

An Energy Action Plan for Mahtomedi, MN



October 3, 2017

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Executive Summary

Our Energy Vision

Mahtomedi residents, schools, congregations, and businesses will work collaboratively to dramatically reduce our carbon footprint and position our community as a regional energy leader by engaging in activities that conserve energy, save money, and use renewable energy.

Our Goals

Overarching, aspirational goals:

- Achieve a 30 percent reduction in energy-related greenhouse gas emissions by 2030 and a 100 percent reduction (carbon neutrality) by 2050 (from a 2016 baseline).
- 1.4 percent average annual energy savings to reduce energy consumption 19 percent by 2030.

Sector-specific goals:

- **Residential:** Triple total participation in energy efficiency programs within one year, resulting in 1.6 percent annual energy use reduction and saving participating households an average of \$113 per year on their energy bills.
- **Business/Institutional:** Engage businesses and institutions in energy saving actions, resulting in a combined 11 percent reduction in energy use in targeted facilities below 2016 baseline by 2020.
- **Renewables:** Double the number of renewable energy subscribers in one year and double average subscription amount.

How Will We Get There?

To support achievement of its goals, Mahtomedi will focus on the following priority strategies:

Residential Strategies	Strategy 1: Residential Outreach Campaign Strategy 2: Energy Efficient Remodeling and Construction
Business & Institutional Strategies	Strategy 3: Congregation Energy Workshops Strategy 4: Business and Institutional Energy Efficiency Leadership
Renewable Energy Strategy	Strategy 5: Renewable Energy Adoption

Playbook for Achieving Our Goals

Ongoing Efforts

- Strategy team check-in calls/meetings
- Tracking of program participation and energy savings
- Monitoring of implementation efforts
- Sharing of success stories

Near-Term Actions

(September 2017 – December 2017)

Residential

- Campaign development workshop
- Environmental Commission review of construction topic
- Develop residential campaign materials and schedule
- Conduct train-the-trainer sessions

Businesses

- Congregation workshop planning
- Host first congregation workshop
- Identify potential institutional facility improvements

Renewables

- Coordinate with residential outreach campaign development
- Review SolSmart requirements

Longer Term Actions

(January 2018 – December 2018+)

Residential

- Conduct outreach campaign
- Update materials as applicable

Businesses

- Explore additional congregation workshop opportunities
- Implement facility improvements

Renewables

- Pursue SolSmart certification
- Explore solar array feasibility

Introduction

This plan outlines tangible steps for Mahtomedi that move the community towards its priorities of a carbon reduction ethic and a dedication to establishing realistic energy conservation goals. This Energy Action Plan (plan) builds upon other local efforts and initiatives, including the Mahtomedi Sustainability Plan, the B3 Benchmarking, GreenStep Cities, and the U.S. Conference of Mayors Climate Protection Agreement. It also leverages the momentum and expertise of myriad local and regional groups, including but not limited to the Mahtomedi Area Green Initiative (MAGI), Mahtomedi Environmental Commission, Conservation Minnesota, Mahtomedi High School EcoClub, and various individuals and congregations.

Mahtomedi hopes to achieve a plethora of benefits from participating in Partners in Energy and creating a community Energy Action Plan. From purely economic and quality of life perspectives, Mahtomedi hopes that by creating a plan it can save community members energy and money over the long term. In addition to those benefits, developing such a plan will help Mahtomedi achieve its Sustainability and Comprehensive Plan goals, keeping Mahtomedi values of environmental, social, and economic sustainability alive and thriving.

To develop the plan, the Energy Action Team convened during Spring 2017 for two, 4-hour workshops. During these workshops, and in subsequent online surveys and web meetings, the Energy Action Team worked section by section through the main components of this plan, reviewing background community and energy data, defining an energy vision, determining areas of focus, exploring and setting energy and greenhouse gas reduction goals, and detailing specific strategies to implement.

Together, these workshops and planning efforts resulted in this plan, which provides a roadmap for the Mahtomedi community to act on its energy priorities and achieve its vision and goals.

Xcel Energy Partners in Energy

Xcel Energy is the main electric and gas utility serving the city of Mahtomedi. In the summer of 2014, Xcel Energy launched Partners in Energy to support communities, such as Mahtomedi, in developing and implementing energy action plans that supplement existing sustainability plans, strategies, and tools (Figure 1). However, the content of this plan is unique to the ideas and priorities of the Mahtomedi community and the Energy Action Team.

Xcel Energy's Partners in Energy team will work with Mahtomedi to coordinate support for implementing the plan over the course of 18 months and will develop a Memorandum of Understanding (MOU) that outlines specific support Xcel Energy will provide to help Mahtomedi deploy its strategies and achieve its goals (Figure 2 and Appendix 2). Implementation of the plan will begin in fall 2017.



Figure 1. Partners in Energy Process for Success

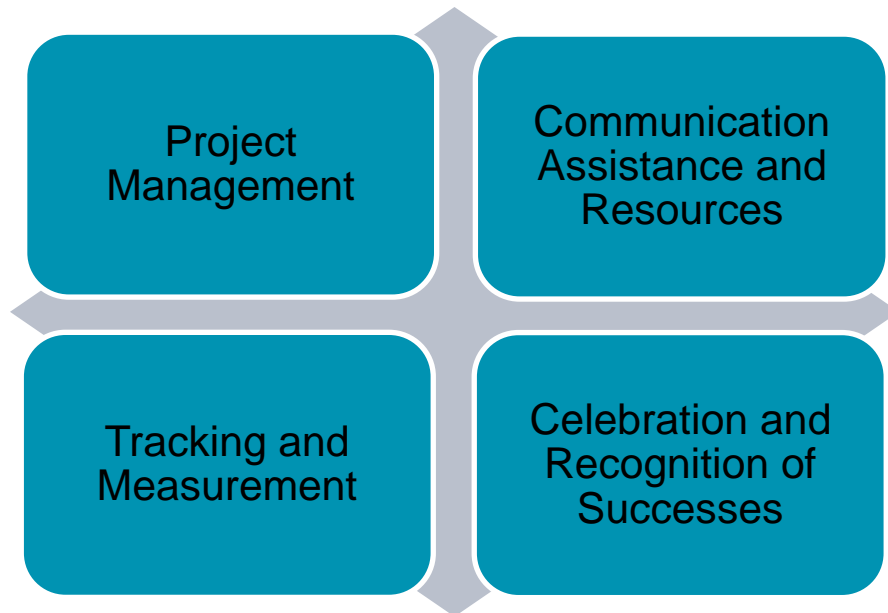


Figure 2. Resources from Xcel Energy for Implementation

Who Are We? – Community Background

Mahtomedi prides itself in being a “small town” city with cornerstone values in local business, a healthy natural environment, and strong community connections. Mahtomedi is a Saint Paul suburb located in Washington County between Saint Paul and Stillwater on the eastern shore of White Bear Lake (see Figure 3). It is surrounded by cities such as Pine Springs, Oakdale, Grant, and Birchwood while surrounding the City of Willernie.

Historically, the area that is now Mahtomedi was hunted and harvested by the Dakota and Objibway people. In fact, “The name Mahtomedi comes from the Dakota name of the lake—mató, the grey bear, and mde, a lake.”¹ Starting in the early 1800s, The U.S. Government opened access to the region to European-American settlers and in July 1883, the City of Mahtomedi was platted by the First Mahtomedi Assembly of the Chautauqua Association². However, Mahtomedi did not incorporate into a city until 1931. The City’s total area is now 5.76 square miles – 3.49 square miles are on land and 2.27 square miles of the City are water, part of which is White Bear Lake. While it closed in 1932, a unique part of Mahtomedi’s heritage is that it had its own amusement park called Wildwood Amusement Park, built in 1889.³ That draw, along with lake recreation, led to Mahtomedi being developed primarily as a seasonal lake cottage home community. Mahtomedi area residents later adapted their homes to make them more comfortable for year-round habitation. Now, as more of a year-round community, City officials are planning for the community’s future in an efficient and sustainable way.



Figure 3: City of Mahtomedi Map

¹ Washington County Historical Society. “Washington County History Guide: Mahtomedi.” <http://www.wchsmn.org/mahtomedi/> (accessed March 14, 2017).

² Ibid.

³ MNopedia. “Wildwood Amusement Park.” <http://www.mnopedia.org/place/wildwood-amusement-park> (accessed June 12th, 2017).

Population and Demographics

The population in Mahtomedi is relatively steady, with 7,676 people as of 2015.⁴ Projections from the Metropolitan Council estimate that the population will remain fairly level around 7,700 residents and 3,100 households through 2040.⁵ Age demographics will shift however, with an increase in residents over the age of 65. This transition will impact housing types, facilities, and services that Mahtomedi will need to have available.

In terms of gender, Mahtomedi is reportedly 52.3 percent female and 47.7 percent male.⁶ The median age is 43.3 as of 2015 and 18.9 percent of the population is 62 years or older. Ethnically, Mahtomedi is 94.9 percent white, 3.6 percent Black or African American, 0.5 percent American Indian or Alaska Native, 2.7 percent Asian, or 0.5 percent some other race. At home, 94.1 percent of people 5 years or older only speak English and 5.9 percent speak a language other than English.

Mahtomedi is known for its high-quality education system, and of its residents 25 years or older, only 2.1 percent have less than a high school diploma. Of the population 25 years or older, 14.7 percent are high school graduates (including those with GEDs), 29.7 percent have bachelor degrees, and 19.7 percent have a graduate or professional degree.

These trends indicate that energy-related campaigns and information will likely be suitable in English (no need to translate to other languages), and that information that is presented at a high-school reading level will be understood.

Housing

The community's housing stock is diverse, with the bulk built between 1980 and 1999. Mahtomedi's housing is predominantly single-family and owner-occupied.⁷ In 2015, Mahtomedi had approximately 3,001 housing units – 89.9 percent of were single-unit structures and 8.4 percent were multiunit. It is estimated that 16.2 percent of homes were built before 1940, 24 percent were built between 1940-1979, 46.1 percent were built between 1980-1999, and 13.7 percent were built after the year 2000.⁸ Approximately 79.9 percent of the housing units have 2 to 4 bedrooms. In terms of heating of housing units, 90.6 percent are heated by utility gas; 3 percent are heated by fuel oil, kerosene, etc.; and 4.6 percent are heated by electricity.⁹ The median house value is \$292,300. There is no significant new housing development going on at this time, but because of the age of Mahtomedi's housing stock, there is significant home renovation happening – an average of 250 single family alteration permits are issued by the City each year.¹⁰

Many of the community's older homes do not have the typical elements of energy efficiency seen in more contemporary suburban homes. Anecdotal evidence shows that Mahtomedi area residents later adapted their summer homes to make them more comfortable for Minnesota winter habitation. Updated wiring may or may not be present, depending upon the year the home was originally built. Opportunities abound in

⁴ Metropolitan Council 2016 Preliminary Population Estimate.

⁵ Metropolitan Council 2040 Forecasts, 2017.

⁶ U.S. Census Bureau 2015 American Community Survey.

⁷ U.S. Census Bureau 2015 American Community Survey.

⁸ Ibid.

⁹ Ibid.

¹⁰ City of Mahtomedi Building Permit Data, 2012-2016.

Mahtomedi to make energy efficiency improvements to older homes, and this plan can help connect such residents to rebate programs and informational resources.

Business and Economy

Mahtomedi is primarily a residential community with a few businesses populating its boundaries. Despite a relatively stable population, employment opportunities are forecasted to increase from approximately 2,100 jobs in 2010 to 2,700 jobs in 2040.¹¹ Per the 2014 American Community Survey (ACS), there is 4.4 percent unemployment in the City. The median household income is \$94,258 and 8.2 percent of all people in Mahtomedi had income below the poverty level in 2015.¹²

The largest employers in the community are FedEx, Century College, Mahtomedi School District, and Saint Andrews Church.¹³ In terms of development, 85 percent of the land in Mahtomedi is already developed, primarily as low density residences.¹⁴ Future development would likely be limited, focusing on a small amount of infill or potential redevelopment.

Given the relatively small share of commercial development in the community as compared with residential, the largest opportunities for energy efficiency improvements are most likely in the largest facilities, which align with the largest employers, as well as places of worship.

Commitment to Sustainability

As stated in the Comprehensive Plan, Mahtomedi as a community values a small-town atmosphere where residents can develop strong connections with their environment, with local businesses, and with each other.¹⁵ Using the GreenStep Cities program as a model, the City of Mahtomedi developed a Sustainability Plan¹⁶ in 2011, "...implementing environmental best practices in the City of Mahtomedi." The plan focused on conservation of resources, transportation, buildings and economic and community development.

Under its Sustainability Plan, Mahtomedi set 13 sustainability goals. Of those goals, at least four directly pertain to community energy planning. Those 4 are (1) improve efficiency of City energy usage by 10 percent by 2012 and 20 percent by 2020, (2) evaluate and maintain City buildings according to efficiency standards, (3) follow energy efficient standards for non-municipal buildings, and (4) support local efforts for renewable energy development.

Additionally, Mahtomedi has signed onto the 2006 U.S. Conference of Mayors Climate Protection Agreement. A core reason that Mahtomedi applied to participate in Partners in Energy was to reduce its carbon footprint and establish realistic energy conservation goals.

¹¹ Metropolitan Council 2040 Forecasts, 2017.

¹² Ibid.

¹³ U.S. Census Bureau 2015 American Community Survey.

¹⁴ Ibid.

