An Energy Action Plan for

Mendota Heights

November 2024

Xcel Energy®

PARTNERS IN ENERGY

An Xcel Energy Community Collaboration

ACKNOWLEDGEMENTS

Thank you to the following individuals who contributed many hours of service to developing this Energy Action Plan.

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The content of this plan is derived from a series of planning workshops hosted by Xcel Energy's Partners in Energy. Xcel Energy is the main electric and gas utility serving Mendota Heights. Partners in Energy is a two-year collaboration to develop and implement a community's energy goals. For more information about the planning workshops, see Appendix A: Xcel Energy's Partners in Energy Planning Process.

This Energy Action Plan was funded by and developed in collaboration with Xcel Energy's Partners in Energy. Partners in Energy shall not be responsible for any content, analysis, or results if Mendota Heights has made modifications to the plan.

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MENDOTA HEIGHTS ENERGY ACTION PLAN

Mendota Heights City staff and community members collaborated with Xcel Energy's Partners in Energy program to create this Energy Action Plan. The plan offers Mendota Heights residents, businesses, and the City itself a path forward to save energy, avoid greenhouse gas emissions, and manage energy costs.

Our Energy Vision

Mendota Heights is a leader in the transition to a clean energy future. This plan guides the city, residents, and businesses to take action to increase energy efficiency and use renewable resources to create more community resilience.

Our Goals

By 2030, the Mendota Heights community will save an estimated **$1.6 million** through energy efficiency projects and avoid **9,000 $MTCO_2e$** of greenhouse gas emissions.

Energy Action Plan Impacts

Estimated savings of **$1.6 million** for residents, businesses and the City through the end of 2030.

GHG

Avoid **9,000 $MTCO_2e$** (Metric tons of carbon dioxide equivalent) of greenhouse gas emissions. That's like removing over 200 gas-powered cars from the road each year through 2030.

Empowering the Mendota Heights community to make decisions about its energy future.

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How We Are Going to Get There

The City of Mendota Heights with support from Partners in Energy will take actions identified in this plan to achieve our goal. These actions center on four focus areas:

- **Residential Energy Efficiency**
- **Business & Municipal Energy Efficiency**
- **Renewable Energy**
- **Beneficial Electrification**

Strategy Highlights

- Connect residents with existing opportunities for energy efficiency upgrades, including home energy audits.
- Partner with area businesses to promote energy efficiency and help businesses manage energy costs.
- Lead by example and showcase the City of Mendota Heights' commitment to solar energy.
- Educate and engage residents on beneficial electrification, the switch from fossil fuel-powered technologies to electricity-powered technologies.
- Explore adding EV chargers to municipal buildings and electrifying the Mendota Heights fleet.
- Showcase local residents' energy efficiency, renewable energy, and electrification projects.

The content of this plan is derived from a series of planning workshops hosted by Xcel Energy's Partners in Energy. Thank you to the Mendota Heights Energy Action Team for their many hours of service.

INTRODUCTION

About This Plan

This Energy Action Plan is a roadmap to strategically guide Mendota Heights' action in a manner that supports the community goal to save $1.6 million for residents and businesses and avoid 9,000 $MTCO_2e$ of greenhouse gas emissions by 2030 (that's like removing over 2,100 gas-powered cars from the road for a single year!).

The goals and strategies outlined in this plan were developed collaboratively with a group of stakeholders, referred to as the Energy Action Team, through five planning workshops conducted between February and August 2024. The Energy Action Team included Mendota Heights residents, Commission members and City staff (see Acknowledgements for full list of participants). Team members coordinated throughout the process to share information and identify potential opportunities for partnership during implementation. See Appendix A: Xcel Energy's Partners in Energy Planning ProcessAppendix A: Xcel Energy's Partners in Energy Planning Process for more information about the planning process and Xcel Energy Partners in Energy.

