48	Motors (including ASD, Fans, Pumps)	X		X	X			X		
49	Manufacturing Process									
50	Refrigeration	X		X	X			X		
51	Space Cooling	X		X	X			X		
52	Space Heating	X		X	X			X		
53	Water Heating	X		X	X			X		
54	Weatherization	X		X	X			X		
55	General/Other	X		X	X			X		
56	**Energy and Demand Savings - Generator**									
57	Average Annual kWh Savings per Participant	95	95	75	91	91	0	94	94	0
58	Annual kWh Saved - Generator	8,528,966	8,528,966	9,850,179	8,530,197	8,530,197		8,532,026	8532026	
59	Cost per Annual kWh Saved	$0.1372	$0.1372	$0.1285	$0.1461	$0.1461	$0.0000	$0.1525	$0.1525	$0.0000
60	Measure Lifetime (Years)									
61	Lifetime kWh savings	0	0	0	0	0	0	0	0	0
62	Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
63	Average kW Savings per Participant	0.02	0.02	0.01	0.02	0.02	0.00	0.02	0.02	0.00
64	Annual kW Savings - Generator	1,572	1,572	1,754	1,575	1,575		1,582	1,582	
65	Cost per KW Saved	$744.1680	$744.1680	$721.4189	$790.9764	$790.9764	$0.0000	$822.6024	$822.6024	$0.0000
66	**Cost/Benefit Results**	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year
67	**Societal**									
68	Net present value	9,957,967		3,620,316	9,957,967			9,957,967		
69	B/C ratio	2.16		2.07	2.16			2.16		
70	**Participant**									
71	Net present value	30,364,707		11,123,955	30,364,707			30,364,707		
72	B/C ratio	4.93		4.39	4.93			4.93		
73	**Rate Payer**									
74	Net present value	(17,888,895)		(6,951,303)	(17,888,895)			(17,888,895)		
75	B/C ratio	0.35		0.34	0.35			0.35		
76	**Utility**									
77	Net present value	6,172,892		2,328,109	6,172,892			6,172,892		
78	B/C ratio	2.78		2.84	2.78			2.78		

	A	B	C	D	E	F	G	H	I	J
1	**Electric Conservation Project Information Sheet**				2014/2015/2016 Cons1 BudgtSavgs					
2	**Utility Name:**	Minnesota Power							ID 68	
3	**Project Name:**	Energy Partners - Low Income								
4	**Project Description:**	This Project provides the products and services that have the greatest impact on saving energy across a broad base of								
5	(Note changes)	customer and dwelling types. Although the structure is the same as in previous years, measures that meet customer								
6		needs will be provided.								
7										
8										
9	**Type**	Conservation								
10	**Status:**	Existing								
11		**2014 Proposed**	**2014 Approved**	**2014 Actual**	**2015 Proposed**	**2015 Approved**	**2015 Actual**	**2016 Proposed**	**2016 Approved**	**2016 Actual**
12										
13	**Project Type -- Enter "X"**									
14	**Indirect (No kWh or kW Savings)**									
15	Audit/Info									
16	Education									
17	Classroom Training/Instructional									
18	R&D									
19	Renewable									
20	Other									
21	**Direct (kWh or kW Savings)**	X	X	X	X	X		X	X	
22	**Cost Components -- Enter Dollars**									
23	Project Delivery	68,675	68,430	49,583	69,533			70,416		
24	Utility Administration	28,800	23,415	22,695	29,658			30,542		
25	Evaluation Labor									
26	Advertising & Promotion									
27	Participant Incentives	295,518	497,291	493,127	295,518			299,268		
28	R&D									
29	Other									
30	**Total Costs**	$392,993	$589,136	$565,405	$394,709	$394,709	$0	$400,226	$400,226	$0
31	**Project Participants**									
32	Total Participants (Measures)	4,651	4,651	13,008	4,651	4,651		4,651	4651	
33	**% of Spending by Customer Segment**									
34	Residential	100.0	100.0	100.0	100.0	100.0		100.0	100.0	
35	Commercial									
36	Industrial									
37	Farm									
38	Other									
39	**Total % of Spending (must equal 100%)**	100.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	0.0
40	**Low-Income & Renter Participation**									
41	Participants % (% of Row 31)	100%	100%	100%	100%	100%		100%	100%	
42	Budget % (% of Row 29)	100%	100%	100%	100%	100%		100%	100%	
43	**End-Use Target -- Enter "X" or %**									
44	Building Efficiency	X		X	X			X		
45	Compressed Air									
46	Energy Star Appliances	X		X	X			X		
47	Lighting	X		X	X			X		
48	Motors (including ASD, Fans, Pumps)									
49	Manufacturing Process									
50	Refrigeration	X		X	X			X		
51	Space Cooling	X		X	X			X		
52	Space Heating	X		X	X			X		
53	Water Heating	X		X	X			X		
54	Weatherization	X		X	X			X		
55	General/Other	X		X	X			X		
56	**Energy and Demand Savings - Generator**									
57	Average Annual kWh Savings per Participant	219	219	120	216	216	0	217	217	0
58	Annual kWh Saved - Generator	1,020,444	1,020,444	1,555,355	1,004,262	1,004,262		1,008,517	1008517	
59	Cost per Annual kWh Saved	$0.3851	$0.5773	$0.3635	$0.3930	$0.3930	$0.0000	$0.3968	$0.3968	$0.0000
60	Measure Lifetime (Years)									
61	Lifetime kWh savings	0	0	0	0	0	0	0	0	0
62	Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
63	Average kW Savings per Participant	0.03	0.03	0.02	0.03	0.03	0.00	0.03	0.03	0.00
64	Annual kW Savings - Generator	133	133	205	130	130		130	130	
65	Cost per KW Saved	$2,952.6146	$4,426.2660	$2,758.0729	$3,031.5591	$3,031.5591	$0.0000	$3,078.6615	$3,078.6615	$0.0000
66	**Cost/Benefit Results**	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year
67	**Societal**									
68	Net present value	667,958		508,216	667,958			667,958		
69	B/C ratio	1.72		1.97	1.72			1.72		
70	**Participant**									
71	Net present value	3,829,293		1,861,472	3,829,293			3,829,293		
72	B/C ratio	6.25		4.90	6.25			6.25		
73	**Rate Payer**									
74	Net present value	(2,378,685)		(1,302,942)	(2,378,685)			(2,378,685)		
75	B/C ratio	0.26		0.26	0.26			0.26		
76	**Utility**									
77	Net present value	(295,641)		(113,886)	(295,641)			(295,641)		
78	B/C ratio	0.73		0.80	0.73			0.73		

	A	B	C	D	E	F	G	H	I	J
1	**Electric Conservation Project Information Sheet**				2014/2015/2016 Cons1 BudgtSavgs					
2	**Utility Name:**	Minnesota Power							ID 68	
3	**Project Name:**	Power of One Business - C/I/Ag								
4	**Project Description:**	This Project uses three key marketing strategies to customize a package of products and services that meets the unique								
5	(Note changes)	needs of distinct business, industrial, agricultural and public communities. The structure is the same as in past years but								
6		the measure mix will depend on customer need.								
7		Previously called PowerGrant								
8										
9	**Type**	Conservation								
10	**Status:**	Existing								
11		**2014 Proposed**	**2014 Approved**	**2014 Actual**	**2015 Proposed**	**2015 Approved**	**2015 Actual**	**2016 Proposed**	**2016 Approved**	**2016 Actual**
12										
13	**Project Type -- Enter "X"**									
14	**Indirect (No kWh or kW Savings)**									
15	Audit/Info									
16	Education									
17	Classroom Training/Instructional									
18	R&D									
19	Renewable									
20	Other									
21	**Direct (kWh or kW Savings)**	X	X	X	X	X		X	X	
22	**Cost Components -- Enter Dollars**									
23	Project Delivery	492,723		681,900	518,274			516,902		
24	Utility Administration	45,760		27,473	47,133			48,505		
25	Evaluation Labor									
26	Advertising & Promotion	13,665			17,685			21,222		
27	Participant Incentives	2,175,758		2,109,286	2,237,102			2,296,236		
28	R&D									
29	Other (Education)			2,762						
30	**Total Costs**	$2,727,906	$2,727,906	$2,821,421	$2,820,194	$2,820,194	$0	$2,882,865	$2,882,865	$0
31	**Project Participants**									
32	Total Participants (Projects)	856	856	723	856	856		856	856	
33	**% of Spending by Customer Segment**									
34	Residential									
35	Commercial	100%	100%	61%	100%	100%		100%	100%	
36	Industrial			38%						
37	Farm			1%						
38	Other									
39	**Total % of Spending (must equal 100%)**	100%	100%	100%	100%	100%	0%	100%	100%	0%
40	**Low-Income & Renter Participation**									
41	Participants % (% of Row 31)	0%	0%	0%	0%	0%		0%	0%	
42	Budget % (% of Row 29)	0%	0%	0%	0%	0%		0%	0%	
43	**End-Use Target -- Enter "X" or %**									
44	Building Efficiency	X		X	X			X		
45	Compressed Air	X		X	X			X		
46	Energy Star Appliances	X		X	X			X		
47	Lighting	X		X	X			X		
48	Motors (including ASD, Fans, Pumps)	X		X	X			X		
49	Manufacturing Process	X		X	X			X		
50	Refrigeration	X		X	X			X		
51	Space Cooling	X		X	X			X		
52	Space Heating	X		X	X			X		
53	Water Heating	X		X	X			X		
54	Weatherization	X		X	X			X		
55	General/Other	X		X	X			X		
56	**Energy and Demand Savings - Generator**									
57	Average Annual kWh Savings per Participant	43230	43230	89810	43230	43230	0	43230	43230	0
58	Annual kWh Saved - Generator	37,004,541	37,004,541	64,932,829	37,004,541	37,004,541		37,004,541	37,004,541	
59	Cost per Annual kWh Saved	$0.0737	$0.0737	$0.0435	$0.0762	$0.0762	$0.0000	$0.0779	$0.0779	$0.0000
60	Measure Lifetime (Years)									
61	Lifetime kWh savings	0	0	0	0	0	0	0	0	0
62	Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
63	Average kW Savings per Participant	5.01	5.01	10.04	5.01	5.01	0.00	5.01	5.01	0.00
64	Annual kW Savings - Generator	4,289	4,289	7,256	4,289	4,289		4,289	4,289	
65	Cost per KW Saved	$635.9793	$635.9793	$388.8397	$657.4952	$657.4952	$0.0000	$672.1062	$672.1062	$0.0000
66	**Cost/Benefit Results**	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year
67	**Societal**									
68	Net present value	38,963,754		21,019,154	38,963,754			38,963,754		
69	B/C ratio	2.12		2.40	2.12			2.12		
70	**Participant**									
71	Net present value	67,625,344		40,645,102	67,625,344			67,625,344		
72	B/C ratio	3.13		3.84	3.13			3.13		
73	**Rate Payer**									
74	Net present value	(54,366,575)		(31,207,582)	(54,366,575)			(54,366,575)		
75	B/C ratio	0.46		0.43	0.46			0.46		
76	**Utility**									
77	Net present value	38,778,814		21,022,526	38,778,814			38,778,814		
78	B/C ratio	5.93		8.45	5.93			5.93		

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1	**Electric Conservation Project Information Sheet**				2014/2015/2016 Cons1 BudgtSavgs					
2	**Utility Name:**	Minnesota Power							ID 68	
3	**Project Name:**	Customer Renewable Energy								
4	**Project Description:**	This Project will continue to serve as an effective vehicle to promote the successful application of small scale renewable								
5	(Note changes)	technologies across market sectors. This project includes the mandatory spending for the Made-in-Minnesota solar								
6		assessment.								
7		Previously called Community-Focused Small Scale RE/DG Pilot								
8										
9	**Type**	Conservation								
10	**Status:**	Existing								
11		**2014 Proposed**	**2014 Approved**	**2014 Actual**	**2015 Proposed**	**2015 Approved**	**2015 Actual**	**2016 Proposed**	**2016 Approved**	**2016 Actual**
12										
13	**Project Type -- Enter "X"**									
14	**Indirect (No kWh or kW Savings)**									
15	Audit/Info									
16	Education									
17	Classroom Training/Instructional									
18	R&D									
19	Renewable	X	X	X	X	X		X	X	
20	Other									
21	**Direct (kWh or kW Savings)**									
22	**Cost Components -- Enter Dollars**									
23	Project Delivery			2,578						
24	Utility Administration	17,160	17,160	14,156	17,675	17,675		18,205	18,205	
25	Evaluation Labor									
26	Advertising & Promotion									
27	Participant Incentives	327,750	322,050	328,799	327,750	322,050		327,750	322,050	
28	R&D									
29	Other (Education)	10,590	10,590	2,123	10,075	10,075		9,545	9,545	
30	**Total Costs**	$355,500	$349,800	$347,656	$355,500	$349,800	$0	$355,500	$349,800	$0
31	**Project Participants**									
32	Total Participants	19	19	17	19	19		19	19	
33	**% of Spending by Customer Segment**									
34	Residential			82%						
35	Commercial			18%						
36	Industrial									
37	Farm									
38	Other									
39	**Total % of Spending (must equal 100%)**	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
40	**Low-Income & Renter Participation**									
41	Participants % (% of Row 31)	0%		0%	0%			0%		
42	Budget % (% of Row 29)	0%		0%	0%			0%		
43	**End-Use Target -- Enter "X" or %**									
44	Building Efficiency									
45	Compressed Air									
46	Energy Star Appliances									
47	Lighting									
48	Motors (including ASD, Fans, Pumps)									
49	Manufacturing Process									
50	Refrigeration									
51	Space Cooling									
52	Space Heating									
53	Water Heating									
54	Weatherization									
55	General/Other	X	X		X			X		
56	**Energy and Demand Savings - Generator**									
57	Average Annual kWh Savings per Participant	0	0	0	0	0	0	0	0	0
58	Annual kWh Saved - Generator									
59	Cost per Annual kWh Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
60	Measure Lifetime (Years)									
61	Lifetime kWh savings	0	0	0	0	0	0	0	0	0
62	Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
63	Average kW Savings per Participant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
64	Annual kW Savings - Generator									
65	Cost per KW Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
66	**Cost/Benefit Results**									
67	**Societal**									
68	Net present value									
69	B/C ratio									
70	**Participant**									
71	Net present value									
72	B/C ratio									
73	**Rate Payer**									
74	Net present value									
75	B/C ratio									
76	**Utility**									
77	Net present value									
78	B/C ratio									

	A	B	C	D	E	F	G	H	I	J
1	**Electric Conservation Project Information Sheet**				2014/2015/2016 Cons1 BudgtSavgs					
2	**Utility Name:**	Minnesota Power							ID 68	
3	**Project Name:**	Customer Engagement								
4	**Project Description:**	This Project is focused on educational outreach and communications via multi-modal marketing channels to increase								
5	(Note changes)	awareness of Power of One® programs.								
6		Previously called Integrated Energy Education & Communication								
7										
8										
9	**Type**	Conservation								
10	**Status:**	Existing								
11		**2014 Proposed**	**2014 Approved**	**2014 Actual**	**2015 Proposed**	**2015 Approved**	**2015 Actual**	**2016 Proposed**	**2016 Approved**	**2016 Actual**
12										
13	**Project Type -- Enter "X"**									
14	**Indirect (No kWh or kW Savings)**									
15	Audit/Info	X	X	X	X	X		X	X	
16	Education									
17	Classroom Training/Instructional	X	X	X	X	X		X	X	
18	R&D									
19	Renewable									
20	Other									
21	**Direct (kWh or kW Savings)**									
22	**Cost Components -- Enter Dollars**									
23	Project Delivery	299,200		235,190	305,506			312,063		
24	Utility Administration	68,640		71,851	70,699			72,758		
25	Evaluation Labor									
26	Advertising & Promotion	10,000		35,358	10,000			10,000		
27	Participant Incentives									
28	R&D									
29	Other (Education)	420,000		427,503	420,000			420,000		
30	**Total Costs**	$797,840	$797,840	$769,903	$806,205	$806,205	$0	$814,821	$814,821	$0
31	**Project Participants**									
32	Total Participants	76,000		122,511	76,000			76,000		
33	**% of Spending by Customer Segment**									
34	Residential									
35	Commercial									
36	Industrial									
37	Farm									
38	Other									
39	**Total % of Spending (must equal 100%)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	**Low-Income & Renter Participation**									
41	Participants % (% of Row 31)	Unknown	Unknown		Unknown	Unknown		Unknown	Unknown	
42	Budget % (% of Row 29)									
43	**End-Use Target -- Enter "X" or %**									
44	Building Efficiency									
45	Compressed Air									
46	Energy Star Appliances									
47	Lighting									
48	Motors (including ASD, Fans, Pumps)									
49	Manufacturing Process									
50	Refrigeration									
51	Space Cooling									
52	Space Heating									
53	Water Heating									
54	Weatherization									
55	General/Other									
56	**Energy and Demand Savings - Generator**									
57	Average Annual kWh Savings per Participant	0	0	0	0	0	0	0	0	0
58	Annual kWh Saved - Generator									
59	Cost per Annual kWh Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
60	Measure Lifetime (Years)									
61	Lifetime kWh savings	0	0	0	0	0	0	0	0	0
62	Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
63	Average kW Savings per Participant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
64	Annual kW Savings - Generator									
65	Cost per KW Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
66	**Cost/Benefit Results**									
67	**Societal**									
68	Net present value									
69	B/C ratio									
70	**Participant**									
71	Net present value									
72	B/C ratio									
73	**Rate Payer**									
74	Net present value									
75	B/C ratio									
76	**Utility**									
77	Net present value									
78	B/C ratio									

	A	B	C	D	E	F	G	H	I	J
1	**Electric Conservation Project Information Sheet**				2014/2015/2016 Cons1 BudgtSavgs					
2	**Utility Name:**	Minnesota Power							ID 68	
3	**Project Name:**	Energy Analysis								
4	**Project Description:**	This Project delivers site and technology-specific information needed to help a cross section of customers choose energy-								
5	(Note changes)	saving products and services for their homes and businesses.								
6										
7										
8										
9	**Type**	Conservation								
10	**Status:**	Existing								
11		**2014 Proposed**	**2014 Approved**	**2014 Actual**	**2015 Proposed**	**2015 Approved**	**2015 Actual**	**2016 Proposed**	**2016 Approved**	**2016 Actual**
12										
13	**Project Type -- Enter "X"**									
14	**Indirect (No kWh or kW Savings)**									
15	Audit/Info	X	X	X	X	X		X	X	
16	Education									
17	Classroom Training/Instructional									
18	R&D									
19	Renewable									
20	Other									
21	**Direct (kWh or kW Savings)**									
22	**Cost Components -- Enter Dollars**									
23	Project Delivery	529,505		630,246	552,691			573,914		
24	Utility Administration	28,600		14,805	29,458			30,316		
25	Evaluation Labor									
26	Advertising & Promotion									
27	Participant Incentives									
28	R&D									
29	Other (Education & Training)									
30	**Total Costs**	$558,105	$569,505	$645,052	$582,149	$593,549	$0	$604,230	$615,630	$0
31	**Project Participants**									
32	Total Participants	5,013	5,013	3,486	5,248	5,248		5,498	5,498	
33	**% of Spending by Customer Segment**									
34	Residential	20%		24%	20%			20%		
35	Commercial, Industrial & Ag Combined	80%		76%	80%			80%		
36	Industrial									
37	Farm									
38	Other									
39	**Total % of Spending (must equal 100%)**	100%	0.0	100%	100%	0.0	0.0	100%	0.0	0.0
40	**Low-Income & Renter Participation**									
41	Participants % (% of Row 31)	9%		22%	9%			8%		
42	Budget % (% of Row 29)	2%		6%	2%			2%		
43	**End-Use Target -- Enter "X" or %**									
44	Building Efficiency									
45	Compressed Air									
46	Energy Star Appliances									
47	Lighting									
48	Motors (including ASD, Fans, Pumps)									
49	Manufacturing Process									
50	Refrigeration									
51	Space Cooling									
52	Space Heating									
53	Water Heating									
54	Weatherization									
55	General/Other									
56	**Energy and Demand Savings - Generator**									
57	Average Annual kWh Savings per Participant	0	0	0	0	0	0	0	0	0
58	Annual kWh Saved - Generator									
59	Cost per Annual kWh Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
60	Measure Lifetime (Years)									
61	Lifetime kWh savings	0	0	0	0	0	0	0	0	0
62	Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
63	Average kW Savings per Participant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
64	Annual kW Savings - Generator									
65	Cost per KW Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
66	**Cost/Benefit Results**									
67	**Societal**									
68	Net present value									
69	B/C ratio									
70	**Participant**									
71	Net present value									
72	B/C ratio									
73	**Rate Payer**									
74	Net present value									
75	B/C ratio									
76	**Utility**									
77	Net present value									
78	B/C ratio									

	A	B	C	D	E	F	G	H	I	J
1	**Electric Conservation Project Information Sheet**				2014/2015/2016 Cons1 BudgtSavgs					
2	**Utility Name:**	Minnesota Power							ID 68	
3	**Project Name:**	Research & Development								
4	**Project Description:**	This Project is designed to take advantage of a broad base of technologies across eligible customer classes - residential								
5	(Note changes)	and low income, commercial, public and agricultural and industrial to ensure that each customer class benefits from								
6		participation in technology development, application and market-based research.								
7										
8										
9	**Type**	Conservation								
10	**Status:**	Existing								
11		**2014 Proposed**	**2014 Approved**	**2014 Actual**	**2015 Proposed**	**2015 Approved**	**2015 Actual**	**2016 Proposed**	**2016 Approved**	**2016 Actual**
12										
13	**Project Type -- Enter "X"**									
14	**Indirect (No kWh or kW Savings)**									
15	Audit/Info									
16	Education									
17	Classroom Training/Instructional									
18	R&D	X	X	X	X	X		X	X	
19	Renewable									
20	Other									
21	**Direct (kWh or kW Savings)**									
22	**Cost Components -- Enter Dollars**									
23	Project Delivery	40,000		74,090	40,000			40,000		
24	Utility Administration	11,440		514	11,783			12,137		
25	Evaluation Labor									
26	Advertising & Promotion									
27	Participant Incentives									
28	R&D	304,060		216,464	303,717			303,363		
29	Other									
30	**Total Costs**	$355,500	$349,800	$291,069	$355,500	$349,800	$0	$355,500	$349,800	$0
31	**Project Participants**									
32	Total Participants									
33	**% of Spending by Customer Segment**									
34	Residential									
35	Commercial									
36	Industrial									
37	Farm									
38	Other									
39	**Total % of Spending (must equal 100%)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	**Low-Income & Renter Participation**									
41	Participants % (% of Row 31)									
42	Budget % (% of Row 29)									
43	**End-Use Target -- Enter "X" or %**									
44	Building Efficiency									
45	Compressed Air									
46	Energy Star Appliances									
47	Lighting									
48	Motors (including ASD, Fans, Pumps)									
49	Manufacturing Process									
50	Refrigeration									
51	Space Cooling									
52	Space Heating									
53	Water Heating									
54	Weatherization									
55	General/Other									
56	**Energy and Demand Savings - Generator**									
57	Average Annual kWh Savings per Participant	0	0	0	0	0	0	0	0	0
58	Annual kWh Saved - Generator									
59	Cost per Annual kWh Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
60	Measure Lifetime (Years)									
61	Lifetime kWh savings	0	0	0	0	0	0	0	0	0
62	Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
63	Average kW Savings per Participant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
64	Annual kW Savings - Generator									
65	Cost per KW Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
66	**Cost/Benefit Results**									
67	**Societal**									
68	Net present value									
69	B/C ratio									
70	**Participant**									
71	Net present value									
72	B/C ratio									
73	**Rate Payer**									
74	Net present value									
75	B/C ratio									
76	**Utility**									
77	Net present value									
78	B/C ratio									

