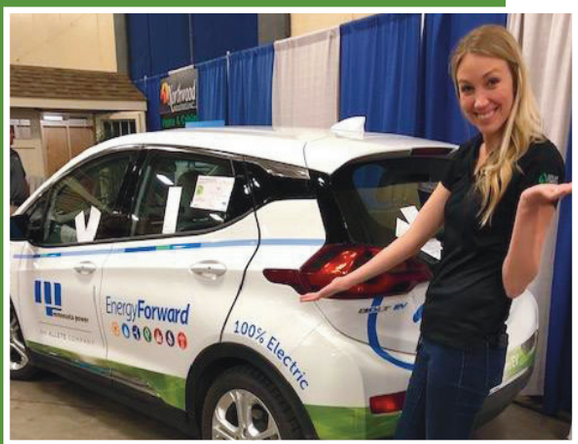
minnesota power
AN ALLETE COMPANY

2019 Consolidated Filing
Conservation Improvement Program



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

May 1, 2020

Docket No. E-015/M-20-428 E-015/CIP-16-117.03

Summary

Minnesota Power
2019 Conservation Improvement Program ("CIP") Consolidated Filing

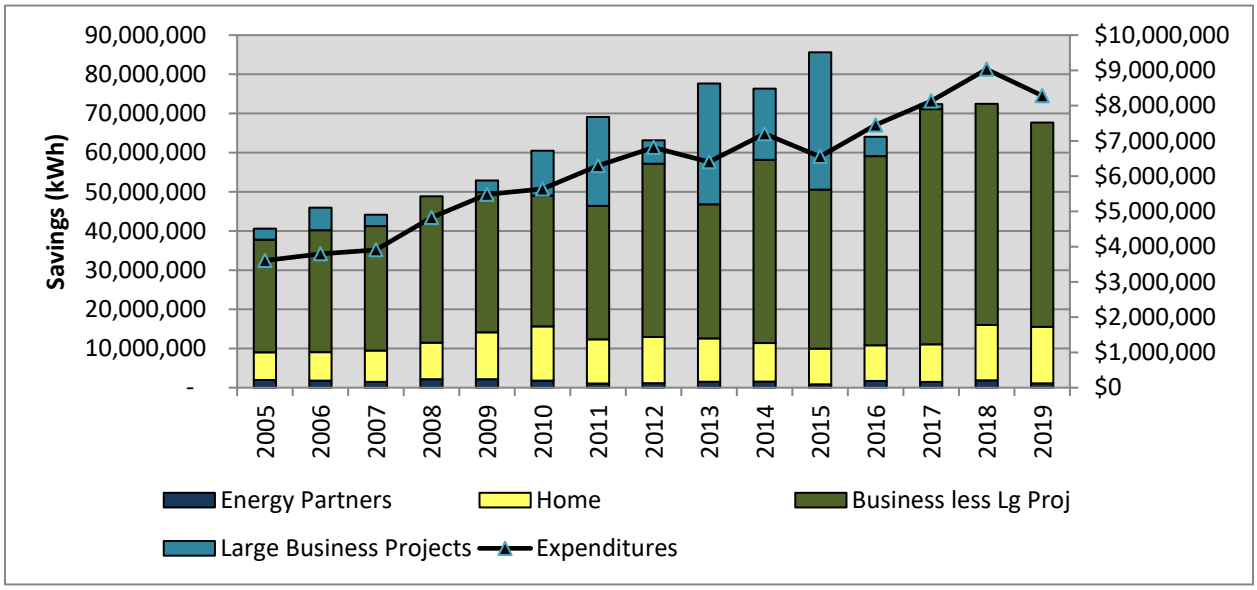
EXECUTIVE SUMMARY

Minnesota Power (or, "the Company") is pleased to report its 2019 energy conservation program results:

- Minnesota Power achieved energy savings of **2.5%** of retail energy sales,[1] well above the state's 1.5% energy-savings goal established in Minn. Stat. § 216B.241.
- The Company achieved energy savings totaling **67,669,222 kWh**, which is 118**%** of the approved energy-savings goal for the year. The Company also achieved demand savings of **8,338 kW**, which is **92%** of the approved demand-savings goal. The proposed energy-savings target for 2019 was well above the state 1.5% energy-savings goal for CIP, aligning with the preferred plan in Minnesota Power's 2015 Integrated Resource Plan.[2]
- Expenditures totaled **$8,280,773**, which was **79%** of the approved program budget for 2019.

This is the tenth year in a row that Minnesota Power has met or exceeded Minnesota's 1.5% energy savings goal since 2010, when the goal went into effect. The figure below illustrates historical and recent kWh energy-savings achievements, along with CIP expenditures. As noted in the chart below, large customer projects (one million kWh or greater) have become a much smaller portion of Minnesota Power's overall CIP energy savings, and in 2018 and 2019 there were no such projects.

Minnesota Power's 2005–2019 CIP Achievements



[1] In accordance with Minnesota Rules part 7690.1200, 2013–2015, weather-normalized average retail energy sales were used to calculate the electric savings goal for Minnesota Power's 2017–2019 Triennial CIP. This equated to 2,939,363,960 kWh, net of CIP exempt customers at the time of the Triennial Filing. Minnesota Power had one newly exempt customer in 2017. Adjusted weather-normalized average retail energy sales excluding this customer is 2,749,752,960 kWh. Savings for 2019 are calculated as a percentage of this adjusted figure.

[2] Docket No. E015/RP-15-690.

Minnesota Power's 2019 CIP Expenditures and Energy Savings

2019	*Expenditures*	*Energy Savings (kWh) at busbar*
Direct Savings Programs:		
Energy Partners (Low Income)	$368,564	1,082,871
Power of One Home (Residential)	$1,824,343	14,444,512
Power of One Business (Business/Commercial/Industrial/Agricultural)	$3,792,943	52,141,839
Indirect Savings Programs:		
Customer Engagement	$538,062	
Energy Analysis	$881,293	
Research & Development	$228,108	
Evaluation & Program Development	$490,318	
Regulatory Charges	$157,143	
Total	**$8,280,773**	**67,669,222**

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Minnesota Power's 2019 Conservation Improvement Program Consolidated Filing	Reporting on CIP Tracker Account Activity, Financial Incentives Report, Proposed CPA Factors and 2019 Project Evaluations Docket No. E-015/M-20-428 E-015/CIP-16-117.03

SUMMARY OF FILING

Minnesota Power (or, "the Company") hereby files with the Minnesota Public Utilities Commission ("MPUC or Commission") and the Department of Commerce, Division of Energy Resources ("Department") its annual Conservation Improvement Program ("CIP") Consolidated Filing in compliance with Minn. Stat. § 216B.241. Minnesota Power requests approval of the following:

- Recovery of the 2019 CIP Tracker Account activity year-end balance of ($5,384,063)
- A revised Conservation Program Adjustment ("CPA"), to be first implemented without proration on August 1, 2020, of ($0.000817)/kWh
- 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 Consolidated Filing via eFiling with the Department of Commerce, Division of Energy Resources to comply with annual CIP project evaluation filing requirements.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Minnesota Power's 2019 Conservation Improvement Program Consolidated Filing	Reporting on CIP Tracker Account Activity, Financial Incentives Report, Proposed CPA Factors and 2019 Project Evaluations
	Docket No. E-015/M-20-428 E-015/CIP-16-117.03

Minnesota Power's Report

TABLE OF CONTENTS

MPUC

SECTION 1

INTRODUCTION AND BACKGROUND

In its August 4, 1993 Order in Docket No. E015/M-91-458, the Minnesota Public Utilities Commission combined future CIP tracker reports and Demand Side Management ("DSM") financial incentives reports into a single submittal filed annually. This is the twenty-seventh annual filing by Minnesota Power in compliance with that Order. In addition, when the Commission 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. On March 20, 2020, in Docket No. CIP-16-117, Deputy Commissioner Sullivan modified the filing date to May 1, 2020, due to the impact of COVID-19. This submittal includes Minnesota Power's proposed revised CPA factor. The 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 those Department filing requirements. Finally, prior orders from the Department have required a response to various issues, and those have been included 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 2019. This report is organized into several sections. The sections and information addressed are:

1) **Summary—**Introduction and Background
2) **CIP Tracker Account Activity Report**, including 2019 expenditures and cost recovery by month.
3) **Financial Incentives Report**
4) **2020–2021 Proposed Conservation Program Adjustment**

   This is the calculation of the CPA factor for the period from August 2020 through June 2021 based on estimated expenditures, cost recovery, and financial incentive.

5) **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 November 3, 2016 Decision for the CIP Triennial Filing. Subsequent to the approval of the CIP Triennial Filing, there was one customer granted exemption status by the Deputy Commissioner effective January 1, 2017. Minnesota Power recalculated its minimum spending requirements and energy-savings goal accordingly and reported it in its Program Modification Request submitted August 9, 2017. This was acknowledged by the Department in its November 16, 2017 Decision. These changes are reflected in this filing.

6) **2019 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.

7) **2019 Evaluation & Results**

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

8) **Research & Development**

9) **Success Stories**

10) **Appendix**

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 and Director of Regulatory Compliance
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 723-3963
dmoeller@allete.com

C. Date of Filing and Date Proposed Rates Take Effect

This petition is being filed on May 1, 2020. The revised CPA factor is proposed to take effect without proration on August 1, 2020. Until MPUC approval, the existing CPA factor will remain in effect.

D. Statute Controlling Schedule for Processing the Petition

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

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

E. Utility Employee Responsible for Filing

Ana Vang
Public Policy Advisor
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 355-3602
avang@mnpower.com

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:

Ana Vang
Public Policy Advisor
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 355-3602
avang@mnpower.com

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

G. Service on Other Parties

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

H. Filing Summary

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

SUMMARY OF FILING REQUESTS

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

From the MPUC:

- Approval of the 2019 CIP Tracker activity, resulting in a year-end 2019 balance of (**$5,384,063)**.
- Approval to book CIP Financial Incentives of **$2,353,720** as per Exhibit 2 of this filing to the CIP Tracker.
- Approval to implement Minnesota Power's proposed revised CPA factor of **($0.000817)/kWh** without proration for bills rendered on and after August 1, 2020.
- Approval of a variance of Minn. Rules 7820.3500 and 7825.2600 to permit Minnesota Power to continue combining the Conservation Program Adjustment with the Fuel Clause Adjustment on customer bills.
- Approval of an updated Carrying Charge rate of **0.2917%** for the CIP Tracker as per Exhibit 1 of this filing.

From the Department:

- Approval of the individual 2019 CIP Project Evaluations.
- Approval of Minnesota Power's response to various Department orders as indicated in the "Compliance" section of this filing.

PROCEDURE AND AUTHORITY

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

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

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

Ana Vang
Public Policy Advisor
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 355-3602
avang@mnpower.com

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

Respectfully submitted,

Date: May 1, 2020

Ana Vang
Public Policy Advisor
Minnesota Power

SECTION 2

CIP TRACKER ACCOUNT ACTIVITY REPORT

On May 16, 1991, in Docket No. E015/M-91-90, the Commission 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. On March 20, 2020, in Docket No. CIP-16-117, Deputy Commissioner Sullivan modified the filing date to May 1, 2020, due to the impact of COVID-19. This report is in compliance with these orders.

Page 1 of Exhibit 1 summarizes the CIP Tracker Account activity for 2018 and 2019 and presents the tracker balance month-by-month throughout each year. Tracker Account activity for 2019 includes the following:

- **$8,280,773** of CIP Expenditures were charged to Tracker 2
- **$10,408,383** was recovered through Base Rates
- **$4,324,922** was recovered through the CPA factor
- **($192,344)** in Carrying Charges were booked to Tracker 2
- **$2,780,073** of Financial Incentives were booked to Tracker 2
- **($5,384,063)** was the resulting CIP Tracker Account balance at the end of 2019

In 1994, Minnesota Power was allowed to implement a conservation cost recovery mechanism known as the 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 Commission action has modified the CPA factor yearly.

The following two CPA factors were in effect during this reporting period:

- **$0.002741/kWh**, effective October 2018, as approved by the MPUC Order dated September 4, 2018, in Docket No. E015/M-18-116 and consistent with the subsequent compliance filing submitted September 14, 2018.

- **($0.000137)/kWh**, effective August 2019, as approved by the MPUC Order dated July 19, 2019, in Docket No. E015/M-19-31 and consistent with the subsequent compliance filing submitted July 29, 2019.

Minnesota Power previously utilized the weighted cost of capital for its Carrying Charge rate as approved in the March 7, 2011 Minnesota Power Retail Rate, Docket No. E015/GR-09-1151. In its Order dated September 16, 2015, in Docket No. E015/M-15-80, the Commission included an order point requiring Minnesota Power to instead calculate the carrying charge on its CIP tracker account using the rate from its multi-year credit facility, effective as of the date of the order. There were two carrying charge rates in effect during the 2019 program year. Page 3 of Exhibit 1 reflects the rate that was effective September 2018 through June 2019. Page 4 of Exhibit 1 reflects the rate that was effective beginning July 2019. As part of this filing, Minnesota Power presents an updated carrying charge rate and proposes an effective date of August 1, 2020, or upon approval by the Commission. The proposed carrying charge rate can be found on page 5 of Exhibit 1.

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

CIP TRACKER ACCOUNT CHANGES

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

Once the first CIP Tracker balance was eliminated, the customers who had successfully petitioned out of minimum spending requirements no longer had the CPA factor applied. The CCRC revenue from those customers was calculated each month and a credit was applied to their

bills (CPA2) equal to the CCRC revenue. In this way, the approved exempt customers have not been charged for subsequent conservation costs resulting from Minnesota Power's ongoing CIP efforts. Further, because the credit to the bill is specific to each individual customer, no cross-subsidy or rate design issues are raised. Beginning in November 2009, and in accordance with Minnesota Power's Retail Rate Case, Docket No. E015/GR-08-415, customers who have opted out of CIP no longer have CCRC revenue included in their base rates. As such, these customers no longer require a credit to their bills (CPA2). Customers remaining within the CIP umbrella will continue to pay for conservation through the CPA and CCRC processes without disruption. For those newly exempt customers as of January 1, 2012, under Docket No. E,G-999/CI-11-1149, a separate CIP Tracker Account was not established. According to the MPUC Order dated March 1, 2012, these newly exempt customers are not responsible for any CIP-related charges and cost recovery through both the CCRC and the CPA ceased effective January 1, 2012, with refunds issued for any amounts collected prior to the Order date.

Effective January 1, 2014, two additional exemption petitions involving three customers were approved by the Department under Docket No. E015/CIP-13-852. Minnesota Power recalculated its minimum spending requirements and energy-savings 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. Effective January 1, 2016, one additional exemption petition was approved by the Department under Docket No. E015/CIP-15-889. Minnesota Power recalculated its minimum spending requirements and energy-savings goal accordingly and reported it in an Informational Notice on December 20, 2016.

Effective January 1, 2017, an additional exemption was approved by the Department under Docket No. E015/CIP-16-812. Minnesota Power recalculated its minimum spending requirements and energy-savings goal accordingly and reported it in its Program Modification Request submitted August 9, 2017. This was acknowledged by the Department in its November 16, 2017 Decision. These changes are reflected in this filing.

MINNESOTA POWER
New CIP Tracker #2 Account
Activity 2000 - 2019

		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)
	2018													
1	BEGINNING OF PERIOD BALANCE	$3,315,557.76	$2,011,709.61	$600,435.73	$238,552.68	($695,271.67)	($1,435,969.86)	($2,008,499.25)	($2,779,827.33)	($349,234.44)	($1,123,999.77)	($1,136,220.22)	($1,398,507.53)	$3,315,557.76
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	$3,315,557.76	$2,011,709.61	$600,435.73	$238,552.68	($695,271.67)	($1,435,969.86)	($2,008,499.25)	($2,779,827.33)	($349,234.44)	($1,123,999.77)	($1,136,220.22)	($1,398,507.53)	
5	COMPOSITE TAX RATE	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	
6	DEFERRED TAXES ON NET BEGIN BAL 1/	$952,957.61	$578,205.58	$172,577.24	$68,564.81	($199,834.98)	($412,726.46)	($577,282.85)	($798,977.97)	($100,376.96)	($323,060.01)	($326,572.42)	($401,959.03)	
7	NET INVESTMENT (L20 - L25)	$2,362,600.15	$1,433,504.03	$427,858.49	$169,987.87	($495,436.69)	($1,023,243.40)	($1,431,216.40)	($1,980,849.36)	($248,857.48)	($800,939.76)	($809,647.80)	($996,548.50)	
8	MONTHLY CARRYING CHARGE RATE 2/	0.3229%	0.3229%	0.3229%	0.3229%	0.3229%	0.3229%	0.3229%	0.3229%	0.4063%	0.4063%	0.4063%	0.4063%	
9	MONTHLY CARRYING CHARGE 0483 (L26 * L27)	$7,629.00	$4,629.00	$1,382.00	$549.00	($1,600.00)	($3,304.00)	($4,621.00)	($6,396.00)	($1,011.00)	($3,254.00)	($3,290.00)	($4,049.00)	($13,336.00)
10	CIP PROGRAM CHARGES TO DEFERRED DEBIT	$460,371.93	$366,369.25	$1,215,470.91	$584,192.39	$664,218.36	$787,741.34	$652,251.08	$971,514.88	$711,861.38	$1,008,911.49	$684,630.59	$923,912.70	$9,031,446.30
11	FINANCIAL INCENTIVES 4/	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$2,994,840.00	$0.00	$0.00	$0.00	$0.00	$2,994,840.00
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	($88,914.00)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	($88,914.00)
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/	($351,216.47)	($450,362.91)	($403,213.06)	($390,679.67)	($365,183.12)	($346,891.96)	($356,551.47)	($385,388.77)	($388,030.08)	($346,439.38)	($364,571.89)	($388,514.26)	($4,537,043.04)
17	LESS: CIP COSTS RECOVERED via CPA 0481 6/	($1,331,718.61)	($1,331,909.22)	($1,175,522.90)	($1,127,886.07)	($1,038,133.43)	($1,010,074.77)	($1,062,406.69)	($1,143,977.22)	($1,097,585.63)	($671,438.56)	($579,056.01)	($652,102.28)	($12,221,811.39)
18	END OF PERIOD BALANCE (L20 + L28 + L29..L36)	$2,011,709.61	$600,435.73	$238,552.68	($695,271.67)	($1,435,969.86)	($2,008,499.25)	($2,779,827.33)	($349,234.44)	($1,123,999.77)	($1,136,220.22)	($1,398,507.53)	($1,519,260.37)	($1,519,260.37)
19	TOTAL CPA & CCRC REVENUE	$1,771,849.08	$1,782,272.13	$1,578,735.96	$1,518,565.74	$1,403,316.55	$1,356,966.73	$1,418,958.16	$1,529,365.99	$1,485,615.71	$1,017,877.94	$943,627.90	$1,040,616.54	$16,847,768.43
	2019													
20	BEGINNING OF PERIOD BALANCE	($1,519,260.37)	($2,330,813.67)	($3,016,182.95)	($5,179,818.07)	($5,928,992.25)	($6,429,664.16)	($7,038,614.73)	($5,105,651.93)	($5,530,872.34)	($5,883,173.80)	($6,019,833.59)	($6,058,245.47)	($1,519,260.37)
21	LESS: NON-DEDUCTIBLE BALANCE 3/	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	
22	PLUS: AMORT OF NON-DEDUCT BALANCE 3/	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
23	NET TAX DEDUCTIBLE PERIOD BALANCE	($1,519,260.37)	($2,330,813.67)	($3,016,182.95)	($5,179,818.07)	($5,928,992.25)	($6,429,664.16)	($7,038,614.73)	($5,105,651.93)	($5,530,872.34)	($5,883,173.80)	($6,019,833.59)	($6,058,245.47)	
24	COMPOSITE TAX RATE	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	28.742%	
25	DEFERRED TAXES ON NET BEGIN BAL 1/	($436,665.82)	($669,922.47)	($866,911.30)	($1,488,783.31)	($1,704,110.95)	($1,848,014.07)	($2,023,038.65)	($1,467,466.48)	($1,589,683.33)	($1,690,941.81)	($1,730,220.57)	($1,741,260.91)	
26	NET INVESTMENT (L20 - L25)	($1,082,594.55)	($1,660,891.20)	($2,149,271.65)	($3,691,034.76)	($4,224,881.30)	($4,581,650.09)	($5,015,576.08)	($3,638,185.45)	($3,941,189.01)	($4,192,231.99)	($4,289,613.02)	($4,316,984.56)	
27	MONTHLY CARRYING CHARGE RATE 2/	0.4063%	0.4063%	0.4063%	0.4063%	0.4063%	0.4063%	0.4792%	0.4792%	0.4792%	0.4792%	0.4792%	0.4792%	
28	MONTHLY CARRYING CHARGE 0483 (L26 * L27)	($4,399.00)	($6,748.00)	($8,732.00)	($14,997.00)	($17,166.00)	($18,615.00)	($24,035.00)	($17,434.00)	($18,886.00)	($20,089.00)	($20,556.00)	($20,687.00)	($192,344.00)
29	CIP PROGRAM CHARGES TO DEFERRED DEBIT	$279,068.71	$501,471.29	$490,109.22	$769,133.87	$841,255.76	$713,897.64	$491,181.12	$637,552.78	$485,722.46	$627,760.36	$834,383.96	$1,609,235.38	$8,280,772.55
30	FINANCIAL INCENTIVES 4/	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$2,780,073.00	$0.00	$0.00	$0.00	$0.00	$0.00	$2,780,073.00
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	$13,336.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$13,336.00
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/	($429,003.89)	($454,526.94)	($1,991,635.27)	($907,181.21)	($780,377.15)	($780,080.26)	($756,248.61)	($882,962.57)	($846,749.35)	($770,861.70)	($876,634.18)	($945,457.66)	($10,421,718.79)
36	LESS: CIP COSTS RECOVERED via CPA 0481 6/	($670,555.12)	($725,565.63)	($653,377.07)	($596,129.84)	($544,384.52)	($524,152.95)	($558,007.71)	($162,376.62)	$27,611.43	$26,530.55	$24,394.34	$31,091.60	($4,324,921.54)
37	END OF PERIOD BALANCE (L20 + L28 + L29..L36)	($2,330,813.67)	($3,016,182.95)	($5,179,818.07)	($5,928,992.25)	($6,429,664.16)	($7,038,614.73)	($5,105,651.93)	($5,530,872.34)	($5,883,173.80)	($6,019,833.59)	($6,058,245.47)	($5,384,063.15)	($5,384,063.15)
38	TOTAL CPA & CCRC REVENUE	$1,086,223.01	$1,180,092.57	$2,645,012.34	$1,503,311.05	$1,324,761.67	$1,304,233.21	$1,314,256.32	$1,045,339.19	$819,137.92	$744,331.15	$852,239.84	$914,366.06	$14,733,304.33

1/ Deferred taxes are determined based on the composite tax rate in effect at the time in question. The effective rate was 41.370% between 1/1/1993 and 12/31/2017. As of 1/1/2018 the effective rate is 28.742%.

2/ Monthly carrying charge rate of 1.0675% is applicable for the period 3/1/94-10/31/2009; 0.9946% is applicable for the period 11/01/2009 - 05/31/2011; 0.9601% is applicable for the period 06/01/2011 - 08/31/2015; 0.2813% is applicable 9/01/2015; 0.3021% is applicable 8/01/2016 - 5/31/2017; 0.3229% is applicable 6/01/2017 through 7/31/2018; 0.4063% effective Sep 2018- June 2019; 0.4792% effective July 2019

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-18-116 dated 9/4/18 and in Docket No. E015/M-19-31

5/ Rate of $0.001209033/kWh, effective Nov 2009 through May 2011 as approved in Docket No. E-015/GR-08-415, $0.001466772/kWh, effective June 2011 through Nov 2018 as approved in Docket No. E-015/GR-09-1151, $0.003299105/kWh effective Dec 2018 as approved in Docket No. E-015/GR-16-664.

6/ CPA OF 1.08% thru Jul 1996, 1.83% Aug 96, 2.75% Jul 97, 1.62% Jul 01, 1.30% Jul 02, 0.92% Jul 03, 2.02% Jul 04, 0.86% Sep 05, 0.12% Jul 06, 0.36% Dec 07, 1.01% Nov 08, 1.22% Oct 09, $0.001448/kWh Oct 10, $0.003728/kWh Feb 12, $0.004537/kWh Jan 13; $0.004062/kWh Nov 13; $0.003425 Sep 14; $0.000442 Nov 15; $0.002494 Aug 16; $0.005052 Jul 2017; $0.002741 effective Oct 2018; -$0.000137 effective August 2019;

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

Sources: Hyperion & CIP Tracker

CHARGE #	DESCRIPTION	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Direct Impact Projects														
	CIP: ENERGY PARTNERS (Low Incor	$368,563.71	$ 23,358.94	$ 15,312.68	$ 18,072.09	$ 16,074.32	$ 49,484.36	$ 42,451.65	$ 43,697.54	$ 18,148.14	$ 24,425.16	$ 18,097.41	$ 38,066.07	$ 61,375.35
	CIP: ONE HOME (Residential)	$1,824,342.84	$ 69,961.47	$ 53,558.45	$ 47,066.75	$ 24,875.17	$ 322,881.63	$ 238,399.40	$ 107,912.95	$ 150,935.56	$ 140,798.25	$ 136,359.56	$ 191,016.38	$ 340,577.27
	CIP: ONE BUSINESS (C/I/Ag)	$3,792,943.04	$ 102,077.29	$ 315,994.31	$ 166,909.69	$ 530,883.31	$ 277,522.45	$ 298,863.41	$ 202,544.38	$ 296,498.82	$ 154,215.69	$ 241,250.85	$ 427,758.91	$ 778,423.93
	Total Direct Impact Projects	$5,985,849.59	$195,397.70	$384,865.44	$232,048.53	$571,832.80	$649,888.44	$579,714.46	$354,154.87	$465,582.52	$319,439.10	$395,707.82	$656,841.36	$1,180,376.55
Indirect Impact Projects														
	CIP: CUSTOMER ENGAGEMENT	$538,061.85	$ 11,485.44	$ 1,153.28	$ 117,661.34	$ 50,691.67	$ 25,044.26	$ 24,117.22	$ 32,231.10	$ 28,963.45	$ 30,159.37	$ 40,500.81	$ 38,758.44	$ 137,295.47
	CIP: RENEWABLE ENERGY*	$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
	CIP: ENERGY ANALYSIS	$881,292.89	$ 44,077.07	$ 68,816.93	$ 11,782.57	$ 115,192.23	$ 24,569.92	$ 75,283.38	$ 78,703.29	$ 72,631.57	$ 59,174.66	$ 80,794.12	$ 74,764.73	$ 175,502.42
	CIP: EVALUATION & PLANNING	$490,317.85	$ 27,486.00	$ 43,027.89	$ 87,870.61	$ 30,825.72	$ 53,938.26	$ 30,371.84	$ 22,687.79	$ 42,708.95	$ 35,862.35	$ 39,102.53	$ 29,233.36	$ 47,202.55
	CIP: REGULATORY CHARGES	$157,142.57	$ -	$ -	$ 39,283.55	$ 174.01	$ -	$ -	$ -	$ -	$ 39,283.50	$ 40,280.17	$ -	$ 38,121.34
	CIP: RESEARCH & DEVELOPMENT	$228,107.80	$ 622.50	$ 3,607.75	$ 1,462.62	$ 417.44	$ 87,814.88	$ 4,410.74	$ 3,404.07	$ 27,666.29	$ 1,803.48	$ 31,374.91	$ 34,786.07	$ 30,737.05
	Total Indirect Impact Projects	$2,294,922.96	$83,671.01	$116,605.85	$258,060.69	$197,301.07	$191,367.32	$134,183.18	$137,026.25	$171,970.26	$166,283.36	$232,052.54	$177,542.60	$428,858.83
	Total Project Charges	$8,280,772.55	$279,068.71	$501,471.29	$490,109.22	$769,133.87	$841,255.76	$713,897.64	$491,181.12	$637,552.78	$485,722.46	$627,760.36	$834,383.96	$1,609,235.38
Other CIP Tracker Account Charges														
1864-0484	CIP: FINANCIAL INCENTIVES - TRAC	$2,780,073.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$2,780,073.00	$0.00	$0.00	$0.00	$0.00	$0.00
1864-0483	CIP: CARRYING CHARGE - TRACKE	($192,344.00)	($4,399.00)	($6,748.00)	($8,732.00)	($14,997.00)	($17,166.00)	($18,615.00)	($24,035.00)	($17,434.00)	($18,886.00)	($20,089.00)	($20,556.00)	($20,687.00)
	Total Charges to the Deferred Debit	$2,587,729.00	($4,399.00)	($6,748.00)	($8,732.00)	($14,997.00)	($17,166.00)	($18,615.00)	$2,756,038.00	($17,434.00)	($18,886.00)	($20,089.00)	($20,556.00)	($20,687.00)
CIP Tracker Account Recovery														
1864-0481	CIP: CPA RECOVERY - TRACKER 2	($4,324,921.54)	($670,555.12)	($725,565.63)	($653,377.07)	($596,129.84)	($544,384.52)	($524,152.95)	($558,007.71)	($162,376.62)	$27,611.43	$26,530.55	$24,394.34	$31,091.60
1864-0482	CIP: CCRC CLEARANCE - TRACKER	($10,408,382.79)	($415,667.89)	($454,526.94)	($1,991,635.27)	($907,181.21)	($780,377.15)	($780,080.26)	($756,248.61)	($882,962.57)	($846,749.35)	($770,861.70)	($876,634.18)	($945,457.66)
	YEAR END CARRYING CHARGE CO	($13,336.00)	$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 CLOSING	$13,336.00	$13,336.00	$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	($14,733,304.33)	($1,072,887.01)	($1,180,092.57)	($2,645,012.34)	($1,503,311.05)	($1,324,761.67)	($1,304,233.21)	($1,314,256.32)	($1,045,339.19)	($819,137.92)	($744,331.15)	($852,239.84)	($914,366.06)

**As a result of the February 10, 2017, MPUC approval of Minnesota Power's SolarSense program (Docket No. E015/M-16-485), the Company filed a Program Modification request on August 9, 2017, to remove the Customer Renewable Energy (RE) program from the 2017–2019 CIP Triennial Plan (Docket No. E015/CIP-16-117). On November 16, 2017, the Deputy Commissioner approved Minnesota Power's petition. Further, due to the enactment of new legislation in 2017 closing the Made in Minnesota (MIM) program, the MIM assessment will remain in CIP under CIP Regulatory Charges for 2017 and then be discontinued thereafter. The Customer Renewable Energy program section has therefore been removed from --Minnesota Power's Consolidated filing.*

Minnesota Power
CIP Tracker Account
Carrying Charge Rate
Effective September 2018 to June 2019*

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

Schedule 1 $400 Million Credit Agreement

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

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

*This rate was effective for Minnesota Power from March 22, 2018 to June 13, 2018.

The monthly Carrying Charge equivalent to the alternate base rate loan and facility fees from the multi-year credit facility is **0.4063%.**

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

= (4.75%+0.125%)*(1/12)

Minnesota Power
CIP Tracker Account
Carrying Charge Rate
Effective July 2019*

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

Schedule 1 $400 Million Credit Agreement

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

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

*This rate was effective for Minnesota Power from March 26, 2019 to July 31, 2019.