¹⁵ City of Mahtomedi. "Comprehensive Plan." http://www.ci.mahtomedi.mn.us/index.asp?Type=B_BASIC&SEC={4B64B038-85EA-4F87-B561-D6B6B1BDF8F2}&DE={F7168EF7-97F5-49BF-ADF1-5F71C06C5925} (accessed June 15th, 2017).

¹⁶ City of Mahtomedi. "Sustainability Plan." [http://www.ci.mahtomedi.mn.us/vertical/sites/%7BB983F313-8CF2-4BB7-8CFD-8AC05AAF37F6%7D/uploads/Sustainability_Plan\(1\).pdf](http://www.ci.mahtomedi.mn.us/vertical/sites/%7BB983F313-8CF2-4BB7-8CFD-8AC05AAF37F6%7D/uploads/Sustainability_Plan(1).pdf) (accessed June 15th, 2017).

Where Are We Now?

Baseline Energy Analysis

An early step in the Partners in Energy planning process is to develop a community energy profile. The Xcel Energy team analyzed and presented energy purchased, by fuel source, from Xcel Energy, a breakout of energy use by segment (residential, commercial/industrial, municipal, and schools), and an overlay of energy use for each segment in Mahtomedi from 2014 to 2016.¹⁷ Comparing these data helped the Energy Action Team understand how and where energy is used in the City to inform decision making. Three complete years of data (2014 through 2016) were used for trending purposes, and the year 2016 was established as the baseline for this plan.

Quick Energy Unit Conversions
 See the glossary in Appendix 1 for definitions of common energy terms.

MMBtu: Million British Thermal Units
kWh: Kilowatt Hour
Thm: Therm

1 MMBtu = 293.07 kWh
 1 MMBtu = 10 thm

Mahtomedi has 3,507 total residential, commercial, and institutional premises as of 2016.¹⁸ This total includes both electricity and natural gas customers. Most premises in the city are residential (93 percent) which consumed nearly three-quarters of the community’s total energy in 2016 or about 365,586 MMBtu (72 percent). Commercial and industrial premises were the minority with 257 premises (7 percent) and accounted for approximately 139,788 MMBtu (28 percent) of total energy use in 2016. Note that places of worship are considered commercial and industrial premises. Municipal and school premises were further delineated within the commercial and industrial sector, accounting for 4,798 MMBtu (1 percent) and 27,864 MMBtu (6 percent) respectively. Figure 4 shows Mahtomedi’s energy use by premise type in 2016.

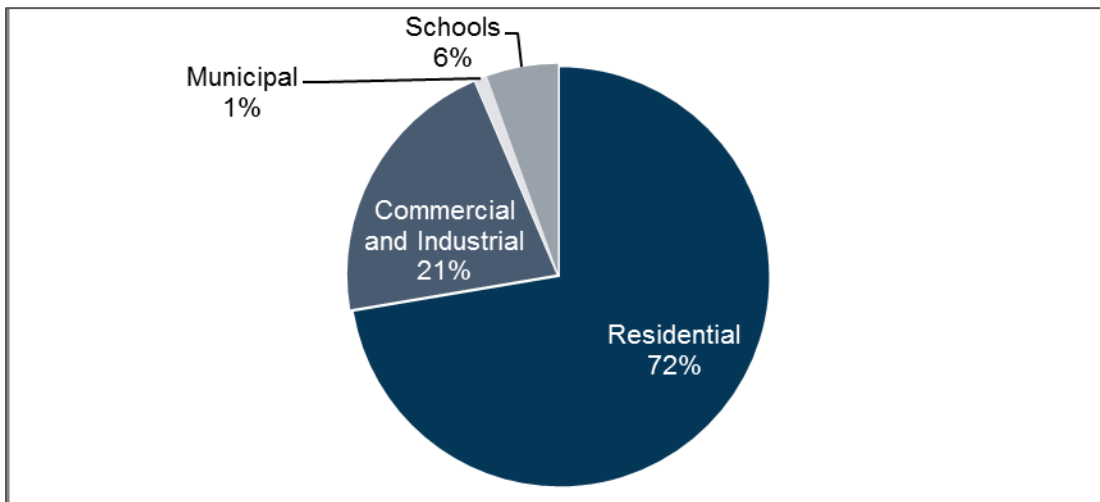


Figure 4. Energy Use by Premise Type

¹⁷ All energy data presented through this process was developed for planning purposes and may contain variations from data obtained through other sources, including census data. All energy and program data presented here comply with Xcel Energy’s Minnesota data privacy policies (all summary statistics must contain at least 15 entities, and no single entity can be responsible for more than 15 percent of the total or they will be removed from the summary).

¹⁸ Energy data analyzed in this plan includes all premises within the City limits of Mahtomedi, as well as Willernie and Mahtomedi Area School District facilities.

In total, approximately 46.7 million kWh of electricity and 3.46 million therms of natural gas were consumed in 2016. The residential sector was the primary consumer accounting for more than 29.2 million kWh (62 percent) of electricity and 2.66 million therms (77 percent) of natural gas. Commercial and industrial use, on the other hand, accounted for 17.5 million kWh (38 percent) of electricity and 801,000 therms (23 percent) of natural gas. Of the total commercial and industrial electricity use, municipal premises consumed 742,000 kWh (2 percent) and 22,700 therms (0.7 percent), and school district premises consumed 3.38 million kWh (7 percent) and 163,000 therms (5 percent). Figure 6 and Figure 6 compare electricity and natural gas use by sector in 2016.

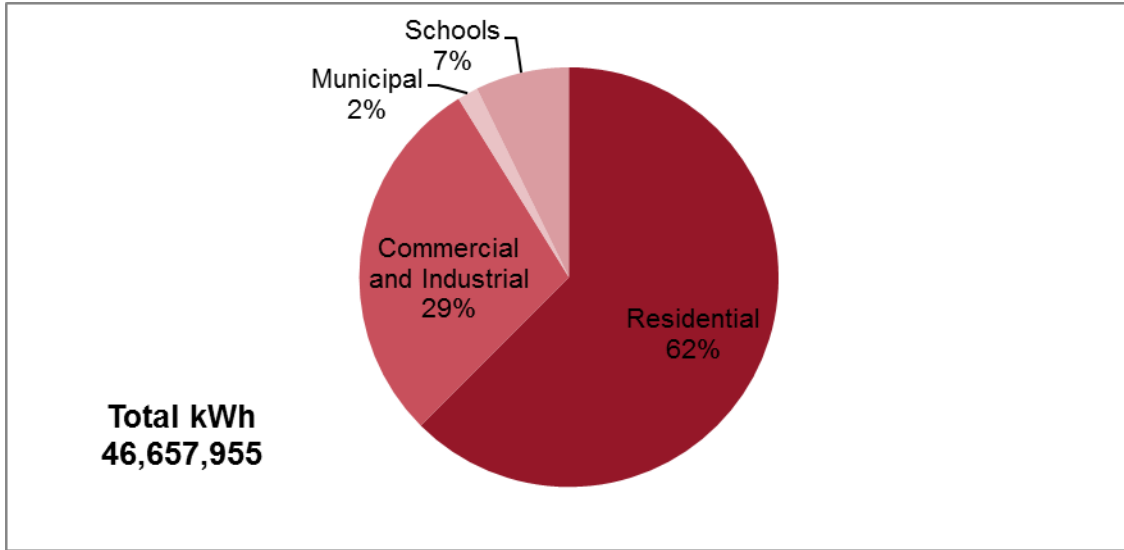


Figure 5. 2016 Electricity Use by Sector

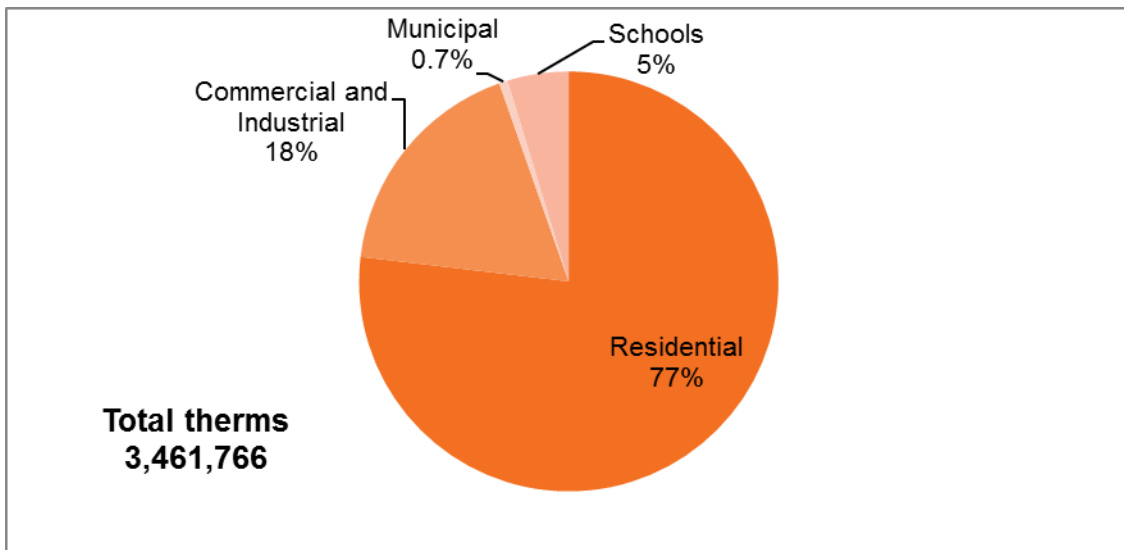


Figure 6. 2016 Natural Gas Use by Sector

Energy use in the community trended downward by 16 percent from 2014 to 2016, though this is largely driven by a 20 percent reduction in natural gas use between 2014 and 2015 that can primarily be attributed to a particularly cold year in 2014. Electricity use, comparatively, decreased only 4 percent over the same period (2014 to 2015). Similarly, in terms of greenhouse gas emissions as a ramification of Mahtomedi’s energy use, the community has seen a 14 percent reduction from 2014 to 2016, due in large part to the natural gas use trend noted above, as well as a decarbonization of Xcel Energy’s electricity supply. Figure 7 and Figure 8 show electricity and natural gas year-to-year trends while Figure 9 shows trends in greenhouse gas emissions from energy used.