	A	B	C	D	E	F	G	H	I	J
1	**Electric Conservation Project Information Sheet**				2014/2015/2016 Cons1 BudgtSavgs					
2	**Utility Name:**	Minnesota Power							ID 68	
3	**Project Name:**	CIP Evaluation & Planning								
4	**Project Description:**	This Project provides the resources for Minnesota Power to plan and evaluate the triennial CIP filing, complete the								
5	(Note changes)	evaluation of current CIP projects, prepare the CIP tracker and DSM incentive reports for the annual Consolidated Filing,								
6		respond to data requests and evaluate the benefit/cost of proposed modifications to existing Projects or for the								
7		development of new Projects.								
8										
9	**Type**									
10	**Status:**	Existing								
11		**2014 Proposed**	**2014 Approved**	**2014 Actual**	**2015 Proposed**	**2015 Approved**	**2015 Actual**	**2016 Proposed**	**2016 Approved**	**2016 Actual**
12										
13	**Project Type -- Enter "X"**									
14	**Indirect (No kWh or kW Savings)**									
15	Audit/Info									
16	Education									
17	Classroom Training/Instructional									
18	R&D									
19	Renewable									
20	Other	X	X	X	X	X		X	X	
21	**Direct (kWh or kW Savings)**									
22	**Cost Components -- Enter Dollars**									
23	Project Delivery	46,000		12,977	46,000			46,000		
24	Utility Administration	128,260		95,778	132,108			136,071		
25	Evaluation Labor	228,260		192,739	232,108			236,071		
26	Advertising & Promotion									
27	Participant Incentives									
28	R&D									
29	Other (Education)			6,317						
30	**Total Costs**	$402,520	$402,520	$307,811	$410,216	$410,216	$0	$418,142	$418,142	$0
31	**Project Participants**									
32	Total Participants									
33	**% of Spending by Customer Segment**									
34	Residential									
35	Commercial									
36	Industrial									
37	Farm									
38	Other	100.0		100.0	100.0			100.0		
39	**Total % of Spending (must equal 100%)**	100.0	0.0	100.0	100.0	0.0	0.0	100.0	0.0	0.0
40	**Low-Income & Renter Participation**									
41	Participants % (% of Row 31)									
42	Budget % (% of Row 29)									
43	**End-Use Target -- Enter "X" or %**									
44	Building Efficiency									
45	Compressed Air									
46	Energy Star Appliances									
47	Lighting									
48	Motors (including ASD, Fans, Pumps)									
49	Manufacturing Process									
50	Refrigeration									
51	Space Cooling									
52	Space Heating									
53	Water Heating									
54	Weatherization									
55	General/Other	X			X			X		
56	**Energy and Demand Savings - Generator**									
57	Average Annual kWh Savings per Participant	0	0	0	0	0	0	0	0	0
58	Annual kWh Saved - Generator									
59	Cost per Annual kWh Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
60	Measure Lifetime (Years)									
61	Lifetime kWh savings	0	0	0	0	0	0	0	0	0
62	Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
63	Average kW Savings per Participant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
64	Annual kW Savings - Generator									
65	Cost per KW Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
66	**Cost/Benefit Results**									
67	**Societal**									
68	Net present value									
69	B/C ratio									
70	**Participant**									
71	Net present value									
72	B/C ratio									
73	**Rate Payer**									
74	Net present value									
75	B/C ratio									
76	**Utility**									
77	Net present value									
78	B/C ratio									

	A	B	C	D	E	F	G	H	I	J
1	**Electric Conservation Project Information Sheet**				2014/2015/2016 Cons1 BudgtSavgs					
2	**Utility Name:**	Minnesota Power							ID 68	
3	**Project Name:**	Regulatory Charges								
4	**Project Description:**	This Project recovers charges billed to Minnesota Power by the Department of Commerce regarding CIP, with exception								
5	(Note changes)	of the Made in Minnesota assessment for solar.								
6										
7										
8										
9	**Type**	Conservation								
10	**Status:**	Existing								
11		**2014 Proposed**	**2014 Approved**	**2014 Actual**	**2015 Proposed**	**2015 Approved**	**2015 Actual**	**2016 Proposed**	**2016 Approved**	**2016 Actual**
12										
13	**Project Type -- Enter "X"**									
14	**Indirect (No kWh or kW Savings)**									
15	Audit/Info									
16	Education									
17	Classroom Training/Instructional									
18	R&D									
19	Renewable									
20	Other	X			X			X		
21	**Direct (kWh or kW Savings)**									
22	**Cost Components -- Enter Dollars**									
23	Project Delivery	175,000		186,931	175,000			175,000		
24	Utility Administration									
25	Evaluation Labor									
26	Advertising & Promotion									
27	Participant Incentives									
28	R&D									
29	Other									
30	**Total Costs**	$175,000	$175,000	$186,931	$175,000	$175,000	$0	$175,000	$175,000	$0
31	**Project Participants**									
32	Total Participants									
33	**% of Spending by Customer Segment**									
34	Residential									
35	Commercial									
36	Industrial									
37	Farm									
38	Other	100.0			100.0			100.0		
39	**Total % of Spending (must equal 100%)**	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0
40	**Low-Income & Renter Participation**									
41	Participants % (% of Row 31)									
42	Budget % (% of Row 29)									
43	**End-Use Target -- Enter "X" or %**									
44	Building Efficiency									
45	Compressed Air									
46	Energy Star Appliances									
47	Lighting									
48	Motors (including ASD, Fans, Pumps)									
49	Manufacturing Process									
50	Refrigeration									
51	Space Cooling									
52	Space Heating									
53	Water Heating									
54	Weatherization									
55	General/Other									
56	**Energy and Demand Savings - Generator**									
57	Average Annual kWh Savings per Participant	0	0	0	0	0	0	0	0	0
58	Annual kWh Saved - Generator									
59	Cost per Annual kWh Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
60	Measure Lifetime (Years)									
61	Lifetime kWh savings	0	0	0	0	0	0	0	0	0
62	Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
63	Average kW Savings per Participant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
64	Annual kW Savings - Generator									
65	Cost per KW Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
66	**Cost/Benefit Results**									
67	**Societal**									
68	Net present value									
69	B/C ratio									
70	**Participant**									
71	Net present value									
72	B/C ratio									
73	**Rate Payer**									
74	Net present value									
75	B/C ratio									
76	**Utility**									
77	Net present value									
78	B/C ratio									

Research & Development

PROGRAM TITLE: RESEARCH & DEVELOPMENT

PROGRAM DESCRIPTION

The Research and Development (R&D) program has been a very successful pro-active 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 right fit solutions. 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.

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 2014 R&D projects are detailed below:

Advanced RTU
($39,435)

Scope:
As buildings age, critical building systems such as HVAC and their rooftop units may experience issues due to failed components, damage, and/or inadequate maintenance. These factors can influence a system by causing it to run less efficiently, and potentially to fail completely, which can be a huge investment for some commercial building owners. In the United States, rooftop AC units are used to cool nearly half of all commercial floor space in the country. By taking actions to find ways to improve rooftop unit (RTU) performance and efficiency, it may be possible for building owners to see energy cost savings and an extended lifespan of their equipment.

Through testing and applying new innovations, Minnesota Power hopes to use the information gained to help educate customers about new technologies that may help them become more energy efficient and save on the costs of running expensive HVAC packaged RTUs, while maintaining the same indoor comfort and air quality.

Technology:

The Catalyst system, manufactured by Transformative Wave, is a complete energy-efficiency HVAC upgrade that has many components. This advanced RTU study focused on utilizing real-time energy monitoring and control via the Catalyst "eIQ Energy Platform" with full building management system (BMS) controls. The Triduum BMS eIQ Cloud gives users scheduling and comfort control options of HVAC with optional lighting and portfolio asset management resources.

Transformative Wave claims that installing Catalyst saves, on average, 69% of fan energy of HVAC systems using its Optic-Run fan control logic. This research project will try to evaluate these claims by retrofitting a Catalyst controller between the thermostat (or BMS controller) and HVAC control terminals to monitor the real-time energy usage with the eIQ platform. Other research claims a reduced energy usage of up to 10% of the annual electricity usage with a two- to four-year usage.

Research:

The Catalyst system, a retrofit solution for optimization and control of RTUs, which in turn increases their efficiency, was chosen for this study. This device claims to be the ideal retrofit device since it can be integrated into the existing building management system (BMS) or function as a BMS itself.

Minnesota Power has chosen to test the Catalyst system on five RTUs at three separate locations in the Duluth/Cloquet area. A variety of newer and older units with gas and electric power were chosen to help evaluate how well the system performs in these different retrofit applications.

Status of Project:

Data loggers were installed on the chosen RTUs in November 2014 and are currently in place measuring electrical amperage of the unit motors. Temperature sensors were also installed inside gas powered units to help quantify this usage by determining when the system calls for heating or cooling. In early 2015, detailed site inspections were completed by technicians from Yale Mechanical prior to when the Catalyst components are planned to be installed and retrofitted specific to each RTU. Units will continue to be monitored following installation and energy savings will be quantified. A detailed report will be written summarizing the effectiveness of the Catalyst system in regard to energy savings, customer payback period, and equipment lifespan. In addition, the sensitivity of Catalyst will be assessed and used to determine how the energy data obtained could be used to create an energy management plan.

CO_2 Sensors (as part of *Advanced RTU*)

Scope:

A pilot study conducted by the U.S. Department of Energy in 2013 revealed that installing advanced controller retrofit kits on commercial rooftop units (RTU) reduced the normalized annual RTU energy consumption by an average of 57% for all RTUs. A large portion of the energy savings was realized when the buildings were not 100% occupied, as the controls were able to adjust the ventilation rate to match the needs of the occupants. This study reveals that the opportunity is great for expanding the market acceptance of controls. Minnesota Power believes that the best way to encourage customers to look into Demand Control Ventilation (DCV) opportunities is to provide them with hard evidence (when applicable) that their buildings'

ventilation systems are sized for a level of occupancy that rarely occurs, and to then use measured CO_2 levels to accurately predict the energy-savings potential for a specific application.

Minnesota Power allocated $494 for the purchase of one CO_2 sensor and connector cable in 2014. For customers looking into DCV opportunities, Minnesota Power will bring equipment onsite to log the occupancy of a specific room and the change in CO_2 levels. The results from the data, when compared to the level of CO_2 that is considered "acceptable" (according to ASHRAE standards and FEMP report DOE/EE-0293: *Demand-Controlled Ventilation Using CO_2 Sensors*), will reveal the potential for energy savings by scaling back the operation of the ventilation system.

Technology:

A list of equipment used to log data is as follows:

- Telfair 7001 CO_2 Sensor*
- Telfair 7001 CO_2 Sensor-U12 Connector Cable
- HOBO UX90 Occupancy/Light Logger
- HOBO U12-006 External Sensor Logger

* *Due to the 72-hour battery life of the logging equipment, the device will need to be plugged in while on site.*

Research:

Minnesota Power will be logging the parts per million (PPM) of CO_2 and occupancy levels in 30-second intervals. The pilot will occur at the Cloquet Service Center in the large conference room. The data will be collected for a period of two weeks. Once the data is retrieved, Minnesota Power will examine the correlation between occupancy and CO_2 levels and determine whether the current PPM levels are low enough during unoccupied times that installing DCV would result in significant cost/energy savings. If the data from the pilot is deemed reliable and there are no significant barriers to conducting the study, Minnesota Power will use this approach at customers' sites.

Status of Project:

As described above, the Telfair 7001 CO_2 Sensors with associated occupancy sensors can be a useful tool for Minnesota Power customers interested in demand control ventilation and may provide energy cost savings. Conducting this pilot at the Cloquet Service Center has provided insight to building occupants who are able to observe the changes in CO_2 PPM during occupied and unoccupied periods. Additional monitoring is needed to be able to quantify energy savings associated with utilizing CO_2 occupancy sensors with demand control ventilation. Minnesota Power is interested in testing this technology in 2015 for applications such as schools, gyms, offices, etc., as part of this ongoing research.

Congregational Pilot

($15,448)

Scope:

Since many congregational facilities are non-profits who depend on donations from charities or their own congregation, there may not always be funding available for services such as energy analysis. Churches present many low-cost, easy-to-implement energy-saving opportunities. Dollars that are saved can be used for other purposes, such as service to the community. Because of this, along with interest in conserving global resources, there has been an increased interest by faith-based communities to attempt to reduce their buildings' energy costs. In response to this increased interest, Minnesota Power partnered with Ecolibrium3 and ComfortSystems to provide a way for congregations to save energy in their homes and ultimately award their congregations with bonus incentives to complete energy-saving projects for their facility.

Three congregations participated in the pilot including St. Paul's Episcopal, Concordia Lutheran, and St. Mark's African Methodist Episcopal. Each church was asked to select an "Energy Champion" to lead the charge in encouraging members of the congregation to participate in a Home Energy Analysis with Building Diagnostics. A goal was set for the number of energy analyses completed for each congregation based on the number of members. If the group completed these goals, they were awarded with a commercial energy analysis of their building and bonus incentives for completing the identified energy-saving projects.

The purpose of this research is to educate congregational communities and help them understand where their energy is going (in their homes and in their churches) and identify actions they can take to use energy more effectively.

Technology/Residential

Designated Energy Champions encouraged congregation members to participate in a Home Energy Analysis with Building Diagnostics. This analysis included the direct install of energy-efficient products, building diagnostics (blower door and infrared thermal scans), and recommendations from the auditor regarding additional energy-saving opportunities. Each facility that completed the designated number of residential home energy analyses received a commercial energy analysis of their facility and bonus incentives to assist in completing energy-saving projects.

Technology/Commercial:

There can be many culprits of high energy usage in churches. This may include inefficient HVAC systems with lack of controls, high energy consuming lighting fixtures, outdated accessory devices such as audio visual equipment, or resulting high energy usage due to behavioral factors. For example, in some cases it may take hours to condition a large space such as a sanctuary to a comfortable temperature for attendees when the existing HVAC system is running inefficiently. Commercial grade thermostats with multiple setback and timing controls have become widely available and very cost effective, especially for large buildings. Secondly, churches often contain many lighting fixtures, which may be outdated and difficult to change out without high labor costs. By making investments to install energy-efficient fixtures and bulbs, maintenance and energy costs may decrease dramatically. A project like this may be considered in phases for better affordability, but would be worth the cost savings in the long term and may be eligible for rebates through Minnesota Power. Many churches are now benefitting from using

smart zone controls. These types of systems, when coupled with smart lighting systems, ensure that light is used only where it is needed. These technologies are especially effective in energy reduction during non-peak hours. Other types of controls for lighting such as occupancy and exterior motion sensors may also help contribute to energy savings. Lastly, energy usage contributing to demand costs should be considered. By reducing the energy usage needed to run a daily church service, these costs can be lowered.

Research:

Each congregation reached their designated goals for the number of residential Home Energy Analysis with Building Diagnostics completed. Customers received direct installations of energy-efficient lighting and water- and energy-saving measures. In addition, they identified building envelope issues through the building diagnostics evaluation. Members of the congregations shared positive feedback about the analyses and shared that the experience was valuable in learning how they use energy and identifying ways to save energy in their homes.

A walk-through energy analysis focusing on natural gas and electric energy usage was completed at the following churches in Duluth, MN: St. Paul's Episcopal, Concordia Lutheran, and St. Mark's African Methodist Episcopal. Detailed reports were compiled for each location and the results were shared with Minnesota Power, ComfortSystems, and representatives from each church. Bonus incentives towards completing projects were distributed based on reaching their home energy analysis goals. Rebates were also awarded as projects were completed and deemed qualifying. Minnesota Power contractors met with church organizers to discuss the best options available to make energy-saving changes.

Status of Project:

Minnesota Power has followed up with the churches that completed energy-efficiency projects. St. Paul's Episcopal was very satisfied with their lighting upgrades and gave great feedback. They are planning to begin phase two of this project in January 2015 and retrofit their high sanctuary lights. Concordia Lutheran Church is also pleased with their new sanctuary lighting and they were glad to borrow a lighting sample from Minnesota Power before moving forward with the project. Minnesota Power is still discussing whether to continue this research in 2015.

Copeland Compressor

($2,039)

Scope:

The purpose of this research is to evaluate the energy and cost savings associated with equipping specific refrigeration compressors with digital capacity controls and derive a method for estimating energy and cost savings for future projects.

Technology:

Emerson Climate Technologies Copeland-Discus Digital compressor controls are a method for variable capacity control in Discus compressors. This variable capacity control is achieved by an internal unloading method known as blocked suction. During normal operation, suction gas enters the cylinders and is compressed. During blocked suction operation, the flow of suction gas is blocked to the cylinders; therefore there is no gas to compress in the cylinders. Due to this "unloaded" state, energy consumption is reduced.

Research:

In 2013, Minnesota Power purchased an Emerson Climate Technologies Copeland-Discus Digital compressor controls for the purpose of testing the technology at a customer site.

The project began with the identification of potential candidates to test out the Copeland-Discus controls within their facilities. Upper Lakes Foods was identified as a potential test site as they are a food distributor and use refrigeration compressors extensively in their operation. Minnesota Power sent a formal research and development proposal to Upper Lakes Foods, to which Upper Lakes Foods agreed. Minnesota Power then installed data loggers for the purpose of collecting baseline energy usage data from the current compressors. A Copeland-Discus compressor with digital controls was installed at Upper Lakes Foods in the spring of 2013. Once the new compressor and controls were installed and operational, Minnesota Power installed data loggers to monitor the energy usage of the new compressor. In 2014, a second round of data logging of the post-installment of the new compressor was done to verify amperage readings.

Status of Project:

This project has brought attention to the complexity of data logging and the need for increased attention to data logging procedures. Additional measures may need to be taken for completing this research, including additional data logging and/or production benchmarking. Minnesota Power is currently in the process of reviewing the data that has been collected thus far to determine the energy and cost savings from the new compressor with digital controls.

Delivery Strategies
($1,067)

Scope:

The purpose of this research is to test drive and verify the effectiveness of a mobile application to perform energy audits in the field, allowing more flexibility of resources for execution time and information analysis.

Technology:

ecoInsight is an interactive mobile application used primarily for working with lighting technologies, but also includes some tools used for motor and drive analysis. The program encompasses a variety of documentation and analysis tools that can be useful for customer engagement during the auditing process. The application gives access to a broad library of manufacturer lighting catalogs and also provides the ability to create financing proposals for customer projects. The company, ecoInsight, offers extra functionality to integrate more modules like HVAC to the basic platform for an extra cost.

Research:

Minnesota Power started this research in 2013. Four iPads were purchased by Minnesota Power to test mobile applications for auditing use. The application ecoInsight was installed on two of the devices for use when performing lighting audits. For ease of collecting information in the field, the application Good Notes was installed on all devices and integrated to sync with Drop Box, a free online storage and file-sharing program.

Status of Project:

In 2014, ecoInsight was no longer offered as a free application and Minnesota Power discontinued use. Minnesota Power has continued to use iPads for taking notes and for the rebate application submittal process.

In 2015, Minnesota Power plans to do a trial of the ecoInsight program for iPads to evaluate if the updated version of the program offers useful tools for lighting audits. According to ecoInsight, the improved version of the application is much more user-friendly, easy to navigate, and also includes the following added features: iOS 8 support, streamlined data collection, light meter support, a plug-in feature, and improved photo and audio capabilities. In addition, the ecoInsight Pro Version can deliver proposals and reports with customized company logos and allows for an extensive catalog library (up to 500 products). The program also has some measures available to plug in calculations for HVAC audits.

Minnesota Power has also been researching similar auditing applications for iPads. One in particular, Hancock Software, is a mobile energy audit and program management platform that can be accessed through iPads. Hancock software has attractive features for utilities such as its Commercial and Industrial Lighting System with cross-platform mobile site assessment, LIHEAP (Low Income Heating Energy Assistance Program), WAP (Weatherization Assistance Programs), and extensive audit reporting for residential energy efficiency, and precision energy analysis tools and benchmarking capabilities.

Energy auditing tools such as ecoInsight and Hancock Software could be useful for Minnesota Power in increasing the quality and volume of energy audits, encouraging customer engagement and meeting energy savings goals effectively. As this is ongoing research, Minnesota Power intends to continue the evaluation of the iPad and associated applications through 2015.

Dust Collection Study

($2,728)

Scope:

The purpose of this research is to evaluate a new delivery service for auditing dust/mist/fume collecting systems and how energy savings result at facilities where exhaust ventilation is required for these processes. If proven effective, this type of audit, which is similar to a compressed air evaluation, could help greatly reduce operating costs to users.

Technology:

Energy analysis, compressed air audits, and facility modeling are all well-known delivery strategies for helping customers find areas in their buildings and facilities with energy conservation opportunities. Learning from these examples, Minnesota Power researched a company that specializes in providing an analysis for facilities that use dust collection, fume, and hood systems. This company proposed doing an evaluation of a cabinet-making facility that uses a dust collection system to remove the dust and particulates from the various woodworking machinery. The premise for the potential energy savings was the desire to slow down the dust collection fan speed using a VFD. This fan would slow down when new gates were installed in the ductwork and at each individual woodworking piece of equipment. However, prior to the installation of the VFD, gates and a sophisticated control system, along with a study, were necessary to determine if there would be any actual energy savings. The study would look at the

energy consumption of the existing fan, CFM delivered at multiple locations throughout the facility, the complexity of the controls, and finally, what the cost effectiveness of this type of upgrade would be.

Research:

The objective of this research was to evaluate the potential dust collection energy savings and to quantify energy savings. Dura Supreme Rough Mill in Pierz, MN, agreed to participate in this study. On average, 67% or less of workstations are utilized at Dura Supreme Rough Mill and the original dust collecting system was running at all times, even when stations were unoccupied. In addition, the fan was not performing correctly due to a design error. The auditor visited the site to conduct a systems savings analysis and take measurements of fan motor and performance, air velocity, and workstation dimensions. Recommendations were made to improve the current ventilation system along with installing the new controls. A detailed report was delivered with the estimated energy savings and cost effectiveness for the project based on the customer site and installation components.

Status of Project:

As a result of the study, it was determined that the dust collector system was underperforming due to a number of conditions such as low static pressure, duct orientation and fan speed. By correcting these conditions, the energy consumption of the dust collector system would actually increase. However, implementing the proposed measures would result in a 41% savings compared to the corrected system. The study recommended that the air volume and fan static pressure of the system be increased to standard levels by doing the following: eliminate system error by adjusting and changing the orientation of the fan duct and increasing the fan RPM to a higher value. Essentially, if fan function was restored and the new control system and equipment were installed, the system would be using the same amount of energy as the original system. This research has been a valuable experience for Minnesota Power to understand how improving dust collection systems using on demand-ventilation controls could result in energy savings.

Energy Benchmarking Tools

($2,366)

Scope:

Energy benchmarking and tracking are useful ways for building owners to see objective, reliable information about how they use energy. It can also increase general awareness of energy efficiency by building occupants and, in turn, may effect a change in behavior to lessen their energy use. These practices also help building owners identify and prioritize areas of improvement for their energy-efficiency goals and help establish reference points and success measurements along the way. Energy benchmarking helps to create a comprehensive energy management action plan for building and business owners for capital investments.

Providing benchmarking assistance to Minnesota Power customers may promote energy efficiency projects and spark an initiative to save energy and operating costs through competition with other facilities. The goal for customers using these programs is for them to have the advantage of being more interactive with the way their property uses energy. This will allow them to make conscious choices to control and manage their energy usage.

Technology:

Energy benchmarking programs such as ENERGY STAR® Portfolio Manager (ESPM) are free 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. ESPM generates weather-normalized reports of energy use intensity (EUI) 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 ESPM help drive energy-efficiency improvements and design to new construction and existing buildings.

Research:

Customers that were interested in energy benchmarking for their facilities worked with energy analysts contracted by Minnesota Power to help with the process of using ESPM. Building characteristics, demographics and utility data were collected from the customers and their utility providers and added into the ESPM. ENERGY STAR® scores will be determined for each facility once the information is entered and verified, and participants may receive 2015 ENERGY STAR® certification if they qualify. Minnesota Power would like to educate the participating customers by assisting in creating energy-saving-goals and identifying energy-saving projects at their facilities. Each project will be evaluated for feasibility and qualification toward Minnesota Power standard rebates.

Status of Project:

Essentia Health and Member's Cooperative Credit Union (MCCU) participated in this research in 2014. MCCU in Cloquet, MN, and five buildings on the Duluth Essentia campus, have been evaluated based on their energy usage and building characteristics. Information has been gained on the complexity of benchmarking large facilities such as Essentia Health that have multiple meters and types of energy usage, building uses, parking lots, etc. Minnesota Power is currently in the process of determining ENERGY STAR® scores for the properties. Miner's Inc. will also be participating in this research and has requested that all of their branch locations are benchmarked for the year 2015.

Minnesota Power would like to find avenues to use other energy benchmarking programs such as SB2030 and B3 as part of this ongoing research.

Energy Modeling and Design

($276)

Scope:

The purpose of this research is to evaluate the energy and cost savings associated with implementing energy design and assistance within the planning and construction stages of new facilities. In this case specifically, the focus was on multifamily apartment complexes.

Technology:

Incorporating energy-efficient design into new facilities is vitally important as the decisions made during the design phase will impact the operational cost of the facility throughout its life cycle. Different design scenarios can be analyzed through plan review, computer modeling and whole building energy simulation. This then provides information to stakeholders and decision makers and allows them to weigh the costs and benefits of each design scenario.