The monthly Carrying Charge equivalent to the alternate base rate loan and facility fees from the multi-year credit facility is **0.4792%.**

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

= (5.5%+.075%+0.175%)*(1/12)

Minnesota Power
CIP Tracker Account
Carrying Charge Rate
Proposed to be effective August 1, 2020*

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

Schedule 1 $400 Million Credit Agreement

Status	Pricing Level I	Pricing Level II	Pricing Level III	Pricing Level IV	Pricing Level V
Senior Debt Rating	≥ A+/ A+/ A1	≥ A/ A/ A2	≥ A-/ A-/A3	≥ BBB+/ BBB+/ Baa1	< BBB+/ BBB+/ Baa1
Applicable Margin for Eurodollar Rate loans and Letter of Credit participation fees	0.800%	0.900%	1.00%	1.075%	1.275%
Applicable for facility fees	0.075%	0.100%	0.125%	0.175%	0.225%
Applicable Margin for ABR loans	0%	0%	0%	0.075%	0.275%

"Alternate Base Rate" means, for any day, a rate per annum equal to the greatest of (a) the Prime Rate in effect on such day, (b) the NYFRB Rate in effect on such day plus ½ of 1% and (c) the Adjusted LIBO Rate for a one month Interest Period on such day (or if such day is not a Business Day, the immediately preceding Business Day) plus 1%; provided that for the purpose of this definition, the Adjusted LIBO Rate for any day shall be based on the LIBO Screen Rate (or if the LIBO Screen Rate is not available for such one month Interest Period, the Interpolated Rate) at approximately 11:00 a.m. London time on such day. Any change in the Alternate Base Rate due to a change in the Prime Rate, the NYFRB Rate or the Adjusted LIBO Rate shall be effective from and including the effective date of such change in the Prime Rate, the NYFRB Rate or the Adjusted LIBO Rate, respectively. If the Alternate Base Rate is being used as an alternate rate of interest pursuant to Section 3.4, then the Alternate Base Rate shall be the greater of clauses (a) and (b) above and shall be determined without reference to clause (c) above. For the avoidance of doubt, if the Alternate Base Rate as determined pursuant to the foregoing would be less than 1.00%, such rate shall be deemed to be 1.00% for purposes of this Agreement.

*This rate was effective for Minnesota Power since March 16, 2020.

The monthly Carrying Charge equivalent to the alternate base rate loan and facility fees from the multi-year credit facility is **0.2917%.**

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

= (3.25%+.075%+0.175%)*(1/12)

SECTION 3

FINANCIAL INCENTIVES REPORT

As part of the Commission Orders dated August 21, 1992, and August 4, 1993, in Docket No. E015/M-91-458, Minnesota Power was required to file, on or before April 30 of each year, the Financial Incentives Report. In compliance with Docket No. E015/M-95-898 and CIP-16-117, Minnesota Power is now required to file all CIP-related reports/requests in one submittal by May 1 this year.[3]

In this filing and as shown in Exhibit 2, Minnesota Power has calculated its financial incentives for 2019 performance consistent with the outcome of the procedures as set forth in Docket No. E,G-999/CI-08-133. Adjustments to the average retail energy sales are also reflected in its 2019 financial incentive calculation.

BACKGROUND

In 1989, the Commission initiated an 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 Commission 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 MPUC, after its own review of financial incentives in Minnesota, approved new financial incentives for the electric

[3] Typical submittal is due by April 11 each year, however on March 20, 2020, in Docket No. CIP-16-117, Deputy Commissioner Sullivan modified the filing date to May 1, 2020, due to the impact of COVID-19.

utilities in the state. Minnesota Power received approval for lost margin recovery in Docket No. E015/M-95-898, dated October 26, 1995.

In 1994, Minnesota Power participated in a statewide workgroup effort to develop recommendations as to what the future of financial incentives in Minnesota should be. Again, during late 1998 and all of 1999, the Commission reviewed the need for financial incentives and the incentive structure. As a result, financial incentives for conservation efforts were significantly modified by Commission action on January 27, 2000, in Docket No. E015/M-99-538 and E,G-999/CI-98-1759.

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

FINANCIAL INCENTIVES—2010 AND BEYOND

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

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

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

The commenting parties recommended that the Commission: (1) adopt a procedural calendar allowing time for the parties to confer and agree on recommended revisions to the incentive formula; (2) establish stakeholder workgroups to evaluate the current incentives and

recommend adjustments; and (3) establish procedural guidelines for the discussion and evaluation of possible revisions in 2009, with implementation of any changes to occur in 2010.

On December 29, 2008, the Commission issued an Order Establishing Procedural Framework for Consideration of Utility Performance Incentives for Energy Conservation. The Commission required utilities to provide further information on how the current incentive model and any other proposed mechanisms would function under the new savings goal. Pursuant to the Commission's Order, a stakeholder workgroup was established to evaluate the current incentives and recommend adjustments. Members of the workgroup included: the Center for Energy and the Environment; CenterPoint Energy; Greater Minnesota Gas; Great Plains Natural Gas; Interstate Power and Light; Izaak Walton League of America; Minnesota Energy Resource Corporation (PNG and NMU); Minnesota Power; the Department; Otter Tail Power Company; and Xcel Energy. The workgroup participants jointly requested Commission approval of a new Shared Savings DSM financial incentive to be applied voluntarily to all gas and electric utilities that participate in the CIP. The new program was intended to replace the current incentive plans and apply to CIP activities beginning with the 2010 project year. The proposal was the product of a series of workgroup meetings initiated and facilitated by the Department. Based on its review and analysis of the workgroup recommendations and the parties' comments, the Commission concluded in its January 27, 2010 Order in Docket No. E,G-999/CI-08-133 that the proposed New Shared Savings Model, as detailed by the Department and the workgroup, is a reasonable approach to achieve the requirements and purposes of the Next Generation Energy Act (Minn. Stat. § 216B.241), taking into consideration the factors listed in Minn. Stat. § 216B.16, subd. 6c and the Commission's duty under Minn. Stat. § 216B.03 to ensure just and reasonable rates. Also in its January 27, 2010 Order,[4] 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

[4] 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.

Savings DSM Financial Incentive on Investor-Owned Utility Conservation Achievements and Customer Costs.[5] 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.[6] 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 Tail Power and Minnesota Power to make their compliance filings on or before February 1, 2014, under the modified incentive mechanism. The modifications applied to the 2014–2016 program years.

On August 5, 2016, the Commission approved modifications based on the Department's January 19 and February 19, 2016 proposal to modify the Shared Savings DSM Financial Incentive mechanism. The approved modifications include the following:

For electric utilities: 1) Authorize financial incentives for a utility that achieves energy savings of at least 1.0 percent of the utility's retail sales; 2) For a utility that achieves energy savings equal to 1.0 percent of retail sales, award the utility a share of the net benefits as set forth in Attachment A (of the Commission's Order). 3) For each additional 0.1 percent of energy savings the utility achieves, increase the net benefits awarded to the utility by an additional 0.75 percent until the utility achieves savings of 1.7 percent of retail sales. 4) For savings levels of 1.7 percent and higher, award the utility a share of the net benefits equal to the Net Benefits Cap.

In addition, for all utilities, set the following Net Benefits Caps: 1) 13.5 percent in 2017, 2) 12.0 percent in 2018 and 3) 10.0 percent in 2019. For all utilities, set the following Conservation Improvement Plan ("CIP") Expenditure Caps: 1) 40 percent in 2017, 2) 35 percent in 2018 and 3) 30 percent in 2019.

In regard to the February 1 compliance filing, the Commission's decision included direction that "utilities may discontinue the annual February 1 compliance filing because a scale of net benefits will no longer be required since the Department's proposal sets percentages at certain savings thresholds and calibrates the mechanism to dollars per unit of energy."

[5] Id., December 20, 2012.

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

2019 **EXHIBIT 2**

UTILITY

Minnesota Power - 2019 Program Performance

Inputs		Location:
2013 Weather-Normalized Sales (kWh)	2,753,584,344	
2014 Weather-Normalized Sales (kWh)	2,793,956,879	
2015 Weather-Normalized Sales (kWh)	2,701,717,658	
3-year Weather-Normalized Sales Average (kWh)	2,749,752,960	
1.0% Energy Savings	27,497,530	
Increase Energy Savings per 0.1% Increase in Achievement Level	2,749,753	
Approved CIP Budget	$10,318,770	From Commissioner's Order approving 2017-2019 Triennial CIP Filing
Approved CIP Energy Savings Goal (kWh)	57,390,222	
Estimated Net Benefits at Energy Savings Goal	$16,218,110	From Utility 2017-2019 Triennial CIP Filing.
Energy savings at 1.5% (kWh)	41,246,294	
Incentive Calibration		
Max Percent of Net Benefits Awarded	10.0%	maximum net benefits awarded
Max Percent Expenditures Awarded	30.0%	
Earning Threshold	1.0%	
Achievement Level Where Net Benefits Cap Begins	1.7%	
Increase in Net Benefits Awarded Per 0.1% Increase in Achievement Level	7.5	% Points

Actual 2019 Achievements	
Expenditures	$8,123,630
Energy Saved (first year kWh saved)	67,669,222
Net Benefits Achieved	$23,537,199
Shared Savings Incentive Results	
Achievement Level	2.46%
Percent of Net Benefits Awarded	10.00%
Financial Incentive Award	**$2,353,720**
Incentive/First Year kWh Saved $	$0.0348
Incentive/Net Benefits	10.00%
Incentive/CIP Expenditures	28.97%

Estimated Incentive Levels by Achievement Level

Achievement Level (% of sales)	Energy Saved	Percent of Net Benefits Awarded	Estimated Net Benefits Achieved	Incentive Award	Average Incentive per unit Saved	Incremental Incentive Units Saved
0.0%	0	0.00%	$0	**$0**	$0.000	-
0.1%	2,749,753	0.00%	$777,063	**$0**	$0.000	$0.000
0.2%	5,499,506	0.00%	$1,554,125	**$0**	$0.000	$0.000
0.3%	8,249,259	0.00%	$2,331,188	**$0**	$0.000	$0.000
0.4%	10,999,012	0.00%	$3,108,250	**$0**	$0.000	$0.000
0.5%	13,748,765	0.00%	$3,885,313	**$0**	$0.000	$0.000
0.6%	16,498,518	0.00%	$4,662,376	**$0**	$0.000	$0.000
0.7%	19,248,271	0.00%	$5,439,438	**$0**	$0.000	$0.000
0.8%	21,998,024	0.00%	$6,216,501	**$0**	$0.000	$0.000
0.9%	24,747,777	0.00%	$6,993,564	**$0**	$0.000	$0.000
1.0%	27,497,530	4.75%	$7,770,626	**$369,105**	$0.013	$0.134
1.1%	30,247,283	5.50%	$8,547,689	**$470,123**	$0.016	$0.037
1.2%	32,997,036	6.25%	$9,324,751	**$582,797**	$0.018	$0.041
1.3%	35,746,788	7.00%	$10,101,814	**$707,127**	$0.020	$0.045
1.4%	38,496,541	7.75%	$10,878,877	**$843,113**	$0.022	$0.049
1.5%	41,246,294	8.50%	$11,655,939	**$990,755**	$0.024	$0.054
1.6%	43,996,047	9.25%	$12,433,002	**$1,150,053**	$0.026	$0.058
1.7%	46,745,800	10.00%	$13,210,064	**$1,321,006**	$0.028	$0.062
1.8%	49,495,553	10.00%	$13,987,127	**$1,398,713**	$0.028	$0.028
1.9%	52,245,306	10.00%	$14,764,190	**$1,476,419**	$0.028	$0.028
2.0%	54,995,059	10.00%	$15,541,252	**$1,554,125**	$0.028	$0.028
2.1%	57,744,812	10.00%	$16,318,315	**$1,631,831**	$0.028	$0.028
2.2%	60,494,565	10.00%	$17,095,378	**$1,709,538**	$0.028	$0.028
2.3%	63,244,318	10.00%	$17,872,440	**$1,787,244**	$0.028	$0.028
2.4%	65,994,071	10.00%	$18,649,503	**$1,864,950**	$0.028	$0.028
2.5%	68,743,824	10.00%	$19,426,565	**$1,942,657**	$0.028	$0.028
2.6%	71,493,577	10.00%	$20,203,628	**$2,020,363**	$0.028	$0.028
2.7%	74,243,330	10.00%	$20,980,691	**$2,098,069**	$0.028	$0.028
2.8%	76,993,083	10.00%	$21,757,753	**$2,175,775**	$0.028	$0.028
2.9%	79,742,836	10.00%	$22,534,816	**$2,253,482**	$0.028	$0.028
3.0%	82,492,589	10.00%	$23,311,878	**$2,331,188**	$0.028	$0.028

SECTION 4

2020-2021 PROPOSED CONSERVATION PROGRAM ADJUSTMENT

CIP costs are recovered by utilities through base rates via the Conservation Cost Recovery Charge and through an annual CIP adjustment factor called the Conservation Program Adjustment.[7] Minnesota Power files a recalculation of its CPA each April as part of its CIP Consolidated Filing.[8] Minnesota Power's CPA has previously been calculated by dividing the year-end CIP tracker balance of the previous year by the forecasted sales (kWh) subject to CIP for the current year. In accordance with the Commission Order dated September 16, 2015, Docket No. E015/M-15-80, Minnesota Power adjusted its CPA calculation to use a fiscal year approach[9] and provided calculation of a new CPA in its September 25, 2015, compliance filing.[10] The proposed CPA for the 2020-2021 period follows the new fiscal year approach which is described further in the background section below.

BACKGROUND

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

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

[7] Also referred to as CCRA in other utility filings.
[8] On March 20, 2020, in Docket No. CIP-16-117, Deputy Commissioner Sullivan modified the filing date to May 1, 2020, due to the impact of COVID-19.
[9] Non-calendar year of July 1–June 30.
[10] Compliance Filing, Order Approving Tracker Account and Financial Incentive, Setting Rider Adjustment and Reducing Carrying Charges for Minnesota Power's 2014 Consolidated Filing, September 25, 2015, Docket No. E015/M-15-80.

group agreed that electric utilities with CPA factors would file annually on April 1 (modified in Docket CIP-16-117 to May 1 for this year) for modification of their CPA factors. This section of the 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.[11]

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

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

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

2020-2021 CPA DEVELOPMENT

The CIP Tracker Account balance at year-end 2019 reflects the result of prior activity in Tracker 2, as indicated on page 1 of Exhibit 1. However, for CPA purposes, the 2019 year-end balance requires adjustments to properly calculate the proposed CPA factor. Using the new fiscal year approach, these factors have been expanded to include actual and anticipated expenditures and cost recovery through base rates (CCRC) and the current CPA rate for the remainder of the current CPA period (January 2020–July 2020) as well as anticipated financial incentives, anticipated CIP expenditures and anticipated cost recovery through base rates for the new CPA period (August 2020–June 2021). The new approach is designed to achieve a zero Tracker balance at the end of the CPA period (fiscal year) rather than at the end of the calendar year. Higher (calendar) year-end Tracker balances should therefore be anticipated going forward which is a deviation from Minnesota Power's recent history of low year-end Tracker balances. Minnesota Power notes that actual program performance, expenditures and sales will lead to tracker balance fluctuation. Additionally, the 2019 year-end Tracker balance was impacted by the implementation timing of an updated CCRC. In December 2018 Minnesota Power implemented an updated CCRC when final rates were implemented as part of the rate case.[12] As that was not in effect at the time

[11] 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.

[12] In the Matter of the Application of Minnesota Power for Authority to Increase Rates for Electric Service in Minnesota, Docket No. E015/GR-16-664.

of the 2017 CIP Consolidated filing, Minnesota Power calculated the (proposed and approved) CPA factor for July 2018 through June 2019 using the CCRC in effect at that time. As a result, the actual CCRC in place was higher than the CCRC that was assumed when calculating the CPA factor that was effective between December 2018 and July 2019. The CPA proposed for approval for July 2019 through June 2020 was calculated using the updated CCRC that is currently in effect.

In accordance with the Commission Order dated September 16, 2015, Docket No. E015/M-15-80, Minnesota Power adjusted its CPA calculation to use a fiscal year approach.[13] Minnesota Power has calculated the CPA factor using a per-kWh methodology, as recommended by the Department and approved by the MPUC in its September 22, 2010, Order, Docket No. E015/M-10-266 and as reaffirmed in its January 12, 2012 Order, Docket No. E015/M-11-241.

Minnesota Power requests Commission approval of a proposed CPA factor of ($0.000817) per kWh to be effective without proration with bills rendered on or after August 1, 2020. Minnesota Power is filing for CPA modification on May 1, 2020, making the anticipated effective period for this request August 1, 2020 through June 30, 2021. Until subsequent MPUC approval, the existing CPA factor will remain in effect.

Minnesota Power requests a variance to Minn. Rules 7820.3500 and 7825.2600, which require that the Fuel and Purchased Energy Adjustment ("FPE") be stated as a separate line item on customers' bills. The requested variance would allow Minnesota Power to continue combining the CPA and FPE on one line in customer bills, known as the Resource Adjustment.[14] The Commission has approved this variance several times in the past, most recently in Docket No. E015/M-18-116.

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).*

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

[13] Minnesota Power's 2014 Consolidated Filing, Order Approving Tracker Account and Financial Incentive, Setting Rider Adjustment and Reducing Carrying Charges, September 16, 2015, Docket No. E015/M-15-80.
[14] https://www.mnpower.com/Content/Documents/CustomerService/resource-adjustment.pdf

MINNESOTA POWER
Conservation Program Adjustment
Proposed for August 2020 - June 2021

Conservation Program Adjustment:

			Jan 2020 - Jul 2020	Aug 2020 - Jun 2021
1	CIP Tracker 2 Account Balance at the end of 2019	1/	$ (5,384,063)	$ (6,002,087)
2	Financial Incentives claimed per Exhibit 2	2/	N/A	2,353,720
3	CIP current year expenditures (actuals)	3/	$ 381,008	N/A
	CIP expenditures approved or budgeted		$ 4,382,821	$ 9,642,206
4	CIP Cost Recovered through Base Rates (actuals)	4/	$ (2,028,645)	N/A
	CIP Cost Recovered through Base Rates (estimated)		$ (3,528,178)	$ (8,211,132)
5	CIP Cost Recovery through current CPA (actuals)	5/	$ 67,765	N/A
	CIP Cost Recovery through current CPA (estimated)		$ 146,513	N/A
6	Carrying Charges	6/	$ (39,308)	N/A
7	**Recoverable Tracker Balance**	7/	**$ (6,002,087)**	**$ (2,217,294)**

8	kWh sales subject to CIP	8/	**2,715,160,330**
	monthly		226,263,361

	CCRC	9/	$ 0.003299105
	Current CPA		$ (0.000137)

Conservation Program Adjustment (per kWh methodology) Line 7/Line 8		**$ (0.000817)**

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

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

3/ Actual CIP expenditures included for Jan-Feb 2020; Estimated expenditures for Mar-Jul 2020 and Aug 2020-Jun 2021 based on the 2020 budget as approved by the Deputy Commissioner on November 26, 2019, in the Company's 2017-2019 Triennial CIP Extension Filing in Docket No. E015/CIP-16-117.

4/ Actual CIP Cost Recovery through Base Rates included for Jan-Feb 2020; Estimates for Mar-Jul 2020 based on the Company's approved conservation cost recovery charge (CCRC) [rate] applied to budgeted Mar-Jul 2020 sales subject to CIP*; Estimates for Aug 2020- Jun 2021 based on approved CCRC applied to 2020 budgeted sales subject to CIP*.

5/ Actual CIP Cost Recovery through current CPA included for Jan-Feb 2020; Estimates for Mar-Jul 2020 based on the current CPA applied to 2020 budgeted sales subject to CIP*.

6/ Actual Carrying Charges included for Jan-Feb 2020

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

9/ New CCRC rate effective December 2018 as approved in Docket No. E015/GR-16-664.

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

2019 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 2019 spending in relation to the approved minimum spending requirement.[15]

Minimum Spending Requirement	*Approved Spending*	*Actual Spending*	*Variance of Actual to Minimum Spending*
$2,438,354	$10,518,770 *(as modified)*	$8,280,773	$5,842,419

2019 Achievements as a Percentage of Sales

The Next Generation Energy Act of 2007 established an energy-savings 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 2013–2015 weather-normalized retail sales.

Year	*Energy Savings Achieved (kWh)*	*Total Adjusted Sales (kWh)*	*Savings as % of Retail Sales*
2019	67,669,222	2,749,752,960	2.46%

[15] Effective January 1, 2017, one CIP exemption was approved by the Department under Docket No. E015/CIP-16-812. Minnesota Power recalculated its minimum spending requirements and energy-saving goal accordingly and reported it in its Program Modification Request submitted August 9, 2017, and approved by the Deputy Commissioner on November 16, 2017.

2019 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,[16] 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.

Minimum Spending Requirement using Three-year Average	*Approved Spending*	*Actual Spending*	*Variance of Actual to Minimum Spending Requirement using Three-year Average*
$195,929	$397,030	$368,564	$172,635

2019 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.[17]

Annual Spending Cap	*Approved Spending*	*Actual Spending*	*Variance of Actual to Cap*
$243,800	$243,800 *(as modified)*	$228,108	($15,692)

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. The Company also facilitates proper management of spent lamps by partnering with hardware stores in its service area to provide free CFL ("compact fluorescent light") recycling and discounted fluorescent tube and lamp recycling.

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

[17] Effective January 1, 2017, one CIP exemption was approved by the Department under Docket No. E015/CIP-16-812. Minnesota Power recalculated its minimum spending requirements and energy-saving goal accordingly and reported it in its Program Modification Request submitted August 9, 2017, and approved by the Deputy Commissioner on November 16, 2017.

TRIENNIAL DECISION REQUIREMENTS

Minnesota Power has complied with the 2017–2019 Triennial Decision requirements as summarized below.

Budget Flexibility

Previously, utilities were required to file a letter with the Department requesting authorization to exceed approved segment budgets by 25% or more. Beginning in 2017, Minnesota Power is required to notify the Department via a courtesy notification of circumstances where the Company expects to exceed a program's approved budget by more than 25% at the segment level. The table below shows the approved budgets for 2019, 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	$397,030	$368,564	93%
Segment: Residential			
Power of One Home	$2,377,252	$1,824,343	77%
Segment: Commercial/Industrial			
Power of One Business	$4,565,608	$3,792,943	83%
Segment: General Indirect			
Customer Engagement	$1,025,025	$538,062	52%
Energy Analysis	$963,280	$881,293	91%
Research & Development *(1)*	$243,800	$228,108	94%
Evaluation & Planning	$746,775	$490,318	66%
Segment TOTAL:	**$2,978,880**	**$2,137,780**	**72%**
Segment: Regulatory Charges			
Regulatory Charges	$200,000	$157,143	79%

(1) Research and Development budget reduced due to newly approved CIP exemption in 2017, Docket No. E015/CIP-16-812.

2017–2019 CIP Triennial Approval Provisions

The Deputy Commissioner approved Minnesota Power's 2017–2019 Triennial CIP[18] with the following specific determinations:

1. The Deputy Commissioner finds that MP's proposed 2017-2019 Plan is in compliance with the following statutory requirements:
    a. Minimum 1.5 percent savings goal requirement (§216B.241, subd. 1c).
    b. Minimum spending levels (§216B.241, subd. 1a).
    c. Minimum low-income spending levels (§216B.241, subd. 7).
    d. Cap on research and development spending equal to ten percent of MP's minimum spending requirement (§216B.241, subd. 2(c)).
        i. The Deputy Commissioner directs MP to include a narrative summary of its R&D activities, and the corresponding dollar amounts for each R&D activity, as part of the Company's annual Status Reports. The Deputy Commissioner directs Staff to evaluate reported R&D spending from MP's Analysis, Evaluation and Project Development program to determine compliance with the CIP R&D spending cap.
    e. Cap on distributed and renewable generation spending equal to five percent of MP's minimum spending requirement (§216B.2411, subd. 1), or ten percent with the Deputy Commissioner's permission for qualifying solar energy projects.[19]
    f. Provision requiring programs to promote the use of efficient lighting and support the collection of spent lamps. (§216B.241, subd. 5, §216B.241, subd. 5(b) and (c)).
    g. Provision requiring inclusion of programs that facilitate ENERGY STAR® labeling, LEED certification, or Green Globes certification of commercial buildings (§216B.241, subd. 1f (c)).
    h. Provision requiring utilities to develop CIP projects to support attainment of SB 2030 standards (§216B.241, subd. 9(e)).
2. The Deputy Commissioner approves MP's budgets and goals at the segment-level (*i.e.*, Residential, Low-Income, Commercial/Industrial and Other Projects), requiring MP to be accountable for achieving segment-level goals. The Company must also report energy savings, spending, participation and cost-effectiveness results at the program, segment and portfolio-level in their annual status reports so that overall CIP program performance can be monitored.
3. The Deputy Commissioner approves MP's technical assumptions.

[18] Docket No. E015/CIP-16-117.

[19] As a result of the February 10, 2017, MPUC approval of Minnesota Power's SolarSense program (Docket No. E015/M-16-485), the Company filed a Program Modification request on August 9, 2017, to remove the Customer Renewable Energy program from the 2017–2019 CIP Triennial Plan (Docket No. E015/CIP-16-117). On November 16, 2017, the Deputy Commissioner approved Minnesota Power's petition. Further, due to the enactment of new legislation in 2017 closing the Made in Minnesota program, the MIM assessment will remain in CIP under CIP Regulatory Charges for 2017 and then be discontinued thereafter. The Customer Renewable Energy program section has therefore been removed from Minnesota Power's Consolidated filing.

4. Within 60 days, MP must file an approved version of its Plan that incorporates all changes and corrects all known errors that have been discovered during the regulatory review proceeding.

5. The Deputy Commissioner finds MP's proposed program designs to be generally reasonable, with the following specific exception:

   a. The ChargeUp™ Pilot is not approved for inclusion in the Company's portfolio. The updated approved spending is included in Table 15.

      Response:

      In response to the Deputy Commissioner's Decision, Minnesota Power removed $125,000 from its Customer Engagement program budgeted for the proposed ChargeUp™ Pilot in Minnesota Power's 2017–2019 Triennial plan. The Company filed the updated approved spending in its 2017–2019 Triennial Conservation Improvement Program ("CIP") Compliance Filing on January 3, 2017.

6. Budget Flexibility and Plan Modifications

   a. The Deputy Commissioner will allow utilities to exceed annual budget goals for all direct impact segments so long as the additional spending does not result in the segment becoming non-cost effective from the societal perspective. Utilities are required to notify the Department via a courtesy notification of circumstances where the utility expects to exceed any segment budget goals by 25 percent. This budget flexibility provision shall not apply to Alternative CIP Programs.

   b. The Deputy Commissioner approves the discontinuation of the Informal Modification procedure for CIP plan modifications and directs utilities to follow the instructions in Minnesota Rules part 7690.1400 and 7690.1430, as outlined in the CIP Budget Flexibility and Plan Modification Section of this Decision.

   c. The Deputy Commissioner requires utilities to email CIP Staff a Courtesy Notification summarizing any program changes that do not fall under the parameters of the formal plan modification process outlined in Minnesota Rules, and then work with Staff to determine whether it merits a formal modification.

   d. The Deputy Commissioner requires that utilities include in their annual status report a description of all program modifications and changes not requiring Deputy Commissioner approval in order to keep the Department and other interested parties informed of their activities.

      Response:

      As a result of the February 10, 2017, MPUC approval of Minnesota Power's SolarSense program (Docket No. E015/M-16-485), the Company filed a Program Modification request on August 9, 2017, to remove the Customer Renewable Energy ("RE") program from the 2017–2019 CIP Triennial Plan (Docket No. E015/CIP-16-117). On November 16, 2017, the Deputy Commissioner approved Minnesota Power's petition. Further, due to the enactment of new legislation in 2017 closing the Made in Minnesota ("MIM") program, the MIM assessment was to remain in CIP under CIP Regulatory Charges for 2017 and is thereafter discontinued. The Customer Renewable Energy program section has therefore been removed from Minnesota Power's 2019 Consolidated filing.

The following guidance on requests related to Minnesota Power's 2017-2019 Triennial Plan was issued by the Department in response to courtesy notifications submitted by Minnesota Power:

i. Starting in 2017, Minnesota Power is no longer required to use IGSHPA contractors for GSHP installations or a pre-application process, due to the use of the TRM measure.

ii. For projects that were started in 2016 (prior triennial), but not completed until 2017, it is acceptable and appropriate to use the TRM 1.1 instead of TRM 2.0 (current triennial).

iii. Regarding multifamily programs, Minnesota Power explored and evaluated various delivery strategies in an effort to move towards a dedicated multifamily offering. A more in-depth description of these efforts can be found in the Energy Analysis section of this filing.

iv. On December 7, 2017, Minnesota Power submitted through email a courtesy notification providing notice that the Company planned to offer increased rebates in its One Home program for refrigerators, freezers and smart thermostats. The Department acknowledged and accepted this request on January 12, 2018.

v. On December 7, 2017, Minnesota Power submitted through email a courtesy notification of a proposed "Fluorescent Troffer to LED" Smart Measure. The Department acknowledged and accepted this request on March 29, 2018.

vi. On November 21, 2018, Minnesota Power submitted through email a courtesy notification that the Company expected to exceed the Energy Partners Low Income program budget by more than 25% for the 2018 program year. On December 4, 2018, the Department acknowledged and accepted Minnesota Power's Energy Partners Low Income budget modification request.

7. The Deputy Commissioner approves the 2017–2019 budgets, energy savings and participation goals. *(Approved budget listed at the beginning of this section in table format.)*

OTHER REGULATORY REQUIREMENTS

2017–2019 Appendix A. Complete List of TRM Deviations and Staff Recommendations

Staff approved all variations of Power of One Home measures and Power of One Business measures.

Measurement and Verification Processes

In 2019, Minnesota Power did not have any customer projects that involved the Measurement and Verification ("M&V") process. It is important to note that for 2019 a significant portion of the savings were not from new construction of industrial operations, which historically have accounted for a large portion of the total claimed savings under Power of One Business.

Minnesota Power expects that attaining savings without the large projects will be the typical model of the One Business program in the future.

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 a 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,[20] 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.[21] Further details regarding Minnesota Power's compliance with this Order can be found in the section titled "2015 Compliance with Department and MPUC Decisions and Orders," which is immediately following this section. Under Minn. Stat. § 216B.1636 there is a EUIC provision with a separate filing process.

In 2016, Minnesota Power's CIP delivery team participated in the Department's Technical Reference Manual ("TRM") measure work focusing on Electric Utility Infrastructure projects. Minnesota Power did not submit any EUI projects in 2016 due to questions related to quantification and qualification of projects but anticipated reviewing ways the EUI TRM might assist in 2017.

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

[21] 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.

On December 11, 2017, the Department filed a Proposal Filing ("Proposal") in order to provide utilities with more formal guidance regarding how EUI provisions can be utilized so that there is consistency and clarity regarding their application in helping utilities continue to meet their energy-savings goals. The Proposal contains the Department's recommended guidance concerning the utility requirements of Minnesota Statutes section 216B.241 subdivision 1c(d) pertaining to the claiming of energy savings for EUI projects. The Proposal also outlines the Department's recommended use and parameters of the carry forward provision contained in Minnesota Statutes section 216B.241 subdivision 1c(b).

The Department's new proposed guidance is based on a plain reading of section 216B.241 subdivision 1c(d) which suggests that the requirements concerning EUI project savings being counted toward energy-savings goals are based on their inclusion in the utility's CIP *plans,* not the actual *results* of those plans. Based on this interpretation, if a utility submits a CIP plan to the Department that is subsequently approved, and the plan includes at least 1% DSM savings with the remainder of a utilities' goal to be met through EUI projects, the actual resulting savings from those EUI projects could then later be counted toward the utility's energy savings results for that particular program year regardless of whether the 1% threshold is actually achieved as part of its CIP results. The Deputy Commissioner approved the new guidance to take effect on February 20, 2018, allowing utilities to apply the new guidance to their 2017 results.

Furthermore, the Deputy Commissioner issued guidance on October 22, 2018 for determining "normal maintenance" activities and the CIP review and approval process for EUI projects.[22]

At this time, Minnesota Power has not requested approval of any EUI projects.

[22] In the Matter of Determining Normal Maintenance Activities and CIP Review Process for Electric Utility Infrastructure Projects. Docket No. E999/CIP-18-543, October 22, 2018

2019 COMPLIANCE WITH DEPARTMENT AND MPUC DECISIONS AND ORDERS

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

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

Response:

4. Effective as of the date of this Order, Minnesota Power modified the CIP tracker account to calculate the carrying charge using the rate from its multi-year credit facility.
5. On September 25, 2015, Minnesota Power submitted a compliance filing in this matter, providing calculation of a new CPA rate of $0.000442, using a fiscal year approach and recognizing that it has been generating revenue since July 1, 2015, at a higher rate of $0.003425.[23]

Minnesota Power continues to use the rate from its multi-year credit facility.