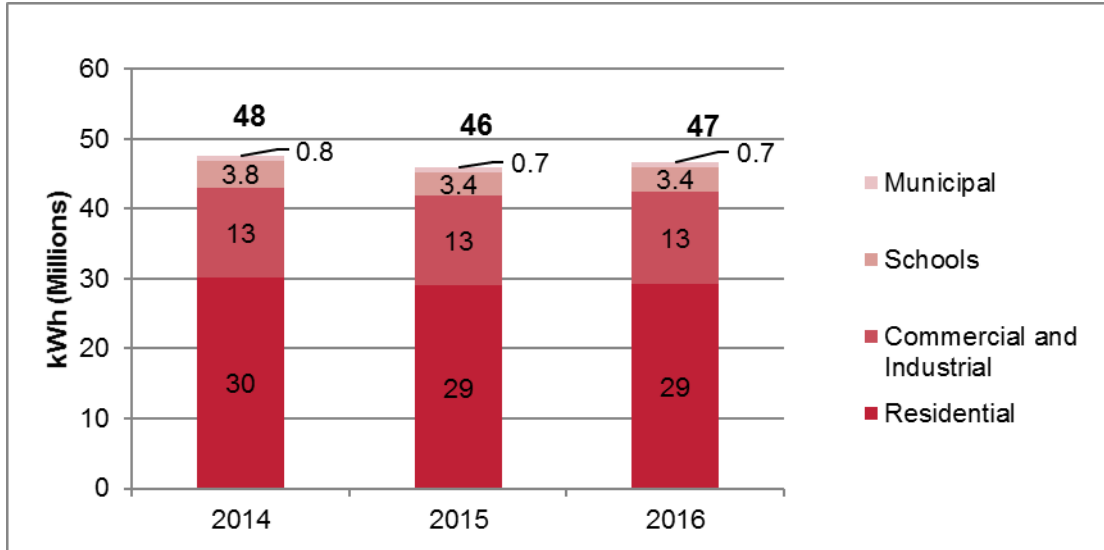


Figure 7. Electricity Consumption Year to Year

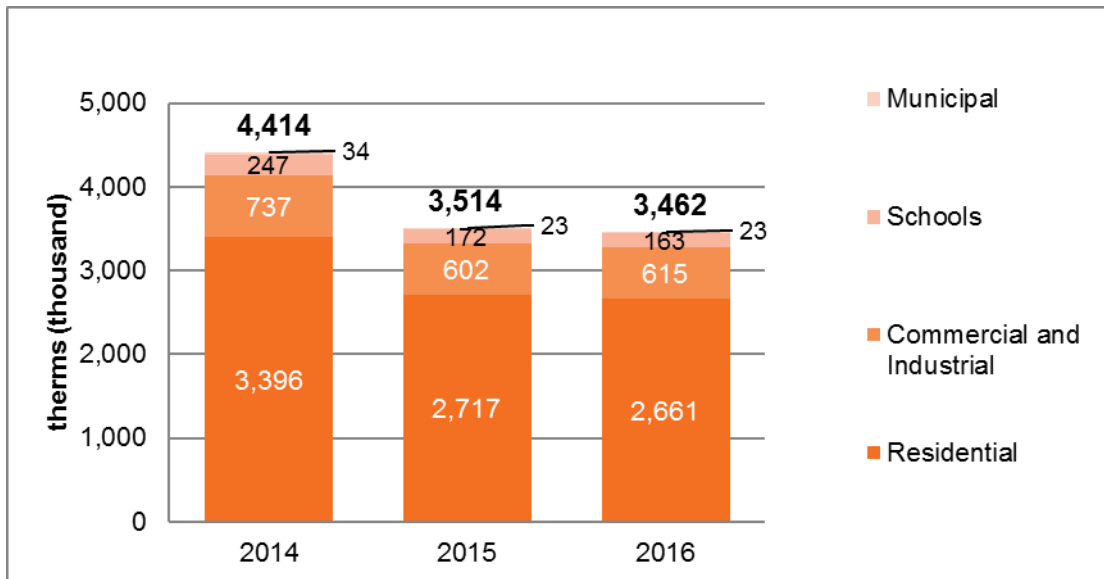


Figure 8. Natural Gas Consumption Year to Year

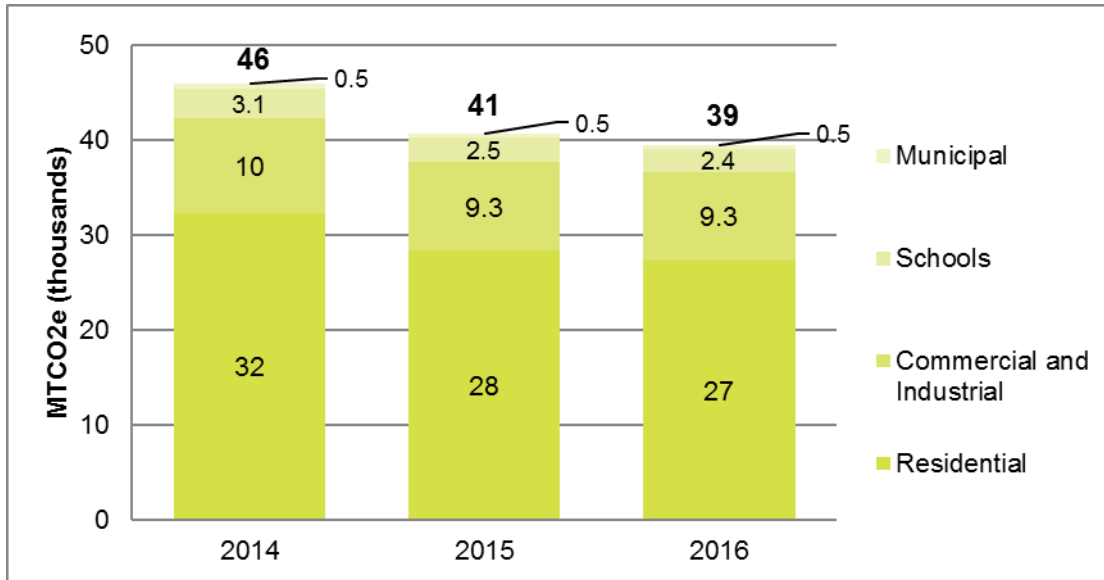


Figure 9: Energy-Related Greenhouse Gas Emissions Year to Year

Considering community total energy costs, on average in 2016, a residential premise spent \$1,577 annually while commercial and industrial premises spent \$8,657 annually. This corresponds to monthly energy costs of \$131 and \$721 for residential and commercial and industrial premises, respectively. Electricity use comprises most energy costs per premise for both residential and commercial and industrial customers. In total, Mahtomedi residents and businesses spent \$7.35 million on energy utilities in 2016. For comparison, the City of Mahtomedi’s operating budget was \$5.1 million in 2016. Figure 10 shows the average dollars spent on energy per sector in 2016. Figure 11 Figure 12 shows that Mahtomedi’s average residential electricity use per premise is high compared to other communities in the area, likely due to the fact that many of Mahtomedi’s homes are older and may lack modern energy efficiency updates.

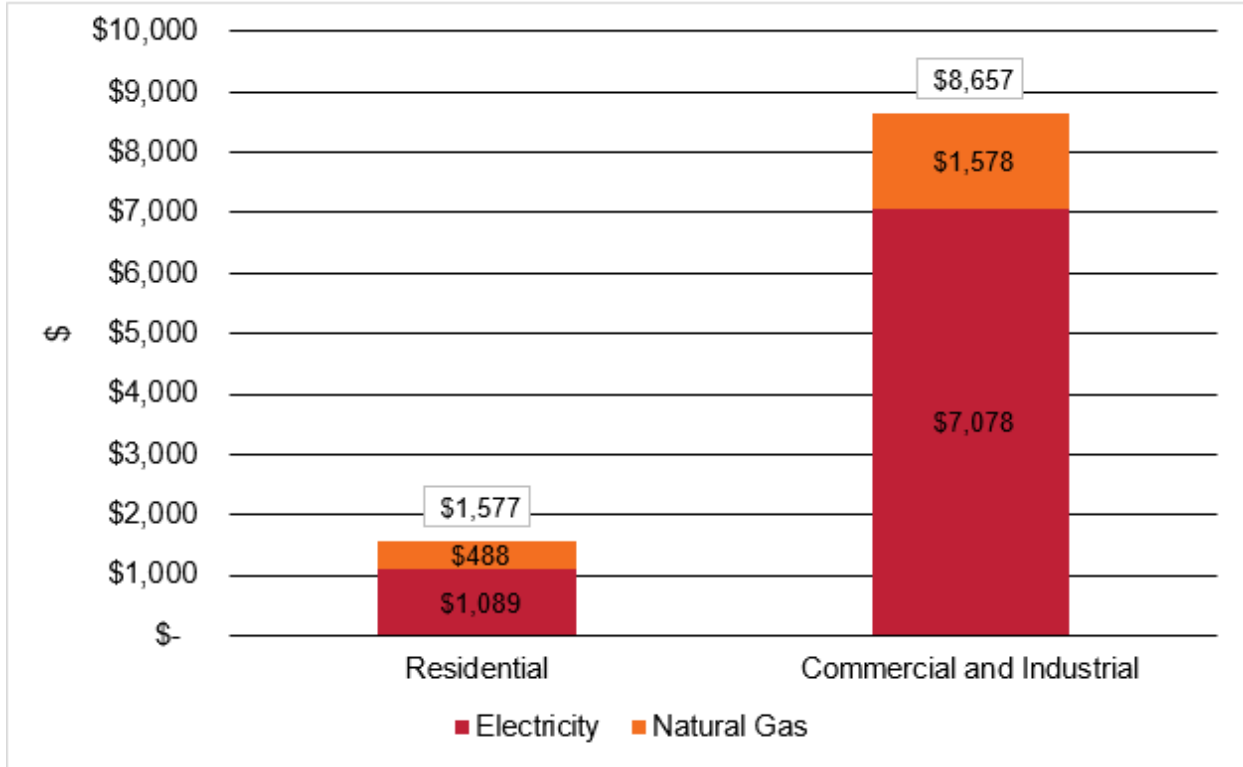


Figure 10. Average Dollars Spent on Energy per Sector in 2016

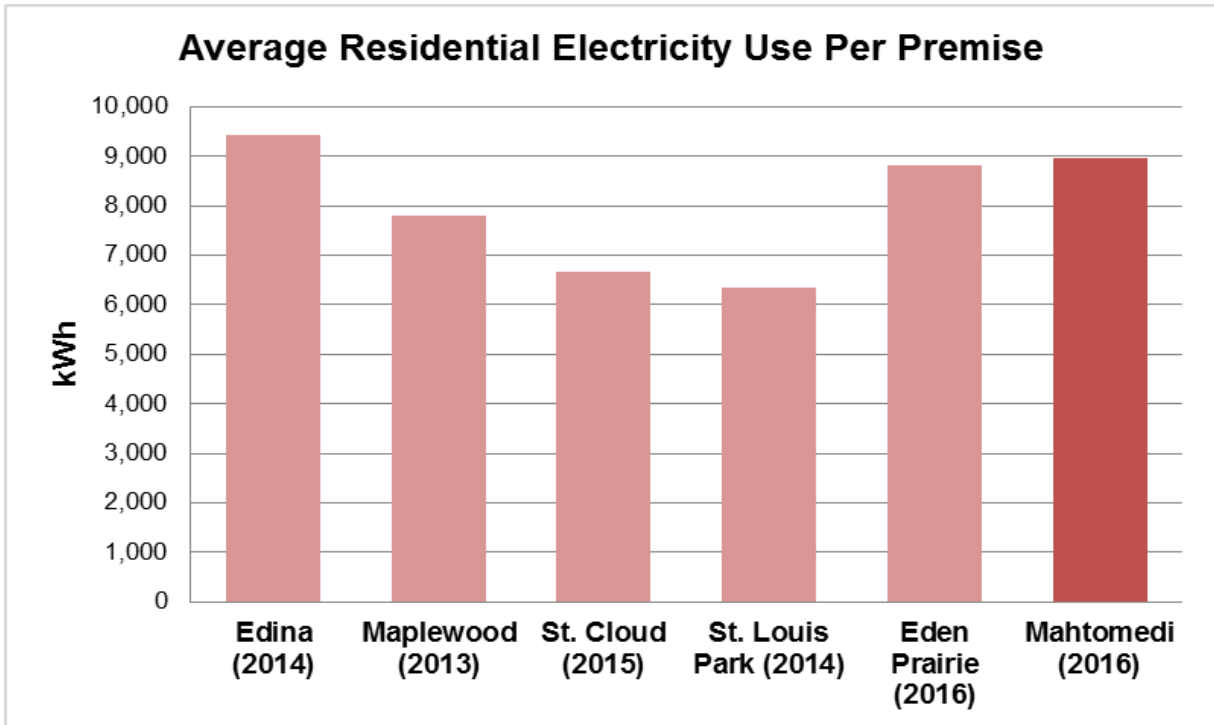


Figure 11: Comparison of Average Residential Electricity Use Across Cities

Community Efficiency Program Participation

Baseline data used to develop this plan include historic Xcel Energy Conservation Improvement Program (CIP) participation for Mahtomedi. These data provide a snapshot of what types of programs both residential and commercial and industrial customers are using and to what degree. They also show opportunities for greater participation in the available CIP offerings and the need for increased education and awareness. On average, 13 percent of residences and businesses have participated historically in CIP. In 2016, residents saved nearly 148,600 kWh and 18,200 therms by participating in CIP offerings with an average rebate of \$54 per participant. Businesses saved nearly 150,900 kWh and 3,800 therms, with a \$480 average rebate per participant. Figure 12 and Figure 13 show program participation by sector for 2014 through 2016. Aside from Saver’s Switch, which is a demand reduction program, participation was greatest in the heating and cooling rebate programs on the residential side and in the heating and lighting programs on the commercial side. More information about Xcel Energy residential and commercial programs can be found in Appendix 4.

A total of 3,210 MMBtu were saved as a result of CIP participation in 2016, representing 0.6 percent of the community’s total energy use. Savings in the residential sector represented 72 percent of total savings in 2016, while the commercial sector represents 28 percent of total savings. Over the past 3 years, the commercial sector has saved an average of 1 percent of energy use per year and the residential sector has saved an average of 0.7 percent per year.