Research:

Minnesota Power continued to expand its research on the impact that modeling and design work can have on commercial buildings with the inclusion of low-income multifamily structures. In 2014, design assistance and commissioning were provided as an enhanced service for the O'Neil Housing project (formerly called the Hillside Apartments project) in Duluth, MN.

The stakeholders expressed interest in achieving certification through the ENERGY STAR® Multifamily High Rise (MFHR) program. Minnesota Power coordinated with the architects and the Center for Energy and Environment (CEE) to incorporate energy design assistance into the construction of the facility. Minnesota Power received a proposal from CEE based on a thoroughly conducted design review that modeled four different energy-efficient design scenarios. These scenarios consisted of a base design (Scenario 1) which was designed to meet current energy code, and Scenarios 2–4 were for planned energy-efficient design that would be 15%, 30%, and 40% better than energy code, respectively. Increased incentives were also offered to correspond with reaching these higher levels of facility efficiency. Minnesota Power approved Scenario 2, and CEE moved forward with creating an energy-efficient design plan that would be 15% better than energy code.

Status of Project:

The newly constructed O'Neil Housing development in Duluth, MN, was chosen for this project and has undergone commissioning through energy design assistance provided by the Center for Energy and Environment (CEE). The final designed construction (which included combined savings for gas and electric energy) was modeled to be 20% better than energy code based on initial energy modeling of the building plan.

The final energy design provided by the CEE resulted in increased electric consumption over the base model, and positive gas savings. The designed scenario yielded 16.7% lower energy costs overall than the base design.

In order to quantify electrical savings and rebate potential for the O'Neil Housing project, a review of the CEE design report was completed along with a review of the building plans. These two documents are compared below.

Breakdown Electric			
	Base (kWh)	***As Designed (kWh)***	***Savings (kWh)***
Area Lighting	115,000	70,000	45,000
Misc. Equipment	145,000	135,000	10,000
Exterior Usage	10,000	10,000	0
Ventilation	20,000	30,000	-10,000
Pumps and Misc.	5,000	5,000	0
Space Cooling	48,000	35,000	13,000
Space Heating	2,000	90,000	-88,000
Heat Pump Supply	0	0	0
Water Heating	2,500	2,500	0
Total	**347,500**	**377,500**	**-30,000**

Above is a breakdown of the electrical usage of the base design compared to the "as designed" scenario taken from the CEE report. As shown, the "as designed" scenario uses approximately 30,000 more kWh per year than the base design. This is due primarily to the electric re-heats incorporated in the "as designed" scenario.

Breakdown Gas			
	Base (therms)	***As Designed (therms)***	***Savings (therms)***
Misc. Equipment	3,750	3,750	0
Pumps and Misc.	500	500	0
Space Heating	17,500	10,000	7,500
Water Heating	15,000	11,000	4,000
Total	**36,750**	**25,250**	**11,500**

Above is a breakdown of the natural gas usage of the base design compared to the "as designed" scenario taken from the CEE report. As shown, the "as designed" scenario uses approximately 11,500 less therms per year than the base design.

A review of the building plans was also completed to determine if there were any areas where Minnesota Power could issue a rebate. Although the posted report confirmed the suspicion that the potential savings resulting from this process were mostly thermal, there were several VFDs and heat pumps installed along with energy-efficient lighting that could be eligible for rebates through Minnesota Power's standard rebate program.

During the design build process, Minnesota Power gleaned information about the energy design process and the impacts of enhanced design. However, there were some roadblocks that were encountered along the way. These include dealing with federal grants for the multifamily sector

(time restrictions) and project timeline (weather dependent). Minnesota Power suggests bringing together designers, builders, and the community to develop a common understanding of what conservation measures should be included as part of the project and design. It would be beneficial if there was a stronger involvement by the design agency in order to implement the identified energy-saving measures properly.

Minnesota Power would like to try this again, and involve energy modeling and design for other building commissioning projects, with process improvements as suggested.

E Source
($37,103)

Scope:

The purpose of this research project is to augment research capability with E Source subscriptions related to conservation program design and technologies. This is helpful in documenting assumptions and identifying technologies and delivery strategies for future consideration.

Technology:

E Source provides research and consulting services to utilities and large energy users, with an Internet-based interface that provides access to searchable content and online queries. E Source subscribers are able to request data on trends, regulatory issues, technologies, utility customer satisfaction, program design, marketing, advanced metering, climate change, and sustainability, with queries answered by industry experts in real time.

Research:

Minnesota Power purchased a 12-month E Source subscription for two new services: Regulatory Trends and DSM Insights. A brief description of each of these services is as follows:

DSM Insights—Allows utility demand-side management (DSM) departments to benchmark themselves against other utilities in virtually all areas of DSM program performance.

- Member inquiry privileges
- Information on utility-funded energy-efficiency, load management, and renewable energy programs
- A detailed breakdown of program level spending and impacts
- A list of the top program administrators, accounting for more than 80% of industry spending
- Original source documentation
- Coverage of planned and actual program performance

Regulatory Trends—Provides a systematic and constantly updated road map of the new and ongoing activities and trends of commissions across all 50 states.

- Member inquiry privileges
- Access to Regulatory Trends database which distills detailed commission documents and establishes a curated list of more than 1,000 active proceedings that are normalized across states for easier comparison
- 40 hours of one-on-one consulting time, discussing proceedings or topic areas of customer choice
- Monthly Regulatory Trends Briefing, highlighting important new regulatory events around the U.S. and providing intelligence on hot-topic trends

Status of Project:

Minnesota Power will analyze the value of the E Source tools. Part of this study will include an analysis of E Source as an information resource for identifying best practices, obtaining current information on regulatory matters, improving program design and delivery, and preparing for the next triennial filing.

Green Ballast

($282)

Scope:

The purpose of this research is to evaluate the energy and cost savings associated with equipping traditional T8 fixtures with Green Ballasts (trade name) and derive a method for estimating energy and cost savings for future projects.

Technology:

Green Ballast is a programmed-start fluorescent fixture with electronic ballast. Each fixture is equipped with a photo-cell sensor which actively measures ambient light levels and determines the amount of fluorescent light needed to adequately illuminate the space while keeping light levels consistent. Each fixture operates independently and can be retrofit to standard 4-foot T8 fluorescent fixtures containing 2–4 lamps.

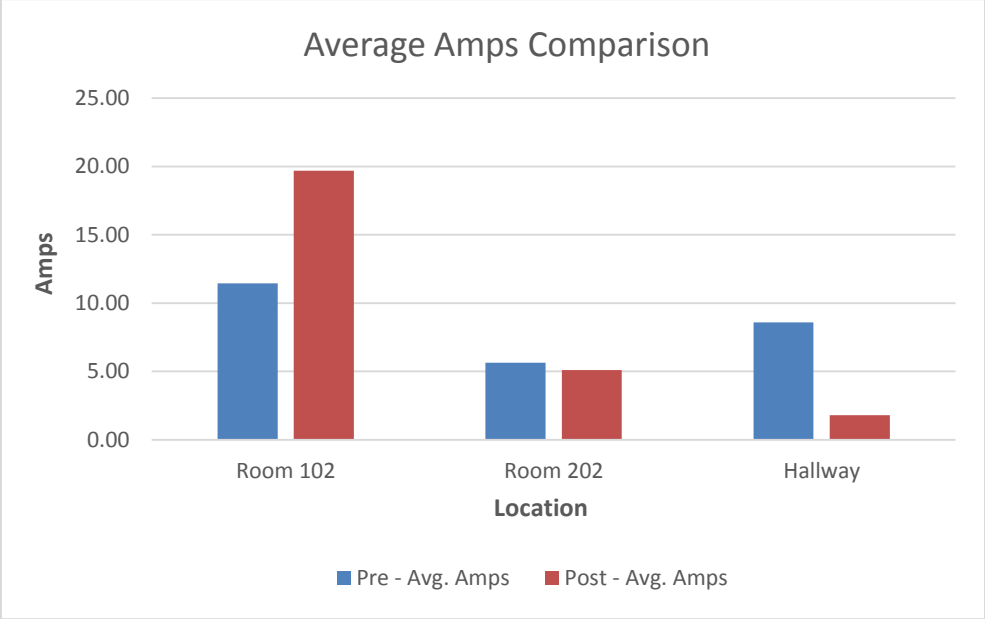
Research:

The project began in 2012 with the identification of potential candidates to test out the ballast within their facilities. The University of Minnesota-Duluth agreed to move forward with hosting the research project. Three locations on the campus were chosen for this research that had high potential for daylight harvesting and Green Ballast retrofit applications.

In 2013, Green Ballasts were purchased by the University of Minnesota and installed by in-house electricians. Because the existing fixtures contained T12 fluorescent lamps, these were first switched out to T8 lamps and then retrofit with Green Ballasts. Onset HOBO data loggers and current transformers were used to measure fixture amperage both before and after the lamp replacement and installation of the Green Ballasts. Accumulated data was used to determine the energy savings associated with the installation of Green Ballasts.

Status of Project:

Initial results show that Green Ballasts have a positive impact on reducing energy consumption of lighting but further testing must be done to verify the actual energy savings. The average amperage was compared for each location before and after the Green Ballasts were installed. This should be proportional to the amount of energy used by the lights. Two out of the three locations showed decreases in average amperage of 10%, which was expected based on the size of the room and proximity to windows. The other location showed an *increase* in average amperage of close to 50% after installment, which was unexpected (Fig. 1).



It was determined that there were many variables affecting these results, which leads to the conclusion that more testing must be carried out to determine an accurate "rule of thumb" for energy savings. Some of these factors include the possibility of bi-level switching or wired installment changes between the pre-existing and newly installed fixtures, the level of ambient light relating to the weather conditions, changes in classroom use hours, etc.

Green Ballasts are currently still installed in the three locations at the University of Minnesota-Duluth. Through doing this research, Minnesota Power has gleaned information on the complexity and limitations of using data loggers to monitor daylight harvesting technology that will be beneficial for future research in this area.

HVAC Control Systems

($327)

Scope:

The purpose of this research project is to evaluate the energy and cost savings associated with installing a sophisticated HVAC control system in hotel rooms and to derive a methodology for estimating energy and cost savings for future projects.

Technology:

Telkonet is an energy management system package that can be applied to control HVAC and lighting systems, among other plug loads. The basic components of Telkonet include wall mount thermostats with built-in occupancy sensors and additional sensors and switches that communicate with a central control server. An online dashboard is used for user monitoring, control, and optimization of the system.

Research:

Minnesota Power started its HVAC control systems research in 2013 and continued this work in 2014. The Telkonet system was installed at two Minnesota Power customer facilities. Both Chase on the Lake in Walker, MN, and Comfort Suites in Duluth, MN, agreed to move forward with hosting the research project. Both hotels expressed interested in controlling their packaged terminal air conditioners (PTACs) with Telkonet.

Each PTAC unit is programmed to have a specific recovery time, which is the time that the PTAC will need to run to achieve the set-point temperature in the room. When the room is unoccupied, the temperature in the room drops or rises (depending on whether the space is being heated or cooled) to some lower or higher temperature that is defined by whatever the recovery time is. When the occupancy sensors detect someone in the room, the system will turn on the PTACs to heat or cool the space. Energy savings associated with using the Telkonet system result from reduced runtime of PTACs due to temperature setbacks.

Status of Project:

Both customers participating in this research were given access to the online dashboard for Telkonet to allow for customization and control. The most significant challenge with this project was communicating the Telkonet system with the Amana heat pumps installed in two rooms at Chase on the Lake. It has been determined that this issue is due to the wiring configuration with the heat pumps. Currently, Telkonet can only control heating or cooling but not both for these units.

Measurement and verification data was received from Telkonet and reviewed. The reported energy savings were calculated by the Telkonet control system based on how many hours the units are currently running versus the manufacturer's expected runtime. There is concern that this method could overstate the savings as the baseline being used is the manufacturer's expected runtime, not the actual runtime of the units prior to the Telkonet install. Minnesota Power is considering conducting more data logging to verify energy savings.

In 2014, Comfort Suites removed the Telkonet system from their facility. Minnesota Power would like to re-establish contact with both customers to get their feedback on the accessibility and user-friendliness of the system. Minnesota Power has also discussed doing further research in this area, either continuing to use Telkonet controls or similar technologies. Smart wireless thermostats are becoming very popular in the market and may also be a related topic for 2015 research.

Independent Consulting Services

($17,573)

Scope:

To gain the most from research, the services of an experienced and trained professional can be essential. There are a number of advantages of using independent consultants for this. Minnesota Power utilized the assistance of ON2 Solutions, a provider of lighting consultations to design and engineer custom and complex lighting projects.

Technology:

Minnesota Power is involved with numerous energy-efficiency customer lighting projects as part of the Conservation Improvement Program (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 effective ways of lighting a space while using the least amount of energy.

Research:

Independent consulting services from ON2 Solutions were utilized for providing independent advice, information, recommendations, and knowledge to assist with complex customer lighting projects. Eligible projects are identified as part of Minnesota Powers ongoing customer interactions. Project complexity as well as savings and technology potential are considered in the selection process. The intent of this study is to identify the impact a deeper investigation of technology options, product types, and design consideration can have on the quality of project installation, savings potential, and overall customer satisfaction.

Status of Project:

In 2014, ON2 Solutions used their expertise to help Minnesota Power with the technical complexity of approximately eighteen customer lighting projects. This assistance ranged from simple lighting equipment recommendations to full lighting design/re-design. The majority of these projects centered around LED lighting. Several customers did move forward with implementing new lighting as recommended and received rebates through Minnesota Power. Many of these projects are still in progress and it is expected that more customers will move forward with implementation in 2015. As an additional benefit, the lighting consultant notifies Minnesota Power of other energy-saving opportunities beyond lighting. Minnesota Power plans to continue to use the services of ON2 Solutions for 2015 as it has been a valuable asset to Minnesota Power customers.

Innovative Lighting

($14,967)

Scope:

Lighting companies continue to make improvements to both the quality of light and the energy efficiency of products. One of the fastest developing lighting technologies today is the light emitting diode (LED). Today's LED bulbs are 6 to 7 times more energy efficient than conventional incandescent lights, can cut energy use by more than 80% and have lifespans of up to 25 times longer than that of conventional lighting technologies. In addition, energy-efficient lighting technologies have now become much more affordable to the general public for many

different applications. Because of this rapid development in energy-efficient lighting technologies and a global push towards overall energy efficiency, education to the general public regarding innovative energy-efficient technologies has become an integral step in helping customers.

The purpose of this research is to understand and test innovative lighting products available in the market and to evaluate the quality of those products. This research is intended to help customers understand what to look for when purchasing new lighting as well as to introduce customers to different products for use in different applications.

Research:

In 2014, Minnesota Power acquired samples of many different LED products designed for different applications. Some of the application categories include: interior, exterior, high-bay, decorative, and street lighting.

Status of Project:

Throughout the duration of this project, Minnesota Power has researched LED products available in the market and created a list of products that will match the needs of customers for many different applications. An acquired inventory of lighting samples has been loaned to Minnesota Power customers to help them make decisions about choosing LED products and an inventory log of samples was created including information about each product. Minnesota Power customers have tested the samples and provided feedback.

This research has allowed Minnesota Power to help customers make informed decisions about selecting the right technology for the right application. It has also helped to encourage customers to consider installing innovative and energy-efficient lighting technologies over traditional lighting products.

A great example of where this research was applied was for a local church in Duluth, MN. Members of Trinity Lutheran requested help finding an LED solution for their large balcony fixtures. Because the customer wanted to have the church's original fixtures remain, a retrofit option had to be investigated. Minnesota Power purchased a variety of sample lamps to try in the fixtures to attempt to meet the customer's needs. There were some discrepancies with color temperature and fan noise of the selected bulbs, and currently, additional lamps are under trial. By having the opportunity to try different lighting samples and working with Minnesota Power, the customer will be able to make an informed decision towards their lighting investments.

This is ongoing research that Minnesota Power would like to continue through 2015. It has been an educational experience for customers as well as for Minnesota Power in assisting with customer projects.

Re-commissioning
($7,416)

Scope:

As building systems become dated, it is essential that energy management procedures be either maintained properly or redesigned following failure or chronic building problems. Re-commissioning provides a systematic approach for understanding and fixing these types of building system issues.

Technology:

Re-commissioning involves persistent and cost-effective building operations improvements through extensive planning, investigation, and implementation. Mechanical and electrical building systems are evaluated through this process for their performance and efficiency and adjusted and optimized to perform more effectively. Re-commissioning can be achieved through energy auditing and facility condition assessments which are used to create plan improvements.

Research:

The Cloquet Service Center was originally designed in 1981 and included a central Variable Air Volume (VAV) Air Handling Unit for both heating and cooling purposes. There were pneumatic thermostats in the occupied spaces with 14 VAV boxes providing conditioned air. In addition, electric baseboard radiation and electric ceiling radiant heating panels provided additional heating needs to the occupied spaces and restrooms/locker rooms.

In 2011, the system was replaced with a 16-ton Daikin air-cooled Variable Refrigerant Flow (VRF) system. This includes two outdoor condensing units which extract heat from outdoor air and transfer it inside during cooler months, and extract heat for the indoor areas and transfer it outside during warmer months. When temperatures are below freezing, two electric boilers provide heat to the condensing unit which then transfers heat into the building. Refrigerant flowing from the condensing units and integrated with fan coils in the ceiling transfer heat into the building. The fan coils are grouped into six zones that are controlled by the Daikin digital system. The restroom/locker rooms are exhausted by one 800 cfm, with make-up air provided through eight Honeywell 100 cfm Heat Recovery Ventilators (HRV) distributed around the building. Outdoor air is pulled inside by each HRV through multiple heat exchanger loops and into the ceiling plenum air. Building temperature control is a combination of the Daikin digital controls interfaced through Johnson Controls Inc. (JCI) Metasys building automation system.

In the fall of 2011, Daikin expressed concerns about the system installation and requested that the control setup be re-verified. It was suggested that there should have been air re-heat installs on the VRV air discharge to prevent a lower heating capacity of the system and cold drafts. It was also suggested that heating set points and room occupancy schedules be implemented and additional baseboard and ceiling radiant heating be controlled in sequence or removed to avoid negative interaction with the Daikin system.

After the installation of the Daikin system, occupants of the CSC were experiencing comfort issues and expressed their concern. Minnesota Power wanted to gain better control of the system to resolve the expressed concerns by Daikin. There seemed to be miscommunication between the various building systems leading to inconsistent or simultaneous heating/cooling and lowered discharge heating temperatures due to the lack of air re-heats on the VRV system. In December

of 2012, a meeting was held at the CSC to resolve some of these issues. It was confirmed that the BACnet interface between the JCI and Daikin system was not fully communicating. Temperature set points for the Daikin system were adjusted so that the fan coils responded correctly to the JCI room controllers. Due to the past concerns regarding heat recovery of the system, it was suggested that this issue be addressed as a priority. Air measurements determined that there was over ventilation occurring in the restrooms/locker rooms and under-ventilation occurring in other areas of the building. In addition, with a lack of heat recovery for reheating intake air to feed the system, the air cannot be heated up fast enough when spaces are occupied.

In early 2013, a proposal was submitted to Minnesota Power by Joe Hallberg of Class 5, Energy to work on addressing this problem. Hallberg visited the facility to re-evaluate what was needed to help the building system function properly and followed up with a technical analysis provided by the Class 5, Energy team that made suggestions for system improvement with cost estimates for undertaking those measures.

Status of Project:

As included in the submitted proposal, the main goals were to understand the issues at hand, determine the amount of heating and cooling necessary for ventilation of the CSC building, and to compare that system capacity to the building's needs, and if necessary, to do re-commissioning. Minnesota Power is interested in not only the design improvement process of the system, but also 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. This is ongoing research and will be continued through the year 2015.

Redwood Technologies
($155)

Scope:

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. Additionally, Minnesota Power would like to develop methodology for estimating energy and cost savings using these types of systems.

Technology:

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.

Some of the claims made by the manufacturer of the Redwood System are that their product can cut lighting costs by 75%, and will typically save 50–75% of the energy used to light a commercial building. Redwood envisions DC applications involved in providing maximum energy efficiency to building systems. This includes not only LED lighting, but potentially

window shade control, variable air volume systems, chillers and coolers, and power supplies for other electrical devices.

Research:

This research began in 2013 with the purchase of the Redwood Technologies system. The technology originally sparked the attention of Minnesota Power consultants prior to attending a presentation on the Redwood System. Because of the energy-savings potential that Redwood could provide for commercial and residential applications, Minnesota Power chose the technology for research. The Redwood System was installed at the Minnesota Power Cloquet Service Center in January 2013.

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.

Reports were accessed from the Redwood online monitoring system that provided lighting network amperage readings for one year of data from the years 2013 to 2014. There have been no determinate conclusions drawn from the data, but results will continue to be compiled and analyzed through 2015.

Refrigeration Catalyst
($5,539)

Scope:

In HVAC and refrigeration systems (HVACR), refrigerant flows from the compressor through the system and picks up a small amount of the compressor's lubricating oil along the way. The oil deposits and forms an insulating barrier on the interior surface of the heat exchanger. This is known as oil-fouling and results in reduced heat transfer which ultimately reduces system efficiency. Various products to help eliminate the problem of oil-fouling, known as polarized refrigerant oil additives (PROA's), have been on the market for more than 15 years, although the effectiveness of such products has not been well documented in literature.

Testing of refrigerant additive products is needed and may provide useful information about the effectiveness and energy-saving potential of applying this technology to HVACR systems. The purpose of this research is to research and test new technologies that may help customers save energy while running their HVAC and refrigeration equipment more efficiently.

Technology:

IceCold is a refrigerant additive that functions similar to a PROA, although the makers of IceCold label it as a refrigerant catalyst, not a PROA. IceCold claims to break down oil fouling in HVACR systems, which increases heat transfer and fluidity of equipment, thereby contributing to increased system efficiency. This leads to reduced compressor runtime resulting in energy savings.

The manufacturer claims that heat transfer in evaporator pipes can be improved by over 70%. It is also claimed that installing IceCold can result in electricity savings of up to 35%. IceCold can

be applied to most air and water-cooled air conditioning and refrigeration systems and is compatible with most refrigerants.

Research:

The objective for this project is to evaluate the effectiveness of IceCold in reducing oil-fouling and optimizing energy consumption of compressor-dependent HVACR systems. B & B Market in Cloquet, MN, was chosen as a test site for this research because of the large amount of refrigeration and cooling equipment they run on a year-round basis.

In order to quantify energy savings attributed to IceCold in HVACR equipment, Onset HOBO data loggers were used to measure equipment load and run-time both before and after the addition of IceCold to the system. Data will be weather-normalized for the site location to avoid any seasonal discrepancies between equipment runtime and energy savings. The quoted price of product and installation was based upon the amount of IceCold needed based on the HVACR equipment chosen for the installation.

Status of Project:

Onset HOBO data loggers were installed at B & B Market in mid-December of 2014 on selected refrigeration equipment. Installation has been put on hold for RTUs and truck boxes until the spring/summer when these units will have substantial runtime for monitoring. In addition, two Onset HOBO temperature probe data loggers were installed on the rooftop of the facility to monitor outdoor air temperatures. In January 2015, IceCold was installed by Air Serve in the refrigeration equipment. After the two-week "burn-in" time (time recommended by the manufacturer for IceCold to work through the system), data loggers will be re-launched and energy usage will be re-monitored. Accumulated data will be used to quantify energy savings attributing to IceCold.

Community Energy Challenge Pilot
($36,868)

Scope:

Due to a rising interest in community-based initiatives and an overall desire within communities to save energy and benefit the environment, Minnesota Power decided to hold a Community Energy Challenge pilot in Royalton, MN, a community that expressed an interest in having a community-oriented energy initiative. The goals of this pilot included increasing awareness about all of the Power of One® energy conservation programs available to a community (residential, commercial, and community-based engagement), increasing participation in energy conservation programs, and supporting an ongoing culture with the shared value of incorporating energy efficiency into the day-to-day lives of the community at large.

Community leaders were identified as "Energy Champions" with the task of leading the charge within the community with support from Minnesota Power. A local retailer was also identified to carry energy-efficient lighting products with an instant rebate from Minnesota Power. Meetings were held with the Energy Champions, community retailer and other key players within Royalton to identify the programs that would best suit this unique community. A small business blitz, Learn & Earn event (school based), commercial energy analyses, and a general community challenge were identified as the target programs. Donations to the community were established for each challenge completed with all donations going toward the Royalton School's

environmental program and the city of Royalton LED holiday lighting fund. A timeline was established for each phase of the pilot along with continued support from Minnesota Power for both marketing and organizational efforts.