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

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

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

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

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

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

Response:

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

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

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

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

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, and entertainment and employee awards. Minnesota Power provides the following summary in response to those guidelines.

Response:
Minnesota Power summarizes the 2019 expenses that fall within the categories outlined by the Department as follows:

Category	***2019 Amount***	***Description***
Meals	$12,923	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	$44,463	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	$0	This includes awards tied to the successful delivery of conservation program energy-savings goals and outreach objectives.
TOTAL	$57,386	This represents 0.7% of the total annual CIP expenditures, with 100% 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 continue to 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 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.

Status Report

2019 CIP STATUS REPORT

POWER OF ONE CONSERVATION PROGRAM

Minnesota Power's Power of One energy conservation strategy offers a wide variety of program offerings to best serve its diverse customer mix, while continuing to focus on targeted program objectives—quality installations, informed decisions, conservation and safety. The Company exercises a thoughtful, balanced approach in terms of traditional program design versus less established, emerging opportunities, using a combination of "direct savings" and "indirect savings" programs that complement each other and provide for a comprehensive customer experience. Refer to Figures 1 and 2 for a breakdown of spending by direct savings and indirect savings programs.

Figure 1: 2019 Program Spending By Direct and Indirect Savings Programs

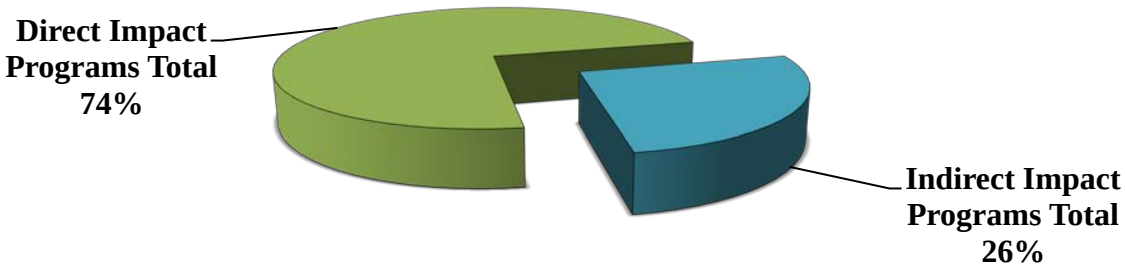
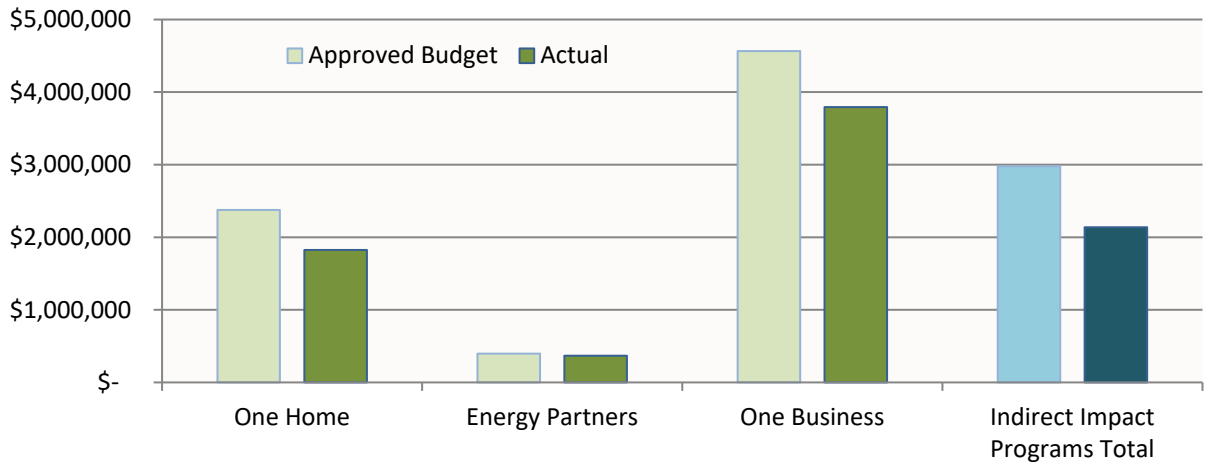


Figure 2: 2019 Approved Budgets & Actual Spending



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

Figure 3: 2019 Direct Savings Program Spending Breakdown

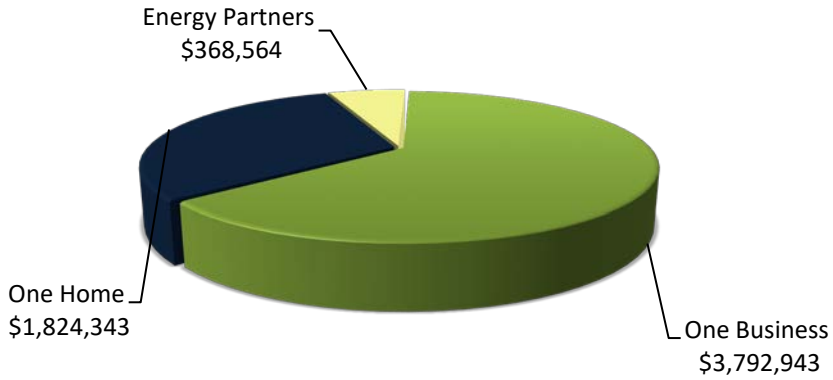
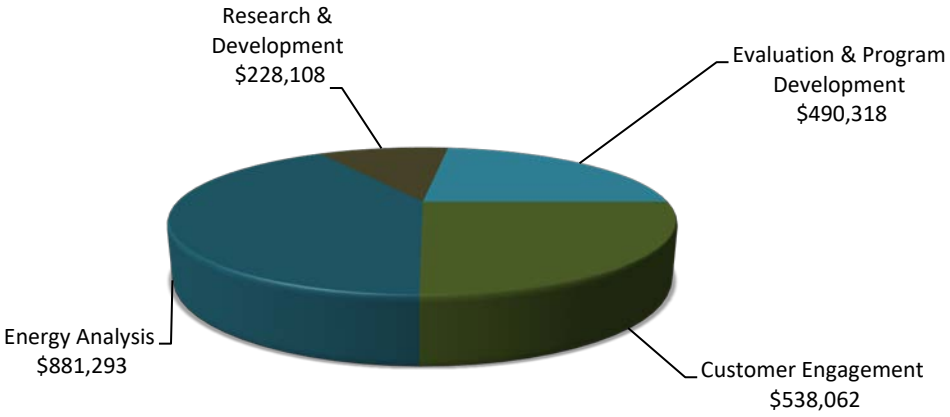
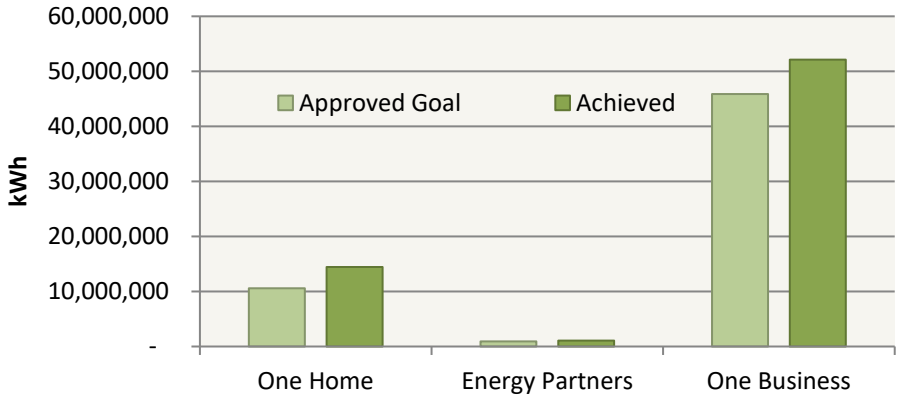


Figure 4: 2019 Indirect Savings Program Spending Breakdown



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 established methods like incentives and direct installation of energy efficiency measures. See Figure 5 for a breakdown of approved savings goals vs. achievements by program.

Figure 5: 2019 Approved Savings Goals & Achievements



While rebates continue to be a large component of influencing customer choices, the value of Power of One program offerings and resources also comes from including a 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, delivered through Minnesota Power's cross-market programs—Customer Engagement, Energy Analysis, Research & Development and Evaluation & Planning. These programs support direct savings programs and serve as a pipeline for projects that ultimately deliver on program objectives.

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

LOOKING FORWARD

While Minnesota Power continues its proven track record of successful program performance at or above 1.5% since 2010, when the goal formally went into effect, the Company acknowledges that the current energy-efficiency environment is rapidly evolving in ways that will continue to present new challenges and opportunities. As described in past filings, Minnesota Power has historically achieved a significant portion of savings from large-scale commercial projects. Projects of this magnitude have become less available, as indicated by the lack of large projects completed in recent years. Additionally, cost-effective savings opportunities continue to decline due to market saturation and changing baselines, requiring the Company to explore new ways to engage customers.

Minnesota Power has taken steps to prepare for these challenges in recent years including an increased focus on new technologies, exploring new delivery strategies and modifying communication efforts to ensure that we continue to be effective in our outreach. The Company will continue to expand on efforts to engage customers in energy efficiency using new and innovative methods to promote underutilized technologies. While these efforts have been

successful thus far, as evidenced by participation in the HVAC portion of the One Home program, continuing to achieve this higher level of savings through less cost-effective measures will be more time and resource intensive.

The Company continues to monitor the ongoing COVID-19 pandemic to understand the impacts it will have on conservation program success in 2020. Minnesota Power has halted in-person audits and limited program communications for the time being. We have taken steps to modify our programs to continue serving customers but messaging has shifted from encouraging program participation to general information about saving energy. Minnesota Power will provide an update on the impact of the COVID-19 pandemic in our 2020 Consolidated Filing.

As utilities continue to navigate the changing conservation landscape, regulatory flexibility may be necessary to continue advancing Minnesota's energy policy as well as economic and environmental goals. Minnesota Power will continue to monitor legislative changes, and engage in working groups as discussions around beneficial electrification, fuel switching within CIP and changes to evaluation and performance metrics, among other things, unfold. Minnesota Power remains committed to providing sustainable and cost-effective energy-efficiency programs, with ongoing program development and increased efforts to raise program awareness and participation.

Minnestota Power's 2019 Cip Expenditures & Achievements

2019	*Expenditures*				*Energy Savings (kWh @ Busbar)*				*Demand Savings (kW @ Busbar)*				*Participation*			
Direct Impact Programs	***Filed Budget***	***Approved Budget (1)***	***Actual***	***Percent of Approved***	***Filed Goal***	***Approved Goal***	***Achieved***	***Percent to Goal***	***Filed Goal***	***Approved Goal***	***Achieved***	***Percent to Goal***	***Filed Goal***	***Approved Goal***	***Achieved***	***Percent to Goal***
One Home	$ 2,377,252	$ 2,377,252	$ 1,824,343	77%	10,590,448	10,590,448	14,444,512	136%	1,126	1,126	1,898	169%	151,053	122,841	259,313	211%
Energy Partners	$ 397,030	$ 397,030	$ 368,564	93%	936,080	936,080	1,082,871	116%	105	105	116	110%	7,229	7,229	14,632	202%
One Business	$ 4,565,608	$ 4,565,608	$ 3,792,943	83%	45,863,694	45,863,694	52,141,839	114%	7,881	7,881	6,324	80%	3,366	3,366	1,355	40%
Direct Impact Programs Total	**$ 7,339,890**	**$ 7,339,890**	**$ 5,985,850**	**82%**	**57,390,222**	**57,390,222**	**67,669,222**	**118%**	**9,112**	**9,112**	**8,338**	**92%**	**161,648**	**133,436**	**275,300**	**206%**
Indirect Impact Programs																
Customer Engagement	$ 1,150,025	$ 1,025,025	$ 538,062	52%									108,000	108,000	104,640	97%
Energy Analysis	$ 963,280	$ 963,280	$ 881,293	91%									5,392	5,392	5,848	108%
Renewable Energy (2)	$ 274,100	$ -	$ -	-			-									
Research & Development	$ 274,100	$ 243,800	$ 228,108	94%												
Evaluation & Program Development	$ 746,775	$ 746,775	$ 490,318	66%												
Indirect Impact Programs Total	**$ 3,408,280**	**$ 2,978,880**	**$ 2,137,780**	**72%**	**-**	**-**	**-**						**113,392**	**113,392**	**110,488**	**97%**
Regulatory Charges	$ 200,000	$ 200,000	$ 157,143	79%												
Total	**$ 10,948,170**	**$ 10,518,770**	**$ 8,280,773**	**79%**	**57,390,222**	**57,390,222**	**67,669,222**	**118%**	**9,111.7**	**9,111.7**	**8,337.9**	**92%**	**275,040**	**246,828**	**385,788**	**156%**

(1) As modified and approved by the Deputy Commissioner on November 16, 2017, in the Company's 2017-2019 Triennial CIP Filing Program Modification Request in Docket No. E015/CIP-16-117.

(2) As a result of the February 10, 2017, MPUC approval of Minnesota Power's SolarSense program (Docket No. E015/M-16-485), the Company filed a Program Modification request on August 9, 2017, to remove the Customer Renewable Energy (RE) program from the 2017–2019 CIP Triennial Plan (Docket No. E015/CIP-16-117). On November 16, 2017, the Deputy Commissioner approved Minnesota Power's petition. Further, due to the enactment of new legislation in 2017 closing the Made in Minnesota (MIM) program, the MIM assessment will remain in CIP under CIP Regulatory Charges for 2017 and then be discontinued thereafter. The Customer Renewable Energy program section has therefore been removed from --Minnesota Power's Consolidated filing.

EXHIBIT 4

One Home

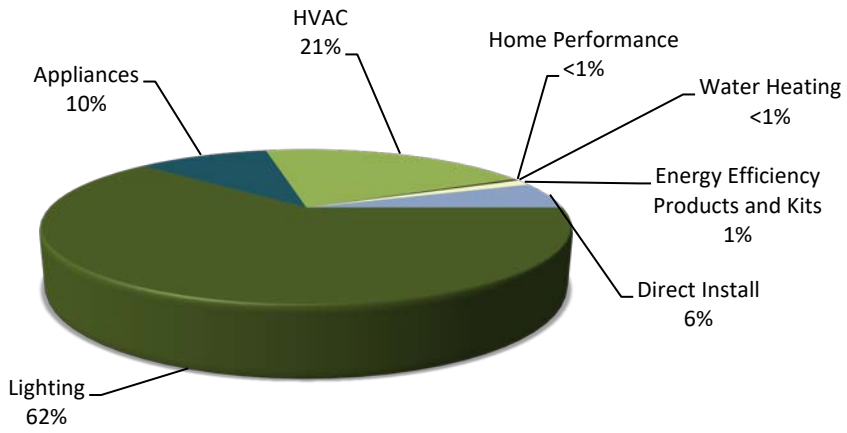
PROGRAM TITLE: POWER OF ONE HOME

PROGRAM DESCRIPTION

Power of One Home is Minnesota Power's portfolio-based residential program designed to help customers make informed decisions about how to save energy in their homes. The program includes rebates on energy-efficient lighting, appliances, heating and cooling, water heating and energy-efficient new construction.

While a variety of technologies are promoted through Power of One Home, lighting continues to be a primary driver of success, accounting for over half of reported savings. Heating and cooling measures represent 21% of the savings while appliances represent 10% of savings. Direct installations, home performance and energy-efficient kits represent a combined 7% of reported savings.

Figure 6: Power of One Home Program – 2019 Savings by Technology (kWh)



RESULTS

The table below details the Power of One Home 2019 approved goals versus actual results.

	Approved Goals		***Actual Results***		***% of Approved Goal***
Total Project Expenditures	$2,377,252		$1,824,343		77%
Total Project Energy Savings (at busbar)	10,590,448	kWh	14,444,512	kWh	136%
Total Project Demand Savings (at busbar)	1,125.5	kW	1,898.0	kW	169%
Participation (measures)	122,841		259,313		211%

EVALUATION METHODOLOGY

This program was evaluated based on the following items:

- Participation levels (number of measures implemented)
- Energy savings (kWh)
- Demand savings (kW)
- Savings by measure
- Net benefit/cost results (see the benefit/cost summary in the Evaluation section)

Minnesota Power strives to influence residential customers to choose energy efficiency, whether through single end-use technologies or bundling a variety of services and technologies together to optimize further energy savings within their home. Helping customers understand how a house functions and uses energy is a critical step in gaining energy savings. Interactive tools such as MyAccount (an online energy tracking and account management tool) offered by Minnesota Power help accomplish this step, along with experienced and well-versed energy auditors who are the boots on the ground educating homeowners on energy efficiency personal to their situation. These offerings are 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.

In 2019, Minnesota Power continued its successful Power of One Home program, which relies predominantly on a prescriptive strategy. This strategy makes it easy for customers to participate in the program and streamlines the rebate process. The Company offers a more custom approach when projects require more in-depth analysis into the savings garnered from multiple energy-efficient measures bundled together. This happens, for example, when a customer participates in the Triple E New Construction program. Minnesota Power recognizes that each customer's situation may be unique and knows the importance of offering a variety of paths for them to achieve their goals in energy efficiency.

Many individual components make up the full portfolio known as the Power of One Home program. The following sections provide more information about specific aspects of this program for 2019.

ENERGY STAR® Lighting and Appliances – 2019 was a very successful year for the ENERGY STAR® lighting and appliance portion of the One Home portfolio, with lighting accounting for a large portion of achieved savings. Minnesota Power incentives, coupled with strategically placed products and clear marketing in stores significantly impacted the large number of light emitting diode ("LED") sales seen in the lighting program in 2019. The demand for LED lighting comes from consumers realizing the benefits of this long-lasting, energy-efficient technology, with a large part of that educational messaging coming from Minnesota Power's efforts in social media, online advertising, bill inserts, point-of-purchase materials in the stores, and the Company's own website, with a section devoted to energy efficiency. A strong emphasis is put on ENERGY STAR® options as the superior energy efficiency solution. With the increasing demand for LEDs, and as product lines expand, so does the need for a strong participating retailer network. Minnesota Power continues to leverage relationships that include a broad retailer mix of mass merchants, home improvement, warehouse club, independent hardware and drug and specialty stores throughout the service territory to ensure that Minnesota Power customers have access to a variety of LED technology. The Company anticipates that the growing number of LED products will continue to lead the program for the near future.

In 2019, Minnesota Power offered rebates on ENERGY STAR® refrigerators, freezers and dehumidifiers. Refrigerator and freezer participation held steady over last year, while dehumidifier program participation increased 22% between program years 2018 and 2019. This is due in large part to the placement of on-package rebate stickers as well as a strategically planned promotion during the spring when dehumidifiers are in highest demand. Minnesota Power's refrigerator and freezer recycling offering had an increase in participation over last year as well, taking 1,058 inefficient refrigerators and 256 freezers off the secondary market. Continued appliance recycling success may be attributed to efforts made in 2019 to partner with a popular big box store in educating their sales representatives to submit appliance pick-up requests for customers during the purchase of new units at their store. Additionally, a promotion during late summer marketed through a press release and targeted postcards to customers having mature units showed a significant increase in participation levels during the limited timeframe of the promotion. The option to sign-up for rebates online continues to offer customers an easy, convenient and straightforward option to apply for appliance rebates, with over 40% of rebate submittals being routed through those means in 2019.

The company utilized a lighting and appliance field representative again in 2019 to visit participating retailers throughout the service territory. Field representatives conducted 1,091 store visits to 109 participating stores in 2019. These visits are important to the ENERGY STAR® lighting and appliance portion of the One Home program because they allow continual development of the relationship that Minnesota Power has with lighting and appliance retailers, whether small, family-owned hardware stores or global, big-box chains. During these visits, field representatives are ensuring associates are educated on the program, point-of-purchase materials are present on shelves markdown products are correctly priced, and the store has rebate forms available for distribution to Minnesota Power customers. Additionally, Minnesota Power in partnership with a few participating retailers in the Duluth area, held three in-store appliance demonstrations where Minnesota Power representatives were available to answer questions and share information on current rebates and the advantages of choosing ENERGY STAR® when purchasing new appliances. These events are important as they allow Minnesota Power to personally connect with customers as well as strengthen the utility/retailer relationship. Minnesota Power will continue to explore opportunities for increased engagement with customers and participating retailers in the coming years.

Water Heating – Water heating makes up a significant portion of residential energy use. As such, Minnesota Power offers the following energy-efficient products to help customers reduce electric water heating costs: a water- and energy-saving SmartPak kit, drain water heat recovery ("DWHR") rebates, and heat pump water heater ("HPWH") rebates. 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. Although there was no participation in 2019, DWHR will continue to be a promoted technology to customers. Minnesota Power rebated three heat pump water heaters in 2019, up from two in 2018. Opportunities for water heating measures as part of the One Home program are somewhat limited overall, as the main requirement for customers is to use electricity to heat water. Additionally, other barriers, including a conservative incentive and restrictive equipment size requirements, which were initially used while the new technology was still being evaluated, have historically limited customer adoption of heat pump water heaters. In late 2019, Minnesota Power reevaluated the incentive and ran a promotion with an increased rebate resulting in all three HPWH participants for 2019. For 2020, the Company intends to continue the increased rebate and also hopes to address the size restriction barrier.

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 on-site visits. The plan review ensures that prescriptive insulation values are being met and that energy-efficient lighting and appliances are being installed. This is followed by a framing visit, which is an opportunity to help the builder identify problem areas for air sealing such as can lights, cantilevers and bonus rooms. The second visit is the pre-sheetrock evaluation. This provides an opportunity to confirm that the insulation values are correct, identify any further air sealing opportunities and check the specifications on the mechanicals. Lastly, the final visit to 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.[24] In 2019, the program experienced similar participation to that of 2018, most likely a result of continued low prices of natural gas and delivered fuels such as propane. Regardless, this is one of the best opportunities to educate consumers on energy efficiency as Triple E New Construction addresses everything from lighting and appliances to HVAC and thermal integrity.

Minnesota Power continues to offer plan reviews for all homes being built in its service territory. The intent of this effort is to reach more customers with the Triple E message of building with safe, durable and efficient construction methods in mind. Doing so ensures a higher level of quality services to all home builders, regardless of heating type, and has the added benefit of extending the efficiency message by staying in front of the customer to ensure other residential measures such as energy-efficient appliances, lighting and HVAC systems are not forgotten. This effort also provides an avenue for educating customers on utility rebates, further ensuring customers are provided the incentive to consider additional options that will encourage a complete efficient home construction experience.

Builders – The Company works with area builders on both a one-on-one basis and through educational outreach such as the annual Energy Design Conference & Expo. This gives Minnesota Power an opportunity to update builders on the Triple E New Construction program standards and encourage them to meet Triple E standards for new homes they build, in addition to providing a vehicle for achieving continuing education requirements.

Direct Installations and Targeted Kit Offers – Direct installation of energy-efficient products during an energy analysis results in meaningful energy savings along with positive customer satisfaction during the time of installation. Minnesota Power offers free direct installation of products to customers participating in our Home Energy Analysis offering in addition to tenants within facilities that participated in our specific multifamily direct installation efforts in 2019. The Company will continue to evaluate this offering and work to ensure available products are meeting customer needs into the future.

Energy efficient product kits have been available to Minnesota Power customers for several years. The SmartPak Kit (which includes an energy-saving showerhead, faucet aerators, shower timer and water temperature card) and the Starter Kit (including three LEDs, refrigerator thermometer, shower timer and plug load information) were provided to customers upon request or by participation in various promotions and offers. Savings per kit were discounted by 50% based on installation levels.[25] Energy-efficient kits are a good way to promote first steps in energy

[24] Minnesota Power's 2011-2013 Triennial CIP, Docket No. E015/CIP-10-526.
[25] Minnesota Power's 2011-2013 Triennial CIP, Docket No. E015/CIP-10-526.

conservation and help generate interest in other program offerings. Minnesota Power promoted SmartPaks and Starter Kits through various methods such as its website, bill inserts and social media. In 2019, the Company recognized October as Energy Awareness Month by promoting the Starter Kit to all of its customers as being the first step of the energy efficiency journey. Digital advertising through social media, digital ads and emails resulted in 137 households participating in this promotion, with the idea that these customers will have additional tools and resources to continue participating in energy conservation programs for years to come.

Heating, Cooling and Air Conditioning – The HVAC component of the Power of One Home program is an integral and growing part of the overall residential portfolio. In 2019, the program saw a 23% increase in participation in HVAC measures including air source heat pumps, ground source heat pumps, electronically commutated motors ("ECM") and circulators. Contributing to this success is an increased effort to engage more consistently with participating contractors, local distributers and HVAC manufacturers on a regular basis throughout the program year. In 2019, Minnesota Power visited all participating contractors in person to educate on program changes, provide rebate forms, educate on cooperative advertising opportunities and to gain feedback on the program**.** In addition, the Company held two air source heat pump ("ASHP") trainings during the year that focused on the advancements of this technology and its capabilities. These trainings, along with continuous education to both contractors and customers in regards to heat pumps contributed to a 123% increase or an increase from 30 to 67 of cold climate air source heat pump models in the program in 2019, compared to 2018, demonstrating that the Company's efforts to move the market to more energy-efficient heating and cooling options are making an impact.

Joint ECM Furnace/Boiler Program with the City of Duluth/ComfortSystems – Minnesota Power and ComfortSystems (the City of Duluth natural gas utility) continued a partnership to offer a joint rebate program on high efficiency furnaces and boilers with ECMs to Duluth residents in 2019. This is the fourth year of this partnership meant to serve shared customers with natural gas and electric incentives with one joint application and rebate check. With over 400 rebates submitted in 2019, this successful partnership is proof that both customers and contractors appreciate the streamlined process. A partnership with ComfortSystems will continue in 2020 as part of efforts to continually look for ways to enhance the experience for shared customers in the City of Duluth.

Contractor Network – For the second year in a row, Minnesota Power's contractor network grew by more than 20% as a result of targeted efforts to recruit new contractors. A field representative conducted 314 contractor visits throughout the year, sharing information about Minnesota Power's programs and answering contractor questions. Minnesota Power conducts a survey of customers who participate in the HVAC program to better understand the customer experience. Gathering feedback on the equipment selection, installation process, equipment performance and overall satisfaction with contractor experience in terms of expertise and quality of service provides valuable insight to Minnesota Power's program offerings. In 2019, Minnesota Power again offered complimentary registration to all participating HVAC contractors to attend the 29th annual Energy Design Conference. This conference offers sessions on a variety of building science and technology topics focused around energy efficiency. The Company feels it is critical to ensure participating contractors are offered continuous education, tools and resources on energy efficiency as they are a trusted resource to our customers for information on high efficiency equipment when making energy-related decisions.

Retailer Engagement Network – Minnesota Power strives 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 encourages retailers to promote energy-efficient products to customers and provides point-of-purchase and informational materials to use for promotional purposes. The Company has participated in specific event and in-store promotions with key retailers in strategic situations. For example, the Company is a long-time exhibitor featured at the Arrowhead Home and Builders Show in Duluth, and has implemented a special offer for customers, in partnership with a local lighting retailer who is featured at the home show as well, as a way to get customers to visit both booths. Partnerships like this enhance utility/retailer relationships and are ways to continue to strengthen the retailer engagement network. Also, the continuation of a lighting and appliance field representative to visit participating stores will grow relationships with the stores and help increase participation.

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 the utility reap the program benefits, including cumulative impact, while leveraging economies of scale these contractors can offer.

SUMMARY

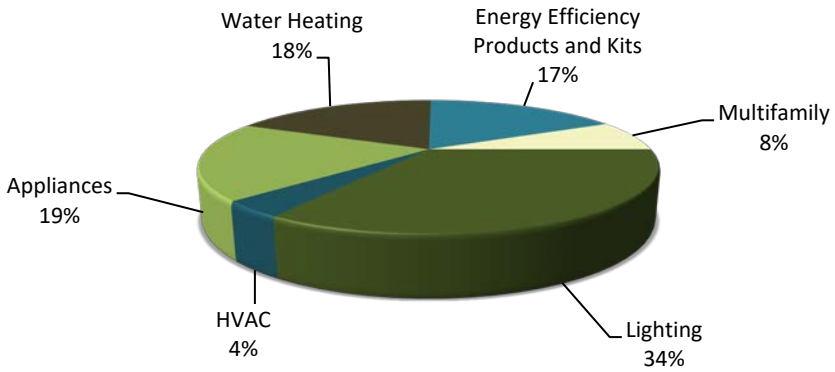
The Power of One Home program had strong performance in 2019. The bulk of energy savings was achieved again this year by a tremendously successful lighting program. This, combined with a balanced portfolio of energy-efficient products and services tailored to customers' specific needs, resulted in a successful program that offers options for customers in different phases of their energy conservation journey. While this portfolio of products and services has been successful in encouraging residential customers to make energy-efficient choices, the Company does see a need to adapt its residential strategy in the future for consistency with changing policies and technology advancements. Minnesota Power will continue to encourage cost-effective measures like energy-efficient lighting while also looking for opportunities to grow other aspects of the residential portfolio including HVAC and new construction programs in 2020.

PROGRAM TITLE: ENERGY PARTNERS LOW INCOME

PROGRAM DESCRIPTION

The Energy Partners Low Income program is designed to provide income-eligible customers educational resources, Home Energy Analysis ("HEA") and direct installation of energy-efficient products and appliances to help them use energy more effectively for the long term. Measures within this program primarily focus on lighting, refrigeration and water heating; products within these categories are provided free of charge to customers that qualify. Program delivery of HEA is accomplished mainly through local Community Action agencies throughout Minnesota Power's service territory in conjunction with weatherization services, where possible. This thoughtful and intentional delivery strategy helps to provide the customer with a seamless experience that leverages various program offerings that one program alone could not provide. Through single family and multifamily HEA, installed measures, energy-efficient upgrades and community events, Minnesota Power is engaging, empowering and educating customers with the Energy Partners program.

Figure 7: Energy Partners Programs – 2019 Savings by Technology (kWh)



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	$397,030	$368,564	93%
Total Project Energy Savings (at busbar)	936,080 kWh	1,082,871 kWh	116%
Total Project Demand Savings (at busbar)	105.2 kW	115.6 kW	110%
Participants (measures)	7,229	14,632	202%
Energy Analysis - Multifamily Units *(1)*	185	219	118%
Energy Analysis - Single Family Homes *(1)*	350	806	230%

(1) The Energy Analysis figures reflected here are also included in the Energy Analysis section but are included here to indicate the number of individual households that participated in the Energy Partners program.

In consultation with Energy CENTS Coalition, Minnesota Power provides the following table to summarize 2019 Energy Partners participation and average rebate costs by measure.

Measure Type	Quantity	Average Cost Per Measure
Lighting	**9,579**	**$8.20**
LED Bulb	8,871	$4.54
LED Torchiere	708	$54.00
HVAC	**30**	**$1,294.73**
Dehumidifier	22	$263.64
Furnace - Delivered Fuels	7	$4,376.46
Air Sealing and Insulation	1	$2,406.72
Appliances	**274**	**$370.58**
Refrigerator Replacement	103	$764.20
Freezer Replacement	22	$425.75
Refrigerator Turn-In	121	$90.00
Freezer Turn-In	27	$90.00
Microwave Oven	1	$139.00
Water Heating	**1,061**	**$6.00**
Showerhead	191	$16.90
Aerator	470	$3.95
Pipe Insulation	90	$0.70
Shower Timer	301	$3.70
Water Heater Temperature Set-Back	9	$12.00
Energy Efficiency Products and Kits	**1,727**	**$19.44**
Energy Expo Kits	500	$39.65
Refrigerator Thermometer	747	$3.10
Power Strip - Tier 1	480	$23.80
Multifamily	**1,961**	**$7.02**
LED Bulb	1,726	$6.91
Refrigerator Thermometer	196	$3.76
Power Strip - Tier 1	39	$28.15
Grand Total	**14,632**	**$18.63**

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 in the Evaluation section)

The Energy Partners program surpassed the original energy savings and participation goals laid out for 2019. Minnesota Power promoted the program to customers through partnerships with Community Action agencies, bill inserts, online ads and various other promotional activities, specifically targeting times in the fall and winter when customers tend to see higher usage on their bills. Efforts to ensure our Community Action agency partners were engaged in the program continued in 2019, with site visits to each agency office to discuss program improvements and potential barriers to program delivery. Minnesota Power distributed postcards in 2019, in an effort to provide low income customers who have high electric usage with information about the Energy Partners free HEA as well as information about other services that they may benefit from such as the Customer Affordability of Residential Electricity ("CARE") discount rate. Mailing lists were then used by agencies as a priority list of leads for HEAs in Minnesota Power's service territory. Three batches of these target mailings were released, which resulted in 16% of targeted customers getting an HEA and other resources from Minnesota Power by year end. Because of this success, postcard distribution will continue in 2020 in coordination with the Community Action agencies to ensure they are staffed properly to accommodate the increased interest.