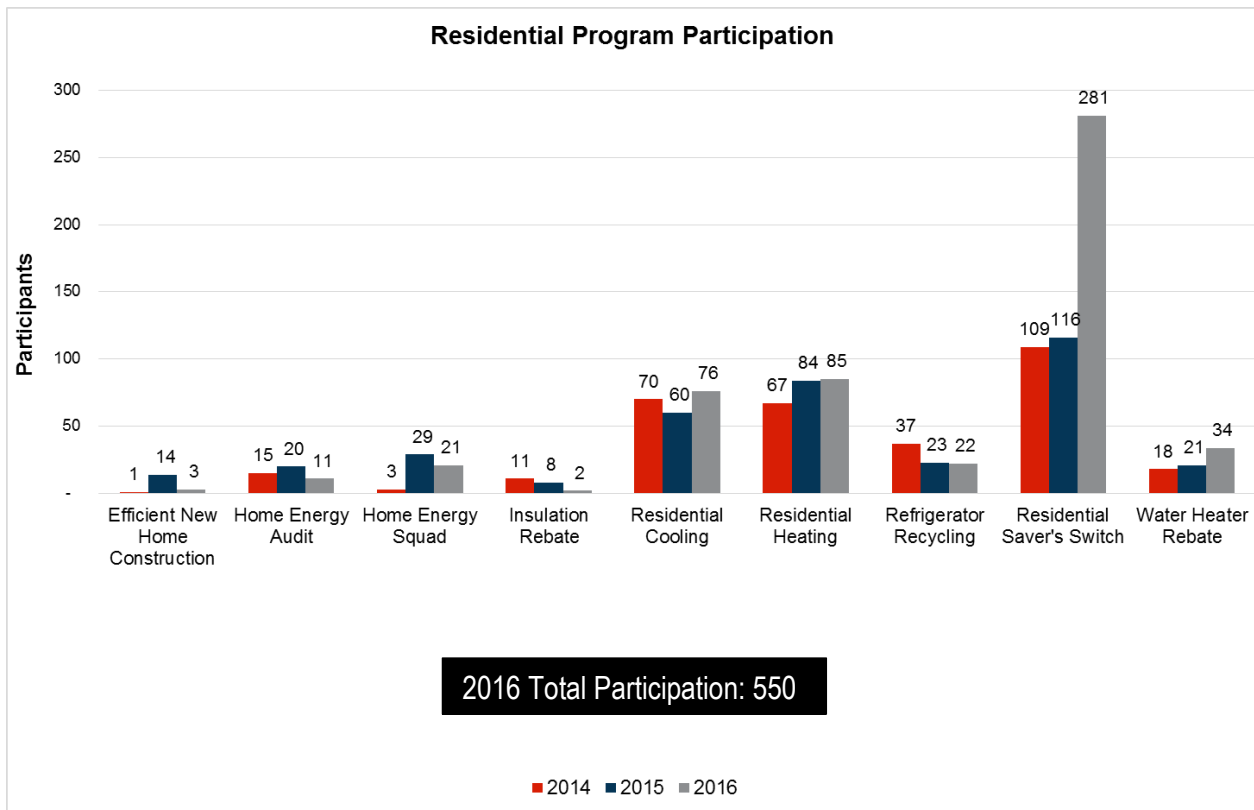


Figure 12. Residential Program Participation from 2014-2016

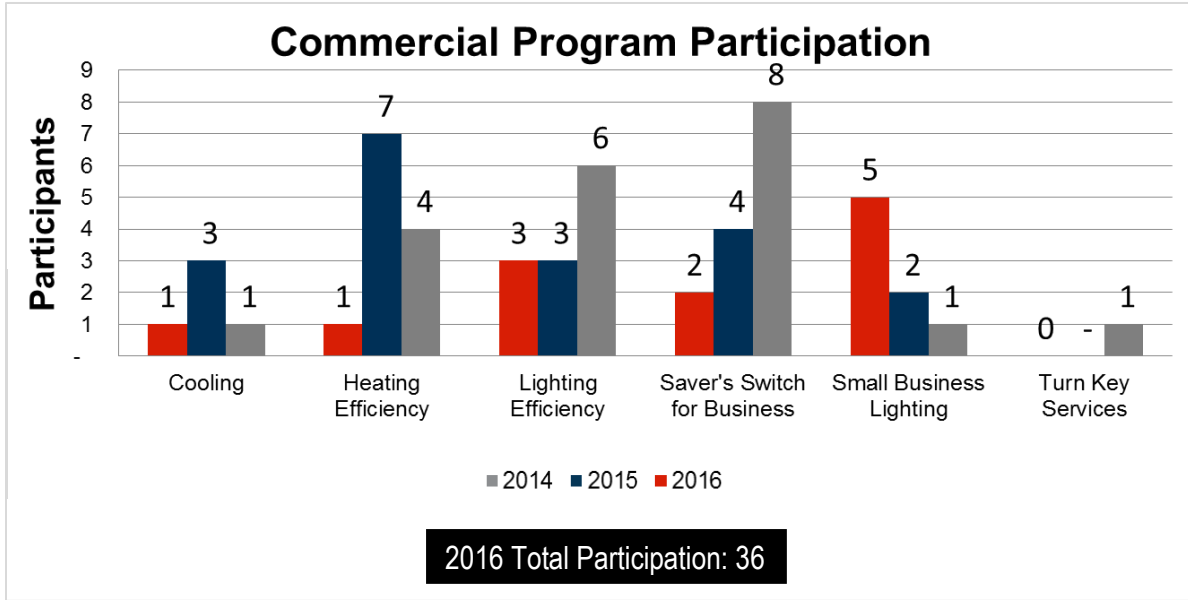


Figure 13. Commercial and Industrial Program Participation from 2014-2016

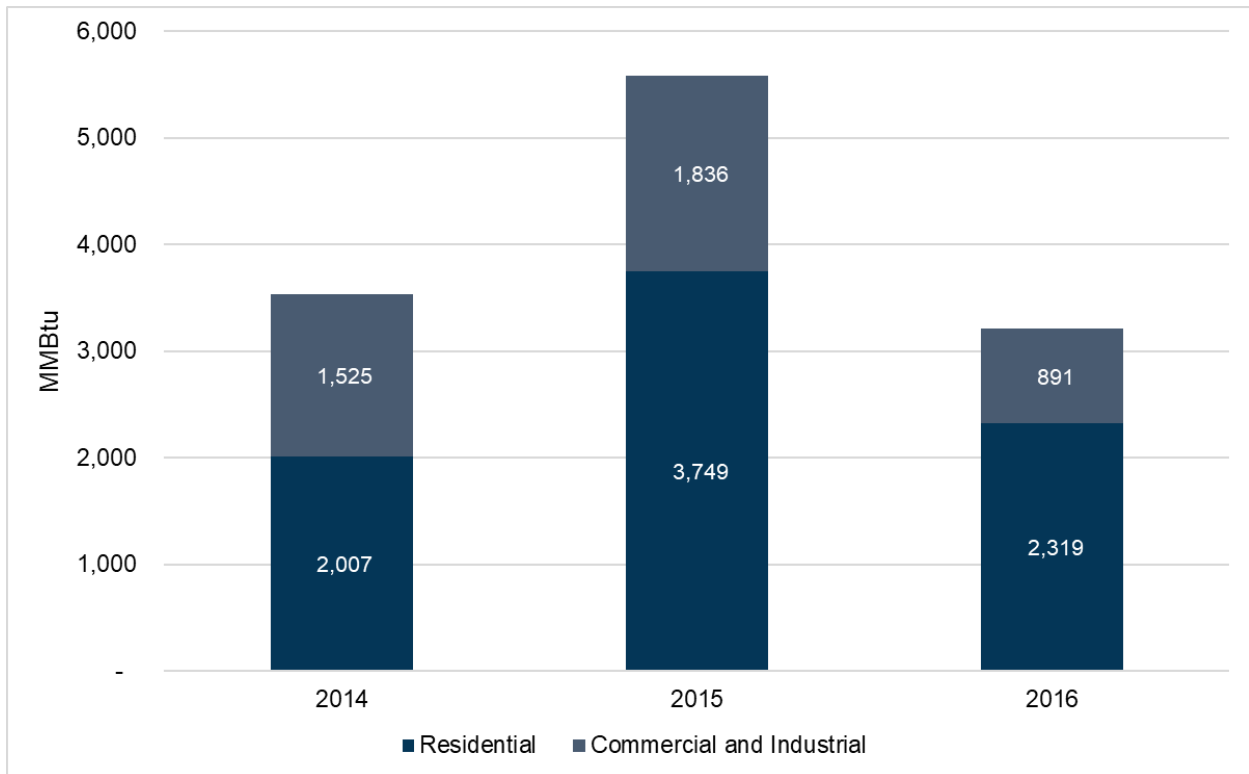


Figure 13. Energy Savings from Program Participation 2014-2016

Where Do We Want to Go?

Our Energy Vision

To establish an energy vision for the community, the Energy Action Team reviewed examples that other communities have developed and provided input via surveys and workshops to identify what elements were most important to incorporate. After several iterations and discussions, the Energy Action Team established the following vision for Mahtomedi's energy future:

Mahtomedi residents, schools, congregations, and businesses will work collaboratively to dramatically reduce our carbon footprint and position our community as a regional energy leader by engaging in activities that conserve energy, save money and use renewable energy.

Our Goals

The Energy Action Team established multiple energy goals for Mahtomedi, including an aspirational and long-term goal related to greenhouse gas emissions, as well as incremental goals against which to measure progress in the near term. The Energy Action Team determined the goals through various workshop brainstorming activities, surveys, discussions, and review of other state and regional targets. Mahtomedi's energy action goals are as follows:

- **Achieve a 30 percent reduction in energy-related greenhouse gas emissions by 2030 and a 100 percent reduction (carbon neutrality) by 2050.**
- **Achieve 1.4 percent average annual energy savings to reduce energy consumption 19 percent below 2016 baseline by 2030.**

To support progress towards achieving these overarching goals, this plan details more sector-specific goals, as follows:

Residential Goal:

Triple total participation in energy efficiency programs within 1 year, resulting in 1.6 percent annual energy use reduction and saving participating households an average of \$113 per year on their energy bills.

Business/Institutional Goal:

Engage businesses and institutions in energy saving actions, resulting in a combined 11 percent reduction in energy use in targeted facilities below 2016 baseline by 2020.

Renewables Goal:

Double the number of renewable energy subscribers in 1 year and double average subscription amount.

To calculate the impact of these combined goals, the Energy Action Team began with 2016 baseline energy use and greenhouse gas emissions data and assumed a Business as Usual (BAU) growth in energy demand of 0.3 percent across the residential and commercial/institutional sectors. If the sector-specific targets are reached, the community could achieve an additional 8 percent energy savings by 2030 compared to historic savings from program participation (Figure 14 and Figure 15).

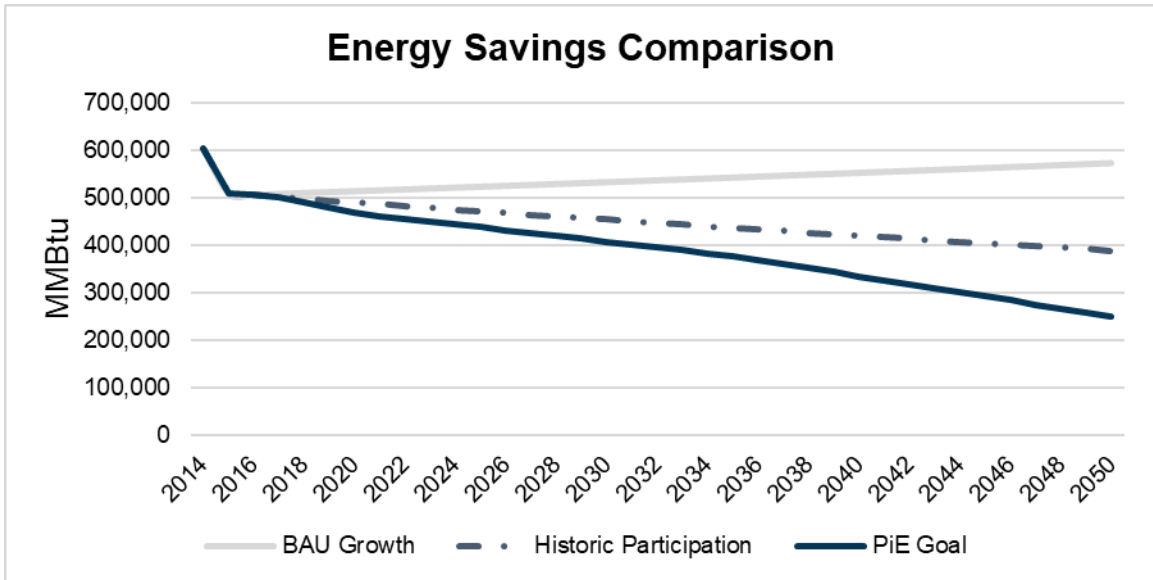


Figure 14. Energy Conservation Impact Compared to Historic Saving Trends

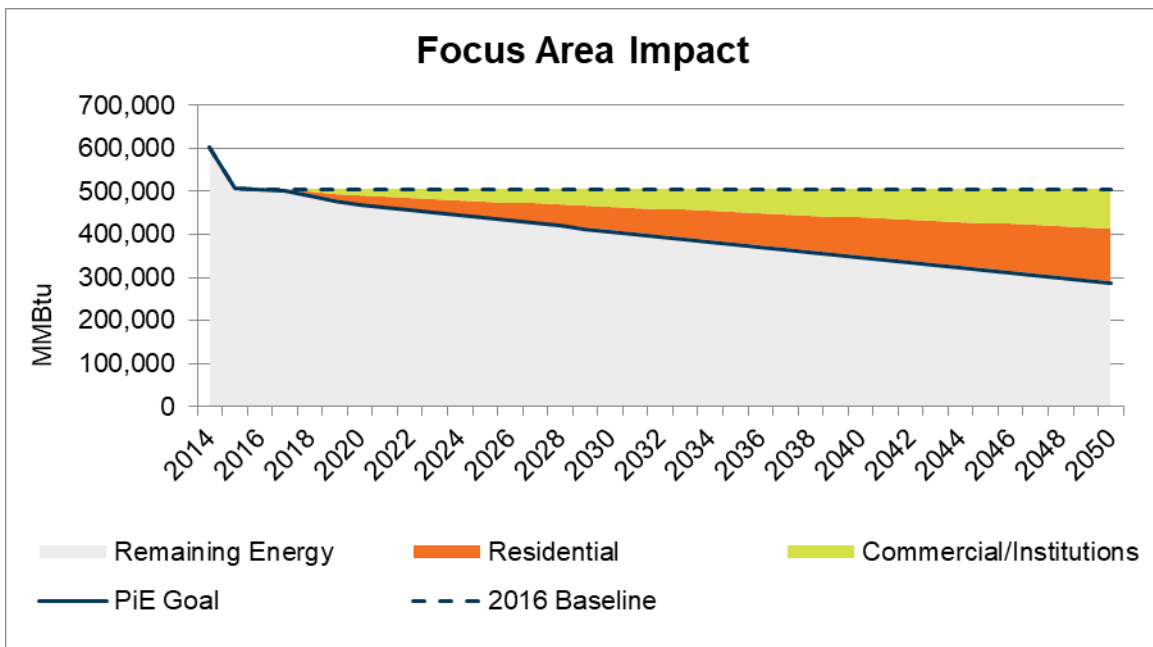


Figure 15. Combined Impact of Focus Areas on Energy Use

Hitting the city’s energy reduction goals will have an important impact on decreasing greenhouse gas emissions. Achieving the goals laid out in this plan will achieve an additional reduction of 4,800 MTCO₂e by 2050, decreasing the community’s total carbon footprint by **13,000 MTCO₂e** – approximately equivalent to the carbon emitted from **2,746 passenger vehicles** in 1 year. Together with Xcel Energy’s efforts to decarbonize the grid by investing in renewable energy, Mahtomedi’s energy-related emissions will be approximately 71 percent below the 2016 baseline by 2050 and will be close to two-thirds of the way to its aspirational goal of carbon neutrality for energy-related emissions.