Business Focused Technologies and Incentives:

A "Business Blitz" was held in Royalton targeting small businesses by providing a complimentary walk-through energy analysis. Auditors provided direct installation of LED lamps, cooling misers, faucet aerators, pipe wrap and smart thermostats. Businesses were directed to a local retailer who had agreed to stock these energy-efficient items for future purchases. During the walk-through analysis, customers were also provided with additional energy-saving recommendations and information on scheduling a more in-depth analysis with Minnesota Power representatives. Larger commercial facilities, schools, and churches were also included in the Community Energy Challenge with onsite visits, design assistance, and customized plans to use energy effectively.

Residential and Community Technologies and Incentives:

Teachers were identified at the elementary school and high school to be the champions of a Learn & Earn event. The Learn & Earn event included promoting home energy analysis, Your Home Energy Report, and the purchase of energy-efficient lighting products at a local supporting retailer of the Community Energy Challenge. A contribution was made to the school for each item completed and put into a fund for an environmental/energy-related project or field trip. Energy-efficiency education was incorporated into the curriculum and students were responsible for promoting the event to family, friends, and the community at large. Community members who participated in the Home Energy Analysis program received direct installs of energy-efficient lighting and water-saving measures along with suggestions for further energy-saving options in their homes. Those who purchased energy-efficient lighting measures from the participating retailer received an instant rebate.

Research:

A walk-through energy analysis was performed in small businesses, larger commercial facilities, faith-based buildings, schools, and residential homes. In addition, residential and commercial community members purchased energy-efficient lighting measures from a local retailer. Residential customers completed the online Your Home Energy Report survey and received a Your Home Energy Report with customized energy-saving recommendations based on their answers to the survey.

Status of Project:

The Royalton Community Energy Challenge is still in progress with an end date set for May 2015. The second phase of the challenge is in full swing with a civic organization-based challenge involving 15 civic groups competing to complete the most home energy analyses, Your Home Energy Report surveys, refrigerator recycling, and purchases of energy-efficient lighting products. A community celebration announcing the results of the challenge is scheduled for late May 2015. After completion of the pilot, Minnesota Power will meet with the Royalton Energy Champions to gather feedback and discuss results. Based on this feedback, Minnesota Power will decide if there is potential to pursue this project in additional communities.

Time-of-Day Rate Pilot
($62,846)

Scope:

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.

Technology:

The multiphase CBSP relies heavily on the increased granularity of customer usage information made available by advanced metering technology throughout both phases of the pilot. In the current phase of the study (Time-of-Day Rate Pilot), the technology is used primarily to enable Minnesota Power to aggregate metered usage by time of use for billing purposes. Furthermore, the technology makes timely and relevant usage information available to participants on the rate through an enhanced web portal. The portal displays detailed (daily and hourly) usage views giving the participants insights about their usage patterns and helping to inform their energy consumption decisions.

Research:

Because the project was developed as part of (and partially funded by) a United States Department of Energy (DOE) grant (Smart Grid Investment Grant), Minnesota Power is required to report data to the DOE relating to overall Pilot Project technology implementation and study impacts. For the year 2014, Minnesota Power activities included enrolling participants in the Time-of-Day Rate Pilot, testing the metering, billing, and notification technology required to carry out the pilot, and tracking participant-related customer usage and billing data for evaluation and reporting purposes.

Status of Project

- Approximately 30,000 eligible residential customers in the Duluth and Hermantown area were solicited for participation in the rate pilot.
- Roughly 700 of the solicited customers enrolled in the pilot.
- Participant surveys that will be used for study evaluation purposes are being developed by Minnesota Power staff in conjunction with the Energy Center of Wisconsin.
- Upon completion of the pilot (September 31, 2015), Minnesota Power staff will evaluate the results of the pilot in conjunction with the Energy Center of Wisconsin.
- Energy Center of Wisconsin will produce a report based on the findings of the evaluation which Minnesota Power will review and submit to the DOE, meeting the Company's obligations as part of the Smart Grid Investment Grant. Also, under the conditions of approval for the Time-of-Day Rate, Minnesota Power will report findings to the Minnesota Public Utilities Commission.

MyMeter Commercial Pilot
($10,155)

Scope:
The purpose of this project is to expand Minnesota Power's current residential MyMeter pilot to the commercial sector in order to better understand the operational requirements of offering this service to a broader customer base and to gauge effectiveness of the tool as a means of improving site visits/field audits and increasing ongoing commercial customer engagement.

Technology:
The MyMeter tool is an enhanced web portal that would allow commercial customers to view detailed usage information (daily and/or hourly usage) paired with various other location/customer-specific energy-related information (such as recent energy-efficient measures taken or process/production changes). As a result, the customer could gain more insight about what activities are affecting their electric consumption. This tool also features a property profile tool for maintaining and reviewing information about appliances/technology and characteristics specific to the customer's location(s). Minnesota Power believes the combination of features offered by this service could also create more effective interactions between energy analysts and customers during site visits and energy audits.

Research:
In 2014, Minnesota Power began piloting the service to various types of commercial customers in an effort to understand the operational impacts and requirements of a full-scale rollout.

Status:
- The MyMeter commercial service/product has been purchased for a year-long pilot period.
- Minnesota Power has identified numerous accounts to be included in the initial pilot implementation.
- Minnesota Power is currently working with the MyMeter team to set up the identified accounts with access to the portal.
- Once setup is completed and the service is running smoothly for the initial pilot participants, Minnesota Power may seek additional accounts to be added to the pilot in order to ensure as many different account scenarios as possible are tested for operational feasibility during the pilot period.

Government Services Center Solar Project
($22,133)

Scope:
Minnesota Power applied the principle of the Pyramid of Conservation and, at the same time, initiated a solar energy research project to test the environmental, economic and performance impacts of three different solar manufacturers in a northern climate.

The St. Louis County Government Services Center (GSC) has been undergoing a $21 million major renovation to become more energy efficient. Within this overall energy improvement initiative, the county plans to seek LEED certification for the GSC recognizing significant and

integrated efficiency gains and also requiring some generation of renewable energy on-site. The desire for renewable energy at the GSC led to the plan to install photovoltaic (PV) electrical energy generating systems on the building's roof and with that the conception of a simultaneous research project on solar panel technology.

Technology:

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 the GSC test site. NRRI, as a neutral agency, is leading this qualitative and quantitative study. They will monitor energy output and report data regarding the three systems' operations, which will include 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.

Through a combination of conservation program research dollars, design assistance, and SolarSense rebates, Minnesota Power contributed toward the installations in 2013. This included $50,000 in solar rebates for the installation of two solar projects and $42,625 in research funding to offset the cost of the different solar systems and associated equipment. It also includes monitoring equipment, third party review funding, and shading analysis.

In 2014, an additional $22,133 of research dollars was spent on finalizing special requirements for the project including wiring costs and the purchase of the weather station.

Research:

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. The research period began on August 1, 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.

Initial research reports have described the project and component parts. Comparative analysis of the initial production of the systems as a whole and as individual arrays was performed. Comparisons of economic performance have shown that despite output, total installed costs have a great effect on the cost of energy per kilowatt hour. The highest cost array had the greatest output, but the kilowatt hour cost was also the highest. Other analysis investigates the footprint and ballasting needs of each array. The research is also analyzing data collection methods using multiple data collection devices that are monitoring the output of the arrays. An analysis of the disparities between these collection devices is discussed in the second report. The quarterly reports also break down environmental benefits such as carbon dioxide emissions that have been avoided. As this project has progressed, some installation issues have come to light. Efforts are

being made to objectively quantify any inequities this may cause in data analysis. These issues are real world examples of on the ground installation complexities that can be incorporated into the research narrative. There are still two and a half years of data collection and analysis that will provide insights into these working systems.

Status of Project:

- All PV arrays are functioning and are monitored by both eGauge and utility production meters.
- Technical issues were experienced with the weather station software. St Louis County and Minnesota Power are troubleshooting these issues and have been able to recover some data while broader communications issues are being resolved.
- The first two quarterly reports of the three year study have been made by NRRI. The reports include information on production performance of the PV systems, economic analysis, and some information on the installation challenges the project has faced thus far.
- Based on the close ongoing involvement with the installation, some installation and warranty issues were identified by Minnesota Power and resolved with the system(s).
- Refinement of the project research and findings will continue with updates reported as part of CIP annual filings.

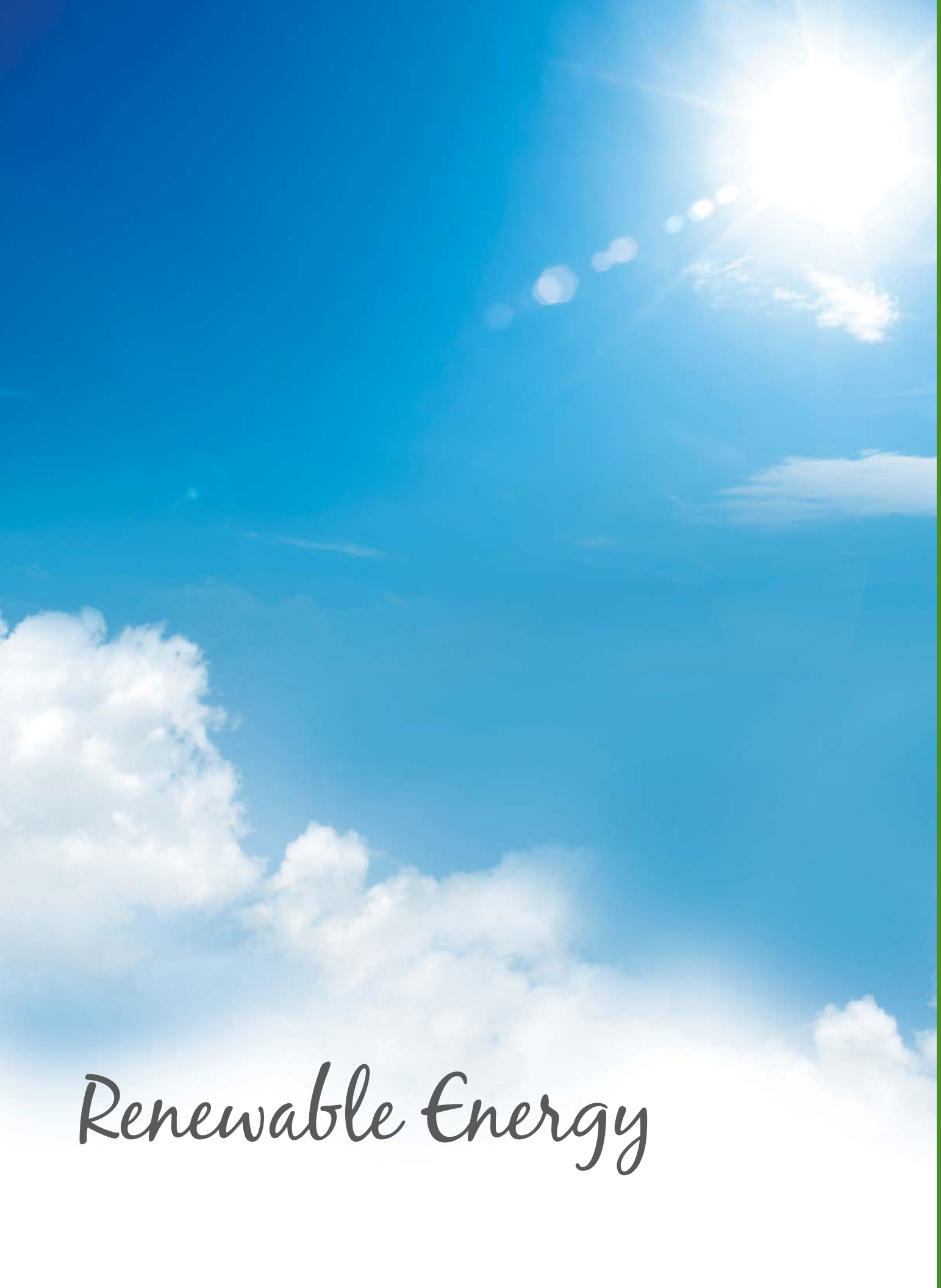
RESULTS

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$349,800 *(1)*	$291,069	83%

(1) As modified and approved in 2014.

SUMMARY

Minnesota Power funded numerous R&D projects in 2014. 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.



Renewable Energy

Renewable Energy

PROGRAM TITLE: CUSTOMER RENEWABLE ENERGY (RE)

PROGRAM DESCRIPTION

As part of its comprehensive Conservation Improvement Program (CIP) portfolio, Minnesota Power includes a Customer Renewable Energy (RE) program which has been in place since 2004. Minnesota Power has a long-standing history of encouraging the adoption of renewable energy options such as photovoltaics (PV), wind turbines, biomass and solar thermal technologies. 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. 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 general, customers are encouraged to consider "conservation first," as is graphically represented in the Pyramid of Conservation developed by Minnesota Power as a tool to help customers understand efficiency options and how to prioritize the steps to increased energy efficiency.

In addition to providing educational opportunities, Minnesota Power continues to work diligently to further clarify and streamline the interconnection process. By enhancing 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 2014, the SolarSense incentive tiers were modified as follows:

	2013	**2014**	
Base Rebate	$1,000	$1000	kW
Bonus Incentives:			
NABCEP Certified Installer	$800	$500	kW
Minnesota Made *(1)*	$800	N/A	kW
Non-profit/Tax Exempt	$500	$500	kW
Energy Efficiency	$800	N/A	kW
Total Possible Incentive	$3,900	$2,000	kW

(1) Manufactured as defined by Minn Stat. § 116C.7791.

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.

Minnesota Power has informally requested guidance from the Department of Commerce regarding the calculation, inclusion, and associated analysis of credited energy savings for Made in Minnesota payments, as provided for under Minn. Stat. § 216C.412, subd. 2. Through this filing, Minnesota Power is formally requesting guidance and will provide updated savings and analysis based upon that guidance.

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 *(1)*	$347,656 *(2)*	99%
Number of Participants			
PV—Solar Electric (SolarSense)	15	9	60%
PV—Solar Electric (Made in Minnesota) *(3)*		8	53%
Combined Total PV—Solar Electric		17	113%
Wind Turbine	0	0	0%
Solar Thermal Water Heating	4	0	0%

(1) As modified and approved in 2014.
(2) Minnesota Power was assessed $181,114 in 2014 for the Made in Minnesota solar incentive program.
(3) Four of the eight Made in Minnesota projects are currently pending.

SUMMARY

While the incentives and tiers of incentives were modified in 2014 from 2013, the following outcomes were observed:

- As costs for solar equipment and installations decreased, the average installation size increased.
- Although the incentive for using a NABCEP certified installer decreased from 2013 to 2014, the percentage of installations using a NABCEP certified installer continued to be 100%.
- While the total possible incentive per kW decreased by nearly 50% from 2013 to 2014, participation levels remained at 100%.

Minnesota Power's experience in renewables, specifically solar, mirrors what has been seen nationally—decreased panel and installation costs are resulting in increased size of installations which starts to attract 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. While solar is a fairly small component of Minnesota Power's overall program portfolio, its inclusion contributes to the robustness of program offerings.

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

2014 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 2014 spending in relation to the approved minimum spending requirement.[8]

Minimum Spending Requirement	*Approved Spending*	*Actual Spending*	*Variance of Actual to Minimum Spending*
$3,498,000 (Net of Newly Exempt Customers in 2014)	$7,131,488 (with approved budget increases)	$7,200,833	$3,702,833

2014 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. These savings do not include

Year	*Energy Savings Achieved (kWh)*[9]	*Total Adjusted Sales (kWh)*	*Savings as % of Retail Sales*
2014	76,338,363	3,013,600,651 (net of newly exempt customers in 2014)	2.53%

[8] 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.

[9] Minnesota Power has informally requested guidance from the Department of Commerce regarding the calculation, inclusion, and associated analysis of credited energy savings for Made in Minnesota payments, as provided for under Minn. Stat. § 216C.412, subd. 2. Through this filing, Minnesota Power is formally requesting guidance and will provide updated savings and analysis based upon that guidance.

2014 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,[10] 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."

The tables below compare Minnesota Power's 2014 actual spending to the requirement using both the "Old Method" and the "New Method."

Old Method:

Minimum Spending Requirement	***Approved Spending***	***Actual Spending***	***Variance of Actual to Minimum Spending***
$191,588	$589,136 (with approved budget increase)	$565,405	$373,817

New Method:

Minimum Spending Requirement using Three-year Average	***Approved Spending***	***Actual Spending***	***Variance of Actual to Minimum Spending Requirement using Three-year Average***
$198,816	$589,136 (with approved budget increase)	$565,405	$366,589

2014 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[11]	$291,069	($58,731)

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

[11] Minnesota Power did not request a modification to this budget; however, Minnesota Power operated within an adjusted cap constraint reflective of three newly exempt customers in 2014.

2014 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."[12] Minnesota Power has informally requested guidance from the Department of Commerce regarding the calculation, inclusion, and associated analysis of credited energy savings for Made in Minnesota payments, as provided for under Minn. Stat. § 216C.412, subd. 2. Through this filing, Minnesota Power is formally requesting guidance and will provide updated savings and analysis based upon that guidance.

Annual Spending Cap	***Approved Spending***	***Actual Spending***	***Variance of Actual to Cap***
$349,800	$349,800[13]	$166,542 (Customer Renewable Energy Program)	($2,144)
		$181,114 (Made in Minnesota)	

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.

[12] Minn. Stat. § 216C.412, subd. 2

[13] Minnesota Power did not request a modification to this budget; however, Minnesota Power operated within an adjusted cap constraint reflective of three newly exempt customers in 2014.

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 2014, 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	$589,136 *(modified)*	$565,405	96%
Segment: Residential			
Power of One® Home	$1,169,981	$1,265,585	108%
Segment: Commercial/Industrial			
Power of One® Business	$2,727,906	$2,821,421	103%
Segment: General Indirect			
Customer Engagement	$797,840	$769,903	96%
Energy Analysis	$569,505 *(modified)*	$645,052	113%
Customer Renewable Energy	$349,800 *(modified)*	$347,656	99%
Research & Development	$349,800 *(modified)*	$291,069	83%
Evaluation & Planning	$402,520	$307,811	76%
Segment TOTAL:	**$2,469,465**	**$2,361,491**	**96%**
Segment: Regulatory Charges			
Regulatory Charges	$175,000	$186,931	107%

2014–2016 CIP Triennial Approval Provisions

The Deputy Commissioner approved Minnesota Power's 2014–2016 Triennial CIP[14] 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 Consolidated filing.

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.)*

[14] 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 filed a letter requesting a budget modification for its Low-income Energy Partners program on November 26, 2014. The request was approved by the Department on December 10, 2014. Minnesota Power did not exceed the approved budget by 25% or more for either Residential or Commercial/Industrial.

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 2014; however, Minnesota Power did request a budget increase for its Energy Partners Program.

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.

OTHER REGULATORY REQUIREMENTS

Measurement and Verification Processes

On July 23, 2008, the 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."

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[15], 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.[16] Further details regarding Minnesota Power's compliance with this Order can be found in the section titled "2014 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 under its CIP to date.

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

[16] 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.

2014 COMPLIANCE WITH DEPARTMENT AND MPUC DECISIONS AND ORDERS

A. 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.

13. 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;
    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.
14. 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.
15. 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 2014 expenses that fall within the categories outlined by the Department as follows:

Category	*2014 Amount*	*Description*
Meals	$10,263	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	$24,220	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	$12,704	This includes awards tied to the successful delivery of conservation program energy-savings goals and outreach objectives.
TOTAL	$47,187	This represents 0.655% of the total annual CIP expenditures, with over 70% 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

2014 Success Stories

Connecting with Customers ...

"Minnesota Power takes a research approach. They pay to install and test new technology at one site and then the company expands it to other stores. It really is about customer service and providing whatever is needed to help customers make wise energy decisions that will help them for a long period of time."

- Tanuj Gulati, Energy Insight, Inc.

MINNESOTA POWER
Walking the Talk
OF ENERGY EFFICIENCY

> "It is good to showcase technologies in our own facilities. We are walking the talk."
>
> Craig Kedrowski,
> Lead Energy Efficiency Analyst,
> Minnesota Power

The recently remodeled employee cafeteria at Minnesota Power's general office building in downtown Duluth is a pleasant place to grab lunch or catch up with co-workers. Its warm natural hues and wood-inspired furnishings reflect a corporate value of environmental stewardship—punctuated by rows of energy-efficient light emitting diode (LED) lights.

Replacing the cafeteria's fluorescent tubes and incandescents with LEDs is part of an ongoing effort to convert lighting throughout Minnesota Power's 22 office and service center facilities to LED technology.

"Minnesota Power is 100 percent committed to LED for any additional lighting," said Mike Polzin, facilities manager. "We are all in."

Not long ago, Polzin was an "optimistic skeptic" who wanted to believe in LEDs and other emerging energy-saving technologies but needed proof that they worked and made business sense. Like many folks in building operations and facilities management, he often fields calls from vendors and product representatives promising the next best thing to improve building performance.

"I am always a bit hesitant when someone comes to me with new technologies," Polzin said. "I take it with a grain of salt."

Representatives of Minnesota Power's Power of One® Business team offered to help Polzin and the Facility Management Group identify and evaluate energy-saving opportunities.

"There are always facility projects in the company," said Craig Kedrowski, lead energy efficiency analyst, Minnesota Power. "We offered the services of one of our consultants, Tanuj Gulati, as a resource to explore opportunities to incorporate efficiencies into these projects."

Gulati, senior energy engineer for Energy Insight, Inc., has worked with Minnesota Power's commercial/industrial customers for nine years. He and his CIP colleagues invited Polzin to meet with facility managers of other large, multi-facility organizations that worked with the Power of One® Business program. They included representatives from St. Louis County, the City of Duluth, UMD, Essentia Health and the Minnesota Air National Guard. Members of this peer group toured each other's facilities, attended joint presentations on LED lighting, and shared information about what energy improvements they had made and how they were working.

"Hearing the testimony of other end users had a big impact. Some were very strong advocates for LED," Polzin said. "Seeing St. Louis County's LED lights and lighting controls in practice sealed it. I became a disciple."

In 2014, Minnesota Power started incorporating LED lighting into its office and service center facilities. In addition to the

cafeteria, three high bay LED lighting projects with controls were completed at service centers in Crosby, Park Rapids and Pine River. Mechanics at the facilities agree the new lights create better, brighter places to work safely—while using far less energy.

"The service centers used to leave the lights on all the time because the old ones took so long to get started," Gulati said. "The new LEDs come on instantly. They also have occupancy sensors so they dim down or turn off when there is no movement and immediately increase intensity when someone comes into the area."

The entire fourth floor of the general office building in downtown Duluth is currently being remodeled and soon will have all LED lights and controls. Additional floors will be remodeled in the next few years. Minnesota Power also plans to install LED lights and controls in its parking ramp to improve safety, increase security, enhance lighting quality and save energy.

"The contractors (who did the cafeteria) told us we were using six 30-amp breakers before and now with LED lighting we are using one 10-amp breaker," Polzin said. "That is significant. It proved to me that this is something we should incorporate wherever we can."

With the Power of One® Business team's help, Polzin and his team have been able to compare LED products and negotiate significant discounts in pricing, helping to offset the upfront investment. Incentives from completed projects are being used to purchase LED retrofit kits for other facilities, and, in addition to the energy savings, there should be significant savings in maintenance costs because LEDs last 10 years or more.

"We have been focused on lighting, but going forward we are looking at energy-efficient heat pumps for circulation, heating and air conditioning," Polzin said. He added that there is an ongoing recommissioning of building controls in the general office building and four other facilities to ensure systems are operating as designed.

"It all comes together as a total package," Polzin said. "I knew we had a CIP group, and members would talk to us about energy efficiency, but they have proven its effectiveness through their own expertise, by bringing in manufacturers and by forming a peer group to share war stories and successes."

"Customers often ask us what Minnesota Power does internally to conserve energy," Kedrowski said. "It is good to showcase technologies in our own facilities. We are walking the talk."

"Minnesota Power is 100 percent committed to LED for any additional lighting. We are all in."

Mike Polzin,
Facilities Manager,
Minnesota Power

Tastefully Designed and Energy Efficient

Tavern on the Hill is one of the latest businesses to open within easy walking distance of both the University of Minnesota Duluth (UMD) and the College of St. Scholastica. The locally owned restaurant and pub is an attractive addition to the college district and surrounding neighborhoods with its striking exterior and ample outdoor deck.