New in 2019, Minnesota Power implemented a customer survey for customers participating in the Energy Partners program. Questions focused on customer satisfaction from scheduling to the audit itself, and results were shared with each corresponding agency. These surveys had an approximate return rate of 31% and out of approximately 250 completed surveys, there was only one customer complaint (regarding scheduling). Also for the first time, energy saving kits were distributed to Minnesota Power customers via our Community Action partners at Headstart home visits in 2019. This is another welcome example of how Minnesota Power's partnership with community agencies expands our reach to customers via cross promotion and resource alignment. This partnership is beneficial for all parties and at its Annual Meeting, KOOTASCA Community Action awarded Minnesota Power a Participant Recognition, "For your partnership and valuable contributions to the households we serve."

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. Energy Partners savings are achieved through replacement of inefficient refrigerators and freezers and through direct installation of energy-efficient lighting products, along with other energy-efficient products such as dehumidifiers, programmable thermostats, microwaves, refrigerator thermometers and plug load kits. Lighting savings continues to be driven by LED technology, with multiple options available for installation based on unique customer needs. Efforts continued in 2019, to be more active with electrically-heated homes in need of shell upgrades including insulation and air-sealing measures.

Minnesota Power's Low Income Customer Task Force, established in 2017, continued its efforts in 2019, to improve services to assist low income customers with cross-functional efforts in mind—conservation program offerings, affordability programs, budget billing, etc. Distribution of postcards, monthly bill inserts, magazine ads and a news release were a few of the strategies

used to share information about programs and services available to low income customers in the Company's service territory. Representatives from Minnesota Power attended, for the third year in a row, the annual National Energy and Utility Affordability Coalition ("NEUAC") conference.

The 16th annual Energy Awareness Expo was held in October 2019 at the Duluth Salvation Army. Minnesota Power collaborated with the City of Duluth, ComfortSystems and Arrowhead Economic Opportunity Agency ("AEOA") to plan and implement the event. Community-based agencies and other fuel suppliers provided low income customers with energy education and information about available resources and assistance, including fuel assistance. Community Action agencies distributed over 130 Energy Assistance applications, 65 of which were returned at the event. In addition, Minnesota Power representatives were on hand to promote affordability programs including answering questions and enrolling eligible customers in the CARE discount rate program. The Company also promoted energy efficiency with the "Wheel of Energy Savings," where attendees answered questions about saving energy to win prizes. The event was well attended, with 650 meals served, and 300 energy-saving kits distributed to low income households. This event continues to reach a wide variety of customers while creating a sense of community through collaboration. In 2019, the Citizens Utility Board ("CUB") and Consumer Affairs Office ("CAO") were both present at the event, sharing their own information with Minnesota Power customers.

General community involvement and outreach has been a particular focus for Minnesota Power in recent years. A new event for Minnesota Power in 2019, was Fond du Lac's Energy Dinner, in conjunction with the Clean Energy Resource Teams ("CERTs"). At this event the Company distributed light bulb samples, information about energy saving tips and literature on a variety of topics for customers to learn how to save on their energy bills. Agencies also helped distribute Minnesota Power energy saving literature at community events throughout the year.

Minnesota Power continued to explore ways to serve the low income multifamily sector in 2019. Eight low income multifamily projects were completed in 2019, which included an in-unit walk-through analysis and installation of energy-saving measures. Minnesota Power partnered with local gas utilities as able on these projects with the intention of making the experience for the customer as easy as possible, providing them an all-inclusive look at the energy being used in their facility (natural gas and electric) with one joint analysis instead of separate visits by the fuel providers. Common area analysis was completed, and recommendations were made to the properties as to next steps to make system upgrades or to save energy in general. Direct installation of energy efficient measures in tenant units was determined on a case-by-case basis and decided by need of individual units. Minnesota Power is evaluating the results of these projects to help guide program development for the low income multifamily sector. For a more comprehensive look at all 2019 Multifamily efforts, refer to the Multifamily Summary included after the Energy Analysis Section.

Minnesota Power recognizes the importance of agency relationships within the Energy Partners program. Not only does this program host a "Listening Session" every year for all of its low income providers to gather feedback and give program updates on the Energy Partners program, but quarterly agency calls occur as well to pace with the agencies and share company-wide updates that would be helpful to the group. It is with these recurring meetings, along with joint community outreach efforts like the ones mentioned above, that Minnesota Power can continue to strengthen these relationships that effectuate meaningful, customer-driven work to best serve this sector of customers.

SUMMARY

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 are provided 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.

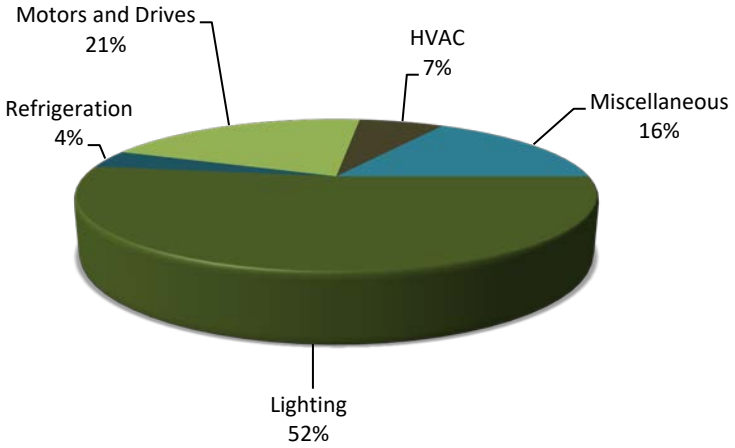
One Business

PROGRAM TITLE: POWER OF ONE BUSINESS

PROGRAM DESCRIPTION

The Power of One Business program serves as the primary forum for reaching and serving business, industrial, agricultural and public sector customers. Minnesota Power recognizes that customers have different priorities and objectives when it comes to investment decisions and this program provides the flexibility required to serve the unique circumstances of various business types. By utilizing program rebates, incentives, tools, expertise and resources, Minnesota Power is able to respond to a dynamic mix of priorities, technical opportunities and specific economic factors.

Figure 8: Power of One Business Program—2019 Savings by Technology (kWh)



RESULTS

The table below details Power of One Business 2019 goal accomplishments.

	Approved Goals	*Actual Results*	*% of Approved Goal*
Total Project Expenditures	$4,565,608	$3,792,943	83%
Total Project Energy Savings (at busbar)	45,863,694 kWh	52,141,839 kWh	114%
Total Project Demand Savings (at busbar)	7,881.0 kW	6,324.3 kW	80%
Participation (measures)	3,366	1,355	40%

2019 Power of One Business Projects Overview by Customer Class

	Total $ Rebated	*Number of Measures*	*Total Estimated kWh Saved (meter)*
Agricultural	$ 38,952	58	1,213,042
Commercial	$1,646,005	1,124	31,944,665
Industrial	$701,488	173	14,031,912

EVALUATION METHODOLOGY

Minnesota Power evaluated energy and demand savings based on manufacturer end-use data, proven engineering methods, the Minnesota Technical Reference Manual and/or site-specific engineering studies. A component of all project savings and demand reduction estimates involves end-use calculations. In 2019, Minnesota Power continued its expanded emphasis on pre- and post-project analysis.

When considering energy-savings opportunities, Minnesota Power reviews projects with consideration toward not only energy savings, but also operating costs, effective design and technology utilization, unit output and overall productivity. By following a well-grounded model, energy conservation can become an integral part of sound investment decisions, supporting the customer's overall asset planning and informed resource considerations, and garnering buy-in from operations employees. 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. Awareness of how systems work together is critical and attention to "systems thinking" with regard to processes pertaining to energy usage is important in providing solutions to customer's energy challenges.

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

Minnesota Power maintains a continuous commitment to refining strategies to reach customers with meaningful programs that address their expectations, preferences, operational needs and decision-making processes. Minnesota Power continues to see a growing portion of its Power of One Business goal coming from what is generally considered hard-to-reach sectors—small to mid-sized businesses. Serving this customer segment requires options that streamline the participation process so these customers, 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.

The Company's customer-driven marketing strategy ensures that customers' operational needs are addressed while retaining flexibility in program delivery. Customers with less complex projects are better suited to use prescriptive type rebates and delivery methods, while customers with larger or more complex processes are encouraged to potentially reach a greater level of energy savings through in-depth analysis of their facilities. In any case, customers are provided a simple pre-application 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.

END-USE CATEGORIES & ENGAGEMENT

Lighting & Controls – Lighting continues to be one of the main contributors to the Power of One Business program. As recently as 2017, lighting accounted for 65% of the One Business kWh savings, while in 2019, lighting savings dropped to 52% of the One Business kWh savings. This is primarily due Minnesota Power's effort to promote other energy savings technologies such as compressed air and process improvement. Minnesota Power continues to offer custom incentives for new and retrofit lighting projects with LED being by far the technology of choice. With LED technology, controls are also becoming a much more popular and cost-effective way to implement lighting savings. Although controls represent a smaller portion of the overall CIP savings, they are still an important part of the One Business program results.

Refrigeration – Minnesota Power offered incentives for new and retrofit refrigeration projects, which include refrigeration equipment, controls, appliances and evaporative fan motor retrofits.

Motors/Pumps – Minnesota Power offered incentives for new or replacement equipment such as premium efficient motors, variable frequency drives ("VFD") and electronically commutated motors ("ECM").

Heating, Ventilation and Air Conditioning (HVAC) & Controls – Minnesota Power offered incentives for new or replacement commercial and industrial heating, ventilation and cooling equipment including roof top units, chillers, heat pumps and controls.

Miscellaneous – Minnesota Power offered incentives for new or retrofit projects with technologies including compressed air upgrades, commissioning, appliances, IT equipment or process improvements.

In 2019, Minnesota Power implemented the following engagement strategies as part of the One Business program.

Direct Installations – In 2019, Minnesota Power representatives visited three communities (Cloquet/Scanlon, Long Prairie and Cuyuna Lakes Area) and provided on-site analyses at local businesses with the direct installation of energy-saving products. By providing these measures, customers gained an increased awareness of products available, leading to conversations about future projects. These visits also allowed Minnesota Power to gain valuable information about technologies used, helping the Company to identify additional energy-savings opportunities.

Multifamily Initiatives – Minnesota Power continued to work with multifamily facilities as part of the One Business custom commercial program, completing 59 custom multifamily projects in the 2019 program year. Additionally, in 2019, Minnesota Power continued to explore direct installation options not only for in-unit applications but common area applications as well. Through this effort Minnesota Power worked with one multifamily building to install lighting measures throughout the common areas in the building. Minnesota Power will continue to provide this service throughout 2020 and into the next triennial. For more information on Minnesota Power's Multifamily offerings see the Multifamily Summary included after the Energy Analysis program.

High Bay Lighting Program – In 2019, Minnesota Power continued the enhanced lighting program to provide an extra incentive for high bay lighting fixtures. This promotion allowed commercial and industrial customers with large indoor space and high ceilings to enter the LED market at a much lower cost. Emphasis was focused on energy savings, quality of light, safety for workers and the public, as well as lower maintenance costs. Personal contacts with all businesses were made to assist these customers with understanding of the incentives and help in working through the projects.

Benchmarking – Minnesota Power uses benchmarking with facilities to help identify energy-savings opportunities when making facility upgrades and to identify maintenance improvements. In addition, Minnesota Power continues to share information with those responsible for facility management and serve as a resource for information on new technologies and application techniques.

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

ELECTRIC UTILITY INFRASTRUCTURE PROJECTS

In 2019, Minnesota Power did not claim savings from any EUI projects. However, CIP professionals worked closely with Minnesota Power's facility managers to identify energy-savings opportunities within its facilities and will continue to do so to identify new opportunities in 2020.

SUMMARY

In 2019, Minnesota Power far exceeded its energy-savings goal for the Power of One Business program, achieving 114%. Though the actual participation numbers (listed as measures) are lower than the approved goals, this is more indicative of the types of projects than it is of actual participation.

The Power of One Business program is designed to empower customers to make informed and effective energy choices by asking the right questions early in projects and reinforcing that energy efficiency is a multi-step process that 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 filing provide further context about how customers, in collaboration with Minnesota Power, succeeded in achieving the Power of One in 2019.

One Community

PROGRAM TITLE: CUSTOMER ENGAGEMENT

PROGRAM DESCRIPTION

The Customer Engagement program is an integral part of raising awareness about Minnesota Power's residential, commercial and community-based energy conservation programs to a wide variety of customers. Through this program, Minnesota Power connects with customers on multiple levels, 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 awareness about programs and creates a more energy-conscious community. Educational outreach via interactive online tools, 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. The connections developed through customer engagement contribute to both the scope and design of Minnesota Power programs, ensuring that the programs offered are meaningful, useful and relevant to evolving customer needs and an evolving energy landscape.

RESULTS

The following chart summarizes and compares the results of the 2019 Customer Engagement program with goals established in the Triennial Filing.

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$1,025,025	$538,062	52%
Utilization of the online energy tools and materials (visitors)	100,000	92,797	93%
Participation in community energy events	8,000	11,843	148%
Number of seminars, demonstrations and conferences	35	27	77%
Customer profiles or newsletters completed	15	21	140%

EVALUATION METHODOLOGY

Minnesota Power tracked the number of visitors (hits) who used online energy tools and program information via the Minnesota Power 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.

UNDERSTANDING

Collaboration

Collaboration is a key component in delivering meaningful programs to a wide variety of customers. Minnesota Power collaborates with HVAC contractors, business owners, area utilities, community agencies and energy-conscious organizations to expand outreach and availability of program involvement. The following sections provide examples of how Minnesota Power connected with various stakeholders to promote energy conservation in 2019.

HVAC Contractor Engagement – Minnesota Power continued to build on its existing relationships with participating HVAC contractors in 2019, while also encouraging new HVAC contractors to join the program. In addition to regular communications via email blasts distributed to participating contractors, information was provided on program offerings, rebate submittal requirements, special promotions and educational elements. Email blasts were also sent to HVAC contractors in the service territory who were not currently participating in programs to inform them of the benefits to both them and their customers. Minnesota Power's participating contractor list grew by 22% in 2019.

Minnesota Power conducted heat pump training sessions in Duluth and Virginia in 2019. Participating and non-participating contractors were invited to the trainings, which provided product details, calculated savings insights and informed participants of the company's rebate offerings. Training efforts will continue in 2020. Additionally in 2019, Minnesota Power consciously built strong relationships with both HVAC distributors and manufacturers and leveraged opportunities to work together to further promote the adoption of energy-efficient HVAC products. Working together to provide contractor trainings as mentioned above as well as being aware of any manufacturer rebates to share with customers are a few examples of these initiatives.

Lighting and Appliance Retailers – Minnesota Power works closely with lighting and appliance retailers. In 2019, the Company continued with a lighting and appliance field representative to increase outreach to retailers. The representative completed over 1,000 visits to over 100 different ENERGY STAR® retailers. During the visits, the representative ensured that retailers had proper point-of-purchase materials, educated staff on the benefits of ENERGY STAR® products, and checked on availability and quantity of rebate forms for customers.

Community Agencies – Minnesota Power collaborates with community agencies to deliver the Energy Partners low income program through Home Energy Analysis, the direct installation of energy-saving measures, and the replacement of inefficient appliances. In an effort to keep the communication lines open with agencies, quarterly calls were held to give program updates and collaborate on ways to best reach customers. Minnesota Power continued to host an annual Listening Session with agencies in 2019, to provide program updates and gather insights for continuing the success of this program.

Veteran Outreach – Minnesota Power continues to build upon its Yellow Ribbon Company certification, which recognizes employers that support military-connected individuals within the company and the community. In 2019, Minnesota Power provided energy efficiency recommendations and rebates to several veteran organizations such as a veteran's home, Veterans of Foreign Wars ("VFWs") and an American Legion Post. These projects consisted of exterior and interior LED lighting, high efficiency roof top units and variable frequency drives on pumps and

fans. Minnesota Power will continue to engage veteran organizations in 2020 and is committed to helping them manage energy costs.

Commercial Energy Teams – Minnesota Power continued to develop and expand its Energy Team strategy in 2019, by assisting both large and small business customers to develop on-site 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 benefits of these on-site meetings extend far beyond energy savings by providing a platform for broader facility operations and management considerations.

Building Operator Certification Training – In 2019, Minnesota Power continued to sponsor and promote Building Operator Certification training by hosting two BOC I and one BOC II classes. This nationally recognized certification program provides education focused on building systems and energy efficiency in facilities. It also presents an opportunity to tie course learning directly to realize energy savings by providing tuition reimbursement to attendees for completing the course and identifying a CIP-eligible project.

Utility Partnerships – Building relationships with neighboring utilities in an effort to provide the most comprehensive energy conservation services possible to shared customers is an important part of Minnesota Power's energy conservation delivery strategy. A long-standing relationship with Duluth's natural gas utility, ComfortSystems, has resulted in years of collaboration on several different programs including Home Energy Analysis, joint rebates and benchmarking commercial facilities. Minnesota Power also partnered with ComfortSystems and Ecolibrium3 to deliver the Rental Energy Upgrade Pilot in Duluth. This program offered energy analysis and grant money from the City of Duluth for envelope improvements and energy-efficient equipment upgrades to landlords and tenants of 2-4 unit buildings. Minnesota Power partnered with Minnesota Energy Resources in 2019, to delivery energy analysis and direct installation of energy-efficient technologies to multifamily buildings. The Company will continue to look for ways to collaborate with other utilities who share the same customer base to streamline the customer experience.

Stakeholder Partnerships – Minnesota Power appreciates the integral role stakeholders have in creating successful conservation programs. Minnesota Power has a long-standing history of partnering with local and regional stakeholders to advance energy efficiency for all customer segments. In 2019, these partnerships included work with the Center for Energy and Environment ("CEE") on research specific to air source heat pumps for customers in Minnesota, continuation of the work that was started in previous years with the Minnesota Multifamily Affordable Housing Energy Network ("MMAHEN") on energy efficiency in multifamily facilities, and work with the CERTs on the creation of a customer-facing marketing tool giving a comprehensive look at heat pumps. Minnesota Power has also worked with Energy CENTS Coalition to identify additional outreach options, get input on improved program reporting, and gather ideas for upcoming triennial program planning.

Community Blitz – Minnesota Power expanded its small business "blitz" initiatives in 2019, to include residential customers. This delivery strategy, targeting both small business and residential customers, has shown promising results for both energy education and energy savings. In 2019, Minnesota Power representatives visited three communities including Cloquet/Scanlon, Long Prairie and the Cuyuna Lakes area, providing an on-site analysis and direct installation of energy-saving products. Minnesota Power continues to partner with Minnesota Energy Resources to install both electric and gas measures, when applicable. By providing these products, customers

gained an increased awareness of products available and conversations were spurred regarding future projects. Additional collaboration with CERTs was beneficial to customers as messaging during the blitz was inclusive of a variety of programs offered by not only the utilities, but by other entities including information on Property-Assessed Clean Energy ("PACE") financing options. Minnesota Power presence at a local football game during the Cuyuna Lakes area Community Blitz offered an additional means for customers to sign up for offers and meet with experts about the effort. While visiting both market segments, Minnesota Power gained valuable information about technologies used and identified further potential energy-savings opportunities unique to these areas.

Educational Outreach Events

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

Lake Superior Harvest Festival – Minnesota Power staffed a booth at the Lake Superior Harvest Festival in Duluth, Minn. Festival-goers were able to visit educational tables and learn about energy conservation, solar programs and electric vehicles.

University of Minnesota Duluth ("UMD") – Minnesota Power continues to share a partnership with UMD students, faculty and the facilities directors. In 2019, conservation team members staffed an energy conservation booth at the spring sustainability fair. The students were engaged 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 and CIP resources.

Energy Design Conference – Minnesota Power hosted the 29th annual Energy Design Conference & Expo in February in Duluth, Minn. This two-day conference focuses on energy-efficient building and sustainable design. With nearly 40 educational sessions, an exhibit hall filled with the best in the building business and an abundance of networking activities, this event is a staple in northern Minnesota for those interested in energy efficiency, high performance homes and responsible building choices.

16th 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.

Home Show – Minnesota Power hosted an energy conservation booth at the 2019 Arrowhead Home and Builders Show. The booth display featured information about residential and commercial energy conservation programs, an interactive website station, information about cold climate air source heat pumps and the opportunity to win an energy-saving kit. 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 to find energy information.

In-Store Demonstrations – Minnesota Power hosted three separate events at three participating appliance retailers in 2019. At each event topics focused on ENERGY STAR® appliances, Minnesota Power's rebates and general energy conservation information. Customers heard about the event through social media, and in some cases traveled upwards of an hour to attend.

Tenant Education Events – In 2019, Minnesota Power incorporated an educational event to its multifamily program offering, providing tenants an opportunity to learn about energy efficiency. Attendance ranged from 15 to 25 tenants at each of the three events held in 2019. Tenants were provided information about the direct install measures included in the program and were given an opportunity to ask questions about the technology, program and energy conservation in general.

Community-Sponsored Events – In addition to Minnesota Power-sponsored events, conservation team members staffed booths at a variety of community-based events. These events offer an opportunity to engage with customers, provide conservation education and receive valuable feedback to strengthen community outreach programs.

Tools and Resources

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 variety of businesses, customers are exposed to the wide scope of business conservation opportunities. Profiles are distributed at community events, promoted on social media and posted on Minnesota Power's website. These profiles prove to be an effective educational and marketing tool in reaching a diverse range of commercial customers. Some of these profiles are featured in the Successes section of this filing and can be accessed online at www.mnpower.com/profiles.

Power of One Internal Communications – In an ongoing effort to increase internal understanding and awareness of Power of One programs, Minnesota Power uses digital posters throughout company facilities to share current programs. The featured promotions and campaigns are integrated into a loop of company updates on screens throughout Minnesota Power's corporate office building and are also available on the internal company webpage. These efforts spurred additional interest and inquiries about Minnesota Power's conservation programs by employees of the company.

Energy-Efficient Kits – The SmartPak Kit (which includes an energy-saving showerhead, faucet aerators, shower timer and water temperature card) and the Starter Kit (includes three LEDs, refrigerator thermometer, shower timer and plug load information) were provided to customers upon request or by participation in various promotions and offers.

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, home energy analyses, tenant events and community events. A selection of literature was also provided online for downloading or mail distribution via an online order form.

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 pre-application (available online) and area businesses who have participated in the Power of One Business program and made energy-efficient changes within their businesses and facilities.

Power of One Section of Minnesota Power's Website – The Power of One is prominently featured on Minnesota Power's website and is a widely-used destination for energy education and information. Through interactive tools, energy and appliance calculators, rebate and incentive information 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 employees when answering customer questions about energy conservation programs. MyAccount continues to be a valuable tool in helping customers understand how they use energy and learn ways to take charge of energy costs. This secure online portal shows current and historical energy usage and offers energy markers to track energy-saving purchases, online bill payments, access to bill history and actions that may affect customer usage.

Promotion – A multi-faceted approach was taken to promote Minnesota Power's energy conservation programs for residential customers, commercial customers and the community at large. Ads were placed in newspapers, magazines and online, promoting energy conservation, the Power of One Home program, community expos and events and the Power of One Business program. Programs were also promoted via social media and through email blasts to opt-in members of the Power of One energy team. Facebook posts prove to be an effective method of communicating with customers, with a large amount of interaction through Likes, Shares and Comments. Twitter and Instagram were also utilized in 2019, as a way of increasing program awareness.

SUMMARY

The Customer Engagement program focuses on key drivers to empower customers to make effective energy choices. 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. While spending in the Customer Engagement program was under budget in 2019, Minnesota Power continues to feel that communication with customers strengthens conservation program offerings and serves as a foundation for an energy-conscious community. Minnesota Power anticipates that the Customer Engagement program will become an even more critical component of program success as savings goals increase.

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. The goal of the Energy Analysis program is to help residential, 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. Where applicable, direct installation of products may be included during a customer visit.

Energy Analysis for residential customers consists of Home Energy Analysis and/or Home Performance. For commercial customers, it consists of three major categories: informational analysis (Level I), end-use analysis (Level II) and facility analysis (Level 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-savings objectives are and Minnesota Power helps them identify products and services to meet those requirements.

Energy auditors and 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	$ 963,280	$881,293	91%
Home Energy Analysis	565	858	152%
Home Performance *(1)*	616	383	62%
Energy Analysis – Low Income Multifamily (renters)	185	219	118%
Energy Analysis – Low Income Single Family Homes	350	806	230%
Business Energy Analysis *(2)*	3,211	3381	105%
Business Facility Performance *(3)*	465	201	43%
Total Participants	5,392	5,848	108%

(1) This includes proper installation of CAC/ASHP and end-use analyses on ground source heat pumps, Triple E plan reviews and HEA with Building Diagnostics.

(2) The analysis categories include: Level I; Level II; Level III & agricultural assistance.

(3) This includes engineering/design assistance (including plan reviews and lighting design) and benchmarking.

Home Energy Analysis – Energy Analysis for the residential sector includes Home Energy Analysis ("HEA"), excluding low income (as determined by LIHEAP qualification). An HEA can help the customer determine how much energy is being used and what can be done to get the most for their energy dollars. Professional auditors help identify ways to save energy in homes and provide energy-saving Direct Install products.

In 2019, the HEA goal was surpassed by almost 300 analyses. This is due in part to more interest from all customers, especially those in outer regions of Minnesota Power's territory. Bill inserts, social media and online ads all were used as marketing techniques in 2019, to promote this offering. Minnesota Power and ComfortSystems, the City of Duluth gas utility, each promote this offering to customers in the Duluth area, as both utilities work together with the auditors to provide customers in Duluth electric and gas audits jointly. Additionally, 71 of the 858 HEA's completed in 2019 were from multifamily properties. See the Multifamily Summary that follows the Energy Analysis section for more details on multifamily efforts.

Minnesota Power continued using a targeted community approach in 2019, performing Community Blitzes in Cloquet/Scanlon, Long Prairie and Cuyuna Lakes. Postcards were sent to residential customers, door hangers were left at homes and phone calls were made to residents in each of these three locations to promote the Home Energy Analysis program and to encourage interested customers to sign up. Other promotional efforts such as yard signs, referral drawings, radio and newspaper advertisements and social media posts were utilized throughout the year at different locations to determine how effective each was in getting the word out. A partnership with the gas utility Minnesota Energy Resources was formed within this effort to give the customer a comprehensive look at their energy usage including both electric and gas. Additionally, a partnership with Clean Energy Resource Teams ("CERTs") was used to further promote these efforts. These targeted initiatives to promote the Home Energy Analysis program increased awareness of the program while also boosting participation in this program.

Home Performance – This category includes those services which take into account system performance along with building science best practices. It includes offerings such as Home Energy Analysis with Building Diagnostics ("HEA w/BD"), Triple E New Construction and Central Air Conditioner ("CAC") and Air Source Heat Pump ("ASHP") Design Assistance.

An HEA w/BD takes a traditional HEA to the next level and includes blower door testing and infrared thermal scanning. This is beneficial for homes that experience cold drafts or sweaty windows in winter, uneven temperatures between rooms, heating or cooling systems that do not keep the home comfortable, or ice dams. This was the second year of a joint effort with ComfortSystems on a small-scale Rental Energy Upgrade Program which targeted landlords of duplexes, triplexes and quadplexes that would benefit from building shell improvements. An HEA w/BD was performed, and based on income eligibility, additional services, offerings, or grants were awarded to upgrade the property based on needs that were found during the analysis. The supplemental offerings included appliance replacements, free minimal weatherization work and grants on both insulation and new high efficiency furnaces.

The Triple E program maintained the higher "Level 2" 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.

CAC and ASHP Design Assistance is a service provided to customers through participating trained HVAC contractors. The contractor focuses on ensuring proper sizing, air flow and refrigerant charge of installed cooling equipment. Minnesota Power continued to promote the importance of these services to its customers.

Low Income Energy Analysis – The Low Income Energy Analysis program consists of single family and multifamily (renters) Home Energy Analysis. This program is delivered through partnerships with local Community Action agencies, as well as through vendors. Active agencies in 2019 included the Arrowhead Economic Opportunity Agency ("AEOA"), Mahube-Otwa Community Action Partnership, Lakes and Pines Community Action Council, KOOTASCA Community Action and Tri-County Community Action Partnership. In 2019, single family Energy Analysis again surpassed its goal with 806 homes visited. To continue to serve the sometimes difficult to reach multifamily segment, Minnesota Power joined efforts with Minnesota Energy Resources in 2019, to reach many multifamily renters. Through this collaboration, along with additional efforts, ten low income multifamily properties were analyzed and 219 units were impacted through direct installation of energy efficiency products. Educational events for tenants were conducted to share conservation tips and tools to customers who would benefit from it the most. Minnesota Power was able to reach hundreds of customers in 2019, by providing energy analysis, education and energy-saving measures, and customers in general seemed to have an increased interest in HEAs and energy conservation.

Business Energy Analysis – The Business Energy Analysis program continues to utilize analysis as a tool for educating and encouraging customers to make informed energy decisions. Business Energy Analysis involves preliminary energy use analysis and benchmarking. It includes a high-level business and facility interview, billing analysis, ENERGY STAR® Portfolio Manager analysis and/or Energy Use Index ("EUI"). The levels used are Level I (high-level site visit and walk-through analysis); Level II (energy survey and engineering analysis plus end-use analysis); and Level III (detailed analysis of capital-intensive modifications). For 2019, MP also tracked customer contacts. These were customer interactions that didn't reach Level 1 Analysis but

involved developing potential energy conservation projects. In 2019, there were 2,683 Customer Contacts.

In 2019, Minnesota Power collaborated with local gas utilities where shared program delivery resulted in implementing energy conservation into a successful project design. Since a majority of energy savings in new construction and commissioning/recommissioning are thermal, this joint cooperation with the natural gas utility fosters a more uniform approach to delivering energy-saving measures in collaboration.

Business Facility Performance

Design Assistance – Minnesota Power provides customers the tools needed to evaluate their facilities in order to make informed choices with their energy-savings options. By providing plan reviews for remodel or new construction projects, or a lighting design study when moving to new LED technology, Minnesota Power is able to provide the resources needed for customers to make informed choices. In 2019, Minnesota Power performed over 130 design assistance projects.

Certification Evaluations – In 2019, Minnesota Power was involved with 70 benchmarking efforts, providing customers with assistance in developing B3, ENERGY STAR® and EUI scores. Through the use of benchmarking scores, customers with multiple facilities are able to target candidates to best utilize limited energy funding in order to make the greatest impact.

SUMMARY

Energy Analysis is often the first step in connecting with a customer. The wide range of Energy Analysis activities enables Minnesota Power and its third-party contractors to deliver accurate and timely information for the customer's decision-making process, from awareness to interest and from action to follow-up. It helps Minnesota Power introduce new technologies, increase the saturation of existing energy-efficient products, and build relationships that enhance ongoing dialogue with customers and their provider networks.

While the Energy Analysis program continues to be an important component of Minnesota Power's conservation programs, participation levels have fluctuated over the years for a variety of reasons with the main driver being resource availability. Minnesota Power continuously explores opportunities to improve program offerings to ensure customers find value in the information being provided. 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.

MULTIFAMILY SUMMARY

While Minnesota Power does not have a separately filed program for multifamily initiatives, the Company has incorporated a variety of multifamily specific activities within the other existing programs. The following information is not provided for the purposes of regulatory compliance, but rather the Company wishes to provide a unified and clearer view of these efforts for stakeholders focused on multifamily. Savings, spending and participation related to these activities are officially accounted for in the One Home, Energy Partners, One Business and Energy Analysis program reporting numbers. This section serves to informally summarize and report on all the 2019 multifamily efforts. The activities mentioned here include efforts that Minnesota Power has offered for many years through the custom commercial program, and new offerings that have been developed and piloted over the last several years.