Note that energy efficiency and renewable energy strategies alone will not likely allow Mahtomedi to achieve carbon neutrality. Over the next few decades, the community will continue to pursue energy efficiency and renewable energy activities that further reduce energy-related greenhouse gas emissions, as well as exploring other strategies to offset emissions and help achieve carbon neutrality, such as investing in renewable energy credits, carbon sequestration methods, and net-positive energy technologies.

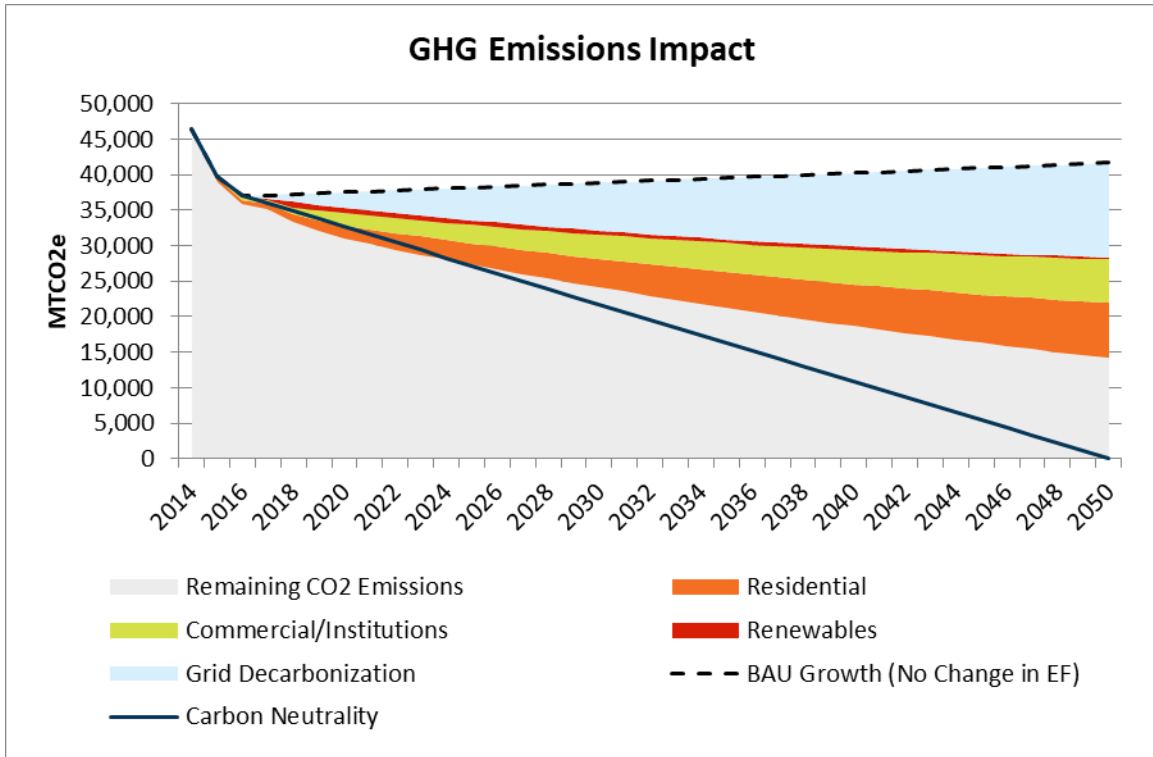


Figure 16. Combined Greenhouse Gas Emissions Impact

How Are We Going to Get There?

To achieve Mahtomedi's energy goals, the Energy Action Team developed strategies for three focus areas: (1) residential, (2) business and institutional facilities, and (3) and renewable energy.

Land use and transportation were two additional topics discussed during the planning process, especially their relationships to energy and sustainability. It is recommended that the updated Mahtomedi Comprehensive Plan address these topics directly and include policies and strategies related to multi-modal transportation (e.g., bicycling, walking, transit, and fuel efficient vehicles), electric vehicles, alternative fuel vehicles, and efficient land use patterns since all impact and directly relate to the community's energy usage and greenhouse gas emissions.

Within the following sections, each focus area begins with a summary of why it was selected as a priority and supporting information about the focus area. Next, the detailed strategies to support achieving the goals are organized in tables for each focus area. Each strategy includes a general description, numeric targets to keep the plan on track, strategy scope details, delineation of responsibilities, draft timeline, identification of necessary resources, and measurements of success.

Note that an early step in the implementation process that will apply to all strategies is the development of a coordinated identity for all Energy Action Plan efforts. This could include a name, logo, tagline, or other brand elements. A marketing campaign design workshop will be held to brainstorm and select concepts.

Residential Strategies

The residential focus area includes the nearly 8,000 residents, 3,000 housing units, and 3,249 residential Xcel Energy premises in Mahtomedi. The Energy Action Team focused on residential homes since approximately 72 percent of the community's energy use is from the residential sector (see Figure 4). Furthermore, the housing stock is ripe for energy efficiency improvements, as many of the community's homes are older and may not be taking advantage of latest technologies, such as high-efficiency heating and cooling equipment or LED lighting.

To achieve the goal of tripling participation in conservation programs (765 energy-saving actions), the Energy Action Team identified a primary strategy of a residential engagement campaign and a supporting strategy focused on energy efficiency and construction.

Strategy 1: Residential Outreach Campaign

Strategy Overview

This strategy focuses on leveraging the power of Mahtomedi Area Green Initiative volunteers, faith community representatives, and Mahtomedi's Environmental Commission to engage residents in conservation efforts and initiatives by leveraging existing relationships. Each member of the Energy Action Team will perform outreach to their respective networks with the goal of engaging residents in energy actions. The emphasis of this strategy is on residents and residential programs and savings opportunities, but business and institutional audiences and facilities will be a secondary focus as relevant and applicable throughout the campaign.

Strategy 1: Residential Outreach Campaign

Target Behaviors

Energy Action Team members will educate and encourage people in their networks to take energy conservation actions in their homes. Note that more specific key messages, communications pathways, and target behaviors will be identified in the early stages of implementation through a marketing campaign development workshop.

Target Actions

- 765 total actions in year 1
- 250 Home Energy Squad visits in Year 1, with at least half completing enhanced visits that include an energy audit
 - Promote the Home Advisor Service to assist with follow-up
- 100 households participating in Refrigerator Recycling each year
- 25 households completing insulation upgrades in Year 1
- Continued promotion of heating, cooling, and water heater rebates
- Specific targeting of low-income households

Target Audience

- The target audiences will be segmented by housing type and demographics. For example, messaging will differ for seniors and families without children in the home vs. families with younger children. Schools and students could potentially be a trickle-up education opportunity. Church congregations are another potential target for outreach.

Communication Pathways

- City of Mahtomedi website
- Nextdoor.com neighborhood social media platform
- The City's quarterly newsletter, "Mahtomedi News"
- White Bear Press
- Community education classes
- Community events/meetings
- Yard signs/posters
- Word of mouth/neighbor-to-neighbor outreach

Potential Messaging Tactics

- Leverage networks of residents rather than canvassing
- Use post cards, live sign-ups, and/or pledge cards
- Challenge the community to reach an overall goal together (everyone must do their part)

Timeline

First Steps (months 1-2)

- Confirm team resources and roles (including MAGI, EcoClub, Environmental Commission, Conservation Minnesota, etc.)
- Confirm each target outreach group and team (e.g., seniors, families, etc.) and develop key messages and outreach tactics (through a campaign development workshop and possibly additional focus groups and/or surveys)
- Identify target group leads
- Explore opportunities and funding sources for a cost-sharing opportunity (e.g., Home Energy Squad discount for a limited number of participants) and/or internship resources

Strategy 1: Residential Outreach Campaign

Second Steps (months 3-4)

- Finalize outreach campaign game plan and schedule
- Develop marketing materials
- Conduct train-the-trainer workshops for each target group lead
- Collaborate with MAGI and other groups to promote campaign in the media
- Roll out campaign

Ongoing (monthly)

- Outreach activities and tracking
- Periodic outreach team check-in

Funding/Resource Needs

- Explore cost-sharing opportunities by City and other partners
- Explore intern support
- Support for printing costs

Responsibilities

- Overall campaign efforts
 - Partners in Energy – co-lead campaign development and outreach activities, marketing material design
 - Julie Drennen, Conservation Minnesota – co-lead campaign development and outreach activities
 - Scott Nielson, City of Mahtomedi – co-lead campaign development and lead distribution of information through City channels
 - Christine Ahman- Maples, Mahtomedi Environmental Commission – lead coordination with Environmental Commission to support campaign development and outreach activities
 - Mary Hoff, Mahtomedi Area Green Initiative – lead coordination with MAGI to support campaign development and outreach activities
- Specific outreach teams
 - Congregations
 - Kate Edwards, White Bear Unitarian Universalist Church
 - Paul Hoff, St. Jude's Congregation and Creation Care Team
 - Students
 - Hannah Maples, Mahtomedi High School Eco Club
 - Genna Viggiano, Mahtomedi High School Eco Club
 - Neighborhoods
 - Al Holcomb, MAGI
 - Scott Peterson, Resident

Measurement

Success will be measured by:

- Participation in Xcel Energy conservation programs and associated energy savings from participation
- Progress on decreased energy consumption

Strategy 2: Energy Efficient Remodeling and Construction

Strategy Overview

This strategy focuses on exploring opportunities to improve energy efficiency by improving compliance with existing energy codes and using existing leverage points to encourage builders and contractors to exceed existing energy code requirements. Mahtomedi contracts with the City of White Bear Lake for building permit review and inspections. During the permitting and inspection processes, there may be additional opportunities to ensure compliance with energy code requirements or provide more information/education about efficiency and renewable energy options such as renewable energy installation, passive solar design, net-zero or net-positive construction, or designing to more advanced energy codes. This topic is of particular interest for major remodeling/renovation projects, but opportunities also exist to ensure compliance for new construction.

Timeline

First Steps (months 1-2)

- Bring energy efficient construction/renovation to the Environmental Commission as an agenda item for discussion and recommendations.
- Meet with code officials from White Bear Lake to determine what documentation is required and what opportunities might exist to improve efficiency/compliance of projects.
- Develop a longer-term game plan based on those opportunities and conversations.

Funding/Resource Needs

- To be determined and discussed with the City of White Bear Lake.

Responsibilities

- Scott Neilson, City of Mahtomedi – coordinate with Environmental Commission and City of White Bear Lake
- Kate Edwards, White Bear Unitarian Universalist Church – support coordination with City of White Bear Lake, provide technical expertise as needed

Measurement

Success will be measured by:

- Number of permits (new construction and renovations) reviewed and approved
- Participation in relevant Xcel Energy conservation programs, including Efficient New Home Construction and Whole Home Efficiency

Business and Institutional Strategies

The business and institutional focus area includes businesses, churches, school facilities, and municipal facilities – 257 Xcel Energy premises in Mahtomedi and Willernie. To engage the community's businesses and institutions in Mahtomedi's energy efforts, the Energy Action Team identified two primary strategies: (1) congregation energy workshop and (2) business and institutional energy efficiency leadership.

Furthermore, the residential outreach campaign will support these efforts by sharing information and opportunities for the business and institutions as applicable.

Strategy 3: Congregation Energy Workshop

Strategy Overview

This strategy focuses on engaging congregations in a workshop (or possibly workshop series) focused on energy opportunities. The first workshop is targeted for Fall 2017 and will be a half-day event open to congregations within Mahtomedi and the region.

Target Behaviors

- Energy efficiency improvements at congregational facilities
- Engaged faith-based communities in energy actions (linked to residential outreach)

Target Audience

- Regional congregation leaders and facility managers (not restricted to churches within the city of Mahtomedi)

Timeline

First Steps (months 1-2)

- Confirm team roles and responsibilities
- Coordinate with Interfaith Power & Light and Conservation Minnesota
- Network and compile list of interested congregations
- Develop workshop agenda and confirm logistics (e.g., location, staffing, AV needs, etc.)
- Develop workshop invitations

Second Steps (months 3-4)

- Distribute workshop invitations/spread the word
- Host workshop in Fall 2017
- Determine if another workshop or series is of interest

Ongoing/monthly

- Conduct any post-workshop follow-up, including tracking actions taken by congregational facilities
- Check in with workshop participants as appropriate
- Draft case studies of successful efforts for future reference

Funding/Resource Needs

- Workshop space (congregation to provide?)
- Partners in Energy to cover refreshments

Strategy 3: Congregation Energy Workshop

Responsibilities

- Partners in Energy Team – co-lead workshop development and delivery
- Julie Drennen, Conservation Minnesota – lead coordination with Interfaith Power & Light
- Interfaith Power & Light – support workshop development and delivery
- Scott Nielson – support workshop development and delivery
- Kate Edwards, White Bear Unitarian Universalist Church – support outreach efforts
- Paul Hoff, St. Jude’s Congregation and Creation Care Team – support outreach efforts

Measurement

Success will be measured by:

- Number of congregations that participate in workshop(s)
- Xcel Energy conservation program participation and/or efficiency projects at places of workshop
- Program participation by congregation members (linked to residential outreach)

Strategy 4: Business and Institutional Energy Efficiency Leadership

Strategy Overview

This strategy focuses on Mahtomedi’s City facilities, school facilities, churches, and other commercial/institutional buildings leading by example in their adoption of energy efficiency practices. It includes facility-specific improvements and sharing success stories to the larger community as a demonstration of how every facility can contribute to achieving Mahtomedi’s energy goals.