It features casual dining with a menu that ranges from burgers and sandwiches to sushi and vegetarian favorites. While great attention went into the building's appearance and atmosphere, its owner, the Black Woods Group (formerly New London Corp.), also wanted Tavern on the Hill to be a model of energy efficiency. Company officials contacted Minnesota Power's Power of One® Business team very early in the design process to identify choices that would save energy, lower costs and minimize the facility's carbon footprint.

"(Minnesota Power) was one of my first calls," said Cullen Flaherty, vice president of operations for the Black Woods Group, which also owns and operates Black Woods restaurants, Black Water Lounge, Greysolon Ballroom by Black Woods and the Proctor Banquet Center. "I trust their expertise in energy efficiency and wanted them on board."

That confidence stems from years of working with the utility's energy conservation experts, including Craig

"Tavern on the Hill's owners wanted to set an example as a responsible local business that cares about the environment and the local community."

Tanuj Gulati, Energy Insight, Inc.

Kedrowski of Minnesota Power and Tanuj Gulati of Energy Insight, Inc. Together they have helped the corporation benchmark the energy performance of its restaurants and access rebate incentives for numerous energy conservation improvements.

"Tavern on the Hill will be our most energy-efficient building," Flaherty said, noting that it is the company's first new construction since Black Woods on the Lake opened in 1997.

"Technology has changed dramatically, and energy improvements that we have not been able to incorporate into our other restaurants made sense here as we started from scratch."

Some of the key energy conservation features incorporated into the new facility based on Minnesota Power's recommendations include:

- An icemaker with a rooftop compressor that gets free natural cooling for much of the year;
- Coolers and freezers with energy-efficient electronically commutated motors (ECM);
- Light emitting diode (LED) exterior signs instead of neon;
- LED interior fixtures with computerized controls throughout the building;

- Rooftop HVAC units with thermostats that can be controlled remotely on an iPad or laptop;
- Full condensing boilers with three-speed ECM pumps; and
- Exhaust controls with heat and smoke detectors so exhaust fans only run when needed.

"It was a good process," Flaherty said. "We are especially proud of the LED lighting and, where we live, using cold outdoor air to chill our ice is pretty cool."

Tavern on the Hill's location near two college campuses made energy efficiency an even higher priority. Both UMD and the College of St. Scholastica are extremely committed to energy and resource efficiency. Both schools partner with Minnesota Power for design assistance, technical support and rebate incentives on their campus building projects.

"There are a lot of college students and faculty members living near the restaurant, and Tavern on the Hill's owners wanted to set an example as a responsible local business that cares about the environment and the local community," said Tanuj Gulati. "They went over and above most new construction standards in terms of energy efficiency."

"We want to be as ecofriendly as we can, across the board," Flaherty said, citing water conservation and recycling as other examples. "In a way, we are an extension of what is happening on these neighboring college campuses."

Minnesota Power stresses the importance of contacting its Power of One® Business team early in a building process.

"(Minnesota Power) was one of my first calls. I trust their expertise in energy efficiency and wanted them on board."

Cullen Flaherty, Vice President of Operations, Black Woods Group

"It is exciting to work with owners like the Black Woods Group that are 100 percent committed," said Craig Kedrowski. "Starting with a clean slate and building toward energy efficiency is the best way to save energy and maximize available rebates. The new restaurant is aesthetically pleasing, energy efficient and will have lower maintenance costs over time. What a great opportunity to design these benefits in on the front end."

These choices will help Tavern on the Hill conserve more than 225,000 kWh of electricity per year and avoid 31 kW in monthly electric demand. The restaurant will save nearly $14,000 annually on energy and reduce operating and maintenance costs by more than $2,000. With projects qualifying for around $9,300 in rebates from Minnesota Power, average payback is less than three years.

Energy Partners Program Helps *Low-Income Customers Save Energy and Money*

Denny Laakkonen of the Arrowhead Economic Opportunity Agency (AEOA) visited over 400 single-family homes in 2014, offering to help Minnesota Power low-income customers conserve energy, save money and increase comfort.

"Convincing people to let me come over and spend an hour in their homes is not always easy," said Laakkonen, a designated energy analyst for Minnesota Power's Energy Partners program. "They always think there is a catch, but I really just want to share information, install energy-saving products, and help them save on their monthly electric bills."

The Energy Partners program is designed to provide income-eligible customers educational resources and energy-efficient products and services that will help them use energy more effectively for the long term. The program is delivered primarily through seven local community agencies that work on Minnesota Power's behalf to identify and reach qualified customers. Those partnering agencies are Kootasca Community Action Council, AEOA, Mahube Community Council, Bi-County Community Action Program, Lakes and Pines Community Action, Tri-County Community Action and Duluth Community Action.

"We work with organizations that specialize in weatherization and fuel assistance to deliver this program to our customers," said Amanda Oja, energy efficiency analyst, Minnesota Power. "They are already working with the population we are trying to reach and they understand the income guidelines."

Laakkonen enjoys his work. He arrives at customers' homes armed with information about energy efficiency, resources available through Minnesota Power's Power of One® conservation program, and opportunities for low-income customers to lower their electric rates through the Customer Affordability of Residential Electricity (CARE) program.

Laakkonen walks through the house, replacing some incandescent bulbs with more energy-efficient compact fluorescent lights (CFLs) and identifying simple ways to reduce plug load and save energy. He tests refrigerators and examines electric water heaters, microwaves and dehumidifiers to determine whether customers qualify for ENERGY STAR® qualified replacements. He also presents additional energy-saving devices, such as energy-efficient floor lamps, desk lamps or smart power strips, and smaller items including shower timers, thermometers, and indoor light timers.

"People are always welcoming and thrilled to have their light bulbs replaced and to receive these products," Laakonen said. "They realize how expensive bulbs are on the market and appreciate the help from Minnesota Power."

John Doberstein, an independent contractor with Community Action Duluth, delivers similar home energy analysis services to customers. Prior to visiting individual apartments, he gets permission from the owner or property manager to present an informational session and "meet and greet" for all residents.

"Tenants come down, hear about the program, see what kinds of lights and appliances we are talking about, and learn how the analysis process works," Doberstein said. "Through Minnesota Power's program, we provide shower timers, light emitting diode (LED) night

> " ... I really just want to share information, install energy-saving products, and help them save on their monthly electric bills."
>
> **Denny Laakkonen,**
> Arrowhead Economic Opportunity Agency

"Most importantly, tenants learn what Minnesota Power is doing with other partners in the community to reduce energy use and assist low-income customers."

John Doberstein,
Community Action Duluth

"The partnership we share with these agencies is essential to providing quality programs to our low-income customers."

Amanda Oja,
Minnesota Power

lights, or other items to encourage people to attend and sign up for an energy analysis."

Most of the apartment buildings he visits are old and inefficient. Many units have outdated refrigerators, purchased 20 or 30 years ago, that use much more kWh than newer models. Doberstein tests the refrigerators and offers to replace those that qualify under the Energy Partners program. He changes light bulbs, installs energy-saving products, and visits with residents one-on-one, sharing ways to conserve energy and answering questions about available programs and services.

"People are enthused to learn about energy efficiency and appreciate the opportunity to get new refrigerators," Doberstein said. "Most importantly, tenants learn what Minnesota Power is doing with other partners in the community to reduce energy use and assist low-income customers."

One major outreach event, co-sponsored by Minnesota Power, ComfortSystems and AEOA, is the Energy Awareness Expo. Over the past 11 years, this annual event focused on providing energy information to low-income customers has become a staple within this community.

People line up outside the Salvation Army in Duluth well before the doors open, eager to enjoy a complimentary hot meal and learn how they can save on their utility bills. Each household receives an energy kit. In 2014, that included two CFL light bulbs, an LED bulb, a string of LED holiday lights, an LED nightlight, faucet aerators, a low-flow showerhead and a furnace-filter warning whistle.

Gary Yernberg, 63, and his girlfriend, Teddy Hill, were among the early arrivals, getting to the Salvation Army 90 minutes early.

"What I like most about (the Expo) is learning the many different ways you can save money," Hill said when asked what attracted her to the annual Energy Awareness Expo. She enjoyed receiving the energy-saving products and seeing friends. "It is a very good program."

Representatives of Minnesota Power's Power of One® team distribute the kits and answer questions about energy efficiency. Additional staff members help qualified customers sign up for the CARE program, which is administered by AEOA on behalf of Minnesota Power. CARE-eligible households can lower their energy costs with a discounted rate and establish a budget payment plan.

The Energy Awareness Expo is an important way to connect with customers and for AEOA to identify income-eligible people who qualify for its weatherization services and for Energy Partners.

"We get a lot of new applicants through the event," said Laakkonen, who also helps organize the Energy Awareness Expo. "It is a great day."

Another component of the Energy Partners Program is an annual "Listening Session" with the agencies that help deliver Minnesota Power's low-income programs. The bulk of this event is focused on gathering feedback from the agencies and brainstorming ways to best serve low-income customers. "The Listening Session provides the perfect venue for gathering insights and ideas to strengthen the Energy Partners program," Oja said. "The partnership we share with these agencies is essential to providing quality programs to our low-income customers."

Energy Partners continues to be an important aspect of Minnesota Power's overall conservation program and to the community at large.

"This program provides customers with valuable tools and resources to take ownership of their energy usage and get the most for their energy dollars," Oja said. "Collaborating with provider networks and other partners enables Minnesota Power to deliver an impactful energy conservation program while connecting some of our most economically challenged customers with essential services and resources."

"Cheers" to for Energy Efficiency

There is a surprising tropical oasis on Minnesota Highway 45 in Scanlon, Minn., complete with a hula-skirted dancer, bottles of coconut rum, and a dog named Marley. Inside the new Gramma Polo's Bottle Shoppe, customers are greeted by a breezy island décor and climate as bright and pleasant as a summer day.

Energy-efficient light emitting diode (LED) lighting and high performance mechanical and refrigeration systems have helped co-owners Jodi Polo and Tom Romundstad achieve this warm, welcoming atmosphere. Minnesota Power's Power of One® Business team was a valuable partner in the effort.

The couple purchased Polo's Liquor Store in 2012 from Jodi's then 90-year-old grandmother, Charlotte, who had operated the business since 1947 on a site next door to the current location. They renamed it Gramma Polo's and had contacted Minnesota Power about energy-efficiency upgrades when Kwik Trip offered to buy and demolish the aging building to build a new convenience store. This gave Tom and Jodi an opportunity to rebuild Gramma Polo's on adjacent land—to very high expectations.

"We wanted to make this the most energy-efficient liquor store in Minnesota or even the Upper Midwest," said Romundstad, a former project manager in St. Louis County's Property Management Department, who oversaw many energy-related projects. He and Polo met at the County, where she works in building maintenance, and they share a passion for green, energy-efficient design and construction.

Over the years, Romundstad had worked closely with Minnesota Power's conservation improvement program on energy-efficiency projects. He knew the value of engaging the utility and its program consultants early in the design process for the greatest energy savings and highest rebates.

"They called us in before the first plans were drawn," said Joe Frauenshuh, of Energy Insight, Inc., an energy-efficiency consultant for Minnesota Power's One Business program. "It was important to the owners that they do this right."

"There are a lot of great technologies at work in Gramma Polo's."

Craig Kedrowski,
Lead Energy Efficiency Analyst, Minnesota Power

Lighting was a major consideration. As a retail liquor store, it was critical to showcase light-sensitive products such as wine and beer without degrading their quality. Energy-efficient LED lighting was installed throughout the store, including inside the "beer cave" walk-in cooler and reach-in refrigerator cases. Exterior lighting and signs also utilize LED technology.

Another cool feature at Gramma Polo's is an energy recovery ventilator that delivers "free cooling" to the beer cave in winter using outdoor air. This minimizes winter use of rooftop condensers and electronically commutated motor (ECM) evaporator fans in the beer cave. A high-speed automatic door on the beer cave keeps cool air in and warm air out, further reducing the building's heating and cooling load.

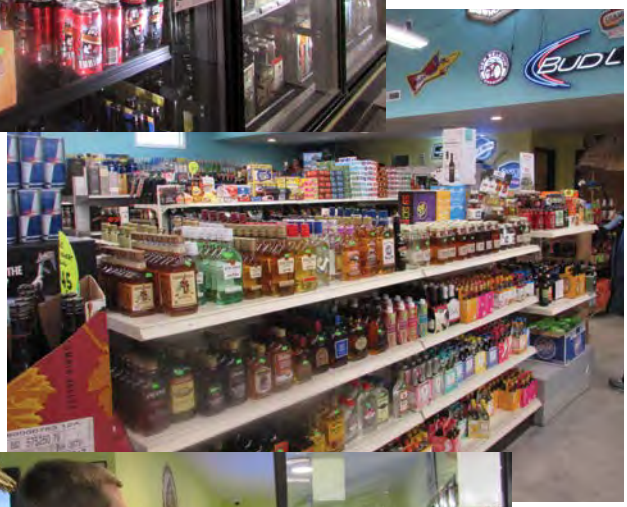
Additional energy-efficiency measures include high performance air conditioning units, a furnace with an ECM fan, an on-demand water heater, cycling anti-sweat controls to keep moisture from fogging glass cooler doors, and an ENERGY STAR® qualified ceiling fan.

These choices qualified for more than $2,500 in rebates from Minnesota Power. They will help Gramma Polo's conserve an estimated 53,000 kWh per year, avoid nearly 12 kW in monthly demand, and save more than $4,000 in annual energy and maintenance costs.

"There are a lot of great technologies at work in Gramma Polo's," said Craig Kedrowski, lead energy efficiency analyst, Minnesota Power. "The owners tried to take advantage of everything out there to reduce energy."

The building is well insulated and tightly constructed with six inches of underground foam insulation, high-density spray foam in the ceiling and walls, and triple-glazed, low U-factor windows. Cupola windows can be opened for summertime heat ventilation and close automatically when it rains using low voltage motors. Many salvaged products were used in design and construction, including doors, frames, baseboards, shelving, carpeting and ceiling panels. The checkout counter was refurbished from a shop in a Minneapolis strip mall, and the washroom mirror and office desk and chairs were "freebies," diverted from the landfill. Even the store sign was purchased secondhand and retrofitted with LEDs that draw only 120 Watts.

"I don't know how much of this has been done in our neck of the woods, but not many liquor stores are this energy and resource efficient," Polo said.



"Minnesota Power has been very helpful through this process. Every time I talk with them, I learn something new."

Tom Romundstad,
Co-owner, Gramma Polo's Bottle Shoppe

"For me energy efficiency is more about saving the earth than saving money, but it really strengthens our bottom line," Romundstad said. "It cuts costs, reduces maintenance and makes us a more viable, profitable business."

The Kwik Trip next door has brought new customers to the neighborhood, introducing them to what Tom and Jodi say is the oldest liquor store business in Minnesota that has been continuously owned by the same family.

"A lot of customers come in and really like what we have done," said Polo, petting her dog, Marley, on the head. "That is nice to hear."

"Minnesota Power has been very helpful through this process," Romundstad said. "Every time I talk with them, I learn something new."

a TEAM APPROACH to Energy Savings

"The full Energy Team (our internal team along with Minnesota Power) meets every six weeks to plan potential projects. Minnesota Power provides feedback, points out potential impacts, and helps us shape actual systems and products we might want to consider."

Erik Birkeland
Property and Facilities Manager, City of Duluth

When Erik Birkeland became property and facilities manager for the City of Duluth in fall 2013, he set the bar high. One of his 2014 goals was to save 1 million kWh of electricity by improving the energy performance of City-owned buildings, parking ramps and other structures. He and his colleagues set out to meet this challenge through a coordinated team approach that keeps energy conservation and building science at the forefront of facility-related decisions.

The City of Duluth is one of many commercial customers, both large and small, that have formed a multidisciplinary Energy Team with Minnesota Power's Power of One® Business program since 2010. Birkeland was familiar with the approach from his prior position as capital planning manager at St. Louis County, a regional leader in energy conservation and one of the first Energy Team success stories. He immediately saw ways to use that experience for the City's benefit, building upon good things that already were being done.

"Energy-efficiency upgrades were happening but not in a concerted way and not connected with overall facilities work," Birkeland said. "I developed a project management office with a tracking system and methodology for how we approach, set up and manage projects."

The project management office houses a broad range of experts. This includes an energy coordinator focused on number crunching, paybacks and utility costs; a maintenance supervisor with deep knowledge of all buildings and systems; a construction project coordinator; an architect; and Birkeland, himself, as manager.

"This group is now our internal Energy Team," Birkeland said, adding that the City also brings in asset management consultants to help assess buildings, systems and necessary improvements. "The full Energy Team (our internal team along with Minnesota Power) meets every six weeks to plan potential projects. Minnesota Power provides feedback, points out potential impacts, and helps us shape actual systems and products we might want to consider."

Getting parties together on the front end leads to more successful projects. This is something Birkeland learned from his mentor, Tony Mancuso, director of property management for St. Louis County. The whole building approach ensures every project is integrated and systems work together for maximum energy efficiency and optimal performance.

Minnesota Power's Power of One® Business staff adds value to Energy Teams with expertise on both proven and the latest energy-saving technologies, project design assistance, research resources, energy- and cost-saving calculations, associated paybacks and incentive support.

"We call up Minnesota Power, and someone is always available to give us a quick turnaround on ideas," Birkeland said. "They help with everything from big renovations to simple lighting improvements—then they wrap up the paperwork for incentives. It is great customer service and is seamless."

Recently, Minnesota Power's Power of One® Business staff developed an energy consortium made up of a peer group of large, multi-facility customers with an Energy Team, including the City of Duluth, St. Louis County, the Minnesota Air National Guard, UMD, Essentia Health and Minnesota Power's own Facility Management Group. It meets quarterly to discuss experiences with energy-efficient technologies, share best practices, and provide ideas to members of the group.

"This field is not standardized," Birkeland said. "There is benefit in creating awareness and figuring out ways we can work together as public entities and community players. We are building on best practices and not reinventing the wheel."

While Minnesota Power initially launched the Energy Team concept to support large commercial customers with multiple, complex facilities, the Power of One® Business group is finding that businesses of all sizes can benefit from this approach.

"The original assumption was that we could afford to do this with large customers because the costs and energy-saving benefits balanced, but we have found improved energy savings with smaller organizations using this approach, as well," said Tim Gallagher, supervisor of program implementation, Minnesota Power. "Rather than depending on one champion in a facility to drive energy-efficiency projects on their own, forming an Energy Team brings parties together, improves understanding and buy-in, and leads to action plans that achieve results. The group supports the champion and helps tell the larger story."

For the City of Duluth's project management office, working as an Energy Team helps move capital improvements forward. In 2014, projects included parking ramp lighting and controls, IT controls, HVAC controls, elevator upgrades, and Lakewalk and street lighting improvements. These measures are saving an estimated 898,000 kWh and lowering operating and maintenance costs. They qualified for over $38,000 in rebates from Minnesota Power in 2014.

"It helps us demonstrate that projects will save energy, lower utility costs, and decrease maintenance," Birkeland said. "Energy conservation and saving money are big sells at the political level. If the City can invest in efficiencies that reduce its carbon footprint and cut operating costs, that is a good use of taxpayer money."

Birkeland hopes the Energy Team can help persuade decision makers to explore solar energy in the next few years—especially as the City competes for the $5 million Georgetown University Energy Prize (www.duluthenergy.org). Renewable energy is at the top of Minnesota Power's Pyramid of Conservation because its impact is greater once energy-efficiency measures are taken. It would be the "icing" on the City of Duluth's well-planned and systematically implemented energy strategy.

"Solar is harder to sell because the payback is not as aggressive as lighting and other technologies, but it makes sense to push in that direction, too," Birkeland said. "The stakes are high, but one role of government is to lead, educate and test out new technologies."

Solar energy is a high priority for Minnesota Power, as well, and the City's Energy Team partnership will ensure that renewable energy projects are a collaborative effort. Helping customers make informed choices is a vital part of that effort. It is part of Minnesota Power's *Energy**Forward*** commitment to evolve the energy landscape.

" ... forming an Energy Team brings parties together, improves understanding and buy-in, and leads to action plans that achieve results."

Tim Gallagher
Supervisor, Program Implementation, Minnesota Power

Savings in Store for Grocery Powerhouse

One of the first areas customers pass through in the newly remodeled Super One Foods store in Duluth's Kenwood neighborhood is the produce department. The brilliant red tomatoes, lush green lettuce and eye-popping oranges reflect more than just high quality fruits and vegetables—they also reveal a corporate commitment to high performance light emitting diode (LED) lighting.

Virtually every light at the newly remodeled store, from the exterior logo and awning lights to those that illuminate the entryway, shopping aisles, restrooms, offices, display counters, coolers and freezers have been converted to energy-efficient LEDs. Bright, long-lasting LEDs have come a long way in recent years. Prices have lowered, quality has improved and there are more choices than ever for a variety of commercial applications.

"We are probably the leader in LED lighting around the region," said Matt Miner, facilities manager for Miner's, Inc., a family-owned corporation that includes 31 grocery stores, 4 liquor stores and 2 malls in the Upper Midwest, plus a 167,000-square-foot warehouse, truck garage and corporate office. "With our large number of facilities, we are always looking for ways to save energy and lower costs."

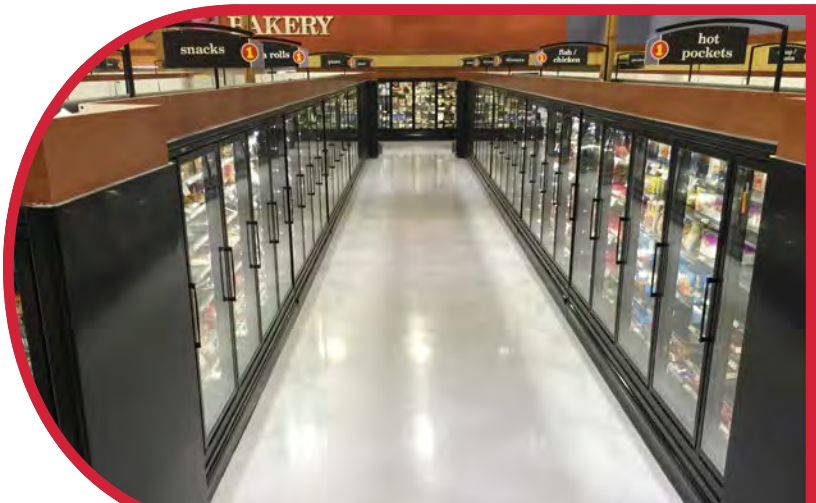
Miner's, Inc., often depends upon Minnesota Power's Power of One® Business team to identify energy-saving opportunities that make business sense. Those opportunities include energy-efficient lighting; heating, ventilation and air conditioning (HVAC) upgrades; and industry-specific technologies, such as cutting-edge refrigeration. Minnesota Power lead energy efficiency analyst Craig Kedrowski and Power of One® Business consultant Tanuj Gulati, of Energy Insight, Inc., are on the front lines.

"Tanuj and Craig come up with ideas, and they understand return on investment," said Miner, noting that they explain potential energy savings, costs with rebates and payback. "Plus they do all of the legwork—I can hand them a file with facts and figures and a few days later they come back with ways to maximize energy savings and rebates from Minnesota Power."

Minnesota Power's recommendations led Miner's, Inc., to replace overhead fluorescent lights with high bay LEDs throughout the Kenwood store. The lighting redesign greatly reduced the number of light fixtures needed, while maintaining the proper output and precise color rendering needed in a retail grocery setting. The project also included lighting controls, new high efficiency freezers, and coolers with anti-condensate controls.

"Eighty percent of the energy load in our stores is refrigeration," said Don Olson, store planning/facility management, Miner's, Inc. "Improving efficiency there has a large impact."

Projected energy savings at the Kenwood store due to these choices are over 800,000 kWh per year and nearly 62 kW in lowered demand. The company also can expect annual energy and maintenance cost reductions of around $33,000. With rebates from Minnesota Power, the total investment will pay for itself in almost eight years, with lighting payback expected in less than three years.



“Our company recognizes value,” said Mark Heehn, store planning/facility management, Miner’s Inc. “If we can get payback on a lighting investment in two to three years, it helps stores be profitable down the road.”