The table below summarizes the multifamily kWh savings that were achieved as part of the One Home, Energy Partners and One Business programs. The Column titled "Program" indicates which program the measures are officially included in for reporting purposes.

2019 Multi-family Savings		
	kWh - Meter	**Program**
Non Low Income Multifamily	**20,522**	**One Home**
LED Bulb	13,101	
Refrigerator Thermometer	7,315	
Power Strip - Tier 1	106	
Low Income Multifamily	**74,040**	**Energy Partners**
LED Bulb	51,286	
Refrigerator Thermometer	18,620	
Power Strip - Tier 1	4,134	
Common Area Direct Install	**28,086**	**One Business**
LED Bulb	28,086	
MF Commercial Custom Project	**1,181,532**	**One Business**
HVAC	15,085	
Lighting	1,009,252	
Miscellaneous	76,751	
Motors and Drives	80,444	
Grand Total	**1,304,180**	

The table below summarizes the participation in the various offerings. The "Standard Residential" and "Low Income" sections of the table reflect the number of facilities and individual units that received energy analysis and direct installation measures. The number of units reflects the number of unique customer participants. Additionally, the "Commercial Custom" portion of the table reflects the number of completed One Business projects that were associated with a multifamily facility in 2019.

Non Low Income Multifamily	
# Facilities Received Analysis*	2
# Facilities Opted for DI	2
Number of Units Received DI	71
Low Income Multifamily	
# Facilities Received Analysis*	10
# Facilities Opted for DI	8
Number of Units Received DI	219
MF Commercial Custom Project	
# of Projects	59

***Facilities Received Analysis includes facilities that did not have enough opportunity for direct installation measures but received full building audits and comprehensive recommendation reports.*

Developing Relationships – As an additional step towards exploring options in the multifamily sector, Minnesota Power continues to work with Minnesota Multifamily Affordable Housing Energy Network ("MMAHEN") to partner with organizations whose goal is to increase energy efficiency and conservation in multifamily buildings. Minnesota Power has attended in-person meetings and conference calls with like-minded organizations through this network, resulting in creative collaboration opportunities and gaining a wealth of resources for further exploration in this sector.

Joint Multifamily Direct Installation Program – In 2019, Minnesota Power continued to focus on a program that would provide an all-encompassing residential/commercial hybrid approach to multifamily facilities. Minnesota Power collaborated with gas utilities when possible, using a joint implementation contractor to provide full on-site inspections, install energy conservation measures in units, provide educational events for tenants and deliver comprehensive reports including recommendations for both electric and gas measures to building owners. This gave customers an all-inclusive overview of their building's energy use. Minnesota Power worked with Minnesota Energy Resources to visit seven multifamily customers throughout shared service territories, including income-qualified multifamily buildings. For facilities where gas partnerships were not possible, Minnesota Power provided the same deliverables except for the inclusion of the gas measures. In all, almost 300 apartment units benefited from direct installation of over 2,400 energy conservation measures. Having an approach that addresses the needs of both the facility operators as well as the tenants is critical to the company's efforts in the multifamily sector. Utility collaboration will continue into 2020 and beyond to provide more all-inclusive multifamily energy audits.

Multifamily Tenant Events – In 2019, Minnesota Power hosted educational events as part its multifamily program offering, providing tenants an opportunity to learn about energy efficiency. Attendance ranged from 15 to 25 tenants at each of the three events held in 2019. Tenants were provided information about the direct installation measures included in the program and were given an opportunity to ask questions about the technology, program and energy conservation in general.

Custom Multifamily Projects – Minnesota Power encouraged property owners and managers who were building new multifamily facilities or performing complete remodels in

2019 to make energy-efficient choices in their lighting, appliances and HVAC systems. These projects were followed throughout the planning and design phases, and rebates were processed through Minnesota Power's One Business energy conservation program. Minnesota Power processed over $60,000 in rebates to multifamily facilities and captured over 1.1 million kWh savings (at the meter).

Evaluation & Planning

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

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

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

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	$746,775	$490,318	66 %

SUMMARY

Minnesota Power included in its 2017–2019 triennial plan an increased Evaluation and Planning program budget. In recent years, Minnesota Power has experienced higher levels of required engagement in regulatory activities including various stakeholder working groups and an increasing number of information requests related to the Company's CIP programs. Additionally, as the industry continues to mature and evolve, better and more detailed evaluation and analytics are becoming critical to designing effective conservation programs that will allow for continued success of the CIP portfolio well into the future.

Program spending activities in 2019 entailed reporting results, program development, measuring and evaluating the effectiveness of direct-impact conservation projects, conservation program strategy, technical assumption documentation, participation in various stakeholder groups and a multitude of collaborative efforts. The Company also views the 2017–2019 triennial years as a period of transition and focused effort in 2019 on planning and development activities to better position its own CIP programs for future success. These efforts included continuing development of more comprehensive program tracking solutions that will allow for increased insights into customer preferences, program participation trends, effective program strategies, etc., which has been a critical part of triennial planning and continuing to meet customer needs and energy efficiency goals. In 2019, Evaluation and Planning spending was somewhat low compared to budget and compared to 2017 and 2018 program spending. This change was partially driven by fewer costs associated with the development of program tracking solutions. Other factors contributing to lower spending in this program for 2019 include changes and reductions in consulting services used for planning and evaluation and labor turnover.

Given the importance of evaluation and program design, Minnesota Power believes this program continues to serve a significant role in the ongoing success of its Power of One programs.

BENEFIT/COST EVALUATIONS

METHODOLOGY

The 2019 project benefit/cost evaluations were performed using Integral Analytics DSMore. This same software was used to evaluate CIP projects in the 2017–2019 CIP Triennial. The following projects were evaluated:

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

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 2017–2019 CIP Triennial, filed in June 2016. 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 2019, the year of plan implementation.

Evaluations of indirect 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 indirect impact projects were added to evaluations of the entire plan for the other tests to illustrate the small impact that these costs would have on overall cost-effectiveness. The Regulatory Charges were not included in the indirect 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:

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

Results of Project Benefit/Cost Evaluations

	Utility Test		Societal Test		Participant Test		RIM Test	
Project	Net Benefits	B/C Ratio	Net Benefits	B/C Ratio	Net Benefits	B/C Ratio	Net Benefits	B/C Ratio
Power of One Home	$6,475,883	4.55	$13,381,575	4.23	$30,379,318	9.74	($10,905,268)	0.41
Energy Partners	$100,738	1.27	$641,459	2.76	$1,886,021	8.03	($901,603)	0.32
Power of One Business	$19,098,359	6.04	$14,063,825	1.77	$31,069,079	2.85	($23,715,411)	0.46
Total Plan (w/o indirect impact projects)	$25,674,980	5.29	$28,086,860	2.24	$63,334,419	4.08	($35,522,282)	0.44
Total Plan (with indirect impact projects)	$23,537,199	3.90	$25,949,079	2.04	$63,334,419	4.08	($37,443,340)	0.43

** 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 are excluded for the purpose of the financial incentive calculation. There were no MP facilities projects in 2019 so no adjustments were needed.*

For the following four benefit cost tests, a project is considered to be cost-effective 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. Utility Test net benefits are used in the Shared Savings DSM Financial Incentive calculation. 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 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. For each of the Direct Impact programs, reduced energy usage (energy savings) is the primary contributor to societal benefits. The major cost component in the societal test is the incremental cost of the efficient measures.

The Participant Test is important because typically a project must 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.

The Ratepayer Impact Measure Test 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. Typically projects are not cost-effective from the ratepayer perspective and these test results should be carefully monitored as the electric marketplace continues to become more competitive.

All three Direct Impact programs (One Home, Energy Partners and One Business) are cost-effective from all perspectives except the ratepayer perspective.

2019 Annual Energy Savings Summary

All values are discounted to 2019

	kWh - Meter	kW - Meter	kWh - Generator	kW - Generator
Total Direct Impact Programs	**61,242,274**	**7,546.0**	**67,669,222**	**8,337.9**
Total Power of One Home	13,072,631	1,717.7	14,444,512	1,898.0
Total Energy Partners	980,024	104.7	1,082,871	115.6
Total Power of One Business	47,189,619	5,723.6	52,141,839	6,324.3
Grand Total	**61,242,274**	**7,546.0**	**67,669,222**	**8,337.9**

2019 Utility Test Summary

All values are discounted to 2019

	Utility Benefits	Utility Costs	Utility Net Benefits	Utility B/C Ratio
Total Direct Impact Programs	**$31,660,829**	**$5,985,850**	**$25,674,980**	**5.29**
Total Power of One Home	$8,300,225	$1,824,343	$6,475,883	4.55
Total Energy Partners	$469,301	$368,564	$100,738	1.27
Total Power of One Business	$22,891,302	$3,792,943	$19,098,359	6.04
Indirect Program Costs	**$0**	**$2,137,780**	**-$2,137,780**	**0.00**
Grand Total	**$31,660,829**	**$8,123,630**	**$23,537,199**	**3.90**

2019 Societal Test Summary

All values are discounted to 2019

	Societal Benefits	Societal Costs	Societal Net Benefits	Societal B/C Ratio
Total Direct Impact Programs	**$50,813,407**	**$22,726,547**	**$28,086,860**	**2.24**
Total Power of One Home	$17,530,768	$4,149,193	$13,381,575	4.23
Total Energy Partners	$1,005,746	$364,287	$641,459	2.76
Total Power of One Business	$32,276,892	$18,213,067	$14,063,825	1.77
Indirect Program Costs	**$0**	**$2,137,780**	**-$2,137,780**	**0.00**
Grand Total	**$50,813,407**	**$24,864,328**	**$25,949,079**	**2.04**

2019 Participant Test Summary

All values are discounted to 2019

	Participant Benefits	Participant Costs	Participant Net Benefits	Participant B/C Ratio
Total Direct Impact Programs	**$83,883,699**	**$20,549,280**	**$63,334,419**	**4.08**
Total Power of One Home	$33,853,727	$3,474,409	$30,379,318	9.74
Total Energy Partners	$2,154,323	$268,301	$1,886,021	8.03
Total Power of One Business	$47,875,649	$16,806,570	$31,069,079	2.85
Indirect Program Costs	**$0**	**$0**	**$0**	**0.00**
Grand Total	**$83,883,699**	**$20,549,280**	**$63,334,419**	**4.08**

2019 Ratepayer Impact Test Summary

All values are discounted to 2019

	Ratepayer Benefits	Ratepayer Costs	Ratepayer Net Benefits	Ratepayer B/C Ratio
Total Direct Impact Programs	**$28,451,139**	**$63,973,421**	**-$35,522,282**	**0.44**
Total Power of One Home	$7,458,771	$18,364,039	-$10,905,268	0.41
Total Energy Partners	$421,725	$1,323,328	-$901,603	0.32
Total Power of One Business	$20,570,643	$44,286,054	-$23,715,411	0.46
Indirect Program Costs	**$0**	**$1,921,058**	**-$1,921,058**	**0.00**
Grand Total	**$28,451,139**	**$65,894,479**	**-$37,443,340**	**0.43**

2019 Power of One Home Annual Energy Savings

All values are discounted to 2019

	kWh - Meter	kW - Meter	kWh - Generator	kW - Generator
Lighting	**8,064,532**	**924.1**	**8,910,848**	**1,021.1**
LED Bulbs	7,902,147	906.5	8,731,422	1,001.6
LED Fixture - Indoor	144,742	16.6	159,932	18.3
LED Fixture - Outdoor	8,349	0.0	9,225	0.0
LED Torchieres	9,170	1.1	10,132	1.2
Energy Star Ceiling Fan	124	0.0	137	0.0
Bulb Recycling	0	0.0	0	0.0
Appliances	**1,327,626**	**152.3**	**1,466,951**	**168.3**
Refrigerators	64,452	7.4	71,216	8.2
Freezers	4,800	0.6	5,304	0.6
Refrigerator Turn-Ins	968,070	111.0	1,069,662	122.7
Freezer Turn-Ins	290,304	33.3	320,769	36.8
HVAC	**2,745,415**	**551.1**	**3,033,527**	**608.9**
CAC - Proper Installation	46,070	52.3	50,905	57.8
ASHP - Proper Installation	10,680	0.9	11,801	1.0
ASHP - Ducted	81,642	6.9	90,210	7.6
ASHP - Ductless	1,463,200	123.4	1,616,753	136.3
GSHP - Closed Loop	274,872	23.2	303,718	25.6
GSHP - Replacement Heat Pump	4,000	0.3	4,420	0.4
ECM - Circulator Pump	126,463	0.0	139,734	0.0
ECM - New Furnace	628,600	245.0	694,567	270.7
ECM - Replacement Motor	2,800	1.1	3,094	1.2
Dehumidifiers	84,780	96.2	93,677	106.3
Smart Thermostat	22,308	1.9	24,649	2.1
Home Performance	**48,333**	**2.0**	**53,405**	**2.2**
Triple E - Level 2 Projects	48,333	2.0	53,405	2.2
Water Heating	**4,584**	**0.4**	**5,065**	**0.4**
Heat Pump Water Heater	4,584	0.4	5,065	0.4
Energy Efficiency Products and Kits	**155,769**	**15.4**	**172,116**	**17.0**
SmartPak	41,624	3.5	45,992	3.8
Starter Kit	114,145	11.9	126,124	13.2
Direct Install	**726,372**	**72.5**	**802,600**	**80.1**
LED Bulbs	239,679	27.5	264,832	30.4
Pipe Insulation	58,788	4.9	64,957	5.4
Showerheads	131,930	10.9	145,775	12.1
Thermostatic Restriction Showerheads	23,800	2.0	26,298	2.2
Aerator	46,288	3.8	51,146	4.2
Water Heater Temperature Set-backs	8,500	0.7	9,392	0.8
Shower Timers	68,996	5.7	76,237	6.3
Refrigerator Thermometers	82,365	9.4	91,009	10.4
Enable Power Management	10,800	1.2	11,933	1.4
Power Strips - Tier 1	55,226	6.3	61,022	7.0
Administrative Costs	**0**	**0.0**	**0**	**0.0**
Administrative Costs	0	0.0	0	0.0
Grand Total	**13,072,631**	**1,717.7**	**14,444,512**	**1,898.0**

2019 Power of One Home Utility Test

All values are discounted to 2019

	Utility Benefits	Utility Costs	Utility Net Benefits	Utility B/C Ratio
Lighting	**$5,347,359**	**$498,024**	**$4,849,335**	**10.74**
LED Bulbs	$5,243,188	$471,675	$4,771,513	11.12
LED Fixture - Indoor	$96,038	$17,394	$78,644	5.52
LED Fixture - Outdoor	$4,452	$288	$4,164	15.44
LED Torchieres	$3,599	$1,050	$2,549	3.43
Energy Star Ceiling Fan	$82	$10	$72	8.23
Bulb Recycling	$0	$7,606	-$7,606	0.00
Appliances	**$486,892**	**$226,190**	**$260,702**	**2.15**
Refrigerators	$35,246	$14,760	$20,486	2.39
Freezers	$2,204	$1,500	$704	1.47
Refrigerator Turn-Ins	$345,756	$168,550	$177,206	2.05
Freezer Turn-Ins	$103,685	$41,380	$62,305	2.51
HVAC	**$2,066,266**	**$336,520**	**$1,729,746**	**6.14**
CAC - Proper Installation	$66,917	$14,300	$52,617	4.68
ASHP - Proper Installation	$7,127	$200	$6,927	35.64
ASHP - Ducted	$54,482	$8,750	$45,732	6.23
ASHP - Ductless	$976,436	$82,000	$894,436	11.91
GSHP - Closed Loop	$195,072	$8,550	$186,522	22.82
GSHP - Replacement Heat Pump	$2,839	$1,250	$1,589	2.27
ECM - Circulator Pump	$68,627	$8,600	$60,027	7.98
ECM - New Furnace	$589,884	$197,600	$392,284	2.99
ECM - Replacement Motor	$1,506	$400	$1,106	3.77
Dehumidifiers	$93,497	$12,670	$80,827	7.38
Smart Thermostat	$9,878	$2,200	$7,678	4.49
Home Performance	**$32,003**	**$9,000**	**$23,003**	**3.56**
Triple E - Level 2 Projects	$32,003	$9,000	$23,003	3.56
Water Heating	**$2,264**	**$1,200**	**$1,064**	**1.89**
Heat Pump Water Heater	$2,264	$1,200	$1,064	1.89
Energy Efficiency Products and Kits	**$51,961**	**$14,458**	**$37,503**	**3.59**
SmartPak	$12,704	$1,624	$11,080	7.82
Starter Kit	$39,257	$12,834	$26,423	3.06
Direct Install	**$313,481**	**$64,167**	**$249,314**	**4.89**
LED Bulbs	$159,030	$35,133	$123,898	4.53
Pipe Insulation	$29,040	$1,024	$28,015	28.35
Showerheads	$53,609	$5,603	$48,006	9.57
Thermostatic Restriction Showerheads	$9,671	$1,545	$8,126	6.26
Aerator	$18,809	$2,030	$16,779	9.26
Water Heater Temperature Set-backs	$866	$600	$266	1.44
Shower Timers	$10,144	$1,358	$8,786	7.47
Refrigerator Thermometers	$12,660	$2,676	$9,984	4.73
Enable Power Management	$1,530	$810	$720	1.89
Power Strips - Tier 1	$18,121	$13,388	$4,734	1.35
Administrative Costs	**$0**	**$674,784**	**-$674,784**	**0.00**
Administrative Costs	$0	$674,784	-$674,784	0.00
Grand Total	**$8,300,225**	**$1,824,343**	**$6,475,883**	**4.55**

2019 Power of One Home Societal Test

All values are discounted to 2019

	Societal Benefits	Societal Costs	Societal Net Benefits	Societal B/C Ratio
Lighting	**$12,952,605**	**$2,165,196**	**$10,787,408**	**5.98**
LED Bulbs	$12,708,698	$2,083,293	$10,625,404	6.10
LED Fixture - Indoor	$228,378	$76,180	$152,198	3.00
LED Fixture - Outdoor	$9,882	$2,760	$7,122	3.58
LED Torchieres	$5,515	$2,938	$2,577	1.88
Energy Star Ceiling Fan	$132	$25	$107	5.27
Bulb Recycling	$0	$0	$0	0.00
Appliances	**$613,941**	**$153,080**	**$460,861**	**4.01**
Refrigerators	$50,534	$19,680	$30,854	2.57
Freezers	$2,947	$2,000	$947	1.47
Refrigerator Turn-Ins	$431,163	$105,800	$325,363	4.08
Freezer Turn-Ins	$129,297	$25,600	$103,697	5.05
HVAC	**$3,252,812**	**$1,041,180**	**$2,211,632**	**3.12**
CAC - Proper Installation	$103,491	$67,750	$35,741	1.53
ASHP - Proper Installation	$11,161	$1,000	$10,161	11.16
ASHP - Ducted	$85,315	$21,780	$63,535	3.92
ASHP - Ductless	$1,529,034	$600,000	$929,034	2.55
GSHP - Closed Loop	$319,001	$40,320	$278,681	7.91
GSHP - Replacement Heat Pump	$4,642	$3,190	$1,452	1.46
ECM - Circulator Pump	$100,818	$64,500	$36,318	1.56
ECM - New Furnace	$958,718	$224,500	$734,218	4.27
ECM - Replacement Motor	$1,905	$740	$1,165	2.57
Dehumidifiers	$125,836	$12,560	$113,276	10.02
Smart Thermostat	$12,891	$4,840	$8,051	2.66
Home Performance	**$52,424**	**$33,976**	**$18,448**	**1.54**
Triple E - Level 2 Projects	$52,424	$33,976	$18,448	1.54
Water Heating	**$3,175**	**$2,352**	**$823**	**1.35**
Heat Pump Water Heater	$3,175	$2,352	$823	1.35
Energy Efficiency Products and Kits	**$64,527**	**$14,458**	**$50,069**	**4.46**
SmartPak	$15,509	$1,624	$13,885	9.55
Starter Kit	$49,018	$12,834	$36,184	3.82
Direct Install	**$591,284**	**$64,167**	**$527,117**	**9.21**
LED Bulbs	$392,732	$35,133	$357,599	11.18
Pipe Insulation	$40,724	$1,024	$39,700	39.76
Showerheads	$70,132	$5,603	$64,529	12.52
Thermostatic Restriction Showerheads	$12,652	$1,545	$11,107	8.19
Aerator	$24,606	$2,030	$22,576	12.12
Water Heater Temperature Set-backs	$927	$600	$327	1.55
Shower Timers	$11,197	$1,358	$9,839	8.25
Refrigerator Thermometers	$13,951	$2,676	$11,275	5.21
Enable Power Management	$1,691	$810	$881	2.09
Power Strips - Tier 1	$22,672	$13,388	$9,284	1.69
Administrative Costs	**$0**	**$674,784**	**-$674,784**	**0.00**
Administrative Costs	$0	$674,784	-$674,784	0.00
Grand Total	**$17,530,768**	**$4,149,193**	**$13,381,575**	**4.23**

2019 Power of One Home Participant Test

All values are discounted to 2019

	Participant Benefits	Participant Costs	Participant Net Benefits	Participant B/C Ratio
Lighting	**$24,077,370**	**$2,165,196**	**$21,912,174**	**11.12**
LED Bulbs	$23,597,678	$2,083,293	$21,514,385	11.33
LED Fixture - Indoor	$436,584	$76,180	$360,404	5.73
LED Fixture - Outdoor	$22,868	$2,760	$20,108	8.29
LED Torchieres	$12,329	$2,938	$9,391	4.20
Energy Star Ceiling Fan	$305	$25	$280	12.21
Bulb Recycling	$7,606	$0	$7,606	0.00
Appliances	**$1,610,106**	**$153,080**	**$1,457,026**	**10.52**
Refrigerators	$127,834	$19,680	$108,154	6.50
Freezers	$8,120	$2,000	$6,120	4.06
Refrigerator Turn-Ins	$1,141,119	$105,800	$1,035,319	10.79
Freezer Turn-Ins	$333,033	$25,600	$307,433	13.01
HVAC	**$6,619,632**	**$1,041,180**	**$5,578,452**	**6.36**
CAC - Proper Installation	$118,209	$67,750	$50,459	1.74
ASHP - Proper Installation	$24,288	$1,000	$23,288	24.29
ASHP - Ducted	$192,889	$21,780	$171,109	8.86
ASHP - Ductless	$3,382,172	$600,000	$2,782,172	5.64
GSHP - Closed Loop	$697,473	$40,320	$657,153	17.30
GSHP - Replacement Heat Pump	$11,275	$3,190	$8,085	3.53
ECM - Circulator Pump	$246,296	$64,500	$181,796	3.82
ECM - New Furnace	$1,773,086	$224,500	$1,548,586	7.90
ECM - Replacement Motor	$3,562	$740	$2,822	4.81
Dehumidifiers	$140,199	$12,560	$127,639	11.16
Smart Thermostat	$30,181	$4,840	$25,341	6.24
Home Performance	**$130,139**	**$33,976**	**$96,163**	**3.83**
Triple E - Level 2 Projects	$130,139	$33,976	$96,163	3.83
Water Heating	**$8,669**	**$2,352**	**$6,317**	**3.69**
Heat Pump Water Heater	$8,669	$2,352	$6,317	3.69
Energy Efficiency Products and Kits	**$165,759**	**$14,458**	**$151,300**	**11.46**
SmartPak	$38,250	$1,624	$36,625	23.55
Starter Kit	$127,509	$12,834	$114,675	9.94
Direct Install	**$1,242,052**	**$64,167**	**$1,177,885**	**19.36**
LED Bulbs	$743,831	$35,133	$708,698	21.17
Pipe Insulation	$96,807	$1,024	$95,782	94.52
Showerheads	$171,086	$5,603	$165,482	30.53
Thermostatic Restriction Showerheads	$31,398	$1,545	$29,853	20.32
Aerator	$60,090	$2,030	$58,060	29.60
Water Heater Temperature Set-backs	$2,795	$600	$2,195	4.66
Shower Timers	$27,879	$1,358	$26,521	20.53
Refrigerator Thermometers	$34,336	$2,676	$31,660	12.83
Enable Power Management	$4,961	$810	$4,151	6.13
Power Strips - Tier 1	$68,870	$13,388	$55,483	5.14
Administrative Costs	**$0**	**$0**	**$0**	**0.00**
Administrative Costs	$0	$0	$0	0.00
Grand Total	**$33,853,727**	**$3,474,409**	**$30,379,318**	**9.74**

2019 Power of One Home Ratepayer Impact Test

All values are discounted to 2019

	Ratepayer Benefits	Ratepayer Costs	Ratepayer Net Benefits	Ratepayer B/C Ratio
Lighting	**$4,805,258**	**$11,585,842**	**-$6,780,584**	**0.41**
LED Bulbs	$4,711,647	$11,342,854	-$6,631,207	0.42
LED Fixture - Indoor	$86,302	$215,632	-$129,330	0.40
LED Fixture - Outdoor	$4,001	$11,796	-$7,795	0.34
LED Torchieres	$3,234	$8,544	-$5,311	0.38
Energy Star Ceiling Fan	$74	$180	-$106	0.41
Bulb Recycling	$0	$6,835	-$6,835	0.00
Appliances	**$437,532**	**$1,232,494**	**-$794,962**	**0.35**
Refrigerators	$31,673	$86,850	-$55,177	0.36
Freezers	$1,981	$5,975	-$3,995	0.33
Refrigerator Turn-Ins	$310,705	$883,085	-$572,381	0.35
Freezer Turn-Ins	$93,174	$256,583	-$163,410	0.36
HVAC	**$1,856,793**	**$3,997,956**	**-$2,141,163**	**0.46**
CAC - Proper Installation	$60,133	$74,525	-$14,391	0.81
ASHP - Proper Installation	$6,405	$14,477	-$8,073	0.44
ASHP - Ducted	$48,959	$117,158	-$68,199	0.42
ASHP - Ductless	$877,448	$2,032,489	-$1,155,041	0.43
GSHP - Closed Loop	$175,296	$398,722	-$223,425	0.44
GSHP - Replacement Heat Pump	$2,551	$6,814	-$4,263	0.37
ECM - Circulator Pump	$61,670	$158,845	-$97,175	0.39
ECM - New Furnace	$530,083	$1,071,827	-$541,743	0.49
ECM - Replacement Motor	$1,353	$2,680	-$1,327	0.50
Dehumidifiers	$84,018	$98,406	-$14,388	0.85
Smart Thermostat	$8,877	$22,015	-$13,138	0.40
Home Performance	**$28,758**	**$76,847**	**-$48,089**	**0.37**
Triple E - Level 2 Projects	$28,758	$76,847	-$48,089	0.37
Water Heating	**$2,035**	**$6,055**	**-$4,020**	**0.34**
Heat Pump Water Heater	$2,035	$6,055	-$4,020	0.34
Energy Efficiency Products and Kits	**$46,693**	**$127,506**	**-$80,812**	**0.37**
SmartPak	$11,416	$29,708	-$18,291	0.38
Starter Kit	$35,277	$97,798	-$62,521	0.36
Direct Install	**$281,701**	**$730,964**	**-$449,263**	**0.39**
LED Bulbs	$142,908	$362,754	-$219,845	0.39
Pipe Insulation	$26,096	$64,741	-$38,645	0.40
Showerheads	$48,175	$123,541	-$75,367	0.39
Thermostatic Restriction Showerheads	$8,691	$22,767	-$14,076	0.38
Aerator	$16,902	$43,403	-$26,500	0.39
Water Heater Temperature Set-backs	$778	$2,460	-$1,682	0.32
Shower Timers	$9,116	$23,846	-$14,731	0.38
Refrigerator Thermometers	$11,377	$29,415	-$18,038	0.39
Enable Power Management	$1,374	$4,270	-$2,895	0.32
Power Strips - Tier 1	$16,284	$53,768	-$37,483	0.30
Administrative Costs	**$0**	**$606,376**	**-$606,376**	**0.00**
Administrative Costs	$0	$606,376	-$606,376	0.00
Grand Total	**$7,458,771**	**$18,364,039**	**-$10,905,268**	**0.41**

2019 Energy Partners Annual Energy Savings

All values are discounted to 2019

	kWh - Meter	kW - Meter	kWh - Generator	kW - Generator
Lighting	**334,381**	**38.4**	**369,472**	**42.4**
LED Bulb	306,061	35.1	338,180	38.8
LED Torchiere	28,320	3.2	31,292	3.6
HVAC	**36,946**	**3.1**	**40,823**	**3.4**
Dehumidifier	2,718	3.1	3,003	3.4
Furnace - Delivered Fuels	26,341	0.0	29,105	0.0
Air Sealing and Insulation	7,887	0.0	8,715	0.0
Appliances	**186,249**	**21.3**	**205,795**	**23.6**
Refrigerator Replacement	38,570	4.4	42,618	4.9
Freezer Replacement	5,346	0.6	5,907	0.7
Refrigerator Turn-In	110,715	12.7	122,334	14.0
Freezer Turn-In	30,618	3.5	33,831	3.9
Microwave Oven	1,000	0.1	1,105	0.1
Water Heating	**179,063**	**14.8**	**197,854**	**16.4**
Showerhead	75,445	6.3	83,362	6.9
Aerator	41,360	3.4	45,700	3.8
Pipe Insulation	4,140	0.3	4,574	0.4
Shower Timer	56,588	4.7	62,527	5.2
Water Heater Temperature Set-Back	1,530	0.1	1,691	0.1
Energy Efficiency Products and Kits	**169,345**	**18.6**	**187,117**	**20.5**
Energy Expo Kits	47,500	4.6	52,485	5.1
Refrigerator Thermometer	70,965	8.1	78,412	9.0
Power Strip - Tier 1	50,880	5.8	56,219	6.4
Multifamily	**74,040**	**8.5**	**81,810**	**9.4**
LED Bulb	51,286	5.9	56,668	6.5
Refrigerator Thermometer	18,620	2.1	20,574	2.4
Power Strip - Tier 1	4,134	0.5	4,568	0.5
Administrative Costs	**0**	**0.0**	**0**	**0.0**
Administrative Costs	0	0.0	0	0.0
Grand Total	**980,024**	**104.7**	**1,082,871**	**115.6**

2019 Energy Partners Utility Test

All values are discounted to 2019

	Utility Benefits	Utility Costs	Utility Net Benefits	Utility B/C Ratio
Lighting	**$221,867**	**$78,503**	**$143,364**	**2.83**
LED Bulb	$203,076	$40,271	$162,805	5.04
LED Torchiere	$18,791	$38,232	-$19,441	0.49
HVAC	**$25,159**	**$38,842**	**-$13,683**	**0.65**
Dehumidifier	$2,997	$5,800	-$2,803	0.52
Furnace - Delivered Fuels	$17,055	$30,635	-$13,580	0.56
Air Sealing and Insulation	$5,107	$2,407	$2,700	2.12
Appliances	**$74,498**	**$101,539**	**-$27,041**	**0.73**
Refrigerator Replacement	$21,092	$78,713	-$57,621	0.27
Freezer Replacement	$2,455	$9,366	-$6,912	0.26
Refrigerator Turn-In	$39,543	$10,890	$28,653	3.63
Freezer Turn-In	$10,936	$2,430	$8,506	4.50
Microwave Oven	$472	$139	$333	3.40
Water Heating	**$57,984**	**$6,368**	**$51,616**	**9.11**
Showerhead	$30,657	$3,228	$27,429	9.50
Aerator	$16,806	$1,855	$14,952	9.06
Pipe Insulation	$2,045	$63	$1,982	32.46
Shower Timer	$8,320	$1,114	$7,206	7.47
Water Heater Temperature Set-Back	$156	$108	$48	1.44
Energy Efficiency Products and Kits	**$51,546**	**$33,567**	**$17,979**	**1.54**
Energy Expo Kits	$23,943	$19,827	$4,116	1.21
Refrigerator Thermometer	$10,908	$2,316	$8,592	4.71
Power Strip - Tier 1	$16,695	$11,424	$5,271	1.46
Multifamily	**$38,248**	**$13,760**	**$24,487**	**2.78**
LED Bulb	$34,029	$11,926	$22,103	2.85
Refrigerator Thermometer	$2,862	$737	$2,125	3.88
Power Strip - Tier 1	$1,356	$1,098	$259	1.24
Administrative Costs	**$0**	**$95,986**	**-$95,986**	**0.00**
Administrative Costs	$0	$95,986	-$95,986	0.00
Grand Total	**$469,301**	**$368,564**	**$100,738**	**1.27**