Target Behaviors

- Energy efficiency improvements at facilities, including:
 - ✓ City of Mahtomedi: Energy audits/recommissioning on all buildings, lighting upgrades on all facilities
 - ✓ School District:¹⁹ Energy audits/recommissioning and lighting upgrades on all buildings, boiler tune-ups at high school and middle school, HVAC equipment replacement at district office and two elementary schools, food service equipment upgrade at high school, and energy management system optimization
 - ✓ Century College: Recommissioning, boiler replacement, boiler tune-up, lighting upgrade in building and parking lot
 - ✓ Congregations: Turn Key assessments of church buildings, lighting upgrades
 - ✓ FedEx Ground: Building recommissioning
- Occupant engagement to reduce energy usage

Target Audience

- Facility managers and occupants (e.g., employees, students, congregations, patrons)

¹⁹ Note that in addition to energy efficiency improvements, Mahtomedi Schools is in the process of subscribing to Xcel Energy’s Renewable*Connect program and plans to use the B3 Benchmarking tool to let building occupants know how well they are doing.

Strategy 4: Business and Institutional Energy Efficiency Leadership

Potential Message Elements

- If we all do our part, we can have a major impact on our community's energy consumption and carbon footprint
- Positive return on investment from energy efficiency improvements

Timeline

First Steps (months 1-2)

- Each facility to identify potential energy efficiency improvements (through energy audits as necessary) and create a prioritized list with estimated resource needs
- Present energy action plan to decision makers (e.g., School District Board) to gain buy-in and support

Ongoing/monthly

- Implement improvements as applicable and as resources are available
- Track and share energy efficiency investments, rebates, and savings information (i.e., success stories)
- Share success stories and case studies through outreach efforts (e.g., residential campaign, congregation workshop, etc.)

Funding/Resource Needs

- Varies based on facility

Responsibilities

- Julie Osterbauer, Mahtomedi School District – coordinate with School Board, identify and implement school facility improvements
- Scott Nielson, City of Mahtomedi – coordinate with City Council and City staff, identify and implement City facility improvements
- Larry Miller, FedEx Ground – coordinate with facility managers to identify and implement facility improvements
- Scott Randall, Century College – coordinate with facility manager to identify and implement facility improvements
- Kate Edwards, White Bear Unitarian Universalist Church – coordinate with facility manager to identify and implement facility improvements
- Paul Hoff – St. Jude's Congregation and Creation Care Team – coordinate with facility manager to identify and implement facility improvements

Measurement

Success will be measured by:

- Xcel Energy conservation program participation
- Energy savings among commercial and institutional facilities

Renewable Energy Strategy

The renewable energy focus area includes all efforts and activities related to solar, wind, and other renewable energy generation within and serving the Mahtomedi community. In addition to prioritizing energy conservation actions in the community, the Energy Action Team focused on renewable energy to support the community's vision for a healthier future.

Strategy 5: Renewable Energy Adoption

Strategy Overview

Energy efficiency is a top priority for the Mahtomedi Energy Action Plan, but the community also supports investment in and adoption of renewable energy to help achieve the community's carbon emissions reduction goals. Near-term, this strategy focuses on increasing subscriptions to renewable energy programs (in coordination with the residential outreach campaign and business and institutional strategies), and making sure that the City is reducing barriers for renewable energy installations. Longer-term, this strategy includes exploring the feasibility of a mid-scale solar array (either specific to an individual facility or a solar garden) installed in a prominent location to visibly showcase the community's carbon reduction ethic and energy vision.

Target Behaviors

- Make improvements to energy efficiency first and then invest in renewable energy
- Sign up and/or increase subscriptions to Windsource® and Renewable*Connect®

Target Actions

- 310 Windsource® or Renewable*Connect® subscribers
- Increase average subscription amount to 600 kWh per month

Target Audience

- All community members, especially those that are sustainability-oriented and want to "green" their energy supply

Timeline

First Steps (months 1-2)

- Confirm team resources and roles
- Coordinate with residential outreach campaign development
- Explore and confirm key message elements for renewable energy
- Begin coordination with SolSmart to determine designation requirements

Second Steps (months 3-4)

- Develop marketing materials in coordination with residential outreach campaign
- Incorporate renewable energy information into train-the-trainer workshops for residential outreach
- Roll out campaign

Ongoing (monthly)

- Outreach activities and tracking
- Periodic outreach team check-in
- Monitoring of opportunities for solar array installation

Strategy 5: Renewable Energy Adoption**Funding/Resource Needs**

- Individual premises to subscribe to renewable energy programs through Xcel Energy
- Solar array investment (longer term)
- See residential outreach campaign for other details

Responsibilities

- Overall campaign efforts
 - Partners in Energy Team – co-lead campaign development and outreach activities
 - Julie Drennen, Conservation Minnesota – co-lead campaign development and outreach activities
 - Scott Nielson, City of Mahtomedi – co-lead campaign development and lead distribution of information through City channels
 - Christine Ahman- Maples, Mahtomedi Environmental Commission – lead coordination with Environmental Commission to support campaign development and outreach activities
 - Mary Hoff, Mahtomedi Area Green Initiative – lead coordination with MAGI to support campaign development and outreach activities

Measurement

Success will be measured by:

- Number of participants in Windsource® and Renewable*Connect® and average subscription amount
- Installation of community solar garden and/or other on-site renewable energy systems

How Are We Going to Stay on Course?

The Mahtomedi Energy Action Team will help the City reach its goals by maintaining consistent and clear communication among team members, community partners, and Xcel Energy's Partners in Energy community facilitators. The community facilitators will provide project management support, communications assistance and resources, and tracking and measurement to keep implementation efforts on track.

Energy Action Team

The Energy Action Team members will lead implementation of the plan, supported by the community facilitators and Xcel Energy. The success of the plan largely depends on the level of effort team members commit to implementing it; and as such, team members will likely want to recruit others to support implementation over time.

Members of the Energy Action Team will organize into strategy teams that will oversee the implementation of the strategies. Teams will meet on a bi-weekly basis during the first stages of implementation and then shift to monthly or less frequent meetings as implementation progresses. The dynamic of each group will vary based on its size and the scope of its strategies, but it is recommended that each group appoint a leader to help build and maintain momentum.

Tracking and Monitoring

On a quarterly basis, all strategy teams will review the energy action strategies and timelines to make sure everyone remains on task and has the resources needed to complete the activities identified in this plan.

Xcel Energy will provide bi-annual (twice a year) tracking and reporting of participation in Xcel Energy's programs and the associated savings from program participants. Each strategy team will be responsible for tracking supplemental quantitative and qualitative information about implementation, such as social media and website analytics, number of materials distributed, event dates and estimated participants, etc.

Changing Course: Corrective Action

An effective energy action plan is cyclical in nature. To ensure that the Mahtomedi Energy Action Plan remains on track, the Energy Action Team will review bi-annual tracking information and compare it against the supplemental strategy tracking metrics and information to assess whether the efforts are making an impact. If the strategies appear to be off-course, the strategy teams will assess their progress and make corrective actions to get back on track.

Beyond the Plan Horizon

Looking beyond the plan horizon, it is recommended that Mahtomedi integrate its energy efficiency and renewable energy goals and aspirations into the community's comprehensive plan and future plan and policy documents to ensure a legacy and commitment to these ideas. Furthermore, future updates to this plan may be necessary as goals are achieved and new energy opportunities and ideas emerge.

Appendix 1: Glossary of Terms

Use whichever appendices are appropriate. The following is a preliminary glossary.

Community Data Mapping: a baseline analysis of energy data in a geospatial (map) format across the community.

Conservation Improvement Program (CIP): Established as part of Minnesota's 2007 Next Generation Energy Act, CIP is funded by ratepayers and administered by utilities to help Minnesota households and businesses use electricity and natural gas more efficiently

Demand Side Management (DSM): modification of consumer demand for energy through various methods, including education and financial incentives. DSM aims to encourage consumers to decrease energy consumption, especially during peak hours or to shift time of energy use to off-peak periods, such as nighttime and weekend.

Energy Action Plan: a written plan that includes an integrated approach to all aspects of energy management and efficiency. This includes both short- and long-term goals, strategies, and metrics to track performance.

Goals: the results toward which efforts and actions are directed. There can be a number of objectives and goals outlined in order to successfully implement a plan.

kWh (kilowatt-hour): a unit of electricity consumption

small businesses in Xcel Energy's Minnesota service territory with an electric demand of 400 KW or less.

Premise: a unique identifier for the location of electricity or natural gas service. In most cases, it is a facility location. There can be multiple premises per building, and multiple premises per individual debtor.

Recommissioning: An energy efficiency service focused on identifying ways that existing building systems can be tuned-up to run as efficiently as possible.

Therm: a unit of natural gas consumption

Appendix 2: Implementation Memorandum of Understanding

Memorandum of Understanding Phase 2 – Plan Implementation

Mr. Scott Neilson
City Administrator
City of Mahtomedi
600 Stillwater Road
Mahtomedi, MN 55115

The intent of this Memorandum of Understanding is to recognize the achievement of the City of Mahtomedi in completing the process of developing an Energy Action Plan. Xcel Energy, through its Partners in Energy offering, has supported the development of this energy action plan. This document will outline how the City of Mahtomedi and Xcel Energy will continue to work together to support the community as they implement their Energy Action Plan.

The term of this joint support, as defined in this document, will extend from Oct 1, 2017, until March 31, 2019. This is a voluntary agreement and not intended to be legally binding for either party.

Xcel Energy will support the City of Mahtomedi in achieving the goals of its Energy Action Plan, by area of focus, in the following ways:

Residential Focus Area:

- **Residential Engagement Campaign**
 - Facilitate a workshop to confirm target outreach groups and support development of residential engagement campaign details (including schedule and work plan).
 - Assist city staff with implementation of a Home Energy Squad city-buy down program.
 - Develop outreach marketing collateral on residential programs.
 - Support the residential campaign roll-out and outreach activities.
 - Lead the facilitation of a train-the-trainer workshop for residential outreach.
 - Assist the Energy Action Team with drafting newsletter articles, social media posts, and website updates.
 - Provide up to \$2,000 for printing, advertising or collateral associated with delivery of the Residential Engagement Campaign.
- **Energy Efficient Construction**
 - Support discussions about ways to improve energy efficiency in new construction/renovation, including exploring potential policy options and/or leverage points.
- Support funded by Xcel Energy for this focus area is not to exceed 140 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and Center for Energy and Environment and does not include support provided by Xcel Energy internal staff.

Business & Institutional Focus Area

- **Congregation Energy Workshops**
 - Assist in coordinating workshop logistics, including identifying expert presenters.
 - Assist in workshop planning and preparation, including invitations, agenda, and promotion support.
 - Support workshop delivery and follow-up.
- **Business & Institutional Energy Leadership**
 - Assist with identifying municipal, institutional, and business facilities for potential energy efficiency improvements and support prioritization of needs and opportunities.
 - Assist businesses and institutional facilities with rebate processes.
 - Support case study development to showcase success stories.
- Provide up to \$150 for food/incidentals for the congregation workshop.
- Support funded by Xcel Energy for this focus area is not to exceed 85 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and Center for Energy and Environment and does not include support provided by Xcel Energy internal staff.

Renewable Energy Focus Area

- Share information about renewable resource options that align with the community's goals.
- Develop outreach materials to support Mahtomedi's residential engagement campaign on Xcel Energy's Windsource[®] program and Renewable*Connect offering.
- Support funded by Xcel Energy for this focus area is not to exceed 20 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and Center for Energy and Environment and does not include support provided by Xcel Energy internal staff.

Project Management

- Facilitate bi-weekly calls.
- Provide biannual implementation tracking, data analysis, and reporting.
- Provide up to \$200 to reimburse expenses for recognition, launch or celebration events. This funding cannot be used for the purchase of alcohol.
- Support funded by Xcel Energy for this is not to exceed 110 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and Center for Energy and Environment and does not include support provided by Xcel Energy internal staff.

The City of Mahtomedi commits to supporting the Energy Action Plan to the best of their ability by:

- Achieving the conservation and renewable energy impacts outlined in the Energy Action Plan are and shown in the table below.

	Electricity Impact (in kWh)	Natural Gas Impact (in therms)
Incremental Energy Savings	870,900	42,000
Continued Participation Based on Historic Activity	307,000	30,600
Total Conservation Goal (Aug 2017 – March 2019)	1,177,900	72,600

- Performing the coordination, tracking, and outreach duties as outlined in the energy action plan. These tasks by area of focus, include but are not limited to:

Residential Focus Area

- **Residential Engagement Campaign**
 - Identify City resources available for potential Home Energy Squad discount or cost-sharing and lead logistics/approval processes.
 - Support development of campaign logistics and collateral and approve use of City logo on outreach materials.
 - Distribute residential marketing materials to City communications channels and post residential campaign content to City website.
 - Recruit and coordinate community volunteers to assist with residential outreach
- **Energy Efficient Construction**
 - Bring energy efficient construction/renovations to the Environmental Commission as an agenda item for discussion.
 - Engage code officials from White Bear Lake in follow-up discussions and make suggestions for process improvements, per Environmental Commission recommendations.