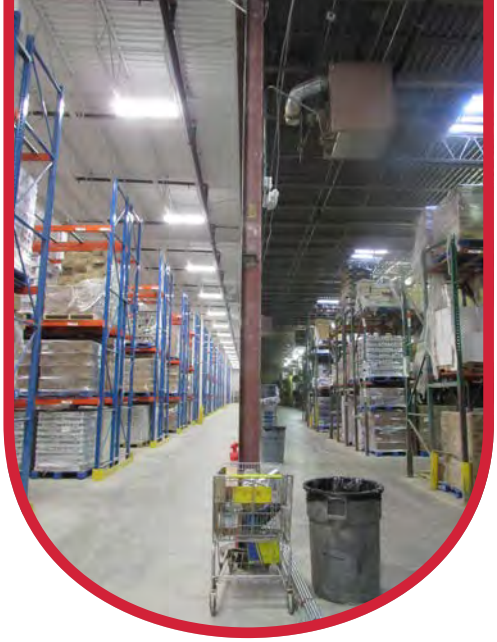
Miner’s, Inc., has a long and comfortable relationship with Minnesota Power and its Power of One® Business team. Company officials contact utility representatives whenever they are considering projects within Minnesota Power’s service territory. Minnesota Power program experts have ENERGY STAR® benchmarked all of the company’s northern Minnesota facilities to assess their energy performance and identify ways to improve. Small-scale research studies funded by Minnesota Power have helped persuade Miner’s, Inc., to make large-scale lighting, refrigeration and HVAC improvements in multiple facilities.

“We are very busy and don’t always have time to research new technologies,” Miner said. “They demonstrate how their ideas would work and find ways to drive down costs and improve payback.”

“Miner’s Inc., has many stores, and decision makers want proof something is going to be effective before they invest,” Gulati said. “Minnesota Power takes a research approach. They pay to install and test new technology at one site and then the company expands it to other stores. It really is about customer service and providing whatever is needed to help customers make wise energy decisions that will help them for a long period of time.”

In 2014, Minnesota Power assisted Miner’s, Inc., with dozens of projects at Kenwood Super One Foods and multiple other locations. They included LED indoor and outdoor lighting and signs at Miller Hill Super One Foods; refrigerator cases and LED lighting at Miner’s Cloquet and West Duluth liquor stores; LED freezer case lighting at Plaza Super One Foods; lighting controls at International Falls County Market; overhead and walk-in freezer lighting at Pike Lake Super One Foods; LED signage at Cloquet Super One Foods: and LED lighting in Miner’s truck garage.

These combined projects will conserve more than 2 million kWh in electricity, reduce electric demand by more than 200 kW, and save the company around $100,000 per year in energy and maintenance costs. They qualified for more than $90,000 in rebates from Minnesota Power and have an average payback of less than 4.5 years.



“These guys are aggressive in energy conservation,” Kedrowski said. “Working with Minnesota Power helps ensure good projects that meet their expectations, fit their goals and can be replicated at multiple stores.”

“They demonstrate how their ideas would work and find ways to drive down cost and improve payback.”

Mark Heehn, Store Planning/ Facilities Manager, Miner’s Inc.

MAGNETATION

ATTRACTED TO ENERGY EFFICIENCY

A brand new industrial plant roared into operation near Grand Rapids, Minn., just in time to toast the New Year. On December 31, 2014, Magnetation, LLC, (Magnetation) announced that its new Plant Four was up and running, producing iron ore concentrate a full quarter ahead of schedule. For those who watch the company, the early completion was just another example of how Magnetation is growing stronger through improved efficiency in energy lead use and operations.

Magnetation was built on extracting maximum value from available resources. A joint venture between Magnetation, Inc., and AK Steel Corporation, the company recovers high quality iron ore concentrate from previously abandoned iron ore waste stockpiles and tailings basins. Its proprietary process requires robust, reliable electricity, but company officials are also committed to energy-efficient technologies that help Magnetation manage costs and get the most for its energy dollars.

Minnesota Power's Power of One® Business program has been a valuable resource from early in the growth-oriented company's history—convincing decision makers that energy conservation was good business.

"Our team met with Magnetation when its first plant was under construction," said Tanuj Gulati, of Energy Insight, Inc., a consultant to the Power of One® Business program. "Even though that plant was not served by Minnesota Power, we heard they were planning to build more facilities in northeast Minnesota and wanted to make sure they incorporated energy efficiency."

Today, Magnetation operates iron ore concentrate plants in Keewatin, Bovey and Grand Rapids, Minn., plus an iron ore pellet plant in Reynolds, Ind.

"Magnetation has been in a major expansion mode for the past five years, but energy efficiency and incentives were important to them back in the beginning, as well as today," said Craig Kedrowski, lead energy efficiency analyst, Minnesota Power.

"As the company has grown, our plants have gotten bigger, we are using more power and markets have tightened. We need to operate very efficiently," said Dave Chappie, vice president of engineering. "Energy is a direct part of our cost per ton—it is a big deal."

Since 2010, Minnesota Power's Power of One® Business team has helped Magnetation identify and install many energy-saving technologies that fit the industry, reduce energy costs, lower operation and maintenance costs, qualify for incentives and have fast paybacks. They range from energy-efficient fluorescent and light emitting diode (LED) lighting to variable frequency drive (VFD) motors, high performance pumps and ENERGY STAR® transformers.

Bernard "B.J." Knapp, electrical engineer in Magnetation's process automation group, works directly with Minnesota Power representatives to identify energy-saving opportunities that make business sense. At first he feared researching and securing rebates for energy conservation projects would take away from commissioning the plant, but Minnesota Power quickly won him over with its knowledge, support and customer service.

“Plant Four will be our largest concentrate production plant, and we expect it will also be our lowest cost concentrate operation.”

Larry Lehtinen, CEO, Magnetation

“They do all of the legwork,” Knapp said. “I use our reporting tools and provide data on energy usage. We also provide them with information about projects we are planning, and they do the rest. Once we received the first rebate check and understood the scale of what energy savings could mean, it changed the way we purchase things.”

In 2014, Minnesota Power was part of the team when Magnetation expanded its Plant Two in Bovey. The company installed VFD motors on pumps throughout the facility.

“We mine waste material and move dirt through a process that screens, slurrifies and concentrates the ore,” Chappie said. “Our whole operation requires pumps, motors and conveyors that use electricity. With VFD motors, pumps can be run slower or faster to maintain the proper flow instead having to run at full power, pedal to the metal.”

Upgrading to VFD motors is expected to save more than 7 million kWh per year, reduce annual energy costs by nearly $262,400, and lower annual operating and maintenance costs by nearly $72,000. These choices qualified for more than $108,000 in rebates from Minnesota Power and will pay for themselves in just over three years.

“Minnesota Power helps us evaluate return on investment,” said Mike Hight, plant electrical engineer, Magenetation. “The upfront capital investment for energy-efficient equipment is higher, but, if the payback is around three years or less, we go for it. We have to preserve capital and manage resources as we build.”

During Plant Four construction, company officials installed transformer systems that are well above standard efficiency, qualifying for nearly $23,500 in rebates, saving more than 670,000 kWh and avoiding over 76 kW in demand. Applications are still being processed for VFD motors and new controls on magnetic separators in the newly constructed plant—projects that could save Magnetation millions of additional kWh of electricity and thousands of dollars per year.

Saving energy also is an environmental win for Magnetation, which values bringing its plants on line in a way that sustains the environment. Every kilowatt hour saved translates into avoided units of non-baseload carbon dioxide emissions.

“Plant Four will be our largest concentrate production plant, and we expect it will also be our lowest cost concentrate operation,” said Larry Lehtinen, CEO, Magnetation, in announcing production at the new plant in December 2014. “We anticipate it being a flagship operation providing high-paying jobs on the Iron Range for many decades to come.”

“Working with Magnetation really fits the Power of One® Business energy conservation model involving an ongoing relationship and developing multiple projects rather than the ‘one and done’ approach,” said Craig Kedrowski. “They have been and continue to be an excellent partner with us.”

“Minnesota Power helps us evaluate return on investment ... if the payback is around three years or less, we go for it. We have to preserve capital and manage resources as we build.”

Mike Hight,
Plant Electrical Engineer, Magnetation

CUSTOMER ENGAGEMENT

The *Key* to Successful Energy Conservation Programs

Engaging **SCHOOL COMMUNITIES AND LOCAL RETAILERS**

The sun was shining on a late May afternoon as students at St. James Catholic School shuffled into an assembly. They were squirming with energy as they took their seats on the rug, anticipating summer vacation just a week or so away. They also were eager for an upcoming science-based field trip on the St. Louis River aboard the Vista Fleet. Students raised money for the adventure by participating in Minnesota Power's Learn & Earn energy education program, and the assembly was a chance to congratulate them and present a check.

"You did great! Tell me some of the things you learned about energy efficiency," said Amanda Oja, energy analyst, Minnesota Power, smiling as almost every hand flew up in the air.

Learn & Earn engages school communities in a variety of activities related to energy efficiency. At St. James, students learned about carbon footprints, compiled lists of things their families could do to save energy, and investigated ways to be more energy efficient at school. In addition to six weeks of classroom activities, they raised nearly $400 for their field trip by encouraging family members and parishioners to complete Minnesota Power's online Your Home Energy Report survey and to buy energy-efficient light bulbs from participating local retailers. Minnesota Power contributed money to the field trip fund for every completed survey and purchased energy-efficient product.

"It was a win-win. People from Minnesota Power came out and met with the teachers. Students learned and shared information about energy efficiency with their parents," said Julianne Blazevic, principal, St. James. "Then we got money back!"

Learn & Earn is just one example of how Minnesota Power's Power of One® Conservation Improvement Program (CIP) reaches into homes, schools, businesses and communities to help customers make informed, effective energy choices.

The CIP team pours tremendous effort into educational outreach and customer engagement, using a broad range of tools and tactics to connect with customers in meaningful ways. It maintains an interactive website, produces and distributes focused literature, sponsors technical trainings, provides educational resources, and participates in a variety of community events to share information, raise awareness, and gather input from customers, trade allies and community members.

The 24th annual Energy Design Conference and Expo (EDC), held in February 2014 at the Duluth Entertainment Convention Center, drew nearly 700 building professionals, presenters and vendors interested in the latest in energy-efficient, high performance design and construction. Minnesota Power has hosted the event since its inception, working with committed partners to ensure a powerful, relevant and meaningful lineup of topics and presenters, year after year.

"I think the conference consistently delivers a quality and level of education about energy efficiency and building science that builders can incorporate into their work immediately," said Rachel Wagner, of Wagner Zaun Architecture, an expert in low-energy, integrated residential design and member of the EDC Session Advisory Committee. "People come back because attention is paid to provide both a solid, basic education plus layers of advanced learning for those who have mastered the basics."

The 2014 EDC included a full-day preconference that examined the latest lighting technologies specific to residential, commercial/industrial and roadway lighting. There was a new designated "Lighting Alley" in the exhibit hall where participants could mingle with the best and the brightest in the lighting industry. In addition, Minnesota Power held a special reception at Great Lakes Aquarium showcasing energy-efficient upgrades made to the facility with the help of Minnesota Power's Power of One® Business program.

Minnesota Power's CIP team also offered an HVAC contractor training during the preconference day. This training is required for contractors to be part of Minnesota Power's participating contractor network and qualify for customer rebates. More than 100 contractors attended

"... attention is paid to provide both a solid, basic education plus layers of advanced learning for those who have mastered the basics."

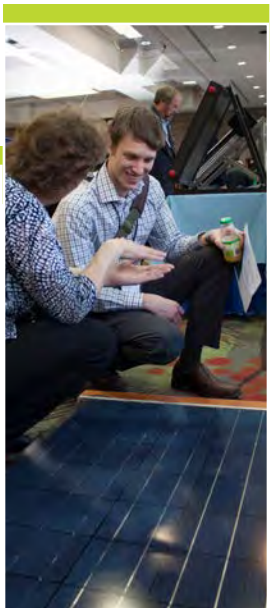
Rachel Wagner, Wagner Zaun Architecture

sessions focused on air source heat pumps, standard central air conditioning, electronically commutated motor replacement and ground source heat pump design, installation and sales.

"A key element of our Power of One® conservation effort is having a trained trade ally network to ensure quality installations and customer satisfaction through education about 'right fit' options," said Al Lian, energy efficiency analyst and one of the training coordinators. "Providing training to this trade ally network helps us meet our goals and also enhances the contractors' business while satisfying customers' needs and expectations."

"Delivering quality products and installations is good for business and for our industry," said Ben LaLone, Summit Mechanical Service. "It benefits contractors and homeowners."

A quarterly newsletter, called *Building Up*, further educates the building community about the bottom-line advantages of "building their business on energy efficiency." It covers emerging topics in energy-efficient design and construction, promotes contractor-training opportunities throughout the year, and links building professionals with online resources to share with their clients. Minnesota Power's Power of One® website features interactive tools, energy and appliance calculators, rebate and incentive information, the Pyramid of Conservation and up-to-date program information to help both business and residential customers better understand how they use energy and develop action plans based on this knowledge.



Engaging COMMERCIAL CUSTOMERS AND BUILDING OPERATORS

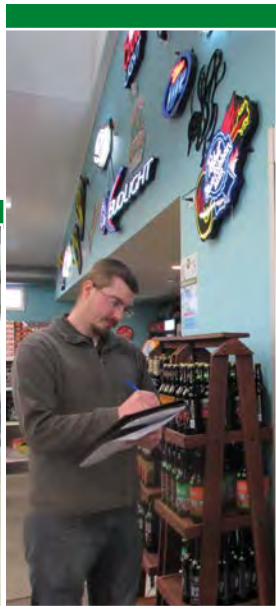
Businesses and organizations of all sizes can benefit from energy conservation. Minnesota Power's Power of One® Business team works with hundreds of private and public sector commercial customers each year to identify energy-saving projects and bring them to completion. Minnesota Power energy analysts and program consultants call on businesses and engage commercial clients in long-term relationships that result in strategic energy planning.

Power of One® Business profiles feature area businesses that have implemented new technologies or made facility improvements through the Power of One® Business program. These range from small "mom and pop" operations, such as Gramma Polo's liquor store in Scanlon, to Miner's, Inc., which owns and operates dozens of supermarkets in multiple states. These profiles are shared with customers, distributed at community events and posted on the Power of One® website.

In recent years, Minnesota Power has encouraged both large and small customers to form onsite Energy Teams, bringing facility managers, maintenance crews, energy-efficiency advocates and those who make financial decisions to the table along with representatives of Minnesota Power. These teams meet regularly to discuss energy-efficiency improvements and keep energy at the forefront of facility decisions. Minnesota Power has found that this approach leads to greater buy-in and helps organizations plan and execute energy-saving measures that make business sense and are the "right fit" for their operations.

The success of Energy Teams has led to the creation of a business energy consortium. Minnesota Power invited Energy Teams from large, multi-facility organizations to meet as a peer group to share information and lessons learned from their experiences with energy conservation. They met three times in 2014, including representatives from St. Louis County, Minnesota Power, City of Duluth, Minnesota Air National Guard, Essentia Health and the University of Minnesota Duluth.

Another way the Power of One® Business team reaches out to commercial customers is by sponsoring and promoting Building Operator Certification (BOC) training. This nationally recognized, competency-based training and certification program educates facilities personnel about how building systems work together to achieve the highest levels of comfort and energy efficiency in their buildings.



Engaging COMMUNITY MEMBERS

Relationships matter. That is why Minnesota Power's Power of One® team gets out into the community and meets people face-to-face.

The annual Energy Awareness Expo at the Duluth Salvation Army is an event staff members look forward to every year. Minnesota Power, ComfortSystems and other partners sponsor the expo to help customers on low or fixed incomes save money on their utility bills. In 2014, over 600 households received energy kits containing two CFL light bulbs, one light emitting diode (LED) light bulb, an LED nightlight and a string of LED holiday lights, along with other energy- and water-saving products. Participants also learned about energy conservation and Minnesota Power's Customer Affordability of Residential Electricity (CARE) reduced-rate program for income-eligible customers.

"The customers who attend this event continue to inspire me with the questions they ask and how engaged they are," Oja said. "Many attendees are facing challenges and still choose to embrace this opportunity to empower themselves to learn more about energy efficiency and take an active role in using energy wisely."

Power of One® team members attend dozens of conferences, expos and community events throughout the year, staffing conservation-themed booths at Northland Community Wellness Day, the Arrowhead Home and Builder Show, Lake Superior Harvest Festival, Iron Range Earth Fest, the University of Minnesota Duluth (UMD) Sustainability Fair, and the Duluth Senior Expo.

"We get a chance to explain our energy conservation programs and the tools and resources available to help our customers," said Deb Knoll, supervisor of outreach and compliance. "It is always rewarding to see the interest and appreciation when we can help them save energy and dollars."

Altogether in 2014, Minnesota Power's CIP team participated in 87 educational outreach events, another outstanding year for meaningful customer engagement.

Engaging EMPLOYEES AND CUSTOMERS TO MOVE *EnergyForward*

Minnesota Power has made extraordinary strides in reducing energy consumption and demand through conservation, while also advancing renewable energy technologies. In 2014, it met Minnesota's renewable standard of 25 percent renewable energy by 2025 a full decade early!

"That is a tremendous accomplishment by our employees," said Brad Oachs, chief operating officer, Minnesota Power. "It reflects our commitment to cleaner energy and the execution of our *Energy**Forward*** plan to a more diversified energy mix of one-third renewable, one-third coal, and one-third natural gas."

Minnesota Power's new Renewable Program is working hand-in-hand with the Power of One® team as it engages customers in solar photovoltaic (PV) projects. For example, before customers receive renewable energy rebates through Minnesota Power, they must get a Home Energy Analysis or a Commercial Energy Analysis to identify and prioritize energy-efficiency improvements.

"There are many low- or no-cost ways to reduce energy consumption before you invest in renewable energy," said Katie Gascoigne, renewable program analyst. "We encourage customers to follow Minnesota Power's Pyramid of Conservation (developed by the Power of One® team)."

Sitting in the grass on a sunny June morning in 2014, a small group of teachers adjusted the angle on a miniature set of PV panels. They checked a handheld monitor and looked to the sky.

"A little more this way, and tilt up a bit," one said, while another fine-tuned the position. "There, I think that's it."

The hands-on activity was part of a two-day Renewable Energy Workshop for teachers and informal educators offered through Minnesota Power and the Boulder Lake Environmental Learning Center (Boulder Lake ELC). It included both classroom instruction and field trips to Minnesota Power's Taconite Ridge Wind Energy Center, Thomson Hydroelectric Station and Hibbard Renewable Energy Center.

"Minnesota Power is a great partner in energy education," said John Geissler, program director of Boulder Lake ELC. "They are giving these teachers access to places most people will never see and helping them understand both the opportunities and challenges of renewable energy in the real world."

"Educational outreach is very important to us," Gascoigne said. "We want Minnesota Power to continue to be a trusted energy resource for our customers and help them to make informed decisions about their energy usage. Providing educational opportunities helps us to do that."

All of Minnesota Power's energy education and outreach efforts begin with meaningful engagement. Through targeted marketing efforts, quality educational materials and personal interactions at community events, Minnesota Power and its Power of One® team engage customers in understanding how they use energy. Tools and resources further this insight and lead individuals and businesses to make informed choices that are the right fit and create a brighter, more energy-conscious community.

"Minnesota Power is a great partner in energy education. They are giving these teachers access to places most people will never see and helping them understand both the opportunities and challenges of renewable energy in the real world."

John Geissler, Program Director, Boulder Lake ELC

Faith Communities Spread the Good News of Energy Efficiency

Caring for the earth is a religious principle for members of St. Paul's Episcopal Church in Duluth, Minn. Just inside the main door of the 101-year-old church building is a rough-hewn wooden plaque—a Green Congregation Award from the Minnesota Episcopal Environmental Stewardship Commission. It recognizes the community's outstanding commitment to environmental stewardship, including energy conservation.

St. Paul's Episcopal Church is one of three congregations that participated in the Congregational Pilot, a collaboration of Minnesota Power, the City of Duluth's ComfortSystems natural gas utility, and Ecolibrium3, a nonprofit that administers the Duluth Energy Efficiency Program. The pilot project engages members of faith communities to improve the energy efficiency of their worship and communal facilities, while saving money on energy at home.

Three Duluth congregations participated in the pilot, including St. Paul's Episcopal Church, St. Mark African Methodist Episcopal (AME) Church, and Concordia Lutheran Church.

Each church was asked to identify an "Energy Champion" to lead the charge in encouraging members of the congregation to participate in a Home Energy Analysis with Building Diagnostics. A goal was set for the number of home energy analyses to be completed for each congregation based on the number of members. If the congregation reached their goal of in-home energy analyses completed they received bonus incentives to put into an Energy Fund to complete recommended projects for their church building.

St. Paul's Episcopal Church

Nelson Thomas, a retiree who spent 37 years with the Environmental Protection Agency, is the "Energy Champion" for St. Paul's Episcopal Church. "I'm an environmentalist and have a great interest in protecting God's creation, which is a focus of the Episcopal Church," said Thomas. "It seemed like a good fit."

Thomas began by engaging a small group of like-minded congregation members that he calls the "green team." They

> "We try to set a good example, and Minnesota Power had a great program for us to plug into in terms of looking at energy usage and becoming more efficient."
>
> - Rev. Bill Van Oss, Rector, St. Paul's Episcopal Church

"If we can complete additional energy-efficiency projects and see big savings on our utility bills, there will be more money for other ministries, children's programs and missionary work."

- Natasha Garner, Trustee Board Vice Chair, St. Mark AME Church

promoted the home energy analyses in bulletins, the monthly newsletter and weekly announcements. Soon, the community had completed the required 15 home energy analyses.

"Nelson presented it to us, and I thought it sounded like a great idea," said Natalie Smith, treasurer, St. Paul's Episcopal Church. "An energy auditor (from Ecolibrium3) came to my house and spent quite a bit of time. It was very informative."

The home energy analysis led Smith to replace a hollow-core door and to reinsulate a crawl space, eliminating the need for a space heater that was keeping pipes from freezing. A similar analysis at Thomas' own home, completed a few days before he was planning to install a new furnace, led him to purchase a higher efficiency model. The report also recommended simple caulking around windows and an insulated liner around the hot water heater to prevent energy loss.

Once its quota of home energy analyses was met, the congregation qualified for a combined electrical and natural gas energy analysis of its building. Representatives of Energy Insight, Inc., energy consultant to Minnesota Power's Power of One® Business program, visited the church. They inspected all lighting and heating, ventilation and air conditioning equipment and identified measures that would result in energy efficiency.

The report recommended lighting upgrades throughout the facility as well as maintenance and replacement of equipment for natural gas efficiency. St. Paul's completed one electric energy-saving project in 2014, replacing 64 incandescent lights in the sanctuary with light emitting diode (LED) lights. Church maintenance staff members were able to make this simple switch. It will save an estimated 2,400 kWh per year and lower annual energy costs by more than $350. Incentives are being reinvested in additional projects. The next phase will upgrade ceiling floodlights in the sanctuary to LEDs.

"We try to set a good example, and Minnesota Power had a great program for us to plug into in terms of looking at energy usage and becoming more efficient," said Rev. Bill Van Oss, rector of St. Paul's Episcopal Church, noting that the program helped his congregation win the Green Congregation Award. He has shared information about the pilot project with leaders of other faith communities in Duluth. "As people of faith, we have a responsibility to care for the good earth God has given us and to leave it better at the end of our lives than when we started."

Concordia Lutheran Church

Similar activities are taking place in other participating faith communities. Congregation members at Concordia Lutheran Church also completed 15 home energy analyses, qualifying for a commercial energy analysis and bonus incentives for their energy fund. Electric energy-efficiency recommendations included upgrading to higher efficiency fluorescent and LED lighting, lighting controls, and de-stratification fans to improve air circulation. There also were recommendations to reduce plug load and improve insulation around a window air conditioning unit, as well as natural gas efficiency measures.

Concordia Lutheran Church completed two electric energy saving projects in 2014 that consisted of changing incandescent and fluorescent lighting to LED in parts of the sanctuary, mezzanine and exterior. These two projects will save approximately 2,500 kWh and more than $230 in energy costs per year. Rebates will help fund additional energy improvements.

St. Mark AME Church

The third participating faith community, St. Mark AME Church, is a small congregation in a neighborhood where few members own their homes. Getting enough home energy analyses to qualify for the commercial energy audit and initial funding was a challenge.

"We did not have enough homeowners to reach the grant level," said Natasha Garner, vice chair of the St. Mark AME Church trustee board and energy advocate. "Fortunately, there were guests from Peace United Church of Christ in the congregation when I announced the program, and they offered to advocate for us and do some audits, as well. Their church had done this before without the grant incentive and wanted to help out of the goodness of their hearts."

A number of other local congregations and community members also assisted. Combined with the home energy analyses of congregation members, St. Mark AME Church achieved its goal, which Minnesota Power and ComfortSystems lowered to 12 because of the small congregation.

Garner was pleasantly surprised at how much she learned during her home energy analysis and shared her enthusiasm with fellow congregation members.