2019 Energy Partners Societal Test

All values are discounted to 2019

	Societal Benefits	Societal Costs	Societal Net Benefits	Societal B/C Ratio
Lighting	**$538,597**	**$78,503**	**$460,094**	**6.86**
LED Bulb	$493,833	$40,271	$453,562	12.26
LED Torchiere	$44,764	$38,232	$6,532	1.17
HVAC	**$40,363**	**$34,565**	**$5,798**	**1.17**
Dehumidifier	$4,034	$440	$3,594	9.17
Furnace - Delivered Fuels	$27,958	$30,635	-$2,678	0.91
Air Sealing and Insulation	$8,371	$3,490	$4,881	2.40
Appliances	**$163,068**	**$101,539**	**$61,530**	**1.61**
Refrigerator Replacement	$86,621	$78,713	$7,908	1.10
Freezer Replacement	$12,885	$9,366	$3,518	1.38
Refrigerator Turn-In	$49,311	$10,890	$38,421	4.53
Freezer Turn-In	$13,637	$2,430	$11,207	5.61
Microwave Oven	$615	$139	$476	4.42
Water Heating	**$74,310**	**$6,367**	**$67,943**	**11.67**
Showerhead	$40,105	$3,228	$36,877	12.42
Aerator	$21,986	$1,855	$20,131	11.85
Pipe Insulation	$2,868	$63	$2,805	45.52
Shower Timer	$9,184	$1,114	$8,070	8.25
Water Heater Temperature Set-Back	$167	$108	$59	1.55
Energy Efficiency Products and Kits	**$107,021**	**$33,567**	**$73,454**	**3.19**
Energy Expo Kits	$74,113	$19,827	$54,286	3.74
Refrigerator Thermometer	$12,020	$2,316	$9,705	5.19
Power Strip - Tier 1	$20,888	$11,424	$9,464	1.83
Multifamily	**$82,388**	**$13,760**	**$68,628**	**5.99**
LED Bulb	$77,537	$11,926	$65,612	6.50
Refrigerator Thermometer	$3,154	$737	$2,417	4.28
Power Strip - Tier 1	$1,697	$1,098	$599	1.55
Administrative Costs	**$0**	**$95,986**	**-$95,986**	**0.00**
Administrative Costs	$0	$95,986	-$95,986	0.00
Grand Total	**$1,005,746**	**$364,287**	**$641,459**	**2.76**

2019 Energy Partners Participant Test

All values are discounted to 2019

	Participant Benefits	Participant Costs	Participant Net Benefits	Participant B/C Ratio
Lighting	**$1,057,910**	**$78,503**	**$979,407**	**13.48**
LED Bulb	$937,580	$40,271	$897,309	23.28
LED Torchiere	$120,330	$38,232	$82,098	3.15
HVAC	**$128,718**	**$34,565**	**$94,152**	**3.72**
Dehumidifier	$9,889	$440	$9,449	22.47
Furnace - Delivered Fuels	$96,655	$30,635	$66,020	3.16
Air Sealing and Insulation	$22,174	$3,490	$18,684	6.35
Appliances	**$385,806**	**$101,539**	**$284,267**	**3.80**
Refrigerator Replacement	$202,760	$78,713	$124,047	2.58
Freezer Replacement	$26,342	$9,366	$16,976	2.81
Refrigerator Turn-In	$122,119	$10,890	$111,229	11.21
Freezer Turn-In	$33,190	$2,430	$30,760	13.66
Microwave Oven	$1,393	$139	$1,254	10.02
Water Heating	**$181,770**	**$6,367**	**$175,403**	**28.55**
Showerhead	$97,860	$3,228	$94,632	30.32
Aerator	$53,734	$1,855	$51,879	28.97
Pipe Insulation	$6,808	$63	$6,745	108.07
Shower Timer	$22,865	$1,114	$21,752	20.53
Water Heater Temperature Set-Back	$503	$108	$395	4.66
Energy Efficiency Products and Kits	**$229,902**	**$33,567**	**$196,335**	**6.85**
Energy Expo Kits	$137,767	$19,827	$117,940	6.95
Refrigerator Thermometer	$29,594	$2,316	$27,278	12.78
Power Strip - Tier 1	$62,540	$11,424	$51,116	5.47
Multifamily	**$170,218**	**$13,760**	**$156,457**	**12.37**
LED Bulb	$157,072	$11,926	$145,147	13.17
Refrigerator Thermometer	$7,894	$737	$7,157	10.71
Power Strip - Tier 1	$5,251	$1,098	$4,153	4.78
Administrative Costs	**$0**	**$0**	**$0**	**0.00**
Administrative Costs	$0	$0	$0	0.00
Grand Total	**$2,154,323**	**$268,301**	**$1,886,021**	**8.03**

2019 Energy Partners Ratepayer Impact Test

All values are discounted to 2019

	Ratepayer Benefits	Ratepayer Costs	Ratepayer Net Benefits	Ratepayer B/C Ratio
Lighting	**$199,374**	**$532,584**	**-$333,210**	**0.37**
LED Bulb	$182,489	$459,096	-$276,608	0.40
LED Torchiere	$16,886	$73,488	-$56,602	0.23
HVAC	**$22,609**	**$86,388**	**-$63,779**	**0.26**
Dehumidifier	$2,694	$8,002	-$5,308	0.34
Furnace - Delivered Fuels	$15,326	$65,003	-$49,677	0.24
Air Sealing and Insulation	$4,589	$13,383	-$8,794	0.34
Appliances	**$66,946**	**$248,146**	**-$181,200**	**0.27**
Refrigerator Replacement	$18,954	$114,770	-$95,815	0.17
Freezer Replacement	$2,206	$13,571	-$11,365	0.16
Refrigerator Turn-In	$35,534	$93,459	-$57,925	0.38
Freezer Turn-In	$9,827	$25,323	-$15,496	0.39
Microwave Oven	$424	$1,023	-$599	0.41
Water Heating	**$52,106**	**$134,039**	**-$81,934**	**0.39**
Showerhead	$27,549	$70,669	-$43,120	0.39
Aerator	$15,103	$38,818	-$23,716	0.39
Pipe Insulation	$1,838	$4,551	-$2,713	0.40
Shower Timer	$7,476	$19,558	-$12,081	0.38
Water Heater Temperature Set-Back	$140	$443	-$303	0.32
Energy Efficiency Products and Kits	**$46,321**	**$143,454**	**-$97,134**	**0.32**
Energy Expo Kits	$21,516	$69,383	-$47,868	0.31
Refrigerator Thermometer	$9,802	$25,353	-$15,550	0.39
Power Strip - Tier 1	$15,003	$48,719	-$33,716	0.31
Multifamily	**$34,370**	**$92,461**	**-$58,091**	**0.37**
LED Bulb	$30,579	$81,582	-$51,003	0.37
Refrigerator Thermometer	$2,572	$6,768	-$4,196	0.38
Power Strip - Tier 1	$1,219	$4,111	-$2,892	0.30
Administrative Costs	**$0**	**$86,255**	**-$86,255**	**0.00**
Administrative Costs	$0	$86,255	-$86,255	0.00
Grand Total	**$421,725**	**$1,323,328**	**-$901,603**	**0.32**

2019 Power of One Business Annual Energy Savings

All values are discounted to 2019

	kWh - Meter	kW - Meter	kWh - Generator	kW - Generator
Lighting	**24,666,803**	**3,609.2**	**27,255,411**	**3,988.0**
LED	7,911,211	1,858.4	8,741,437	2,053.4
LED Outdoor	4,691,966	0.0	5,184,355	0.0
Mixed Energy Efficient Lighting	11,776,234	1,750.7	13,012,067	1,934.5
Lighting Controls	287,392	0.1	317,552	0.1
Refrigeration	**1,782,230**	**137.3**	**1,969,263**	**151.7**
Refrigeration Improvement	1,445,685	131.3	1,597,400	145.1
Refrigeration Controls	336,545	6.0	371,863	6.6
Motors and Drives	**9,819,263**	**179.8**	**10,849,726**	**198.6**
Standard to Eff Motor	1,107,531	117.3	1,223,759	129.6
Standard to VSD Motor	8,024,961	46.6	8,867,124	51.5
Motor Controls	686,771	15.9	758,843	17.6
HVAC	**3,153,118**	**940.9**	**3,484,016**	**1,039.6**
AC Improvements	1,667,018	495.8	1,841,960	547.9
Heat Pump - Cooling and Heating	517,100	152.1	571,366	168.0
HVAC and EMS Controls	969,000	293.0	1,070,690	323.7
Miscellaneous	**7,768,205**	**856.5**	**8,583,424**	**946.3**
Compressed Air Upgrades	3,134,438	69.8	3,463,375	77.1
Process Improvements	2,039,867	427.7	2,253,937	472.6
Appliances	231,079	37.5	255,329	41.4
Shell Measures	100,148	1.2	110,658	1.3
Heat Recovery	16,645	0.0	18,392	0.0
Miscellaneous Controls	2,115,573	295.7	2,337,588	326.7
IT Equipment	130,455	24.5	144,145	27.1
Administrative Costs	**0**	**0.0**	**0**	**0.0**
Administrative Costs	0	0.0	0	0.0
Grand Total	**47,189,619**	**5,723.6**	**52,141,839**	**6,324.3**

2019 Power of One Business Utility Test

All values are discounted to 2019

	Utility Benefits	Utility Costs	Utility Net Benefits	Utility B/C Ratio
Lighting	**$12,143,600**	**$1,389,562**	**$10,754,038**	**8.74**
LED	$4,515,005	$495,776	$4,019,229	9.11
LED Outdoor	$1,784,690	$210,486	$1,574,204	8.48
Mixed Energy Efficient Lighting	$5,747,941	$659,278	$5,088,663	8.72
Lighting Controls	$95,964	$24,022	$71,942	3.99
Refrigeration	**$837,396**	**$66,463**	**$770,932**	**12.60**
Refrigeration Improvement	$702,433	$53,034	$649,399	13.24
Refrigeration Controls	$134,963	$13,429	$121,534	10.05
Motors and Drives	**$3,958,753**	**$396,739**	**$3,562,014**	**9.98**
Standard to Eff Motor	$566,303	$49,916	$516,387	11.35
Standard to VSD Motor	$3,111,484	$320,923	$2,790,561	9.70
Motor Controls	$280,966	$25,900	$255,066	10.85
HVAC	**$2,194,234**	**$238,834**	**$1,955,400**	**9.19**
AC Improvements	$1,049,151	$127,241	$921,909	8.25
Heat Pump - Cooling and Heating	$397,915	$77,589	$320,326	5.13
HVAC and EMS Controls	$747,168	$34,004	$713,164	21.97
Miscellaneous	**$3,757,320**	**$294,847**	**$3,462,473**	**12.74**
Compressed Air Upgrades	$1,280,314	$30,946	$1,249,367	41.37
Process Improvements	$996,155	$131,056	$865,100	7.60
Appliances	$137,217	$18,717	$118,500	7.33
Shell Measures	$42,415	$3,575	$38,840	11.87
Heat Recovery	$6,333	$559	$5,774	11.34
Miscellaneous Controls	$1,233,938	$104,226	$1,129,712	11.84
IT Equipment	$60,948	$5,769	$55,179	10.57
Administrative Costs	**$0**	**$1,406,498**	**-$1,406,498**	**0.00**
Administrative Costs	$0	$1,406,498	-$1,406,498	0.00
Grand Total	**$22,891,302**	**$3,792,943**	**$19,098,359**	**6.04**

2019 Power of One Business Societal Test

All values are discounted to 2019

	Societal Benefits	Societal Costs	Societal Net Benefits	Societal B/C Ratio
Lighting	**$16,614,933**	**$8,071,512**	**$8,543,421**	**2.06**
LED	$6,152,160	$2,764,319	$3,387,841	2.23
LED Outdoor	$2,465,161	$1,557,650	$907,511	1.58
Mixed Energy Efficient Lighting	$7,864,607	$3,651,240	$4,213,366	2.15
Lighting Controls	$133,005	$98,302	$34,703	1.35
Refrigeration	**$1,235,196**	**$1,075,587**	**$159,610**	**1.15**
Refrigeration Improvement	$1,035,059	$999,603	$35,456	1.04
Refrigeration Controls	$200,137	$75,984	$124,153	2.63
Motors and Drives	**$5,869,305**	**$2,577,965**	**$3,291,340**	**2.28**
Standard to Eff Motor	$833,224	$350,010	$483,215	2.38
Standard to VSD Motor	$4,619,735	$1,709,582	$2,910,153	2.70
Motor Controls	$416,346	$518,374	-$102,027	0.80
HVAC	**$3,202,461**	**$1,712,951**	**$1,489,511**	**1.87**
AC Improvements	$1,534,534	$651,079	$883,456	2.36
Heat Pump - Cooling and Heating	$579,580	$228,328	$351,252	2.54
HVAC and EMS Controls	$1,088,347	$833,544	$254,802	1.31
Miscellaneous	**$5,354,997**	**$3,368,556**	**$1,986,441**	**1.59**
Compressed Air Upgrades	$1,897,325	$208,491	$1,688,834	9.10
Process Improvements	$1,296,376	$1,425,212	-$128,837	0.91
Appliances	$201,095	$50,002	$151,093	4.02
Shell Measures	$62,735	$99,727	-$36,992	0.63
Heat Recovery	$9,410	$21,321	-$11,911	0.44
Miscellaneous Controls	$1,808,642	$1,202,111	$606,532	1.50
IT Equipment	$79,414	$361,691	-$282,277	0.22
Administrative Costs	**$0**	**$1,406,498**	**-$1,406,498**	**0.00**
Administrative Costs	$0	$1,406,498	-$1,406,498	0.00
Grand Total	**$32,276,892**	**$18,213,067**	**$14,063,825**	**1.77**

2019 Power of One Business Participant Test

All values are discounted to 2019

	Participant Benefits	Participant Costs	Participant Net Benefits	Participant B/C Ratio
Lighting	**$24,274,634**	**$8,071,512**	**$16,203,122**	**3.01**
LED	$8,304,798	$2,764,319	$5,540,479	3.00
LED Outdoor	$4,444,345	$1,557,650	$2,886,695	2.85
Mixed Energy Efficient Lighting	$11,239,094	$3,651,240	$7,587,854	3.08
Lighting Controls	$286,397	$98,302	$188,095	2.91
Refrigeration	**$1,838,522**	**$1,075,587**	**$762,936**	**1.71**
Refrigeration Improvement	$1,488,750	$999,603	$489,147	1.49
Refrigeration Controls	$349,772	$75,984	$273,789	4.60
Motors and Drives	**$10,683,995**	**$2,577,965**	**$8,106,030**	**4.14**
Standard to Eff Motor	$1,225,546	$350,010	$875,536	3.50
Standard to VSD Motor	$8,687,628	$1,709,582	$6,978,046	5.08
Motor Controls	$770,821	$518,373	$252,448	1.49
HVAC	**$3,633,871**	**$1,712,951**	**$1,920,921**	**2.12**
AC Improvements	$1,957,925	$651,079	$1,306,847	3.01
Heat Pump - Cooling and Heating	$635,567	$228,328	$407,239	2.78
HVAC and EMS Controls	$1,040,379	$833,544	$206,835	1.25
Miscellaneous	**$7,444,626**	**$3,368,556**	**$4,076,070**	**2.21**
Compressed Air Upgrades	$3,025,008	$208,491	$2,816,517	14.51
Process Improvements	$1,613,345	$1,425,212	$188,133	1.13
Appliances	$288,739	$50,002	$238,737	5.77
Shell Measures	$107,811	$99,727	$8,084	1.08
Heat Recovery	$21,362	$21,321	$41	1.00
Miscellaneous Controls	$2,286,362	$1,202,111	$1,084,251	1.90
IT Equipment	$101,999	$361,691	-$259,693	0.28
Administrative Costs	**$0**	**$0**	**$0**	**0.00**
Administrative Costs	$0	$0	$0	0.00
Grand Total	**$47,875,649**	**$16,806,570**	**$31,069,079**	**2.85**

2019 Power of One Business Ratepayer Impact Test

All values are discounted to 2019

	Ratepayer Benefits	Ratepayer Costs	Ratepayer Net Benefits	Ratepayer B/C Ratio
Lighting	**$10,912,515**	**$21,813,737**	**-$10,901,222**	**0.50**
LED	$4,057,286	$7,462,880	-$3,405,594	0.54
LED Outdoor	$1,603,763	$3,993,789	-$2,390,027	0.40
Mixed Energy Efficient Lighting	$5,165,230	$10,099,705	-$4,934,474	0.51
Lighting Controls	$86,235	$257,363	-$171,127	0.34
Refrigeration	**$752,503**	**$1,652,138**	**-$899,635**	**0.46**
Refrigeration Improvement	$631,222	$1,337,825	-$706,603	0.47
Refrigeration Controls	$121,281	$314,313	-$193,033	0.39
Motors and Drives	**$3,557,425**	**$9,600,880**	**-$6,043,455**	**0.37**
Standard to Eff Motor	$508,893	$1,101,303	-$592,411	0.46
Standard to VSD Motor	$2,796,051	$7,806,899	-$5,010,849	0.36
Motor Controls	$252,482	$692,678	-$440,196	0.36
HVAC	**$1,971,788**	**$3,265,479**	**-$1,293,691**	**0.60**
AC Improvements	$942,791	$1,759,436	-$816,645	0.54
Heat Pump - Cooling and Heating	$357,575	$571,135	-$213,559	0.63
HVAC and EMS Controls	$671,422	$934,908	-$263,486	0.72
Miscellaneous	**$3,376,413**	**$6,689,910**	**-$3,313,497**	**0.50**
Compressed Air Upgrades	$1,150,519	$2,718,341	-$1,567,822	0.42
Process Improvements	$895,168	$1,449,789	-$554,621	0.62
Appliances	$123,306	$259,467	-$136,161	0.48
Shell Measures	$38,115	$96,882	-$58,766	0.39
Heat Recovery	$5,691	$19,197	-$13,506	0.30
Miscellaneous Controls	$1,108,845	$2,054,576	-$945,732	0.54
IT Equipment	$54,769	$91,658	-$36,889	0.60
Administrative Costs	**$0**	**$1,263,911**	**-$1,263,911**	**0.00**
Administrative Costs	$0	$1,263,911	-$1,263,911	0.00
Grand Total	**$20,570,643**	**$44,286,054**	**-$23,715,411**	**0.46**

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Investor Owned Electric Utility 2017-19 CIP Report
Overview

GENERAL UTILITY INFORMATION

2017-19
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	Leah Peterson
Contact Title	Supervisor - Customer Business Analyti
Telephone	(218) 355-3014
Fax	(218) 723-3984
Email Address	lpeterson@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 2015)

Category	# of Customers	kWh Sales
Residential	121,515	1,026,454,000
Commercial	22,170	1,254,681,000
Industrial	394	6,073,273,000
Farm	incl above	incl above
Other	954	70,272,000
Total	145,033	8,424,680,000
*Total Net of Exempt	145,017	2,701,717,658

*reflecting newly exempt customers in 2017 & weather normalization

6. 2015 Adjusted Gross Operating Revenue (GOR)

Gross Operating Revenue 2015	$528,805,775
Less Exempt Facility Revenue 2015	$346,088,050
Adjusted GOR 2015	$182,717,725

6b. 2015 Adjusted Gross Operating Revenue (GOR)

Gross Operating Revenue 2015	$528,805,775
Less Exempt Facility Revenue 2015*	$366,248,874
Adjusted GOR 2015	$162,556,901

*reflecting newly exempt customers in 2017

CIP SPENDING REPORT

7. Annual CIP Minimum Spending Requirement

2017	$2,438,000
2018	$2,438,000
2019	$2,438,000

8. 2017 CIP Actual (most recently approved)

Annual Total Expenditures	$8,129,337
Annual Energy Savings - (Gen kWh)	72,467,019
Annual Demand Savings - (Gen kW)	8,594.0

9. 2017 CIP Plan

Annual Total Expenditures	$10,265,125
Annual Energy Savings - (Gen kWh)	57,390,222
Annual Demand Savings - (Gen kW)	9,111.6

10. 2018 CIP Actual

Annual Total Expenditures	$9,031,446
Annual Energy Savings - (Gen kWh)	72,479,534
Annual Demand Savings - (Gen kW)	8,095.9

11. 2018 CIP Plan

Annual Total Expenditures	$10,327,880
Annual Energy Savings - (Gen kWh)	57,390,222
Annual Demand Savings - (Gen kW)	9,111.6

12. 2019 CIP Actual

Annual Total Expenditures	$8,280,773
Annual Energy Savings - (Gen kWh)	67,669,222
Annual Demand Savings - (Gen kW)	8,337.9

13. 2019 CIP Plan

Annual Total Expenditures	$10,518,770
Annual Energy Savings - (Gen kWh)	57,390,222
Annual Demand Savings - (Gen kW)	9,111.6

12. # of Projects: 8

	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	Renewable Energy		
5	Customer Engagement		X
6	Energy Analysis		X
7	Research & Development		X
8	CIP Evaluation & Planning		X
9	Regulatory Charges		X
10			

Electric Conservation Project Information Sheet

2017/2018/2019 Cons1 BudgtSavgs

Utility Name: Minnesota Power
Project Name: Power of One Home - Residential
Project Description: This Project provides a comprehensive package of products and services to residential customers.

Type Conservation
Status: Existing

	2017 Proposed	2017 Approved	2017 Actual	2018 Proposed	2018 Approved	2018 Actual	2019 Proposed	2019 Approved	2019 Actual
Project Type -- Enter "X"									
Indirect (No kWh or kW Savings)									
Audit/Info									
Education									
Classroom Training/Instructional									
R&D									
Renewable									
Other									
Direct (kWh or kW Savings)	X	X	X	X	X	X	X	X	X
Cost Components -- Enter Dollars									
Project Delivery	970,000	970,000	548,712	977,650	977,650	698,579	985,530	985,530	582,761
Utility Administration	62,500	62,500	63,685	64,375	64,375	63,338	66,310	66,310	68,715
Evaluation Labor									
Advertising & Promotion	61,000	61,000	11,873	61,000	61,000	25,891	61,000	61,000	23,307
Participant Incentives	1,264,412	1,264,412	864,111	1,264,412	1,264,412	1,146,141	1,264,412	1,264,412	1,149,559
R&D									
Other									
Total Costs	$2,357,912	$2,357,912	$1,488,380	$2,367,437	$2,367,437	$1,933,950	$2,377,252	$2,377,252	$1,824,343
Project Participants									
Total Participants (Measures)	151,053	122,841	168,322	151,053	122,841	271,137	151,053	122,841	259,313
% of Spending by Customer Segment									
Residential	100%	100%	100%	100%	100%	100%	100%	100%	100%
Commercial									
Industrial									
Farm									
Other									
Total % of Spending (must equal 100%)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Low-Income & Renter Participation									
Participants % (% of Row 31)			5%			5%			5%
Budget % (% of Row 29)			6%			6%			6%
End-Use Target -- Enter "X" or %									
Building Efficiency	X	X	X	X	X	X	X	X	X
Compressed Air									
Energy Star Appliances	X	X	X	X	X	X	X	X	X
Lighting	X	X	X	X	X	X	X	X	X
Motors (including ASD, Fans, Pumps)	X	X	X	X	X	X	X	X	X
Manufacturing Process									
Refrigeration	X	X	X	X	X	X	X	X	X
Space Cooling	X	X	X	X	X	X	X	X	X
Space Heating	X	X	X	X	X	X	X	X	X
Water Heating	X	X	X	X	X	X	X	X	X
Weatherization	X	X	X	X	X	X	X	X	X
General/Other	X	X	X	X	X	X	X	X	X
Energy and Demand Savings - Generator									
Average Annual kWh Savings per Participant	70	86	57	70	86	52	70	86	56
Annual kWh Saved - Generator	10,590,448	10,590,448	9,614,443	10,590,448	10,590,448	14,133,230	10,590,448	10,590,448	14,444,512
Cost per Annual kWh Saved	$0.2226	$0.2226	$0.1548	$0.2235	$0.2235	$0.1368	$0.2245	$0.2245	$0.1263
Measure Lifetime (Years)									
Lifetime kWh savings	0	0	0	0	0	0	0	0	0
Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Average kW Savings per Participant	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Annual kW Savings - Generator	1,125.5	1,125.5	1,198.9	1,125.5	1,125.5	1,814.6	1,125.5	1,125.5	1,898.0
Cost per KW Saved	$2,094.99	$2,094.99	$1,241.42	$2,103.45	$2,103.45	$1,065.77	$2,112.17	$2,112.17	$961.19
Cost/Benefit Results	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year
Societal									
Net present value	21,545,366	21,574,277	7,863,477	21,545,366	21,574,277	7,899,225	21,545,366	21,574,277	13,381,575
B/C ratio	2.92	2.92	3.70	2.92	2.92	2.91	2.92	2.92	4.23
Participant									
Net present value	59,223,016	59,223,016	19,011,847	59,223,016	59,223,016	24,895,322	59,223,016	59,223,016	30,379,318
B/C ratio	8.42	8.42	9.31	8.42	8.42	8.45	8.42	8.42	9.74
Rate Payer									
Net present value	(26,765,669)	(26,737,257)	(8,146,357)	(26,765,669)	(26,737,257)	(11,311,475)	(26,765,669)	(26,737,257)	(10,905,268)
B/C ratio	0.37	0.37	0.38	0.37	0.37	0.40	0.37	0.37	0.41
Utility									
Net present value	8,858,496	8,886,909	3,512,405	8,858,496	8,886,909	5,958,147	8,858,496	8,886,909	6,475,883
B/C ratio	2.34	2.35	3.36	2.34	2.35	4.08	2.34	2.35	4.55

Electric Conservation Project Information Sheet

2017/2018/2019 Cons1 BudgtSavgs

Utility Name: Minnesota Power
Project Name: Energy Partners - Low Income
Project Description: This Project provides the products and services that have the greatest impact on saving energy across a broad base of customer and dwelling types. Although the structure is the same as in previous years, measures that meet customer needs will be provided.
Type Conservation
Status: Existing

	2017 Proposed	2017 Approved	2017 Actual	2018 Proposed	2018 Approved	2018 Actual	2019 Proposed	2019 Approved	2019 Actual
Project Type -- Enter "X"									
Indirect (No kWh or kW Savings)									
Audit/Info									
Education									
Classroom Training/Instructional									
R&D									
Renewable									
Other									
Direct (kWh or kW Savings)	X	X	X	X	X	X	X	X	X
Cost Components -- Enter Dollars									
Project Delivery	67,030	67,030	63,560	68,245	68,245	103,703	69,495	69,495	70,806
Utility Administration	20,430	20,430	15,676	21,045	21,045	24,251	21,675	21,675	25,180
Evaluation Labor									
Advertising & Promotion									
Participant Incentives	305,860	305,860	287,735	305,860	305,860	429,724	305,860	305,860	272,578
R&D									
Other									
Total Costs	$393,320	$393,320	$366,971	$395,150	$395,150	$557,678	$397,030	$397,030	$368,564
Project Participants									
Total Participants (Measures)	7,229	7,229	18,137	7,229	7,229	22,765	7,229	7,229	14,632
% of Spending by Customer Segment									
Residential	100%	100%	100%	100%	100%	100%	100%	100%	100%
Commercial									
Industrial									
Farm									
Other									
Total % of Spending (must equal 100%)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Low-Income & Renter Participation									
Participants % (% of Row 31)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Budget % (% of Row 29)	100%	100%	100%	100%	100%	100%	100%	100%	100%
End-Use Target -- Enter "X" or %									
Building Efficiency	X	X	X	X	X	X	X	X	X
Compressed Air									
Energy Star Appliances	X	X	X	X	X	X	X	X	X
Lighting	X	X	X	X	X	X	X	X	X
Motors (including ASD, Fans, Pumps)									
Manufacturing Process									
Refrigeration	X	X	X	X	X	X	X	X	X
Space Cooling	X	X	X	X	X	X	X	X	X
Space Heating	X	X	X	X	X	X	X	X	X
Water Heating	X	X	X	X	X	X	X	X	X
Weatherization	X	X	X	X	X	X	X	X	X
General/Other	X	X	X	X	X	X	X	X	X
Energy and Demand Savings - Generator									
Average Annual kWh Savings per Participant	129	129	80	129	129	82	129	129	74
Annual kWh Saved - Generator	936,080	936,080	1,458,538	936,080	936,080	1,863,183	936,080	936,080	1,082,871
Cost per Annual kWh Saved	$0.4202	$0.4202	$0.2516	$0.4221	$0.4221	$0.2993	$0.4241	$0.4241	$0.3404
Measure Lifetime (Years)									
Lifetime kWh savings	0	0	0	0	0	0	0	0	0
Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Average kW Savings per Participant	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Annual kW Savings - Generator	105.2	105.2	156.7	105.2	105.2	202.5	105.2	105.2	115.6
Cost per KW Saved	$3,738.78	$3,738.78	$2,342.35	$3,756.18	$3,756.18	$2,753.64	$3,774.05	$3,774.05	$3,187.16
Cost/Benefit Results	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year
Societal									
Net present value	823,722	829,266	667,398	823,722	829,266	542,085	823,722	829,266	641,459
B/C ratio	1.78	1.79	2.97	1.78	1.79	2.01	1.78	1.79	2.76
Participant									
Net present value	3,660,482	3,660,482	1,986,055	3,660,482	3,660,482	2,556,170	3,660,482	3,660,482	1,886,021
B/C ratio	5.65	5.65	8.66	5.65	5.65	7.22	5.65	5.65	8.03
Rate Payer									
Net present value	(2,389,981)	(2,384,533)	(1,115,615)	(2,389,981)	(2,384,533)	(1,521,899)	(2,389,981)	(2,384,533)	(901,603)
B/C ratio	0.28	0.28	0.31	0.28	0.28	0.32	0.28	0.28	0.32
Utility									
Net present value	(183,583)	(178,135)	143,700	(183,583)	(178,135)	211,259	(183,583)	(178,135)	100,738
B/C ratio	0.83	0.84	1.39	0.83	0.84	1.38	0.83	0.84	1.27

Electric Conservation Project Information Sheet

2017/2018/2019 Cons1 BudgtSavgs

Utility Name: Minnesota Power
Project Name: Power of One Business - C/I/Ag
Project Description: This Project uses a "Three-Phased Market Strategy" to customize a package of products and services that meets the unique needs of distinct business, industrial, agricultural and public communities.
Type Conservation
Status: Existing

	2017 Proposed	2017 Approved	2017 Actual	2018 Proposed	2018 Approved	2018 Actual	2019 Proposed	2019 Approved	2019 Actual
Project Type -- Enter "X"									
Indirect (No kWh or kW Savings)									
Audit/Info									
Education									
Classroom Training/Instructional									
R&D									
Renewable									
Other									
Direct (kWh or kW Savings)	X	X	X	X	X	X	X	X	X
Cost Components -- Enter Dollars									
Project Delivery	1,305,655	1,305,655	981,371	1,360,100	1,360,100	924,411	1,417,055	1,417,055	1,020,253
Utility Administration	100,000	100,000	100,137	103,000	103,000	121,305	106,095	106,095	72,629
Evaluation Labor									
Advertising & Promotion	246,170	246,170	128,802	329,965	329,965	340,360	416,090	416,090	313,109
Participant Incentives	2,626,368	2,626,368	2,475,454	2,626,368	2,626,368	2,452,999	2,626,368	2,626,368	2,386,445
R&D									
Other (Edu)			6,020	0		3,724	0		507
Total Costs	$4,278,193	$4,278,193	$3,691,784	$4,419,433	$4,419,433	$3,842,799	$4,565,608	$4,565,608	$3,792,943
Project Participants									
Total Participants (Projects)	3,366	3,366	905	3,366	3,366	940	3,366	3,366	1,355
% of Spending by Customer Segment									
Residential									
Commercial	100%	100%	77%	100%	100%	63%	100%	100%	69%
Industrial			23%			35%			29%
Farm			0%			2%			2%
Other									
Total % of Spending (must equal 100%)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Low-Income & Renter Participation									
Participants % (% of Row 31)	0%	0%	0%	0%	0%	0%	0%	0%	0%
Budget % (% of Row 29)	0%	0%	0%	0%	0%	0%	0%	0%	0%
End-Use Target -- Enter "X" or %									
Building Efficiency	X	X	X	X	X	X	X	X	X
Compressed Air	X	X	X	X	X	X	X	X	X
Energy Star Appliances	X	X	X	X	X	X	X	X	X
Lighting	X	X	X	X	X	X	X	X	X
Motors (including ASD, Fans, Pumps)	X	X	X	X	X	X	X	X	X
Manufacturing Process	X	X	X	X	X	X	X	X	X
Refrigeration	X	X	X	X	X	X	X	X	X
Space Cooling	X	X	X	X	X	X	X	X	X
Space Heating	X	X	X	X	X	X	X	X	X
Water Heating	X	X	X	X	X	X	X	X	X
Weatherization	X	X	X	X	X	X	X	X	X
General/Other	X	X	X	X	X	X	X	X	X
Energy and Demand Savings - Generator									
Average Annual kWh Savings per Participant	13626	13626	67734	13626	13626	60088	13626	13626	38481
Annual kWh Saved - Generator	45,863,694	45,863,694	61,299,182	45,863,694	45,863,694	56,483,120	45,863,694	45,863,694	52,141,839
Cost per Annual kWh Saved	$0.0933	$0.0933	$0.0602	$0.0964	$0.0964	$0.0680	$0.0995	$0.0995	$0.0727
Measure Lifetime (Years)									
Lifetime kWh savings	0	0	0	0	0	0	0	0	0
Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Average kW Savings per Participant	2.34	2.34	8.00	2.34	2.34	6.47	2.34	2.34	4.67
Annual kW Savings - Generator	7,881.0	7,881.0	7,238.4	7,881.0	7,881.0	6,078.8	7,881.0	7,881.0	6,324.3
Cost per KW Saved	$542.85	$542.85	$510.03	$560.77	$560.77	$632.17	$579.32	$579.32	$599.74
Cost/Benefit Results	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year	3 Years	3 Years	1 Year
Societal									
Net present value	40,115,573	40,545,528	16,935,451	40,115,573	40,545,528	14,251,660	40,115,573	40,545,528	14,063,825
B/C ratio	1.80	1.82	1.94	1.80	1.82	1.81	1.80	1.82	1.77
Participant									
Net present value	80,548,320	80,548,320	37,671,716	80,548,320	80,548,320	35,209,139	80,548,320	80,548,320	31,069,079
B/C ratio	2.91	2.91	3.25	2.91	2.91	3.18	2.91	2.91	2.85
Rate Payer									
Net present value	(67,298,834)	(66,876,297)	(30,928,024)	(67,298,834)	(66,876,297)	(27,798,063)	(67,298,834)	(66,876,297)	(23,715,411)
B/C ratio	0.47	0.48	0.44	0.47	0.48	0.44	0.47	0.48	0.46
Utility									
Net present value	48,170,393	48,592,930	21,014,762	48,170,393	48,592,930	19,554,779	48,170,393	48,592,930	19,098,359
B/C ratio	4.80	4.96	6.69	4.80	4.96	6.09	4.80	4.96	6.04

Electric Conservation Project Information Sheet

2017/2018/2019 Cons1 BudgtSavgs

Utility Name: Minnesota Power
Project Name: Customer Engagement
Project Description: This Project is focused on educational outreach and communications via multi-modal marketing channels to increase awareness of Power of One® programs.