Non-Residential Focus Area

- **Congregation Energy Workshops**
 - Coordinate workshop logistics and delivery, including identifying expert presenters and venues.
 - Assist in workshop planning and preparation, including invitations, agenda, and promotion support.
 - Lead workshop delivery and follow-up, including additional workshop planning if desired.
- **Business & Institutional Energy Leadership**
 - Identify and complete improvements at City facilities.

- Share success stories and related data with team and community.
- Support case study development and share with City outreach channels.

Renewable Energy Focus Area

- Support development of campaign messaging and outreach tactics regarding renewable energy options.
- Assist in developing and reviewing outreach materials and conduct outreach to promote renewable options.

Project Management

- Participate in the coordination and tracking of scheduled activities and events.
- Provide Xcel Energy an opportunity to review marketing materials to assure accuracy when they incorporate the Xcel Energy logo or reference any of Xcel Energy's products or services
- Share the collateral, plan document, supporting work documents and implementation results from the Energy Action Plan with the public. The experience, successes and lessons learned from this community will inform others looking at similar or expanded initiatives

All communications pertaining to this agreement shall be directed to Scott Nielson, on behalf of the City of Mahtomedi and Tami Gunderzik, on behalf of Xcel Energy.

Xcel Energy is excited about this opportunity to support the City of Mahtomedi in advancing their goals. The resources outlined above and provided through Partners in Energy are provided as a part of our commitment to the communities we serve and Xcel Energy's support of energy efficiency and renewable energy as important resources to meet your future energy needs.

For the City of Mahtomedi:

Date: _____

For Xcel Energy:

Date: _____

Appendix 3: Additional Data

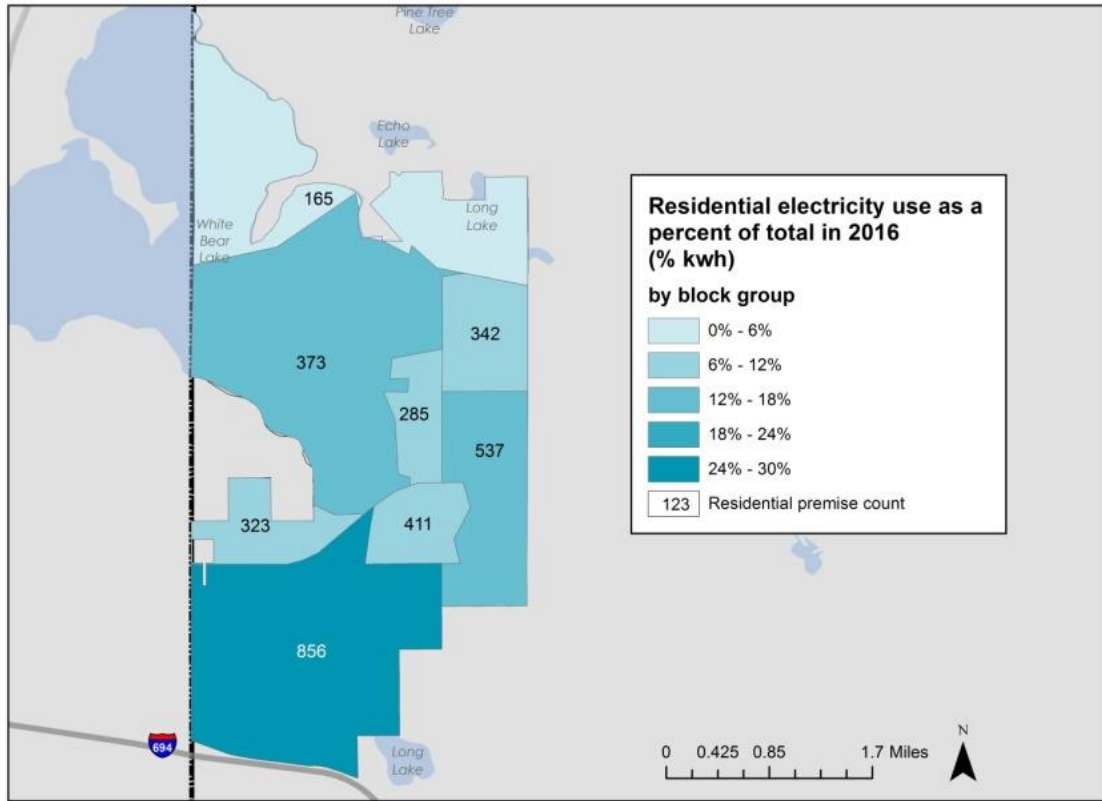


Figure A: Residential proportion of total electricity use by census block group

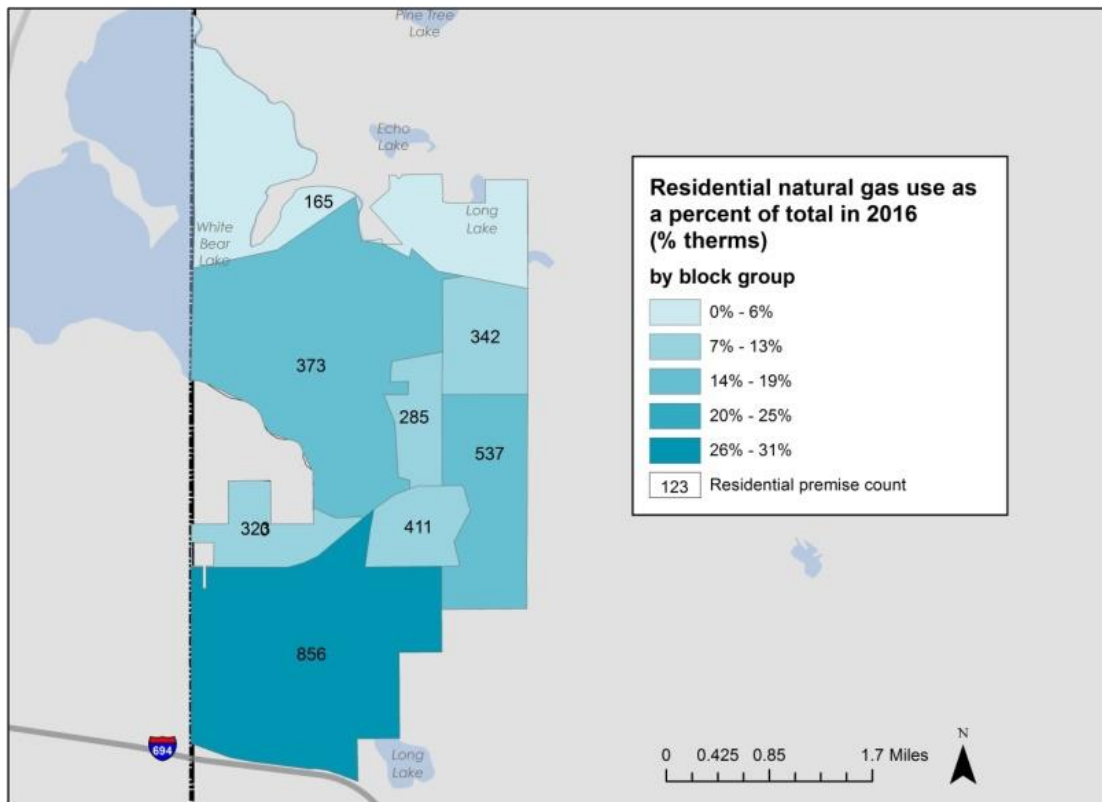


Figure B: Residential proportion of total natural gas use by census block group

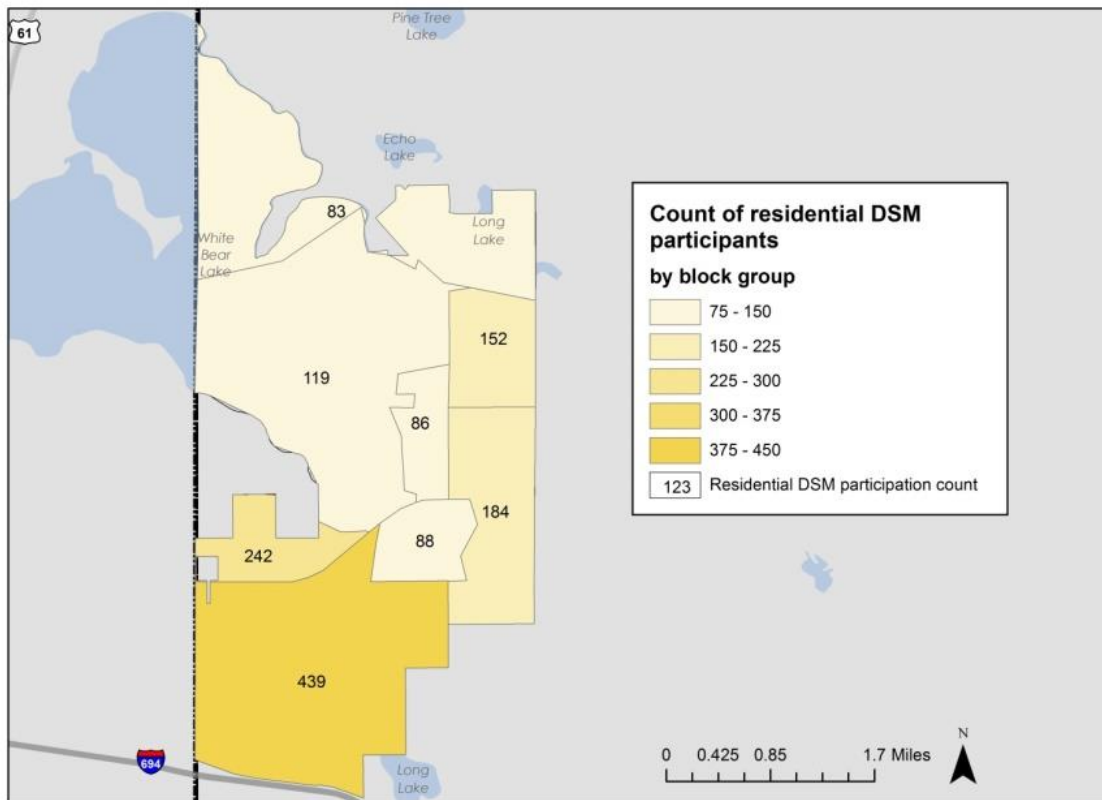


Figure C: Residential DSM program participation (2014-2016) by census block group

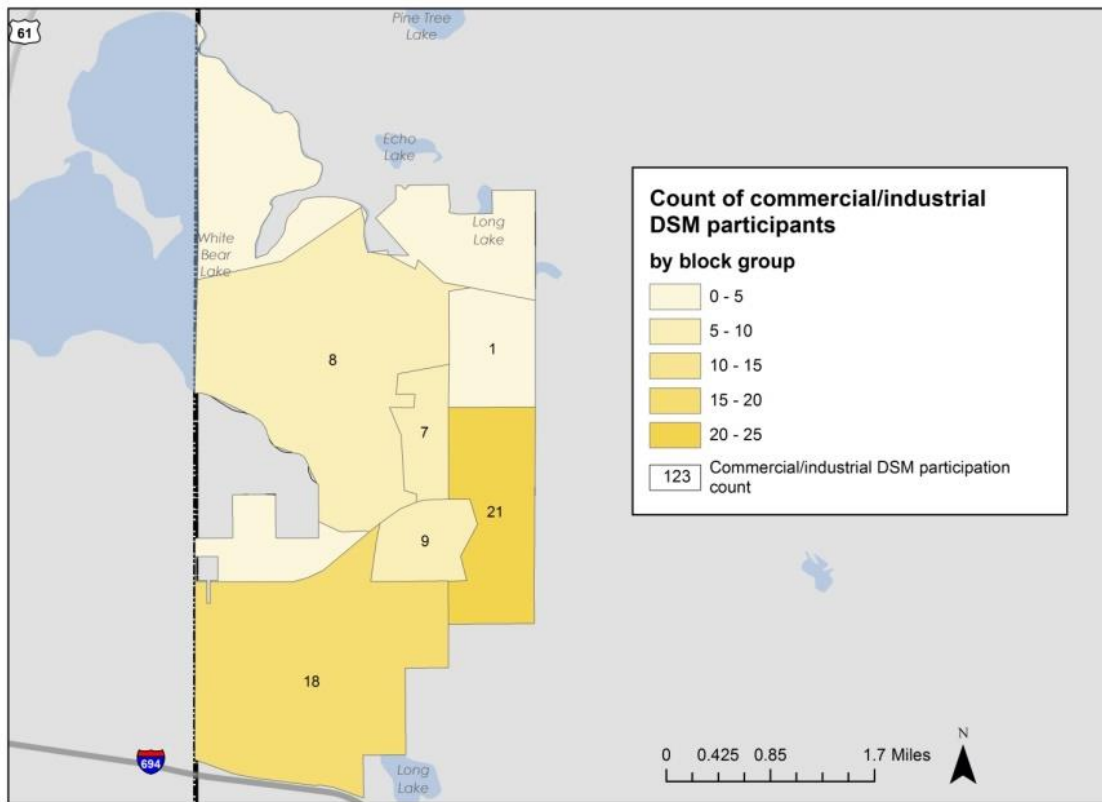


Figure D: Commercial/industrial DSM program participation (2014-2016) by census block group