"I didn't really know much about our house," Garner said. "My husband and I got great information about little things we could do on our own to save energy. I let people know it was fun, easy and educational."

Electric energy efficiency recommendations at St. Mark AME included upgrading T12 fluorescent lighting to 28-Watt T8; replacing compact fluorescent lights (CFLs) with longer lasting, more energy-efficient LEDs; replacing an existing air conditioning unit with a more energy-efficient model; consolidating refrigerator/freezer units; and upgrading to ENERGY STAR®-rated appliances. There also were recommendations to improve natural gas efficiency.

The congregation used its bonus incentives from their energy fund to complete energy projects. It has replaced a door and completed some caulking and weatherstripping. While no electric energy-saving measures were completed in 2014, the congregation has money remaining and is reviewing additional projects.

"The commercial audit showed us what needs to be addressed, and we want to continue," Garner said. "We are a small church and the budget is tight. If we can complete additional energy-efficiency projects and see big savings on our utility bills, there will be more money for other ministries, children's programs and missionary work."

It's clear that Congregational communities are excited to spread the word about energy efficiency and reap the benefits of saving energy in their homes and congregational buildings, while also benefitting the environment.

> "I didn't really know much about our house. My husband and I got great information about little things we could do on our own to save energy."
>
> - Natasha Garner, Trustee Board Vice Chair, St. Mark AME Church

"Historically, faith groups were Social Media 1.0, so they provide a great platform for getting the word out about energy efficiency," said Bret Pence, program specialist at Ecolibrium3 and coordinator of the Interfaith Energy Pilot Project. "Faith organizations are very important partners as we encourage individuals and businesses to save energy."

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, 2015

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: **2014 Conservation Improvement Program Consolidated Filing**
MPUC Docket No. E015/M-15-80
DOC Docket No. E015/CIP-13-409.01

Dear Mr. Wolf and Deputy Commissioner Grant:

Attached please find via eFiling Minnesota Power's 2014 Conservation Improvement Program (CIP) Consolidated Filing. This submittal includes a CIP Tracker Activity Report, a Financial Incentives Report, a Proposed Conservation Program Adjustment Factor, 2014 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 2014 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 2014 Conservation Improvement Program Consolidated Filing	Reporting on CIP Tracker Account Activity, Financial Incentives Report, Proposed CPA Factors and 2014 Project Evaluations Docket No. E-015/M-15-80 E-015/CIP-13-409.01

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 2014 CIP Tracker Account activity, resulting in a year-end 2014 balance of ($1,116,332). Minnesota Power also requests approval to book financial incentives in the amount of $6,237,702. In addition, Minnesota Power requests approval of a revised Conservation Program Adjustment (CPA) factor of $0.002334/kWh, to be first implemented without proration on July 1, 2015. 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 "409.01" for the number and then click on "Search." The MPUC Docket Number is "15" for the year and "80" for the number. A paper copy of this filing is available upon request.

STATE OF MINNESOTA	)	AFFIDAVIT OF SERVICE VIA
	) ss	E-FILING AND
COUNTY OF ST. LOUIS	)	FIRST CLASS MAIL

Susan Romans, of the City of Duluth, County of St. Louis, State of Minnesota, says that on the 1st day of April, 2015, she e-filed Minnesota Power's Conservation Improvement Program Consolidated Filing in Docket No's E015/CIP-13-409.01 and E015/M-15-80 on the Minnesota Public Utilities Commission and the Minnesota Department of Commerce via electronic filing. The persons on the attached Service Lists were served the Summary of Filing.

Susan Romans

Susan Romans

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	Yes	OFF_SL_13-409_CIP-13-409
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 500 Saint Paul, MN 551012198	Electronic Service	No	OFF_SL_13-409_CIP-13-409
Tina	Koecher	tkoecher@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_13-409_CIP-13-409
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	Yes	OFF_SL_13-409_CIP-13-409
Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	Yes	OFF_SL_13-409_CIP-13-409

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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
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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
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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
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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
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
Jim	Horan	Jim@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
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
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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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
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
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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
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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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
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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
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	No	GEN_SL_Minnesota Power_MP's CIP Service List

Appendix B

DSManager Evaluation Computer Runs

Plan: CI - C&I Aggregation 2014 Status w/ MP Proj.

Summary Parameters Data discounted to 2014 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	3.84	8.45	0.43	1.61	2.40
Internal Rate of Ret. (%)	0.00	0.00	0.00	0.00	0.00
Level Benefits ($/kW)	2.60	1.13	1.13	1.12	1.21
Level Benefits ($/kWh)	0.00	0.00	0.00	0.00	0.00
Level Costs ($/kW)	0.68	0.13	2.60	0.70	0.50
Level Costs ($/kWh)	0.00	0.00	0.00	0.00	0.00
Net Benefits	40,645.10	21,022.53	(31,207.58)	9,127.44	21,019.15
Payback (in years)	0.00	0.00	0.00	0.00	0.00
Total Benefits	54,976.21	23,843.95	23,843.95	24,170.69	36,062.40
Total Costs	14,331.11	2,821.42	55,051.53	15,043.25	15,043.25

Plan: CI - C&I Aggregation 2014 Status w/ MP Proj.

Benefit Components Data discounted to 2014 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	52,866.93	0.00	0.00	0.00	0.00
Cust Non-electric Bill Decrease	0.00	0.00	0.00	0.00	0.00
Customer Rebates Received	2,109.29	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	266.15	266.15	269.41	332.42
PS Elec Prod Cost Decrease	0.00	19,121.17	19,121.17	19,368.99	24,218.14
External Environmental Benefit	0.00	0.00	0.00	0.00	5,495.47
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	4,161.55	4,161.55	4,233.60	5,647.82
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	295.07	295.07	298.68	368.54
TP Non-Elec Acq Cost Decrease	0.00	0.00	0.00	0.00	0.00
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: CI - C&I Aggregation 2014 Status w/ MP Proj.

Cost Components Data discounted to 2014 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	14,331.11	14,331.11
Cust Invest Inc - Gross of FR	14,331.11	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	52,230.11	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	712.13	712.13	712.13	712.13
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	2,109.29	2,109.29	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: LI - Energy Partners Aggregation-2014 Status

Summary Parameters Data discounted to 2014 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	4.90	0.80	0.26	1.49	1.97
Internal Rate of Ret. (%)	0.00	0.00	0.00	0.00	0.00
Level Benefits ($/kw)	0.08	0.02	0.02	0.04	0.03
Level Benefits ($/kwh)	0.00	0.00	0.00	0.00	0.00
Level Costs ($/kW)	0.02	0.03	0.08	0.02	0.02
Level Costs ($/kWh)	0.00	0.00	0.00	0.00	0.00
Net Benefits	1,861.47	(113.89)	(1,302.94)	254.53	508.22
Payback (in years)	0.00	0.00	0.00	0.00	0.00
Total Benefits	2,338.31	451.52	451.52	773.56	1,034.74
Total Costs	476.83	565.40	1,754.46	519.03	526.52

Plan: LI - Energy Partners Aggregation-2014 Status

Benefit Components Data discounted to 2014 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	1,437.60	0.00	0.00	0.00	0.00
Cust Non-electric Bill Decrease	45.97	0.00	0.00	0.00	0.00
Customer Rebates Received	493.85	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	289.98	360.88
Cust O&M & Oth Cst Dec - Grs of FR	360.88	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	6.28	6.28	6.34	7.55
PS Elec Prod Cost Decrease	0.00	351.12	351.12	354.68	422.30
External Environmental Benefit	0.00	0.00	0.00	0.00	89.03
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	87.15	87.15	88.51	114.71
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	6.96	6.96	7.03	8.37
TP Non-Elec Acq Cost Decrease	0.00	0.00	0.00	27.02	31.88
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: LI - Energy Partners Aggregation-2014 Status

Cost Components Data discounted to 2014 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	73.89	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	402.95	402.95
Cust Invest Inc - Gross of FR	402.95	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	1,189.06	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	72.28	72.28	72.28	72.28
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	493.13	493.13	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	43.81	51.30
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: RES - Residential Aggregation 2014 Status

Summary Parameters Data discounted to 2014 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	4.39	2.84	0.34	1.51	2.07
Internal Rate of Ret. (%)	0.00	0.00	0.00	0.00	0.00
Level Benefits ($/kW)	0.48	0.17	0.17	0.23	0.24
Level Benefits ($/kWh)	0.00	0.00	0.00	0.00	0.00
Level Costs ($/kW)	0.11	0.06	0.50	0.15	0.11
Level Costs ($/kWh)	0.00	0.00	0.00	0.00	0.00
Net Benefits	11,123.95	2,328.11	(6,951.30)	1,658.61	3,620.32
Payback (in years)	0.00	0.00	0.00	0.00	0.00
Total Benefits	14,407.58	3,593.69	3,593.69	4,938.92	7,019.17
Total Costs	3,283.63	1,265.59	10,545.00	3,280.31	3,398.85

Plan: RES - Residential Aggregation 2014 Status

Benefit Components Data discounted to 2014 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	11,965.67	0.00	0.00	0.00	0.00
Cust Non-electric Bill Decrease	20.40	0.00	0.00	0.00	0.00
Customer Rebates Received	832.51	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	1,281.57	1,589.01
Cust O&M & Oth Cst Dec - Grs of FR	1,589.01	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	53.37	53.37	54.09	68.42
PS Elec Prod Cost Decrease	0.00	2,723.85	2,723.85	2,759.75	3,481.37
External Environmental Benefit	0.00	0.00	0.00	0.00	717.70
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	763.27	763.27	777.99	1,079.88
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	53.20	53.20	53.94	68.82
TP Non-Elec Acq Cost Decrease	0.00	0.00	0.00	11.59	13.98
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: RES - Residential Aggregation 2014 Status

Cost Components Data discounted to 2014 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	1,000.39	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	2,283.24	2,283.24
Cust Invest Inc - Gross of FR	2,283.24	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	9,279.41	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	425.28	425.28	425.28	425.28
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	7.80	7.80	7.80	7.80
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	832.51	832.51	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	563.99	682.53
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 Dir. Impact 2014 Status w/MP Proj

Summary Parameters Data discounted to 2014 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	3.96	5.99	0.41	1.59	2.33
Internal Rate of Ret. (%)	0.00	0.00	0.00	0.00	0.00
Level Benefits ($/kW)	3.39	1.32	1.32	1.39	1.48
Level Benefits ($/kWh)	0.00	0.00	0.00	0.00	0.00
Level Costs ($/kW)	0.86	0.22	3.19	0.88	0.64
Level Costs ($/kWh)	0.00	0.00	0.00	0.00	0.00
Net Benefits	53,630.53	23,236.75	(39,461.83)	11,040.58	25,147.69
Payback (in years)	0.00	0.00	0.00	0.00	0.00
Total Benefits	71,722.10	27,889.16	27,889.16	29,883.18	44,116.31
Total Costs	18,091.57	4,652.41	67,350.99	18,842.59	18,968.62

Plan: TOT-DIR - Total Dir. Impact 2014 Status w/MP Proj

Benefit Components Data discounted to 2014 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	66,270.20	0.00	0.00	0.00	0.00
Cust Non-electric Bill Decrease	66.37	0.00	0.00	0.00	0.00
Customer Rebates Received	3,435.64	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	1,571.55	1,949.89
Cust O&M & Oth Cst Dec - Grs of FR	1,949.89	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	325.81	325.81	329.84	408.39
PS Elec Prod Cost Decrease	0.00	22,196.14	22,196.14	22,483.43	28,121.81
External Environmental Benefit	0.00	0.00	0.00	0.00	6,302.20
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	5,011.97	5,011.97	5,100.10	6,842.42
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	355.24	355.24	359.65	445.73
TP Non-Elec Acq Cost Decrease	0.00	0.00	0.00	38.60	45.85
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: TOT-DIR - Total Dir. Impact 2014 Status w/MP Proj

Cost Components Data discounted to 2014 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	1,074.27	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	17,017.30	17,017.30
Cust Invest Inc - Gross of FR	17,017.30	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	62,698.58	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	1,209.69	1,209.69	1,209.69	1,209.69
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	7.80	7.80	7.80	7.80
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	3,434.92	3,434.92	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	607.80	733.83
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 2014 w/MP Pro

Summary Parameters Data discounted to 2014 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	3.97	4.08	0.40	1.43	2.10
Internal Rate of Ret. (%)	0.00	0.00	0.00	0.00	0.00
Level Benefits ($/kW)	3.40	1.32	1.32	1.39	1.48
Level Benefits ($/kWh)	0.00	0.00	0.00	0.00	0.00
Level Costs ($/kW)	0.86	0.32	3.29	0.97	0.70
Level Costs ($/kWh)	0.00	0.00	0.00	0.00	0.00
Net Benefits	53,778.21	21,056.37	(41,642.20)	9,007.89	23,114.99
Payback (in years)	0.00	0.00	0.00	0.00	0.00
Total Benefits	71,869.79	27,889.16	27,889.16	29,883.18	44,116.31
Total Costs	18,091.57	6,832.79	69,531.36	20,875.28	21,001.31

Plan: TOT-NIMP - Total with Nonimpact Costs 2014 w/MP Pro

Benefit Components Data discounted to 2014 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	66,270.20	0.00	0.00	0.00	0.00
Cust Non-electric Bill Decrease	66.37	0.00	0.00	0.00	0.00
Customer Rebates Received	3,583.33	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	1,571.55	1,949.89
Cust O&M & Oth Cst Dec - Grs of FR	1,949.89	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	325.81	325.81	329.84	408.39
PS Elec Prod Cost Decrease	0.00	22,196.14	22,196.14	22,483.43	28,121.81
External Environmental Benefit	0.00	0.00	0.00	0.00	6,302.20
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	5,011.97	5,011.97	5,100.10	6,842.42
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	355.24	355.24	359.65	445.73
TP Non-Elec Acq Cost Decrease	0.00	0.00	0.00	38.60	45.85
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: TOT-NIMP - Total with Nonimpact Costs 2014 w/MP Pro

Cost Components Data discounted to 2014 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	1,074.27	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	17,017.30	17,017.30
Cust Invest Inc - Gross of FR	17,017.30	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	62,698.58	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	3,242.38	3,242.38	3,242.38	3,242.38
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	7.80	7.80	7.80	7.80
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	3,582.60	3,582.60	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	607.80	733.83
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

2014 Solar Electric

Residential or Commercial

R or C	Location	kW	On-line date	CIP Incentive
C	Duluth	9.84	4/1/2014	$19,680.00
C	Duluth	8	8/28/2014	$12,000.00
R	Silver Bay	8	10/31/2014	$12,000.00
R	Upsala	13.2	9/29/2014	$19,800.00
R	Little Falls	15.01	6/26/2014	$20,000.00
R	Ely	7	10/20/2014	$10,500.00
R	Esko	13.5	10/27/2014	$20,000.00
R	Duluth	12.75	7/9/2014	$19,125.00
R	Ironton	9.72	7/2/2014	$14,580.00
	Total	97.02		$147,685.00
	Average	10.78		

There were no solar thermal or wind installations in 2014.

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

Appendix D

ENERGY STAR® Products, HVAC and Home Energy Analysis with Building Diagnostics Year-end Summary Report

minnesota power
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power of one
a conservation program

WECC

2014 ENERGY STAR® Products, HVAC, and Home Energy Analysis with Building Diagnostics Year-end Summary Report

Prepared for April 1, 2015 CIP Consolidated Filing

JOINTLY PREPARED BY:

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431 CHARMANY DRIVE | MADISON, WI 53719

Executive Summary

Key Successes for 2014 Minnesota Power residential conservation program:

- Overall, the portfolio achieved 115 percent (8,914,649 kWh) of Minnesota Power's filed goal (7,718,919 kWh).
- The lighting program exceeded filed unit goal (79,060 units) by 53 percent (120,871 units).
- The programs have a broad retailer and channel mix that includes mass merchants, home improvement, warehouse club, independent hardware, and specialty stores supporting programming.
- Minnesota Power and WECC developed and distributed regular communications to engage and educate trade allies in program offers, rebate submittal requirements, and special promotions.

This report summarizes results in kWh savings at the meter for the following Power of One® program components: ENERGY STAR® Products program, HVAC Rebate program, and the Home Energy Analysis (HEA) with Building Diagnostics Rebate program.

ENERGY STAR® Products Program

Overview and Objectives

The Minnesota Power ENERGY STAR® Products program works closely with market players such as manufacturers, distributors, and retailers to promote ENERGY STAR® qualified products to consumers throughout the service territory. The goals of the program are to:

- Increase consumer demand for ENERGY STAR® qualified products.
- Establish the value of ENERGY STAR® qualified products among consumers.
- Achieve energy-savings goals.
- Engage retailers and manufacturers in actively promoting ENERGY STAR® qualified products.
- Increase the availability and selection of qualified products.

This program offers rebates on ENERGY STAR® qualified clothes washers, refrigerators, dehumidifiers, compact fluorescent bulbs (CFLs), torchieres, LED bulbs and LED holiday lighting. Partnerships with retailers have established a strong retail presence for ENERGY STAR® qualified products in Minnesota Power's service territory. The program utilizes channel marketing, cooperative promotions and regional coordination through retailer incentives, retailer training and support, and consumer education as part of the delivery strategy.

Marketing and Outreach

ENERGY STAR® Products Campaign

Retailer and consumer participation is strong in the ENERGY STAR® Products program. The program served Minnesota Power customers during 2014 by supporting retail partner product education and product sales efforts, as well as by utilizing mass media and public relations to generate overall awareness of ENERGY STAR® qualified products and the ENERGY STAR® label. In addition, the program was successful in targeting customers through direct mail—the *Energizer* newsletter, Building Up (trade ally newsletter), "Welcome Wagon" packet to new customers, monthly bill inserts, and at events such as the Arrowhead Home & Builder Show and Energy Design Conference & Expo. Personalized and targeted email messaging was also used to reach out to the Power of One® Energy Team and Market of One Choice portal participants based on their Your Home Energy Report (YHER) survey results. Display ads and social media were used to reach customers as well.

Point-of-Purchase

Point-of-purchase (POP) materials continued to be an important component of the 2014 program and helped maintain the ENERGY STAR® message at retail stores. The materials were designed to draw the consumer's eye to ENERGY STAR® qualified products displayed on the sales floor. All the POP materials prominently featured the ENERGY STAR® logo along with specific messages about Minnesota Power incentives.

Specific materials included:

- Shelf shouters attached to the sides of end caps or other displays
- Price-point signs displaying cost after instant rebate
- Shelf stickers to help customers locate qualified product on shelf or display

Local Lighting Retailer Program

In 2014, Minnesota Power continued its initiative aimed at engaging local retailers by offering participants marketing and educational materials for customers, cooperative advertising, visibility on Minnesota Power's website and Facebook pages, and special promotions.

Web-Based and Direct Response

The Power of One® website was used extensively to provide product and energy-efficiency education, easy access to rebates, a list of participating retailers, and to support special promotions via retailers and manufacturers. It also provided a process called "Demonstrating the Power of One®" to help customers climb the Pyramid of Conservation to reach their energy-saving goals. This includes the development of an action plan customized for the visitor based on behavioral change as well as investments in asset improvements such as lighting and appliances. In addition, Minnesota Power used cross-product marketing, via rebate checks and energy-efficiency kits, to encourage customers to take the next step to managing energy and costs in their home.

Promotions

LED and CFL Markdown Promotions

Minnesota Power, in partnership with Ace Hardware, Dollar Tree, United Hardware, Walgreens, Home Depot, Walmart, Sam's Club, Menards, and Batteries Plus Bulbs, featured a markdown on ENERGY STAR® qualified CFLs and LEDs. These promotions were designed to increase consumer awareness regarding the benefits of replacing inefficient incandescent light bulbs with ENERGY STAR® qualified replacement bulbs and fixtures.

Mail-in CFL and LED Program

Minnesota Power continued to support incentives for ENERGY STAR® qualified lighting products in 2014 with mail-in rebates. Rebate forms were available to customers in stores and were made available on the Minnesota Power website. In 2014, claims for 2,915 CFLs, LED bulbs and LED fixtures through the mail-in program were received.

LED Holiday Light Promotion

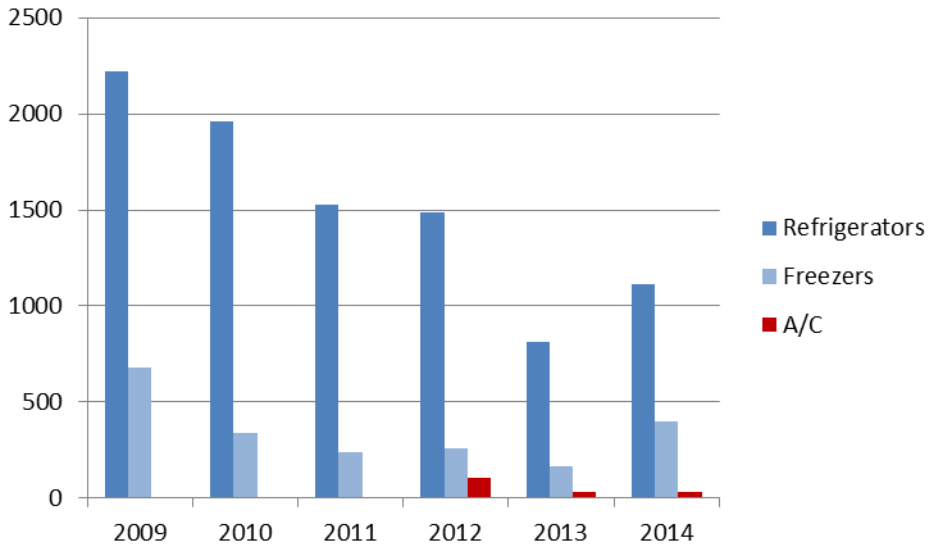
Minnesota Power continued to promote LED holiday lighting through local retailers. The promotions ran at participating Menards and select Ace Hardware stores from October 1 through December 31, 2014, and featured a $2 instant rebate on ENERGY STAR® qualified LED holiday lights. The promotion was successful with 2,940 sets of lights purchased by Minnesota Power customers with associated energy savings of 64,680 kWh.

Refrigerator/Freezer Roundup

In 2014, Minnesota Power continued to build on the success of The Great Refrigerator/Freezer Roundup, which ran from January 1 to December 31, 2014. Minnesota Power encouraged customers to properly recycle inefficient refrigerators and freezers through a scheduled home pickup. Customers received a $50 rebate for the first unit turned in and $35 for a second unit (if applicable). Eligible units for the Roundup were required to be plugged in at the time of pick-up and in working condition. If the requirement was met, the power cord was cut, ensuring the unit would not be used again or re-sold. Customers were also encouraged to recycle inefficient room air conditioners in working condition in conjunction with a scheduled pickup of a refrigerator or freezer. The Refrigerator/Freezer Roundup is designed to take second refrigerators off the market. Overall, the program was successful with the turn in of 781 refrigerators, 389 freezers, and 35 window air conditioners by Minnesota Power customers. From January 1 to March 31, 2014, Minnesota Power

promoted the Refrigerator/Freezer Roundup with an “oldest freezer” contest. During that time, every freezer turned in received an additional $50 reward (for a total of $100) and this promotion resulted in the turn in of 269 freezers.

Refrigerator/Freezer Roundup
2009–2014



Refrigerator Rebate

In 2014, Minnesota Power offered its customers a $25 rebate on ENERGY STAR® qualified refrigerators from January 1 through December 31. The total number of refrigerators receiving a $25 rebate was 721, with a total energy savings of 100,219 kWh.

Clothes Washer Rebate

In an effort to heighten consumer awareness and encourage the purchase of ENERGY STAR® qualified clothes washers, Minnesota Power offered its customers a $40 rebate on qualifying clothes washers from January 1 through December 31, 2014. The total number of clothes washers receiving a $40 rebate was 881, with a total energy savings of 121,578 kWh.

Dehumidifier Rebate

In 2014, Minnesota Power offered a $10 rebate on ENERGY STAR® qualified dehumidifiers from January 1 through December 31. The number of rebates was 603 with a total energy savings of 262,908 kWh.

Program Results

The lighting program achieved 153 percent of the unit goal in 2014. The lighting program exceeded goal for CFLs, LED holiday lights, and LED replacement lamps and fixtures. The appliance program achieved 87 percent of the unit goal in 2014. Refrigerators realized 72 percent of the annual unit goal while clothes washers realized 68 percent and dehumidifiers achieved 80 percent.