Type Conservation
Status: Existing

	2017 Proposed	2017 Approved	2017 Actual	2018 Proposed	2018 Approved	2018 Actual	2019 Proposed	2019 Approved	2019 Actual
Project Type -- Enter "X"									
Indirect (No kWh or kW Savings)									
Audit/Info	X	X	X	X	X	X	X	X	X
Education	X	X	X	X	X	X	X	X	X
Classroom Training/Instructional	X	X	X	X	X	X	X	X	X
R&D									
Renewable									
Other									
Direct (kWh or kW Savings)									
Cost Components -- Enter Dollars									
Project Delivery	451,250	451,250	171,942	462,840	462,840	177,353	474,775	474,775	146,983
Utility Administration	128,750	128,750	9,916	132,615	132,615	7,364	136,595	136,595	5,959
Evaluation Labor									
Advertising & Promotion	65,000	65,000	80,332	65,000	65,000	49,775	65,000	65,000	51,198
Participant Incentives									
R&D								20,000	
Other (Education)	470,000	345,000	274,445	471,800	346,800	441,928	473,655	328,655	333,922
Total Costs	$1,115,000	$990,000	$536,634	$1,132,255	$1,007,255	$676,420	$1,150,025	$1,025,025	$538,062
Project Participants									
Total Participants	108,000	108,000	106,128	108,000	108,000	100,256	108,000	108,000	104,640
% of Spending by Customer Segment									
Residential									
Commercial									
Industrial									
Farm									
Other	100%	100%	100%	100%	100%	100%	100%	100%	100%
Total % of Spending (must equal 100%)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Low-Income & Renter Participation									
Participants % (% of Row 31)									
Budget % (% of Row 29)									
End-Use Target -- Enter "X" or %									
Building Efficiency									
Compressed Air									
Energy Star Appliances									
Lighting									
Motors (including ASD, Fans, Pumps)									
Manufacturing Process									
Refrigeration									
Space Cooling									
Space Heating									
Water Heating									
Weatherization									
General/Other									
Energy and Demand Savings - Generator									
Average Annual kWh Savings per Participant	0	0	0	0	0	0	0	0	0
Annual kWh Saved - Generator									
Cost per Annual kWh Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Measure Lifetime (Years)									
Lifetime kWh savings	0	0	0	0	0	0	0	0	0
Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Average kW Savings per Participant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual kW Savings - Generator									
Cost per KW Saved	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Cost/Benefit Results									
Societal									
Net present value									
B/C ratio									
Participant									
Net present value									
B/C ratio									
Rate Payer									
Net present value									
B/C ratio									
Utility									
Net present value									
B/C ratio									

Electric Conservation Project Information Sheet

2017/2018/2019 Cons1 BudgtSavgs

Utility Name: Minnesota Power
Project Name: Energy Analysis
Project Description: This Project delivers site and technology-specific information needed to help a cross section of customers choose energy-saving products and services for their homes and businesses.
Type Conservation
Status: Existing

	2017 Proposed	2017 Approved	2017 Actual	2018 Proposed	2018 Approved	2018 Actual	2019 Proposed	2019 Approved	2019 Actual
Project Type -- Enter "X"									
Indirect (No kWh or kW Savings)									
Audit/Info	X	X	X	X	X	X	X	X	X
Education									
Classroom Training/Instructional									
R&D									
Renewable									
Other									
Direct (kWh or kW Savings)									
Cost Components -- Enter Dollars									
Project Delivery	923,560	923,560	728,459	923,560	923,560	906,704	923,560	923,560	877,259
Utility Administration	37,440	37,440	5,872	38,565	38,565	5,855	39,720	39,720	4,034
Evaluation Labor									
Advertising & Promotion									
Participant Incentives									
R&D									
Other (Education & Training)									
Total Costs	$961,000	$961,000	$734,331	$962,125	$962,125	$912,559	$963,280	$963,280	$881,293
Project Participants									
Total Participants	5,392	5,392	5,807	5,392	5,392	7,733	5,392	5,392	5,848
% of Spending by Customer Segment									
Residential	20%	20%	18%	20%	20%	21%	20%	20%	23%
Commercial, Industrial & Ag Combined	80%	80%	82%	80%	80%	79%	80%	80%	77%
Industrial									
Farm									
Other									
Total % of Spending (must equal 100%)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Low-Income & Renter Participation									
Participants % (% of Row 32)	10%	10%	19%	10%	10%	18%	10%	10%	19%
Budget % (% of Row 30)	2%	2%	6%	2%	2%	6%	2%	2%	4%
End-Use Target -- Enter "X" or %									
Building Efficiency									
Compressed Air									
Energy Star Appliances									
Lighting									
Motors (including ASD, Fans, Pumps)									
Manufacturing Process									
Refrigeration									
Space Cooling									
Space Heating									
Water Heating									
Weatherization									
General/Other									
Energy and Demand Savings - Generator									
Average Annual kWh Savings per Participant	0	0	0	0	0	0	0	0	0
Annual kWh Saved - Generator									
Cost per Annual kWh Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Measure Lifetime (Years)									
Lifetime kWh savings	0	0	0	0	0	0	0	0	0
Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Average kW Savings per Participant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual kW Savings - Generator									
Cost per KW Saved	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Cost/Benefit Results									
Societal									
Net present value									
B/C ratio									
Participant									
Net present value									
B/C ratio									
Rate Payer									
Net present value									
B/C ratio									
Utility									
Net present value									
B/C ratio									

Electric Conservation Project Information Sheet

2017/2018/2019 Cons1 BudgtSavgs

Utility Name: Minnesota Power
Project Name: Research & Development
Project Description: This Project is designed to take advantage of a broad base of technologies across customer classes - residential and low income, commercial, public and agricultural and industrial (non-opt-out) to ensure that each customer class benefits from participation in technology development, application and market-based research.
Type Conservation
Status: Existing

	2017 Proposed	2017 Approved	2017 Actual	2018 Proposed	2018 Approved	2018 Actual	2019 Proposed	2019 Approved	2019 Actual
Project Type -- Enter "X"									
Indirect (No kWh or kW Savings)									
Audit/Info									
Education									
Classroom Training/Instructional									
R&D	X	X	X	X	X	X	X	X	X
Renewable									
Other									
Direct (kWh or kW Savings)									
Cost Components -- Enter Dollars									
Project Delivery	30,000	26,680	26,257	30,000	26,680	19,842	30,000	26,680	6,370
Utility Administration	9,360	8,330	808	9,640	8,330	819	9,930	8,330	
Evaluation Labor									
Advertising & Promotion									
Participant Incentives									
R&D	234,740	208,790	183,596	234,460	208,790	212,199	234,170	208,790	221,738
Other									
Total Costs	$274,100	$243,800	$210,660	$274,100	$243,800	$232,861	$274,100	$243,800	$228,108
Project Participants									
Total Participants									
% of Spending by Customer Segment									
Residential									
Commercial									
Industrial									
Farm									
Other	100%	100%	100%	100%	100%	100%	100%	100%	100%
Total % of Spending (must equal 100%)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Low-Income & Renter Participation									
Participants % (% of Row 31)									
Budget % (% of Row 29)									
End-Use Target -- Enter "X" or %									
Building Efficiency									
Compressed Air									
Energy Star Appliances									
Lighting									
Motors (including ASD, Fans, Pumps)									
Manufacturing Process									
Refrigeration									
Space Cooling									
Space Heating									
Water Heating									
Weatherization									
General/Other									
Energy and Demand Savings - Generator									
Average Annual kWh Savings per Participant	0	0	0	0	0	0	0	0	0
Annual kWh Saved - Generator									
Cost per Annual kWh Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Measure Lifetime (Years)									
Lifetime kWh savings	0	0	0	0	0	0	0	0	0
Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Average kW Savings per Participant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual kW Savings - Generator									
Cost per KW Saved	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Cost/Benefit Results									
Societal									
Net present value									
B/C ratio									
Participant									
Net present value									
B/C ratio									
Rate Payer									
Net present value									
B/C ratio									
Utility									
Net present value									
B/C ratio									

Electric Conservation Project Information Sheet

2017/2018/2019 Cons1 BudgtSavgs

Utility Name: Minnesota Power
Project Name: CIP Evaluation & Planning
Project Description: This Project provides the resources for Minnesota Power to plan and evaluate the triennial CIP filing, complete the evaluation of current CIP projects, prepare the CIP tracker and DSM incentive reports for the Annual Consolidated filing, respond to data requests and evaluate the benefit/cost of proposed modifications to existing Projects or for the development of new Projects.
Type Conservation
Status: Existing

	2017 Proposed	2017 Approved	2017 Actual	2018 Proposed	2018 Approved	2018 Actual	2019 Proposed	2019 Approved	2019 Actual
Project Type -- Enter "X"									
Indirect (No kWh or kW Savings)									
Audit/Info									
Education									
Classroom Training/Instructional									
R&D									
Renewable									
Other	X	X	X	X	X	X	X	X	X
Direct (kWh or kW Savings)									
Cost Components -- Enter Dollars									
Project Delivery	266,000	266,000	466,017	271,430	271,430	377,957	277,025	277,025	210,711
Utility Administration	125,000	125,000	102,568	128,750	128,750	106,774	132,615	132,615	88,241
Evaluation Labor	318,000	318,000	217,037	322,500	322,500	239,158	327,135	327,135	162,455
Advertising & Promotion									
Participant Incentives									
R&D									
Other (Edu)	10,000	10,000	11,350	10,000	10,000	11,179	10,000	10,000	28,911
Total Costs	$719,000	$719,000	$796,973	$732,680	$732,680	$735,068	$746,775	$746,775	$490,318
Project Participants									
Total Participants									
% of Spending by Customer Segment									
Residential									
Commercial									
Industrial									
Farm									
Other	100%	100%	100%	100%	100%	100%	100%	100%	100%
Total % of Spending (must equal 100%)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Low-Income & Renter Participation									
Participants % (% of Row 31)									
Budget % (% of Row 29)									
End-Use Target -- Enter "X" or %									
Building Efficiency									
Compressed Air									
Energy Star Appliances									
Lighting									
Motors (including ASD, Fans, Pumps)									
Manufacturing Process									
Refrigeration									
Space Cooling									
Space Heating									
Water Heating									
Weatherization									
General/Other									
Energy and Demand Savings - Generator									
Average Annual kWh Savings per Participant	0	0	0	0	0	0	0	0	0
Annual kWh Saved - Generator									
Cost per Annual kWh Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Measure Lifetime (Years)									
Lifetime kWh savings	0	0	0	0	0	0	0	0	0
Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Average kW Savings per Participant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual kW Savings - Generator									
Cost per KW Saved	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Cost/Benefit Results									
Societal									
Net present value									
B/C ratio									
Participant									
Net present value									
B/C ratio									
Rate Payer									
Net present value									
B/C ratio									
Utility									
Net present value									
B/C ratio									

Electric Conservation Project Information Sheet

2017/2018/2019 Cons1 BudgtSavgs

Utility Name: Minnesota Power
Project Name: Regulatory Charges
Project Description: This Project recovers charges billed to Minnesota Power by the Department of Commerce regarding CIP, with the exception of the Made in Minnesota assessment for solar.

Type Conservation
Status: Existing

	2017 Proposed	2017 Approved	2017 Actual	2018 Proposed	2018 Approved	2018 Actual	2019 Proposed	2019 Approved	2019 Actual
Project Type -- Enter "X"									
Indirect (No kWh or kW Savings)									
Audit/Info									
Education									
Classroom Training/Instructional									
R&D									
Renewable									
Other	X	X	X	X	X	X	X	X	X
Direct (kWh or kW Savings)									
Cost Components -- Enter Dollars									
Project Delivery	200,000	321,900	303,604	200,000	200,000	140,113	200,000	200,000	157,143
Utility Administration									
Evaluation Labor									
Advertising & Promotion									
Participant Incentives									
R&D									
Other									
Total Costs	$200,000	$321,900	$303,604	$200,000	$200,000	$140,113	$200,000	$200,000	$157,143
Project Participants									
Total Participants									
% of Spending by Customer Segment									
Residential									
Commercial									
Industrial									
Farm									
Other	100%	100%	100%	100%	100%	100%	100%	100%	100%
Total % of Spending (must equal 100%)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Low-Income & Renter Participation									
Participants % (% of Row 31)									
Budget % (% of Row 29)									
End-Use Target -- Enter "X" or %									
Building Efficiency									
Compressed Air									
Energy Star Appliances									
Lighting									
Motors (including ASD, Fans, Pumps)									
Manufacturing Process									
Refrigeration									
Space Cooling									
Space Heating									
Water Heating									
Weatherization									
General/Other									
Energy and Demand Savings - Generator									
Average Annual kWh Savings per Participant	0	0	0	0	0	0	0	0	0
Annual kWh Saved - Generator									
Cost per Annual kWh Saved	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Measure Lifetime (Years)									
Lifetime kWh savings	0	0	0	0	0	0	0	0	0
Cost per kWh Lifetime	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Average kW Savings per Participant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual kW Savings - Generator									
Cost per KW Saved	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Cost/Benefit Results									
Societal									
Net present value									
B/C ratio									
Participant									
Net present value									
B/C ratio									
Rate Payer									
Net present value									
B/C ratio									
Utility									
Net present value									
B/C ratio									

Research & Development

PROGRAM TITLE: RESEARCH & DEVELOPMENT

PROGRAM DESCRIPTION

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

EVALUATION METHODOLOGY

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

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

RESULTS

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$243,800	$228,108	94%

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 2019 R&D projects are detailed below.

Innovative Lighting
($ 17,661)

Project Description

Lighting research keeps Minnesota Power current with new and innovative lighting products and technologies and allows customers to make informed decisions in the constantly changing LED market. Lighting samples provided to customers in 2019 included LED tubes, integrated controls, high bay retrofits and exterior and street lighting alternatives. This no-obligation approach allows customers to trial new lighting options in their space to determine if it meets their needs and continues to be a successful part of Minnesota Power's R&D program.

Current Status

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

Scroll Digital Refrigeration Compressor
($11,691)

Project Description

Minnesota Power funded the installation of a 15 horse power Copeland Scroll Digital Compressor at a local grocery/meat market and data logged the equipment throughout the year. Scroll Digital Refrigeration compressors provide infinite capacity modulation from 10% to100% which provides simple, variable modulation for temperature control within 0.5 degrees F. Scroll Compressors also have lower operating costs, reduced power consumption and are up to 30% more efficient than traditional methods of compressor modulation. Longer cycle times, reduced wear and improved humidity control help consumers reduce annual energy consumption by as much as 40%.

Current Status:

Initial analysis showed up to 70% energy savings with the Scroll Compressor versus the baseline existing compressor. Additional data monitoring and analysis are ongoing.

HVACR Technologies
($142,723)

Project Description

This research focuses on new or retrofit Heating, Ventilation, Air Conditioning and Refrigeration ("HVACR") equipment and controls for Roof Top Units ("RTUs"), refrigeration systems and integrated controls for energy use monitoring. With new equipment coming on line, Minnesota Power will explore the viability of the energy savings potential and install some units at participating customer sites for evaluation and product visibility. There are a number of new products on the market that Minnesota Power began to evaluate in 2019.

Emerson Einstein with Facility Management System ("E2 CX") – This E2 CX product incorporates the proven refrigeration control of the E2 with a HVAC and Lighting package providing complete control of building and refrigeration systems.

Cold Climate Variable Refrigerant Flow ("CCVRF") – The new CCVRF technology is being developed by a number of manufacturers with claims of viable operation down to -20 degrees F.

Cold Climate Air Source Heat Pumps ("ASHP") – ASHP technology continues to evolve, with manufacturers claiming their systems provide sufficient heat down to -15 degrees F. HVAC contractors and customers are turning to Minnesota Power for potential rebates for these systems

and information on the validity of the heating claims. Minnesota Power continues to look for opportunities with customers to demonstrate this technology.

Minnesota Power believes these products offer potential cost-effective energy-savings opportunities for small to mid-size commercial customers.

Current Status

Emerson Einstein Controller ("E2 CX") – Minnesota Power identified a small community center with an indoor skating arena as a potential site to install the E2 CX controller with Facility Management. The existing rink compressor did not have advanced controls and the building RTUs were controlled via one thermostat for the entire community center making it an ideal candidate for this technology. The installation of the E2 CX unit was completed in early 2019 with data logging of the systems performance taking place during the remainder of 2019 and the first quarter of 2020 to determine actual energy savings.

Cold Climate Variable Refrigerant Flow – Minnesota Power installed CCVRF technology in its Cloquet facility in 2019. Data logging is currently taking place and the Company will continue to evaluate this project throughout the 2019 and 2020 heating season.

Cold Climate Air Source Heat Pumps – In 2019, Minnesota Power began to explore applications for cold climate air source heat pumps in the hospitality industry. Minnesota Power partnered with a large resort to purchase a total of 12 cold climate heat pumps to replace electric resistance heat, wood fireplaces, and window AC units to reduce simultaneous heating and cooling as well as infiltration losses. The installation of this project will begin in winter 2020. Data logging will be performed before and after the cold climate heat pump installation, as well as getting feedback from customers staying in both types of rooms (fireplace vs. heat pump) for comfort level. Initial results show the customer & guests are extremely satisfied with the ASHP units. Resistance heat has not been utilized all winter. The customer has purchased an additional 12 units to continue the changeover.

Cold Climate Heat Pump Study
($23,380)

Project Description

This study used Building Energy Optimization Tool ("BEopt") modeling software based upon Energy Plus to estimate how installing cold-climate heat pumps would affect annual energy usage, costs and greenhouse gas emissions for an average home in Minnesota Power's service territory. Through multiple model runs, evaluations on how regional climate, heat pump type (ductless or ducted), heat pump efficiency ratings and percent of space conditioned affect expected savings.

Current Status

This study was completed and submitted to Minnesota Power. It will help evaluate savings and potential rebates for the installation of CCASHP. Modeling results and review of relevant field studies show cold climate heat pumps have the potential to significantly reduce fuel costs and, in many cases, greenhouse gas emissions for a typical home in Minnesota Power's service territory with electric, oil or propane heat. For a home with electric resistance heat, it is estimated that a multi-head 1.5-ton heat pump with a 10.5 HSPF should reduce heating energy use, fuel costs and greenhouse gas emissions by approximately 50%.

Recommissioning
($24,572)

Project Description

Minnesota Power is researching and implementing the systematic approach of recommissioning facilities to evaluate the energy and cost savings associated with implementing energy design and assistance when updating existing facilities. Incorporating energy-efficient design into any remodel or infrastructure updates is vitally important, as the decisions made during the design phase will impact the operational costs of the facility throughout its remaining life cycle.

For 2019, Minnesota Power participated in two different recommissioning projects. One is the application of controls and variable speed drives at an existing municipal lift station. The second was to develop a program to deliver customer training and technology for commercial cooking equipment.

Current Status

Lift Pump Controls - Standard operating and installation practice for lift pumps include a pump and float control. A newer manufacturer offers a technology where a pump can be downsized (or right-sized) with VFDs integrated into the motor and pump to allow for increased control, tracking, diagnostics and energy savings. Minnesota Power will be working with a municipal customer to evaluate the manufacturer claims of 25% to 50% energy savings.

A customer site for this R&D project was identified and the equipment has been installed. Because this site does not have any other significant loads, Minnesota Power will monitor the actual electric meter along with flows to determine the energy savings.

Commercial Food Service - Minnesota Power identified commercial food service equipment as an area of focus in 2019, and 2020. The Company is working with a vendor to provide training for Minnesota Power staff and interested customers to better understand high efficient electrotechnologies in active food service locations. A training will be planned and scheduled in 2020.

Details for a multi-day training are currently being confirmed but potential topics include:

- Discussion of potential opportunities in Minnesota Power's service territory
- Overview of industry trends and electric cooking equipment for commercial food service
- One day training for customers and trade allies

- Detailed analysis of three to four commercial customer sites

Compressed Air Pilot
($1,709)

Project Description

The Compressed Air program is aimed at attracting more industrial customers to participate in conservation projects which offer cost-effective savings opportunities for industrial and small commercial workshop environments. Work included routine customer contact; collecting inventory and specification data of all compressed air equipment in participant facilities; creating a diagram of compressed air systems, associated equipment and major primary and secondary piping; managing data loggers to monitor energy consumption and PSI; completing detailed compressed air leak evaluation; calculating compressed air end-use; defining inappropriate uses of equipment; proposing other technologies to replace existing equipment; researching other utility compressed air programs; aiding in leak repair; and identifying energy savings and cost effectiveness from repairs or system changes made.

Current Status

The success of the Compressed Air Program warranted moving from the Pilot R&D stage to a Business Program offering. However, one attribute to this program (as stated above) is the investigation and evaluation of compressed air equipment alternatives. As a result of a compressed air study at an aircraft re-finishing company, it was noted that the company was utilizing compressed air for their full faced respirators. A recommendation was made to move to a battery powered respirator as an alternative with the indication of potential energy savings as well as increased mobility.

In an effort to ease customer concerns about the technology, Minnesota Power assisted in the purchase of the battery powered respirator to test the viability of this compressed air alternative technology. The customer was satisfied with the technology and has purchased two additional battery powered units, eliminating compressed air for this application.

SUMMARY

In 2019, Minnesota Power funded R&D projects that 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 prepares 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 conservation program market strategies.

Successes

2019 Success Stories

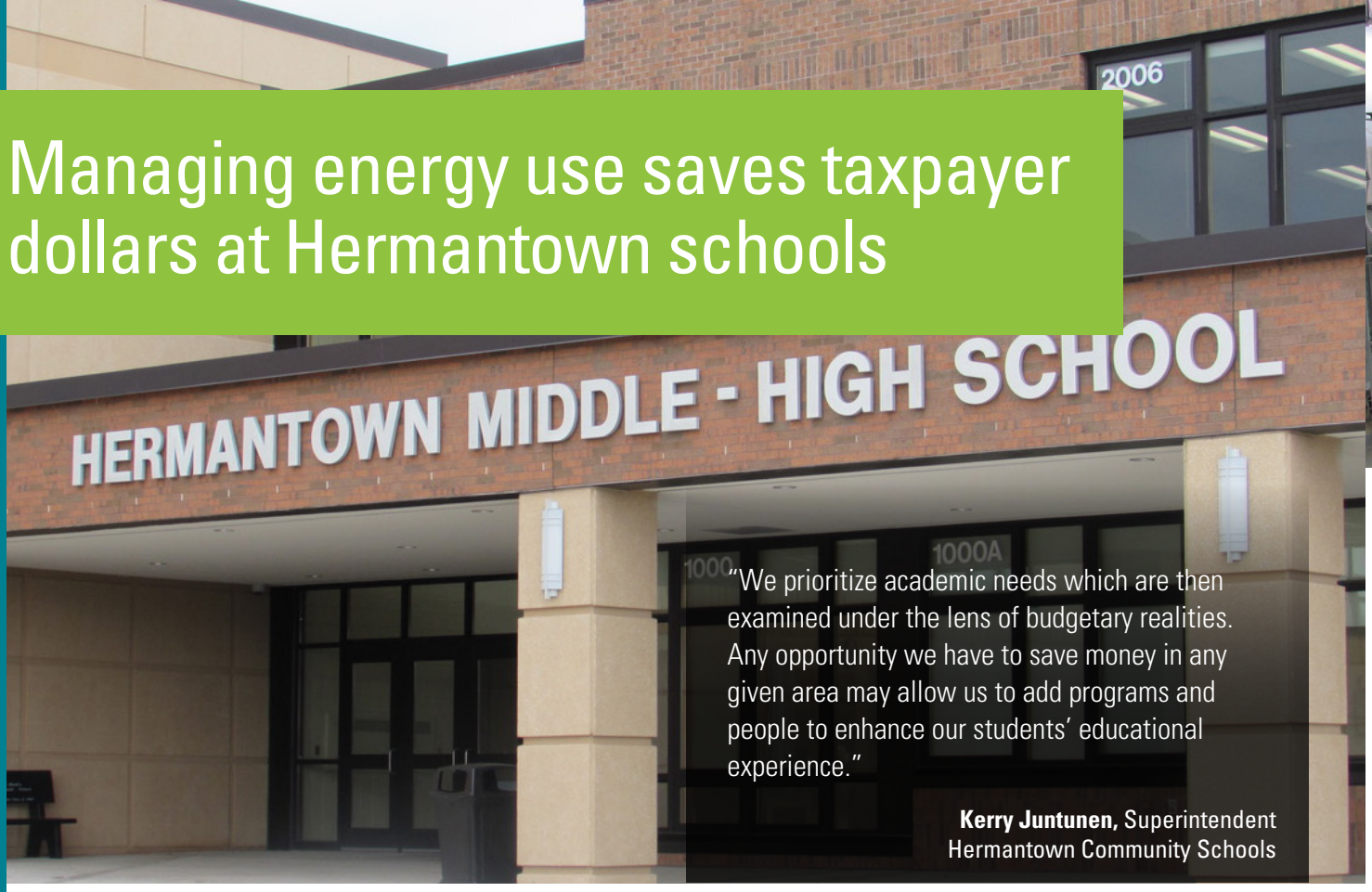
1. **Managing energy use saves taxpayer dollars at Hermantown schools**

3. **Minnesota Power partners with Habitat for Humanity, opening doors for affordable, energy-efficient homes**

5. **UMD teaches sustainability by example**

9. **Program targets Long Prairie homes and businesses for free energy analyses**

Managing energy use saves taxpayer dollars at Hermantown schools



"We prioritize academic needs which are then examined under the lens of budgetary realities. Any opportunity we have to save money in any given area may allow us to add programs and people to enhance our students' educational experience."

Kerry Juntunen, Superintendent
Hermantown Community Schools

Imagine being able to harness and direct all of the energy that flows through a middle school. Steve Stupak, director of buildings and grounds for Hermantown Community Schools (ISD 700), has that power—thanks to a new energy management system that came online in summer 2019. It is linked to controls in the connected high school facility, so now he can program, monitor and manage lighting, airflow and room temperatures in both facilities from his office computer.

This has been one of Stupak's goals for years. He took the position in 2016, just as a $48.9 million district-wide facilities upgrade was nearing completion. The multi-year overhaul expanded and remodeled the district's elementary school, converted the former high school facility into a middle school, and built a new high school that shares multiple common spaces with the middle school. Syncing energy controls for those two connected buildings is a crowning achievement.

"I have been working for two years to blend these two buildings as one, not only in physical appearance and curbside setting but also with energy management," Stupak said. "This will save tons of energy and money and also improve comfort."

Minnesota Power's conservation improvement program (CIP) was at the table throughout ISD 700's major school construction and renovation program. It continues to work closely with Hermantown school officials as the district looks to the future.

New and updated schools get high marks for efficiency

This longtime relationship and high level of mutual trust resulted in numerous energy-efficiency measures being incorporated into Hermantown's K-12 facilities in recent years, qualifying for more than $155,000 in Minnesota Power CIP rebates and saving taxpayers roughly $210,000 per year in avoided electricity costs.

The remodeled and expanded elementary school features energy-efficient LED lighting fixtures, bi-level and occupancy lighting controls, variable frequency drive (VFD) motors on fans and pumps, a control system for heating, ventilation and air conditioning (HVAC) equipment, and ENERGY STAR®-qualified commercial kitchen appliances.

Hermantown's middle school relocation project replaced lighting in the former high school with energy-efficient fixtures and bulbs, added occupancy sensors to lights throughout the building and incorporated a new air handler equipped with VFDs.

The new high school features energy-efficient lighting, high performance HVAC equipment, ENERGY STAR transformers, ENERGY STAR kitchen equipment and appliances, and building-wide energy controls (recently linked to those in the middle school).

Hermantown Middle-High School officially opened in fall 2016. In recognition, Minnesota Power presented ISD 700 with a Certificate of Energy Efficiency, noting that the District saved 3,2881,412 kWh in 2016-17 through the measures noted above. Those electric savings are the equivalent of powering 362 homes for a year, taking 522 cars off the road (saving 7,039,326 driving miles) and saving 2,701 tons of carbon.

"I really enjoy presenting these Energy Certificates, because, when you are in the middle of multiple projects, the significance of what is being accomplished can become lost," said Chad Trebilcock, energy analyst, Minnesota Power. "The Energy Certificate does a nice job of summarizing the savings and recognizes the customer for its thoughtful approach to managing energy."