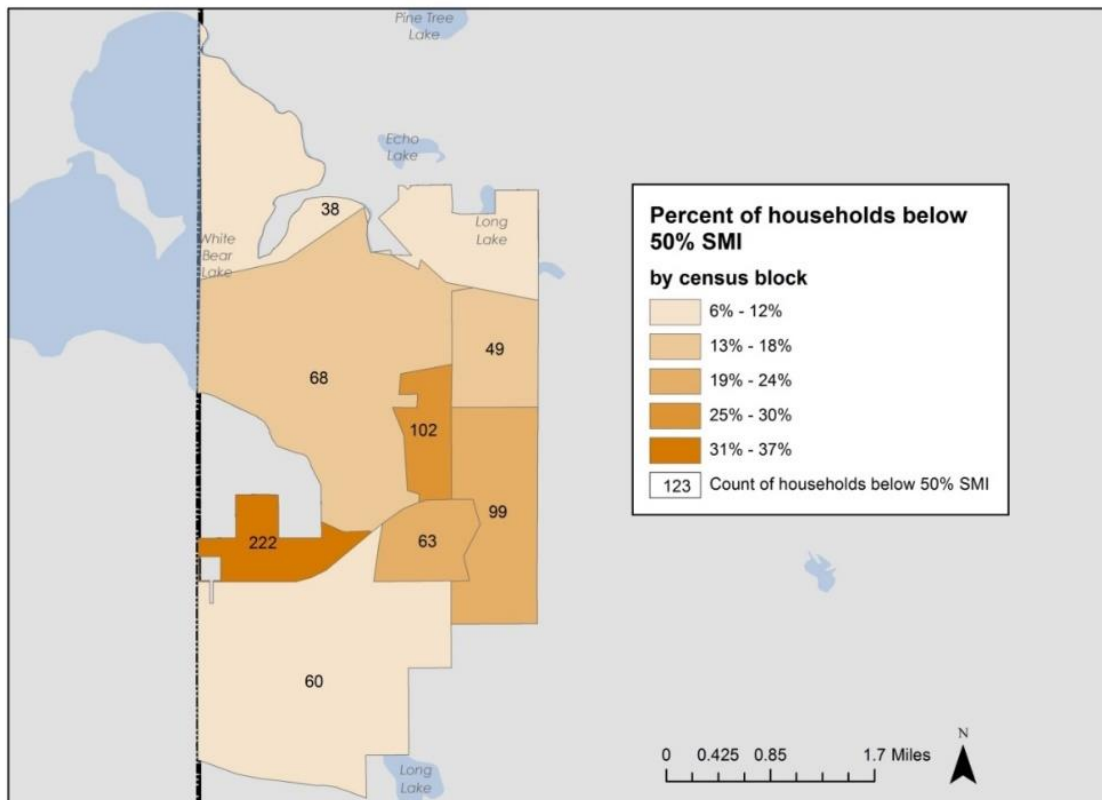


Figure E: Proportion of households below 50% of State Median Income by census block group

Appendix 4: Xcel Energy Program Summaries



PARTNERS IN ENERGY
An Xcel Energy Community Collaboration

Xcel Energy Program Offerings

Minnesota residential studies, audits and services				
Efficiency type	Deliverable	Description	Gas or electric	Study rebate service
Billing and payment	My Account with eBill	My Account is Xcel Energy's online account management service that provides customers with a personalized summary of their account. Features include eBill, eBill payment, usage history, account info, product/program offers, energy efficiency info, and the customer preference center.	E G	Service
Fuel conversions	Switch from propane or fuel oil to natural gas	Convert your primary fuel in your home and save. Potential construction charge for distances from distribution gas line greater than 75 ft and one-time account set-up charge.	G (in area)	Service
Home audits	Home Energy Savings Program	After an in-home evaluation, qualifying residents may be eligible for services and equipment that include CFL bulb upgrades, insulation and weather stripping, appliance replacements and other equipment and appliances,	E G	Service
	Low-Cost Home Energy Audits	Home Walkthrough – Whole-house visual inspection and basic energy bill analysis for \$30. Standard Audit – Home Walkthrough plus blower door test for \$60. Standard audit with Infrared – Standard Audit plus an infrared camera scan for \$100 (where available).	E G	Audits
Home services	Home Energy Squad®	Low-cost service to provide and install efficient items such as compact fluorescent light bulbs, programmable thermostats, weather stripping and more. Must have natural gas service from Xcel Energy or CenterPoint Energy (\$70).	E G (CenterPoint Energy gas)	Service
	Home Performance with ENERGY STAR®	By installing multiple measures after a \$60 energy audit, natural gas customers are eligible for cash rebates.	E G	Audits
	Saver's Switch®	During peak air conditioning use days, participating residents can save 15% off of their electric energy use June through September by allowing a lowering of energy use from their AC units.	E G	Services Rebates
New home construction	ENERGY STAR Homes	Free home performance testing, inspections and consulting services to help meet the ENERGY STAR guidelines set by the U.S. Environmental Protection Agency. We conduct regular site inspections and arrange an independent inspection at completion to ensure homes meet all required builder rebates.	E G	Study

Minnesota residential rebate programs

Efficiency type	Deliverable	Description	Gas or electric	Study rebate service
Cooling efficiencies	Central air conditioning and air source heat pumps	Our Central AC Rebate program is designed to generate maximum energy savings for residents by focusing on proper installation practices. Qualifying equipment and installations may earn up to \$450 cash rebates. Must be installed by a contractor registered in Xcel Energy's Cooling program.	E	Rebate
	Ground source heat pumps	Qualifying ENERGY STAR ground source heat pumps are eligible for a cash rebate of \$150 per ton (five ton limit). Must be installed by a contractor registered in Xcel Energy's Cooling program.	E	Rebate
Environmental	Refrigerator/freezer recycling	We pick up resident's old working, second fridge or freezer and recycle it free of charge as well as give a \$50 cash rebate and two compact fluorescent light bulbs.	E	Rebate Service
	CFL bulb recycling	Compact fluorescent lights (CFLs) contain small amounts of mercury that are harmful to the environment. Because of this, they should not be disposed in household trash receptacles. Xcel Energy provides free CFL recycling at participating retailers and Minnesota county recycling centers.	E	Service
Heating efficiencies	Heating/ECM rebates	Qualifying natural gas boiler, gas furnace or factory installed Electronically Commutated Motor (ECM) are eligible for cash rebates.	E G	Rebate
	Water heating rebates	Qualifying energy-efficient water heaters can earn rebates.	G	Rebate
	Insulation rebates	Well-insulated homes can save up to 20% on heating and cooling costs. Rebates for 20% of project cost with a \$300 annual cap. Insulation upgrades existing single-family and multi-unit homes, up to four units, that professionally install insulation. Additional restrictions may apply.	G E (electric heat)	Rebate
Lighting efficiencies	Home lighting	Energy-efficient compact fluorescent light bulbs and light-emitting diodes can be purchased at a discount at participating retailers.	E	Rebate

Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota residential renewable options

Deliverable	Description	Fuel type	Existing or new	Study rebate service
Solar*Rewards® Community®	A developer or a community installs a solar garden. Residents purchase or lease shares and receive credit on their monthly Xcel Energy electricity bills for their portion of solar energy produced by the solar gardens.	E	E N	Service
Solar*Rewards®	Residents receive incentives for installation of photovoltaic (PV) solar panels. The state of Minnesota may offer an additional rebate if you buy solar panels from Minnesota manufacturers.	E	E N	Service
Windsorce®	Residents can purchase renewable, wind energy through Windsorce. Subscriptions start at less than \$1 per month for one, 100-kilowatt-hour block*.	E	E N	Service

Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota business audits, studies & services

Deliverable	Description	Gas or electric	Study rebate service
Business new construction energy design assistance*	An integrated design process that includes whole building computer modeling and verification of measures for new buildings, additions or major renovations. Finished space 20,000 sq. ft. or larger	G E	Study Rebates
Business new construction energy efficient buildings*	Free design review to identify potential rebates and energy-saving opportunities, plus rebates for making efficiency improvements to your new building, addition or major renovation. Finished space smaller than 20,000 sq. ft.	E G	Study Rebates
Commercial efficiency*	Operations and facilities analysis and support to help large commercial operations create a long-term energy management plan. (Designed for energy conservation potential of 1 GWh or 4,000 Dth)	E G	Study Rebate
Data center efficiency study*	Data center energy efficiency analysis and identification of opportunities to improve IT equipment and/or facility systems to run at peak efficiency	E G	Study Rebate
Free online assessment	For businesses unsure of investing in an on-site energy audit, we have a FREE online energy assessment tool that offers a basic report on hidden energy-savings potential: xcelenergy.com/OnlineAssessment	E G	Tool
Fluid system optimization* (compressed air, pumps, fans, blowers, vacuums)	Rebates for a study to analyze your fluid systems to discover no-cost/low-cost improvements as well as identify capital projects to increase your system's efficiency, reliability and performance	E	Study Rebate
Heating efficiency steam trap audits and rebates	Identify failed traps and benefit from cost-saving rebates to repair or replace traps	G	Study Rebate
Heating efficiency system optimization study*	Analyze all or part of heating system to uncover and/or assess natural gas savings opportunities, including no-/low-cost adjustments and/or equipment improvements	G	Study
Lighting redesign study*	A complete lighting analysis to identify ways to improve your lighting efficiency in over-lit or wrongly-lit spaces. (Not for 1-to-1 lighting retrofits; must be performed by a certified lighting professional)	E	Study Rebates
Process efficiency*	Operations and facilities analysis to help create a long-term energy management plan. Industrial manufacturing customers must have cumulative energy conservation potential of 1 GWh or 4,000 Dth	E G	Study Rebate
Recommissioning*	Energy experts conduct a Recommissioning study and provide recommendations for building tune-ups. Many measures have simple paybacks of less than one year. Choose what to implement and get rebates on both the study and implementation measure(s)	E G	Study Rebates
Refrigeration recommissioning*	Rebates for tuning up existing commercial refrigeration systems in grocery outlets, convenience stores and other facilities with refrigerated cases	E	Study Rebates
Turn key services	Low-cost, on-site assessments that identify energy-saving opportunities for community businesses. Includes free project implementation services and 30% bonus rebates on rebate-eligible improvements made within 12 months from assessment date. If businesses already have energy-saving projects identified, they can still take advantage of our free implementation services	E G	Study Service Rebates
My Account with eBill	My Account is Xcel Energy's online account management service that provides business customers with a summary of their account to help manage energy. Features include eBill, eBill payment, usage history, account info, product/program offers, energy efficiency info, and the customer preference center	E G	Services
PERSONALIZED BUSINESS ACCOUNT SERVICES	Our efficiency specialists are your go-to support for your businesses' energy needs, available to: <ul style="list-style-type: none"> • Answer questions • Suggest energy recommendations tailored to your business • Help you navigate program options, requirements and documentation • Discuss different ways to get started Contact your Xcel Energy account manager, or our energy efficiency specialists at 1-855-839-4362 or energyefficiency@xcelenergy.com .		Services
Trillion BTU financing	Loan program that leverages public and private money to help businesses make improvements that lower energy costs. Delivered by St. Paul Port Authority.		Service

*Requires preapproval prior to starting the project or study.

Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota Business Rebate Programs

Deliverable	Description	Gas or Electric	Study Rebate Service
Cooling Efficiency	Rebates for energy-efficient air conditioning equipment including rooftops, chillers, water source heat pumps, zero-loss energy doors, PTACs and more	E	Rebate
Computer Efficiency	Rebates available for virtual desktop infrastructure (VDI) or PC power management software	E	Rebate
Custom Efficiency*	Rebates for energy-efficient technologies or process improvements not covered under our prescriptive programs	E G	Rebate
Data Center Efficiency Equipment Rebates*	Custom rebates for opportunities identified through a Data Center study	E	Rebate
Efficiency Controls*	Rebates for control systems that save energy by automating building systems such as lighting, HVAC and others	E	Rebate
Fluid System Optimization*	Rebates for efficiency improvements from upgraded equipment identified in a fluid system optimization study	E	Rebate
Foodservice Equipment	Cash-back rebates for purchasing and installing qualifying energy-efficient foodservice equipment such as convection ovens, broilers, demand controlled ventilation, ENERGY STAR dishwashers and more	E G	Rebate
Heating Efficiency	Prescriptive rebates for qualifying commercial heating systems used for space heating, domestic water heating and up to 30% additional process load	E G	Rebate
Lighting Efficiency Retrofit Rebates	Rebates for purchasing and installing energy-efficient lighting in an existing building	E	Rebate
Lighting Efficiency New Construction Rebates	Rebates for purchasing and installing energy-efficient lighting for new or significantly renovated facilities	E	Rebate
Motor and Drive Efficiency	Prescriptive and custom rebates for installing variable frequency drives (VFD), adjustable speed drives (ASD) and Constant Speed Motor Controllers. Motor rebates are available for NEMA Premium® enhanced new, upgrade and enhanced upgrade motors	E	Rebate

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Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota Business Renewable Options

Deliverable	Description	Fuel Type	Existing or New	Study Rebate Service
Solar*Rewards	Rebates based on energy production for installing solar panels on your business. Participation is limited. Additional incentive may be available through the Made in Minnesota program. Additional payment available for excess energy produced.	E	E N	Service
Windsorce	Businesses can purchase renewable energy through Windsorce. Subscriptions start at less than \$1 per month, for one, 100 kilowatt-hour block.*	E	E N	Service



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