Future Program Year Considerations

The future state of Minnesota Power's ENERGY STAR® Products program remains bright. The program is committed to continue the momentum of the current Power of One® Home program by further establishing the ENERGY STAR® logo as the mark of high quality energy-efficient products, which increases brand awareness for Minnesota Power customers. Continuing to grow the channel-based delivery mechanism will be critical to the success of future programs for Minnesota Power. Minnesota Power firmly believes that lighting and appliance programs need to build a market through key drivers including people, products, and processes.

HVAC and Water Heating Rebate Program

Overview and Objectives

In 2014, Minnesota Power's HVAC and Water Heater Rebate program provided information and incentives to encourage the purchase and installation of high efficiency heating, cooling and water heating equipment. The heating and cooling channel requires trade ally enrollment and training, provides program informational materials to distributors and participating contractors, and offers rebates to Minnesota Power residential customers for the purchase of efficient heating and cooling equipment. The Water Heating Rebate program provides energy-saving kits and rebates to Minnesota Power customers who purchase eligible equipment through retail outlets or participating contractors.

Key program design objectives include:

- Increase consumer and trade ally awareness of high efficiency heating and cooling equipment through an active trade ally network, program-related trade ally communications and effective equipment requirements that drive quality and energy-efficient installations.
- Influence customer decision making by offering financial incentives for the purchase and installation of qualified, high efficiency heating, cooling and water heating equipment.
- Reduce electrical consumption for space heating and cooling through the purchase and installation of high efficiency heating and cooling equipment.
- Reduce electrical consumption utilized in water heating through the purchase of high efficiency water heating equipment and water-saving devices.
- Achieve savings goals that result from the purchase of qualified high efficiency heating, cooling and water heating equipment.

Marketing and Outreach

Minnesota Power delivered targeted marketing to residential electric customers and HVAC trade allies to increase installations of high efficiency heating, cooling and water heating equipment.

Minnesota Power Customer Marketing

As part of the Power of One® program, Minnesota Power delivered messaging on energy efficiency specific to HVAC and water heating systems to its residential customers. Customer outreach is conducted through a variety of tactics including, but not limited to, the following:

- Bill Inserts
- Online through Minnesota Power's website
- Print media
- Social media
- Educational literature
- Community events

Trade Ally Communications and Direct Outreach

Minnesota Power and WECC developed and distributed regular communications to engage and educate trade allies in program offers, rebate submittal requirements, and special promotions. Trade allies are integral to the successful delivery of prescriptive energy-efficiency programs and are the primary means for reaching residential end-users. Coupling a strong participating contractor network with targeted utility messaging led to successful program delivery. Contractors are often the customers' first and only point of contact and a trusted resource for information on high

efficiency equipment and when making energy-related decisions. Minnesota Power has a long-standing history of building and maintaining effective and respected relationships with trade allies and utilizing these relationships to drive energy-savings goal achievement. The program provided electronic communications including Minnesota Power program information and notices to allies when WECC received an incomplete application. Overall, these communication efforts were used to:

- Keep contractors informed of Minnesota Power marketing campaigns.
- Demonstrate how to utilize the efficiency program as a sales tool.
- Educate allies about the residential prescriptive program.
- Inform partners of changes in qualified equipment.
- Invite allies to upcoming training events and workshops.
- Inform allies of special promotions and provide them with access to all necessary materials/paperwork.

Trade Ally Tools

It is imperative to provide trade allies with the resources they need to help promote and deliver energy-saving programs. Minnesota Power and WECC provided program- and technology-related tools and materials that trade allies used to promote efficiency programs to their customers, including:

- Measure overviews
- Incentive applications
- Promotional rebate offers
- Qualified equipment lists
- Product and program materials
- Online energy calculators
- 800 hotline for questions and requests

Trade Ally Enrollment and Training

Training is required to enroll in the Minnesota Power HVAC program. The program relies on distributors and manufacturers to deliver technology-specific training. Measure-specific training for participating contractors was developed for delivery during the 2014 Energy Design Conference & Expo. Minnesota Power and WECC worked with trainers to develop a curriculum specific to participating contractors. The program offered three training sessions: Air Source Heat Pumps and Standard Central Air — Quality Installation; ECM Replacement Installation; and Ground Source Heat Pumps Design, Installation, and Sales. The program provided in-person classroom style trainings for contractors in addition to providing the same training content online for those unable to attend the in-person training. The program tracked training requirements for each contractor and assisted Minnesota Power in maintaining its online contractor lists for the respective HVAC technologies.

Rebate Check Stuffers

WECC drives additional savings by delivering Minnesota Power-created cross-promotional materials to HVAC and retail program participants with every rebate check delivered.

Customer Surveys

In 2014, Minnesota Power conducted surveys for all customers who participated in the HVAC rebate program to better understand their overall satisfaction with the program and to gather feedback about the service received from their contractor. Surveys were delivered with every rebate check and results were reported quarterly to program staff and annually to program contractors. Participants were questioned about their satisfaction with the contractor's knowledge of products and in finding the right product for them, the installation process, customer service,

professionalism, and best practices for operating and maintaining the equipment installed. The customers received these surveys along with their rebate checks, with results compiled on a quarterly basis to ensure customer satisfaction with the program.

HVAC Survey Results
In 2014, the overall customer experience reported an average of 4.8 out of 5, with five points indicating very satisfied. Detailed charts can be found on page 12. Since surveys were returned with predominantly positive feedback, WECC made a point to address any negative customer feedback by following up with the customer directly. The program will continue to utilize this effective feedback mechanism in 2015 to further ensure program quality.

Promotions

In an effort to take advantage of the seasonal impacts that affect the program, Minnesota Power implemented increased consumer incentives in order to further influence customer purchasing decisions and increase the number of eligible HVAC system and water heater installations.

Water Heater
The program provided customers an extra $50 for installing an eligible electric water heater from April 1 through August 31, 2014. This bonus had an impact on decisions to upgrade to a 0.95 Energy Factor water heater, with 50 rebates paid for the measure in 2014 that included the bonus amount. A total of 60 water heater rebates were provided throughout the course of the program year.

Ground Source Heat Pump Incentive Package
In an effort to promote Ground Source Heat Pumps (GSHP) and to push the technology, Minnesota Power increased the bonus for GSHPs in Triple E New Construction from $100 to $200 per ton. The combination of a Triple E home with a GSHP delivers the comfort, reliability and energy savings to get the most for a customer's energy dollar. A total of 31 GSHP rebate bonuses were paid in conjunction with Triple E New Construction in 2014.

Program Results

The HVAC program achieved 82 percent of its 2014 filed kWh goal, achieving 2,138,417 kWh of energy savings. The program met and exceeded goals for ECM Furnace and ENERGY STAR® Air Source Heat Pump (ASHP) measures. GSHP installations also played an important role in the program's success, reporting 31 GSHP measures in 2014 and achieving 790,283 kWh in savings. New this year to the program were electric water heaters with an Energy Factor of .95 or greater. The program saw results of 86 percent of the unit goal.

The program was successful in reinforcing the requirements of high quality and high performance installations through its infrastructure of contractors, distributors, and plumbers that will continue to drive activities in future program years.

The program achieved 37 percent of its heating and cooling savings through GSHPs, and approximately 20 percent of the savings were delivered through ASHP technology. These numbers indicate a shift in the marketplace, with emerging technologies such as ASHPs and GSHPs taking a foothold. The program relied less upon traditional measures of ECM Furnace and Central A/C replacements than in previous program years.

Trade Ally training and participation requirements impacted program participation in 2014. Minnesota Power places training and certification requirements on HVAC contractors in order for them to remain active in the program. Participating contractors were required to attend trainings in order to continue to submit rebate applications for certain measures including Central Air Conditioning (CAC), Air Source Heat Pumps (ASHPs), Electrically Commutated Motor (ECM) replacements and Ground Source Heat Pumps (GSHP). Contractors that did not complete the training requirements were no longer listed as eligible to install the associated technology measure. Also, the program required data collection requirements for cooling measures to improve performance.

Additionally, International Ground Source Heat Pump Association (IGSPHA) accreditation continues to be required of all contractors submitting rebates for GSHP installs. The program requirement ensures high quality installations for Minnesota Power customers.

While 2014 program changes were met with resistance from some contractors and led to a decrease in the number of participating contractors, these changes had a minimal negative impact on participation metrics and will have an overall long-term positive impact on the program in terms of the quality of installations and the impact on energy savings.

Future Program Year Considerations

The Minnesota Power HVAC and Water Heating Rebate program will continue to leverage an engaged and reliable trade ally network to effectively implement savings for the heating, cooling, and water heating programs. WECC will continue enforcement of the existing participation requirements, implementation of electronic trade ally communications and a strategic communications plan to maintain contractor participation in 2015. The program will continue to offer the same rebate levels for eligible equipment and a continued emphasis will be made to promote technologies in the marketplace such as GSHPs and ASHPs to both utility customers and participating contractors in 2015.

Home Energy Analysis (HEA) with Building Diagnostics Rebate Program

Overview and Objectives

This program encourages reduction in electrical usage by delivering rebates for utility customers participating in an assessment of a home's energy usage. Home Energy Analysis with Building Diagnostics (HEA w/BD) is a fee-for-service program. Adding building diagnostics takes a traditional HEA to the next level by including blower door testing and infrared thermal scans to identify air leaks and reduced insulation levels in a customer's home. Key program design objectives include:

- Raise awareness of energy-saving measures and devices.
- Influence residential customer energy usage behaviors.
- Provide a rebate to offset the cost of obtaining a Home Energy Analysis with Building Diagnostics from a participating contractor.
- Achieve the kWh savings goals from program participation.

Marketing and Outreach

Minnesota Power markets the HEA w/BD program through its messaging to residential utility customers. In partnership with Minnesota Power, WECC promotes the HEA w/BD program by providing an informational piece to participants with the delivery of an appliance, lighting, or HVAC program rebate check. This effort encourages those program participants to seek additional energy savings through the HEA w/BD program, as residential customers who have already participated in other rebate programs are ideal candidates for participating in this program. WECC also utilizes program satisfaction surveys to help gauge the usefulness of the HEA w/BD, the knowledge and responsiveness of participating auditors and the ease with which program fulfillment is delivered.

Customer Surveys

An HEA w/BD survey was distributed in 2014 to provide a baseline of satisfaction. The survey evaluated customer satisfaction with HEA w/BD, customer service of the auditors, auditor knowledge, and satisfaction with installed items. The survey also allowed the opportunity to provide customers with additional follow-up information on the program and other rebates. The customers received these surveys along with their rebate checks. These results are compiled on a quarterly basis to maintain consistent monitoring of customer satisfaction.

HEA Survey Results

In 2014, customers participating in HEA w/BD were asked to fill out a survey with questions about the value of a home energy analysis, products installed, which products were most valued, which products were removed, auditor knowledge about HEA w/BD, and their overall customer service experience. The average result was 4.8 out of 5 points, with 5 points being very satisfied. The survey also revealed that all or most customers were given energy information and a detailed energy plan. Detailed charts are found on page 13.

Program Results

Direct installs as part of the HEA w/BD program achieved 121 percent of its participation goal and 101 percent of the filed 2014 kWh goal. The program reported 5,131 measures saving 384,485 kWh, with participants providing high marks on the program delivery.

Future Program Year Considerations

WECC delivers the fulfillment and survey implementation for this program on Minnesota Power's behalf. Direct install measures per customer are updated monthly for tracking via the Power of One® Portal. Minnesota Power works with customers to ensure each one fills out a Your Home Energy Report (YHER) before the energy analysis. The results are presented to the auditor before the in-home visit. Both the customer and auditor have found the results of the YHER valuable in customizing the analysis and providing recommendations to meet their needs. It also reinforces the use of a customized action plan and message board on the portal to designate accomplishments and provide informed choices for future energy-saving measures. This is expected to continue in 2015 as it enables Minnesota Power to track the affinity relationships between participating in an energy analysis and participation in other CIP projects.

Conclusion

In 2014, the following was observed:

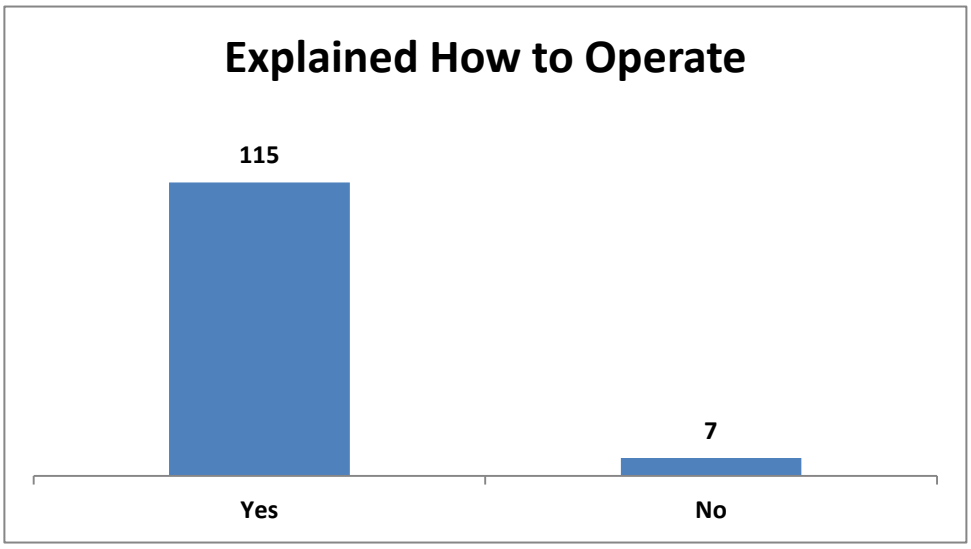
- The market for ENERGY STAR® qualified products is expanding and the availability and selection of qualified products is increasing, while prices for these products are dropping.
- There is increased interest and participation from trained HVAC contractors and plumbers.
- There is increased consumer awareness of HVAC programs and their benefits.
- There are more opportunities for consumers to learn about the benefits of ENERGY STAR® labeled products.

For calendar year 2014, the Minnesota Power-sponsored ENERGY STAR® qualified products, HVAC and HEA programs have resulted in savings of 8,914,649 kWh which is the equivalent of:

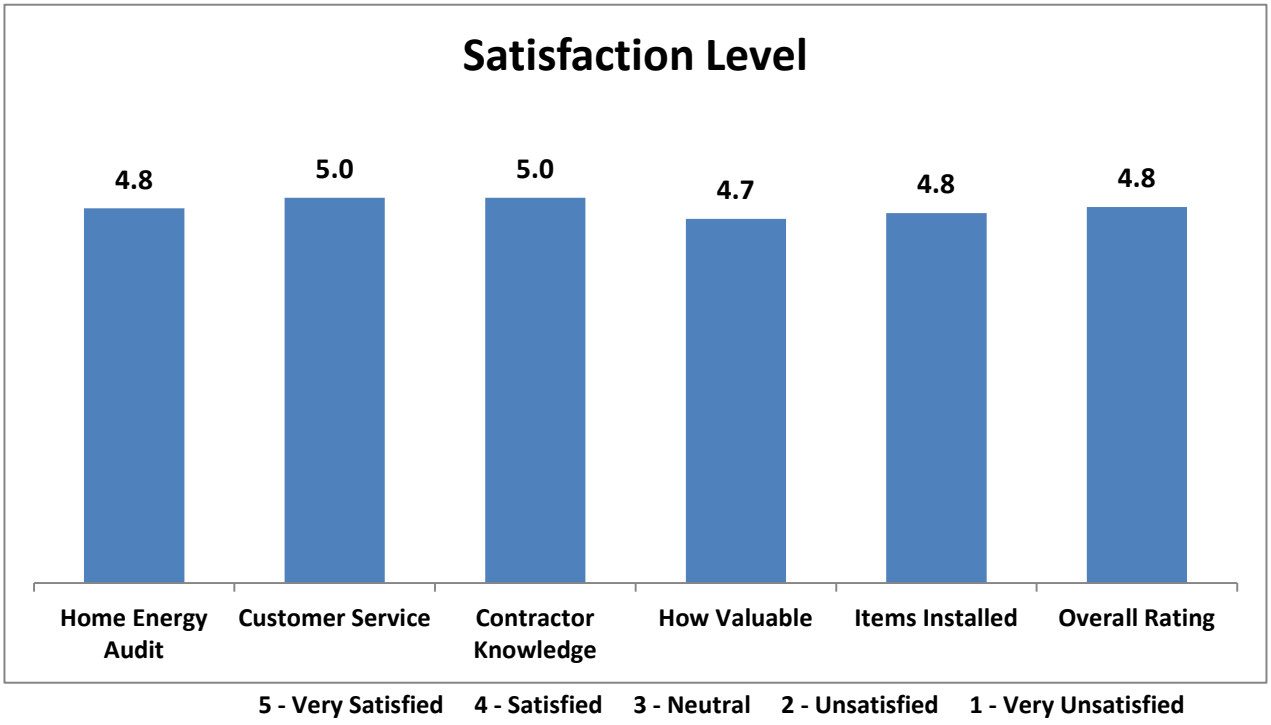
- Saving 9,499 metric tons of CO_2
- Taking 1,900 cars off the road
- Powering 984 homes

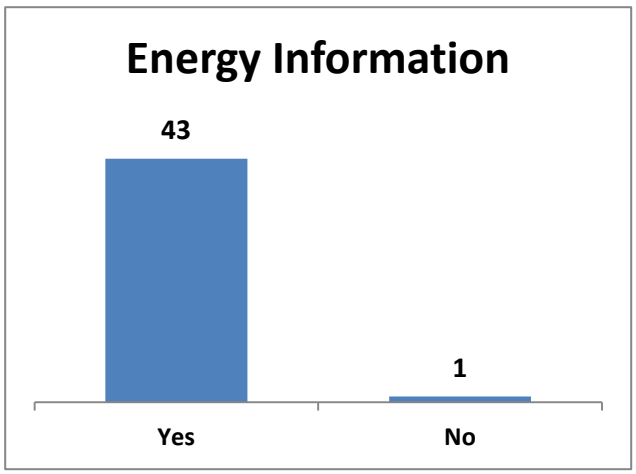
Minnesota Power
HVAC Survey Results
2014

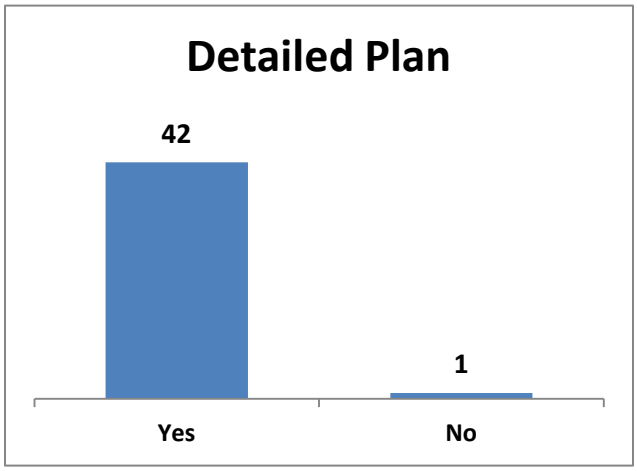
5 - Very Satisfied 4 - Satisfied 3 - Neutral 2 - Unsatisfied 1 - Very Unsatisfied



Minnesota Power
HEA Survey Results
2014







(Only 43 total answers were given for this question.)

Appendix E

List of Demonstrations, Training,
Seminars and Presentations

2014 Demonstrations, Training, Conferences and Presentations

Description of Training	Category	Date	Location
Midwest Energy Solutions Conference - MEEA	Conference	January	Chicago
Advanced RTU Control Strategies	Training	January	Madison
ECW - Building Blocks for Better Building Design	Webinar	January	Online
Energy Efficiency Tracking Solutions	Webinar	January	Online
CLS - Lighting Tool - Overview and Technical Implementation	Webinar	January	Online
Dynamic Ventilation Reset Strategies	Webinar	January	Online
E Source Technology Update	Webinar	January	Cloquet
Deep Energy Retrofits: A Holistic Approach to Greater Savings	Webinar	January	Online
Northern Area Safety Conference	Conference	January	Duluth
City of Duluth Housing Summit	Training	February	Duluth
Cyber Crime Seminar	Seminar	February	Wayzata
Creating Opportunities with Digital Lighting Systems	Training	February	Eden Prairie
Energy Efficient Rooftop Units	Webinar	February	Online
Power Factor Tutorial	Webinar	February	Online
Getting to Zero: Status Update	Webinar	February	Online
ECW - New Construction Best Energy Practices	Webinar	February	Online
Solid State Lighting: Lessons Learned	Webinar	February	Online
Energy Design Conference	Conference/Training	February	Duluth
ECW - Better Business Conference	Conference	March	Wisconsin Dells
Leviton Sub Metering Offering	Training	March	Chanhassen
ESP Training Sessions	Webinar	March	Online
Technical Resource Manual Training	Training	March	St. Paul
ESP Advanced Operations	Training	March	St. Paul
CEA Training	Webinar	March	Online
Net Zero Webinar - Walgreen's Example	Webinar	March	Online
Compressed Air Training	Training	March	Duluth
Behavior - ACEE	Webinar	April	Online
ENERGY STAR® Benchmarking	Webinar	April	Online
Iron Range Earth Fest	Event	April	Eveleth

2014 Demonstrations, Training, Conferences and Presentations

Description of Training	Category	Date	Location
Lake Superior College Earth Day Celebration	Event	April	Duluth
UMD Spring Sustainability Fair	Event	April	Duluth
Arrowhead Home and Builders Show	Event	April	Duluth
Updates on Reporting ESP for Munis, Coops	Webinar	April	Online
FOE - Getting to Yes	Conference	April	Superior
SEPA Solar Conference	Conference	April	Newport Beach
Noesis Energy	Webinar	May	Online
Energy Efficient Motors & Drives Update	Webinar	May	Online
BOC Certification	Training	May	Cloquet
ESP Training Sessions	Training	May	St. Paul
ECW - Motors	Webinar	May	Online
Rockwell Automation	Training	May	Chanhassen
Solar Power Pack	Training	May	Hibbing
Energy Efficient Tech Conference	Conference	May	Minneapolis
IceCOLD Product Review	Training	May	Conference Call
Cost Effective Energy Improvements for Small/Medium Industrial Facilities	Webinar	June	Online
Light Fair	Conference	June	Las Vegas
Renewable Energy Teacher Workshop	Training	June	Duluth
Power Quality	Conference	June	Rochester
Tower Tech Webinar - Energy Efficient Cooling Towers	Webinar	June	Online
PoolPak Indoor Pool Dehumidification Systems	Webinar	July	Online
FOE - Comm/Ind. Lighting Workshop	Conference	July	Eau Claire
Energy Efficiency in Small to Medium Wastewater Treatment Facilities	Webinar	July	Plymouth
Phillips/Lutron	Training	July	Duluth
Operating an Energy Efficient Restaurant w/Effective Restroom Design	Webinar	August	Online
EEBA Excellence in Building Conference	Conference	September	St. Louis
Designing and Maintaining an Energy Manager Position	Webinar	September	Online
TEC Sterling Xcelon MUA	Webinar	September	Online
Energy Cost Reduction Using Six Sigma, Kaizen, etc.	Webinar	September	Online

2014 Demonstrations, Training, Conferences and Presentations

Description of Training	Category	Date	Location
Energy Policy Meeting	Training	September	St. Paul
Lake Superior Harvest Festival	Event	September	Duluth
AESP Fall Regional Meeting	Conference	September	Plymouth
Best Practices for Lighting Audit	Webinar	September	Online
USGBC Energy Conference	Conference	October	Duluth
TCP Lighting	Webinar	October	Online
Senior Expo	Event	October	Duluth
Energy Awareness Expo	Event	October	Duluth
Advanced Approaches to Improve RTU Performance	Training	October	Duluth
Accelerated Innovations (MyMeter)	Training	October	Duluth
UMD Fall Sustainability Fair	Event	November	Duluth
Cut Costs and Improve Facility Operation with Energy Data	Webinar	November	Online
Gas 101 Training	Training	November	Conference Call
Understanding, Making and Using Energy Metrics	Webinar	November	Webinar
Energy Code Training	Training	November	St. Paul
LED Highbay Coming of Age	Webinar	November	St. Paul
Training on Steam Traps	Training	November	Chanhassen
Energy Efficiency Appliance Standards	Webinar	November	Online
Better Buildings, Better Plants - 3	Webinar	November	Online
ISO 50001	Webinar	November	Online
Visual 2012 Lighting Software	Training	December	Chanhassen
AESP Regional Meeting	Conference	December	Plymouth
Portfolio Manager 101 & 201	Webinar	December	Online
Utility SEM Programs	Webinar	December	Online
Building Automation Controls	Webinar	December	Online
Honeywell Automation Controls	Training	December	Chanhassen
Ultrasonic Probe Demonstration	Training	December	Duluth