Energy efficiency revolving fund spurs more projects

Savings continue to build, year after year, as more energy-efficiency upgrades are worked into the budget. This is helped by the fact that ISD 700 established an energy efficiency revolving fund, where CIP rebates are deposited to use for future projects. Minnesota Power provides Hermantown Community Schools with slightly higher rebates because of this fund and helps identify projects that save energy and qualify for additional incentives.

"Energy efficiency is an important aspect to how the Hermantown School District does business," Trebilcock said. "Minnesota Power is committed to being a resource for them."

"The District has a long-term facility maintenance plan in place, and the funds are fixed through the levy process. We can save money by doing it properly and by upgrading things," said Stupak, who learned the value of energy efficiency over 34 years in a similar position with the School District of Superior, Wis. "I like to put rebates back into our buildings, so we are on a constant gain."

Savings help improve quality of education

Money freed up through energy savings is then used for projects that directly impact the quality of education.

"Fiscal responsibility is a central mission for the Hermantown Board of Education," said Superintendent of Hermantown Community Schools Kerry Juntunen. "We prioritize academic needs which are then examined under the lens of budgetary realities. Any opportunity we have to save money in any given area may allow us to add programs and people to enhance our students' educational experience."

"Energy efficiency is one of the best things we can do for all of the stakeholders involved," said Stupak, adding that having data and documentation from Minnesota Power ensures administrators and board members will have the information they need in order to make informed decisions. "We are in the education business, and there are very few areas in which a school district can actually save money. Superintendent Juntunen has a solid understanding of reinvestment programs and has backed me 100 percent on energy-efficient choices."

"There has been continuous progress ever since Steve (Stupak) came on board; he makes things happen," said Minnesota Power CIP consultant Matt Haley, Energy Insight, Inc. "We provide information and documentation, and Steve gets it to the right people. He is always forward thinking—looking ahead to the next items that need to get done."

The future looks bright for energy efficiency

Several large projects are now on the boards, and Minnesota Power is positioned to help. Minnesota Power is reviewing plans for lighting and mechanical systems in a new pre-K facility that will open in 2020. Another planned project will replace the refrigeration system in the Hermantown Hawks' ice arena.

"That is a big one, and we will be working hand-in-hand with Minnesota Power," Stupak said. "We always get Minnesota Power in on the front end of projects, so changes can be made before it is too late."

"The folks at ISD 700 are a pleasure to work with, and Steve is always excited to make energy-efficient facility improvements," Trebilcock said. "He is a strong advocate for the schools and for energy efficiency."

Top left: Steve Stupak, director of building and grounds for Hermantown Community Schools with Minnesota Power CIP consultant Matt Haley.
Top right: The gymnasium is illuminated with LED lighting and lighting controls.

Minnesota Power partners with Habitat for Humanity, opening doors for affordable, energy-efficient homes

Standing on the front porch of her new house in Duluth's Lincoln Park neighborhood, Salaam Witherspoon is beaming. Homeownership is a dream come true for the young working mom and her two children, ages six and eight. The family moved into the tidy, three-bedroom house in early August, grateful to Western Lake Superior Habitat for Humanity and its network of community partners for making it possible.

Witherspoon's home is not just comfortable and attractive. It was designed and built to meet Minnesota Power's rigorous Triple E New Construction standards for thermal integrity and energy performance. Triple E homes average a 25 percent reduction in space heating costs compared to conventional new homes.

"We want the homes we build to be affordable, not just the mortgage, insurance and taxes, but also the utility bills," said Western Lake Superior Habitat for Humanity Executive Director David Clanaugh, explaining the organization's interest in energy-efficient construction. "Our goal is to reduce those expenses substantially, so families can build assets."

Minnesota Power's conservation improvement program (CIP) team worked hand-in-hand with local Habitat for Humanity officials, builders and suppliers to ensure standards were met and the project qualified for maximum conservation rebates. The utility invited the organization's construction manager, Chase Bement, to attend the 2019 Energy Design Conference & Expo in Duluth to learn about advances in energy-efficient design and construction. Habitat for Humanity volunteers staffed an informational booth at the event.

"It was a big learning process," Clanaugh said. "Our goal is to build houses cost effectively, but in a high quality manner."

The Lincoln Park project was the first Habitat for Humanity home built in Duluth in more than a decade, but the organization recently completed a home in Superior, Wis., another is under construction in West Duluth, and more homes are being planned. The Minnesota Power Foundation recently provided a $10,000 grant toward this surge in activity. Dozens of other community partners are supporting Habitat for Humanity's work in the Twin Ports, as well. Partners in the Lincoln Park home included Lake Superior College, ISD 709, Wells Fargo, Essentia Health, three Rotary clubs, numerous faith-based congregations, union electricians and contractors, the City of Duluth and St. Louis County.

"There are layers and layers of interlocking partnerships; that is how Habitat for Humanity creates housing," said

Homeowner Salaam Witherspoon shakes hands with Western Lake Superior Habitat for Humanity Executive Director David Clanaugh on the front porch of her new energy-efficient home.

"I have the most up-to-date, energy-efficient home; it's awesome. But the most exciting part of being a homeowner is having a place that my kids can grow up in and call home. I'm so thankful!"

Salaam Witherspoon
Homeowner

Clanaugh, adding that families like Witherspoon's are at the center of every project, contributing sweat equity, completing homeowner education and taking on the mortgage. "Our slogan is we build homes, community and hope."

That hope is evident in the smile on Witherspoon's face as she hugs her daughter.

"I have the most up-to-date, energy-efficient home; it's awesome," Witherspoon said, "But the most exciting part of being a homeowner is having a place that my kids can grow up in and call home. I'm so thankful!"

"Minnesota Power is grateful to partner with Western Lake Superior Habitat for Humanity, " said Chad Trebilcock, energy analyst with Minnesota Power and a key member of the CIP team. "Our goals are similar in many ways. We both like to promote healthy, energy-efficient homes in the communities we serve."

"We are just honored to be partners with Minnesota Power," Clanaugh added. "It is an incredibly good organization that brings a lot to the table, and we are stronger because of that partnership."

"Minnesota Power is grateful to partner with Western Lake Superior Habitat for Humanity. Our goals are similar in many ways. We both like to promote healthy, energy-efficient homes in the communities we serve"

Chad Trebilcock, Energy Analyst
Minnesota Power

Clockwise: Crew with newly placed slab for electric slab heat will help keep the home comfortable and utility costs affordable for the Witherspoon family. Homeowner Salaam Witherspoon and her daughter enjoy the front porch of their energy-efficient Habitat for Humanity home. Minnesota Power employees volunteered at the build.

UMD teaches sustainability by example

"I rely on the resources Minnesota Power provides to dig in and answer the data questions. I literally can call with a question and get an answer within a few hours. Not all sustainability directors have that strong support from their local utilities."

Mindy Granley, Director
UMD's Office of Sustainability

Maroon and gold may be the University of Minnesota Duluth's official colors, but the home of the UMD Bulldogs is increasingly green. UMD has long been committed to sustainability and focused on reducing its carbon footprint. Its long-term goal is to be a carbon neutral campus by 2050, and it is making significant progress every year.

Using energy more effectively is a big part of that effort, especially since 90 percent of campus carbon emissions come from heating and powering buildings. Minnesota Power's conservation improvement program (CIP) is a powerful partner in helping UMD reach its carbon reduction goals. Together, they are pursuing a three-pronged, "3-E" strategy of energy efficiency, electrification and engagement.

Campus adds buildings while cutting carbon emissions

Modern, high performance facilities are vital in today's market as colleges and universities compete for students. UMD has added several new buildings in recent years, all designed and constructed to rigorous sustainability standards such as the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. Newer facilities include the Labovitz School of Business and Economics (2008-LEED Gold), Swenson Civil Engineering building (2010-LEED Gold) and Ianni Hall (2011-LEED Silver). The newest building on campus, the Heikkila Chemistry and Advanced Materials Science (HCAMS) building, opened in August 2019. It was built to the Minnesota B3 (Building, Benchmarks and Beyond) standards and designed to be energy efficient.

Despite adding multiple facilities and hundreds of thousands of square feet, UMD has managed to reduce total carbon emissions by 11 percent since 2007. Energy-saving renovations and equipment upgrades, increased solar energy on campus and Minnesota Power's EnergyForward efforts to green its energy mix all have contributed to this success. Energy efficiency tops the list.

"That is quite a feat to cut carbon emissions during such a period of growth," said Mindy Granley, director of UMD's Office of Sustainability. "The building and renovation projects incorporate a lot of energy efficiency, not just in lighting but in how we move energy around campus, air conditioning, heat recovery, ventilation, timers and building systems. These choices add up, and they were all informed by our work with Minnesota Power CIP, getting advice, assistance and rebates for those projects. It is how we have gotten to where we are today."

"Energy efficiency is important to UMD for a couple of reasons. First of all, we save money for our students and for our campus," said John Sawyer, operations manager, UMD Facilities Management, adding that conservation goals make a difference. "From a project standpoint, we try to look at ways to reduce energy use and be more conscious of the budget. It also creates a good learning environment for students. Many different classes and groups come through and look at projects we have done, whether it be solar installations, LED lighting or variable frequency drives in our heating plant that runs 24 hours a day."

Minnesota Power CIP is like having energy experts on staff

Sawyer's team depends on Minnesota Power and its commercial energy consultants from Energy Insight Inc., to identify energy-saving opportunities, research costs and benefits and build the case for implementing them.

"UMD makes sure we are involved whenever there is a project with potential energy savings," said Craig Kedrowski, business services advisor for Minnesota Power and a prominent member of the CIP team. "We have worked hard to develop this relationship and high level of trust."

"It is like having additional employees," Sawyer said. "They scope out projects, do the calculations and put together memos or reports that help sell projects to administration. Without the relationship with Minnesota Power, we certainly would have gotten fewer projects approved and completed."

Granley feels the same way as she works to engage the campus community in sustainability.

"My job is the connector and educator, but I can't also be the campus energy manager," Granley said. "I rely on the resources Minnesota Power provides to dig in and answer the data questions. I literally can call with a question and get an answer within a few hours. Not all sustainability directors have that strong support from their local utilities."

"It is all about communication and customer service," said Tanuj Gulati, a Minnesota Power CIP consultant with Energy Insight, Inc. "Mindy and John bring the right people to the table, and we provide data, resources and examples to demonstrate energy-saving technologies and get decision-makers on board."

Green Revolving Fund reinvests energy savings

One valuable tool is UMD's Green Revolving Fund. First proposed by a student partner, the fund was launched in 2011 with $100,000 in seed money from Facilities Management. It is used to reinvest energy savings and conservation rebates into additional projects that save energy and reduce carbon emissions. Minnesota Power is able to provide slightly higher rebates to UMD because of this fund.

Over the years, the Green Revolving Fund has advanced numerous lighting upgrades, variable frequency drive retrofits, direct digital controls, refrigerator exchanges, renewable energy installations and other projects. Rebates and savings earned go back into the pot.

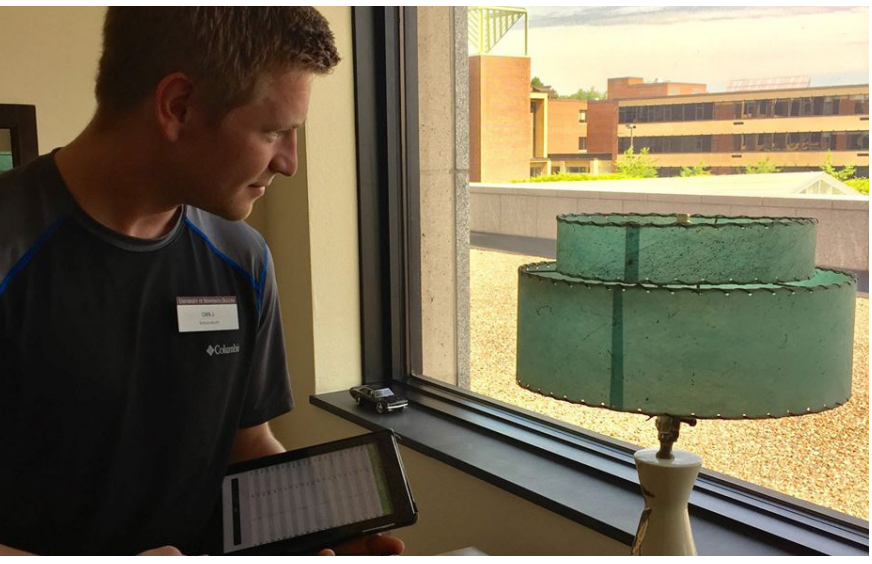
"We started with $100,000, we've spent over $385,000 on projects, and the balance is still around $100,000, " Granley said. "Money just keeps getting used over and over for energy efficiency."

> "UMD makes sure we are involved whenever there is a project with potential energy savings. We have worked hard to develop this relationship and high level of trust."
>
> **Craig Kedrowski,** Business Services Advisor
> Minnesota Power

From top to bottom: Variable frequency drives in UMD's Campus Utility Building adjust speed depending on cooling demand so pumps and fans do not have to run continuously at high speeds. UMD Sustainability Director Mindy Granley, Minnesota Power Business Services Advisor Craig Kedrowski, Minnesota Power CIP Consultant Tanuj Gulati, and UMD Facilities Operations Manager John Sawyer meet regularly to discuss energy efficiency. Students gather to study under energy-efficient lighting in a common area on campus.

"The more we electrify campus, the better. The electric utility industry is greening its energy mix. Combined with energy efficiency and on-campus solar production, that reduces our carbon footprint."

Mindy Granley, Director
UMD's Office of Sustainability



Recently, the fund helped incorporate lighting and lighting controls into a remodel of UMD's Romano Gym.

"Lighting was not part of the original project, but money from the Green Revolving Fund helped offset the cost," Sawyer said. "It was one of the bigger projects, in the $75,000 to $100,000 range. Now the whole gymnasium is LED with lighting controls to conserve energy. That would not have happened without this resource."

Engaging UMD students in powerful ways

The Green Revolving Fund combined with student fees and Minnesota Power rebates also helped a student group called the SUN Delegation plan and install photovoltaic panels on Oakland Apartments. The installation is part of a 900 percent increase in solar energy on campus over the past year that also includes a 50 kW ballasted solar array on the new HCAMS building.

Paul Helstrom, a senior customer programs and services representative for Minnesota Power, helped SUN Delegation members think about real-world construction timelines and hurdles like interconnection application timelines, permitting, siting and technology considerations.

"It is always great to see young professionals in the making as they tackle real-world projects and effect real change on their campus," said Helstrom. "Minnesota Power fully supports their efforts in many capacities, from direct advice to helpful rebate funding."

As one of the region's largest employers, Minnesota Power is genuinely interested in up-and-coming talent, particularly in science and technology fields that match regional workforce needs. Minnesota Power CIP team members often speak to UMD engineering classes about the energy efficiency field, and numerous UMD students and graduates have gotten internships and jobs through those connections.

Campus-wide LED lighting on the horizon

One Minnesota Power-funded intern embedded at UMD recently completed a full campus-wide lighting inventory. It determined the value of an LED retrofit for the entire campus, a project included in UMD's capital requests for the upcoming year.

"The results were so exciting," Granley said. "Every year I ask for money for energy efficiency, often not knowing what to put it toward. The lighting inventory answered that question. Having data and information helps clarify decisions and priorities. The more data we have, the better."

The multimillion-dollar LED lighting retrofit could be completed within the next few years if full funding is approved.

From top to bottom: Student members of UMD's SUN Delegation worked with Minnesota Power to plan a rooftop solar array at Oakland Apartments. Dan Janasz, a Minnesota Power funded intern, conducted a campus-wide lighting inventory at UMD.

Electricity will generate green future

With a natural gas heating plant that is nearing its maximum capacity, one of the strategies at UMD for expansion and renovation could be electrification. Heat pumps and variable refrigerant flow technologies use electricity efficiently to concentrate and move heat around, reducing the need for generating heat. Housing officials recently tapped Minnesota Power to study the potential for energy-saving features in a 10-story, 350-bed residence hall and dining facility that will open in 2021.

"The more we electrify campus, the better," Granley said. "The electric utility industry is greening its energy mix. Combined with energy efficiency and on-campus solar production, that reduces our carbon footprint."

Minnesota Power also funded a rooftop inspection of UMD housing units using a drone-mounted infrared camera to identify air leaks. While using high-tech equipment like drones and installing solar panels on rooftops generate the most interest, engaging students, faculty and the larger campus community in energy efficiency remains key to achieving UMD's ambitious carbon reduction goals. Minnesota Power is committed to helping UMD every step of the way.

"UMD is doing great things," Kedrowski said. "It has become a showcase for energy-effective technologies and behaviors. Minnesota Power appreciates having a large customer like UMD with passionate people on staff who are knowledgeable about smart energy use as they work to achieve their sustainability goals."

From top to bottom: The Heikkila Chemistry and Advanced Materials Science building, which opened in August 2019, was built to Minnesota B3 standards. Energy-efficient LED lighting illuminates hallways throughout the building and helps UMD achieve its sustainability goals.

Program targets Long Prairie homes and businesses for free energy analyses

Autumn of 2019 brought more than cool air and brilliant fall colors to Long Prairie, Minnesota. It carried new opportunities and incentives for people to transform how they use energy in their homes and businesses, sparked by a Minnesota Power promotion called the Long Prairie Community Blitz.

For years, Minnesota Power has sponsored energy-efficiency campaigns targeting either residential or small business customers in communities across its service territory. Recently, the utility piloted a series of community blitzes, focusing on both market segments in small towns at the same times.

The Long Prairie Community Blitz demonstrates the value of this combined approach. It spurred more than five dozen households and a similar number of businesses to get detailed energy analyses, install simple energy-saving products, and look to the future armed with recommendations for long-term energy and cost savings.

Strong local advocate helps pave the way

"The small business and residential customer segments are very similar in terms of the energy they use and the recommendations we can provide," said Alyssa Harries, customer programs and services representative at Minnesota Power, explaining the rationale behind joint community blitzes. "Putting those two together, we can easily market to both."

One of the first steps in preparing for the Long Prairie Community Blitz was to contact the local chamber of commerce, where Minnesota Power found a strong ally and advocate.

"Luan (Thomas-Brunkhorst), the chamber director, was super excited," said Lindsey Buran, a Minnesota Power customer programs and services representative. "She said it was going to be great and wanted to know what she could do to help."

"I was really excited about Minnesota Power contacting me directly," said Thomas-Brunkhorst, who is passionate about saving energy and reducing her own carbon footprint. "They were eager to connect with people in the community and share their knowledge about ways to save energy."

Minnesota Power sent copies of promotional materials, which Thomas-Brunkhorst posted on Facebook and emailed to chamber members and others in the community. She mentioned the Long Prairie Community Blitz during a monthly radio appearance and arranged to have information posted on an outdoor electronic sign in a visible location. Thomas-Brunkhorst also provided local media contacts, including information about a local

Energy advisors Tom Younger and Ed Byrnes visited Long Prairie, where they conducted home energy analyses and provided residential customers with energy-saving recommendations.

Spanish newspaper to help Minnesota Power reach Long Prairie's sizeable Hispanic population. Meanwhile, Minnesota Power sent postcards to all of its commercial and residential customers in the community, encouraging them to sign up for energy analyses in their homes and businesses.

All of this paved the way for the blitz to begin in early September.

Professional team of energy analysts takes the lead

Franklin Energy, an energy-efficiency consultant which helped Minnesota Power pilot similar community blitzes in Silver Bay and Cloquet, was hired to implement the two-pronged campaign in Long Prairie.

"We delivered both community small business and residential home energy analysis programs," said Rose Shannon, program manager, Franklin Energy. "The small business piece included three trips on alternating weeks through September and into October; At the same time, we had energy advisors in town conducting residential assessments."

Small businesses welcome energy-saving products and insights

Bruce Stahlberg, C.E.M., a certified energy manager with Franklin Energy, led the small business component. Following up on the Minnesota Power and chamber of commerce promotions, he and his team knocked on doors, explained Minnesota Power's program to business owners and operators, and offered each a free energy analysis, direct install of energy-saving products and a report with recommendations.

"We rarely got turned down," said Stahlberg, who has done many small business analyses for Minnesota Power in recent years. "This was a free service, and generally people are pretty happy to get information about projects they might be thinking about, like LED lighting."

Commercial walk-through inspections like those done in Long Prairie usually take less than a half hour but can go longer if a business owner has questions or wants in-depth information. Energy advisors look at lighting, air conditioning, water heating, mechanical ventilation and more.

"It depends on the business," Stahlberg said. "For example, restaurants use a lot of refrigeration, so we look at things like walk-in coolers. We check for maintenance. If equipment isn't accessible, we get as much information as we can to include in our reports. Direct install is done at the same time."

In Long Prairie, commercial direct install measures included LED T8 replacement bulbs, flood lights, globes, candelabras, and exit sign retrofits; refrigerated beverage and non-refrigerated snack vending misers; faucet aerators; pre-rinse spray valves; pipe insulation; and the setback of water heater thermostats. Participating businesses received a written report on additional ways to save energy.

"We also followed up to make sure businesses got the report," Stahlberg said. "Then, if they had technical questions, we could look at proposals, guide them with advice and handle paperwork for rebates. The service includes a report based on a site visit but also offers free follow-up consultations to assist in getting projects completed."

On the commercial side, the Long Prairie Community Blitz resulted in 65 small business energy analyses, with annual savings of 23,351 kilowatt-hours due to direct install of products. Top recommendations were converting fluorescent lighting to LED and maintenance on heating, ventilation and air conditioning (HVAC) equipment. Small businesses and organizations that participated seem pleased with the process and results.

"Our experience with you was great, great, great," said business owner Marie Siegle of Long Prairie Plumbing. "You affirmed that we need to replace our lights to LED."

"(Bruce Stahlberg) spent about an hour and a half here and provided a very detailed report with interesting items to consider," said Long Prairie City Administrator Ted Gray. He learned about the blitz through Thomas-Brunkhorst at the chamber and requested an energy analysis of the Long Prairie City Hall, Fire Hall and Public Works Garage. "The report points out that our furnaces could be more efficient and that we could use additional lighting upgrades to LED. This is a good first step as we plan for the future," Gray said.

Residents open their homes and hearts to energy savings

Back on the home energy analysis front, Minnesota Power was experiencing similar interest in the community as Long Prairie residents welcomed teams of energy advisors into their houses and apartments.

A typical home energy analysis takes about an hour and 15 minutes and includes a thorough walk-through of the home. Energy advisors look at furnaces, air conditioners, water heaters, lights and appliances. They estimate insulation levels and talk with homeowners about how they use energy, collecting insights that could help Minnesota Power better serve residential customers.

Home energy advisors in Long Prairie also installed free energy-saving products, such as LED lightbulbs, faucet aerators, low-flow shower heads, refrigerator thermometers, shower timers, thermostatic restriction valves, smart power strips, and turned down electric water heater thermostats.

"One thing I thought was very nice was that they wrapped the tubing on our water heater with a thermal wrap," Thomas-Brunkhorst said. She was impressed with the level of professionalism energy advisors showed when visiting her home." They had Minnesota Power badges on and introduced themselves. They asked permission to take pictures and explained things very well. I think they did a fabulous job of making people feel comfortable that they were in their homes for a good reason," she said.

A total of 67 home energy analyses were conducted during the two-month blitz, resulting in annual energy savings of 50,358 kilowatt-hours due to direct installation of products. Top recommendations given were upgrading appliances to ENERGY STAR®, converting all lighting to LED and upgrading old central air conditioning units to more efficient models.

Feedback received from residential customers who participated in the blitz was positive. For example:

- "Very nice program. Impressed with the items received. The electric bill went down $15 from one month to the next." Gloria Miller
- "What I liked most about the program was the savings—the heating and the lightbulbs." Shirley Bierwerth.
- "Everything was great. Have recommended to friends." Linda Kielty

"We had lots of comments about how much people liked the process and the products that were left or installed for them," said Franklin Energy's Shannon. "At the end of each visit, participants got literature about programs and rebates they might be interested in based on their homes, and they were asked to refer friends, family members and neighbors. Word-of-mouth is very important in small communities."

> "I was really excited about Minnesota Power contacting me directly. They were eager to connect with people in the community and share their knowledge about ways to save energy."
>
> **Luan Thomas-Brunkhorst,** Director
> Long Prairie Chamber of Commerce

Looking forward to a bright future

It is too early to know the full effects of the Long Prairie Community Blitz, but the campaign has sparked interest, raised awareness and provided Minnesota Power with multiple leads that could help area businesses implement major energy-saving projects down the road.

On the residential side, it has given the utility solid inventories of the types of appliances and equipment Long Prairie customers have in their homes. This information will help shape future outreach and promotions, such as targeted rebates for lighting, HVAC improvements and appliance recycling.

Minnesota Power also engaged residential and commercial building contractors during the Long Prairie Community Blitz, so they are more aware of energy-saving resources and incentives that could benefit their customers.

Combined, these connections have raised Minnesota Power's profile in the community as an energy-efficiency expert with genuine concern for its customers and for the environment.

"Minnesota Power was eager to be out in the community and share knowledge about energy savings," Thomas-Brunkhorst said. "They also were willing to give back to the community with products such as free LED lights and smart power strips. Those kinds of things are memorable for people."

"Our goal moving forward is to do two community blitzes per year, one in April for Earth Day and one in October, which is Energy Awareness month," Harries said. "Minnesota Power offers free home energy analyses and small business analyses year-round, but a community blitz is more powerful than a stand-alone bill insert or social media post. Having feet on the ground in a small community for a specific amount of time really, really helps in getting people to move with these programs."

The Numbers:

65 Businesses
23,351 kWh annual energy savings
Top Recommendations: Convert lighting to LED; maintenance on HVAC equipment

67 Homes
50,358 kWh annual energy savings
Top Recommendations: Upgrade appliances to ENERGY STAR®; convert lighting to LED; upgrade old central air conditioning units to energy-efficient models

Energy advisor Brian Wimmer discussed results of a home energy analysis with residential customer Mardelle Peterson. A typical home energy analysis takes about an hour and 15 minutes and includes a thorough walk-through of the home.

Appendix

Appendix A

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

minnesota power
AN ALLETE COMPANY

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May 1, 2020

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

Ms. Jessica Burdette, Manager
Division of Energy Resources
Minnesota Department of Commerce
85 Seventh Place East, Suite 500
St. Paul, MN 55101-2198

Re: **2019 Conservation Improvement Program Consolidated Filing**
Docket Nos. E015/M-20-428, E015/CIP-16-117.03

Dear Mr. Seuffert and Ms. Burdette:

Attached please find via eFiling Minnesota Power's 2019 Conservation Improvement Program ("CIP") Consolidated Filing. This submittal includes a CIP Tracker Activity Report, a Financial Incentives Report, a Proposed Conservation Program Adjustment Factor, 2019 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 2019 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.

If you have any questions regarding this filing, please contact me at (218) 355-3602 or avang@mnpower.com.

Sincerely,

Ana Vang
Public Policy Advisor

AV:th
Attach.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Minnesota Power's 2019 Conservation Improvement Program Consolidated Filing	Reporting on CIP Tracker Account Activity, Financial Incentives Report, Proposed CPA Factors and 2019 Project Evaluations Docket No. E-015/M-20-428 E-015/CIP-16-117.03

SUMMARY OF FILING

Minnesota Power (or, "the Company") hereby files with the Minnesota Public Utilities Commission ("MPUC or Commission") and the Department of Commerce, Division of Energy Resources ("Department") its annual Conservation Improvement Program ("CIP") Consolidated Filing in compliance with Minn. Stat. § 216B.241. Minnesota Power requests approval of the following:

- Recovery of the 2019 CIP Tracker Account activity year-end balance of ($5,384,063)
- A revised Conservation Program Adjustment ("CPA"), to be first implemented without proration on August 1, 2020, of ($0.000817)/kWh
- 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 Consolidated Filing via eFiling with the Department of Commerce, Division of Energy Resources to comply with annual CIP project evaluation filing requirements.

STATE OF MINNESOTA	)	AFFIDAVIT OF SERVICE VIA
	) ss	ELECTRONIC FILING
COUNTY OF ST. LOUIS	)	

Tiana Heger of the City of Duluth, County of St. Louis, State of Minnesota, says that on the 1st day of May, 2020, she served Minnesota Power's Compliance Filing in **Docket No. E015/M-20-428** and **E015/CIP-16-117.03** on the Minnesota Public Utilities Commission and the Energy Resources Division of the Minnesota Department of Commerce via electronic filing. The persons on E-Docket's Official Service List for this Docket were served as requested.

Tiana Heger

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Tom	Balster	tombalster@alliantenergy.com	Interstate Power & Light Company	PO Box 351 200 1st St SE Cedar Rapids, IA 524060351	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Lisa	Beckner	lbeckner@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Christina	Brusven	cbrusven@fredlaw.com	Fredrikson Byron	200 S 6th St Ste 4000 Minneapolis, MN 554021425	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1400 St. Paul, MN 55101	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
George	Crocker	gwillc@nawo.org	North American Water Office	PO Box 174 Lake Elmo, MN 55042	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Steve	Downer	sdowner@mmua.org	MMUA	3025 Harbor Ln N Ste 400 Plymouth, MN 554475142	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Jim	Erchul	jerchul@dbnhs.org	Daytons Bluff Neighborhood Housing Sv.	823 E 7th St St. Paul, MN 55106	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Greg	Ernst	gaernst@q.com	G. A. Ernst & Associates, Inc.	2377 Union Lake Trl Northfield, MN 55057	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Melissa S	Feine	melissa.feine@semcac.org	SEMCAC	PO Box 549 204 S Elm St Rushford, MN 55971	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Karolanne	Foley	Karolanne.foley@dairylandpower.com	Dairyland Power Cooperative	PO Box 817 La Crosse, WI 54602-0817	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Pat	Green	N/A	N Energy Dev	City Hall 401 E 21st St Hibbing, MN 55746	Paper Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Jason	Grenier	jgrenier@otpco.com	Otter Tail Power Company	215 South Cascade Street Fergus Falls, MN 56537	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Jeffrey	Haase	jhaase@grenergy.com	Great River Energy	12300 Elm Creek Blvd Maple Grove, MN 55369	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Tyler	Hamman	tylerh@bepc.com	Basin Electric Power Cooperative	1717 E Interstate Ave Bismarck, ND 58501	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Scott	Hautala	scotth@hpuc.com	Hibbing Public Utilities	1902 E 6th Ave Hibbing, MN 55746	Paper Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Lori	Hoyum	lhoyum@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Dave	Johnson	dave.johnson@aeoa.org	Arrowhead Economic Opportunity Agency	702 3rd Ave S Virginia, MN 55792	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Tina	Koecher	tkoecher@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Kelly	Lady	kellyl@austinutilities.com	Austin Utilities	400 4th St NE Austin, MN 55912	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Nick	Mark	nick.mark@centerpointenergy.com	CenterPoint Energy	505 Nicollet Mall Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
John	McWilliams	John.McWilliams@DairylandPower.com	Dairyland Power Cooperative	3200 East Ave SPO Box 817 La Crosse, WI 54601-7227	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Brian	Meloy	brian.meloy@stinson.com	STINSON LLP	50 S 6th St Ste 2600 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	GEN_SL_Minnesota Power_MPs 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_MPs CIP Service List
Samantha	Norris	samanthanorris@alliantenergy.com	Interstate Power and Light Company	200 1st Street SE PO Box 351 Cedar Rapids, IA 524060351	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Joyce	Peppin	joyce@mrea.org	Minnesota Rural Electric Association	11640 73rd Ave N Maple Grove, MN 55369	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Dave	Reinke	dreinke@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024-9583	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Susan	Romans	sromans@allete.com	Minnesota Power	30 West Superior Street Legal Dept Duulth, MN 55802	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Christopher	Schoenherr	cp.schoenherr@smmpa.org	SMMPA	500 First Ave SW Rochester, MN 55902-3303	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Will	Seuffert	Will.Seuffert@state.mn.us	Public Utilities Commission	121 7th Pl E Ste 350 Saint Paul, MN 55101	Electronic Service	No	GEN_SL_Minnesota Power_MPs 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_MPs CIP Service List
Lynnette	Sweet	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List
Michael	Volker	mvolker@eastriver.coop	East River Electric Power Coop	211 S. Harth Ave Madison, SD 57042	Electronic Service	No	GEN_SL_Minnesota Power_MPs CIP Service List

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