Mendota Heights joined more than 30 other Minnesota and Wisconsin communities that have developed Energy Action Plans through Xcel Energy's Partners in Energy, an offering that provides resources for community energy planning. Partners in Energy also supports 18 months of plan implementation in the form of marketing and communications, data tracking and analysis, program expertise, and project management.

Why an Energy Action Plan

The City of Mendota Heights and its residents are committed to building a resilient future. Robust efforts are being made to create a more energy efficient and sustainable city — this Energy Action Plan will help guide the community in achieving its goals.

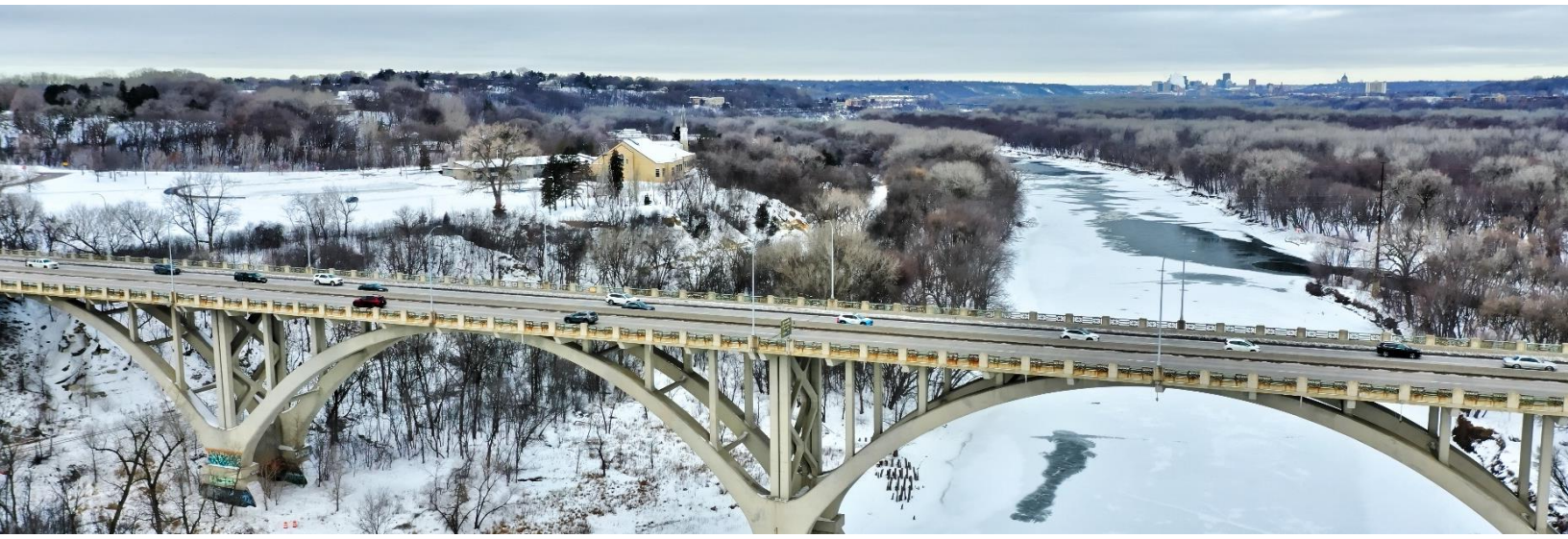
Climate trends suggest that in the next 50 years, Mendota Heights will experience more severe weather events, which are expected to have substantial impacts on public health. Climate-

resilient communities can prevent the worst public health and economic impacts by adapting the built environment and reducing greenhouse gas emissions.

To help reduce Mendota Height's greenhouse gas emissions, the City prioritizes energy efficiency. In the City's 2040 Comprehensive Plan, Chapter 8, "Resilience," addresses renewable energy, the City's emergency action plan and sustainability. This chapter was initiated and created by community members with experience and knowledge of the subject matter and was included at the residents' recommendation. Many residents and community members are already dedicated to the goal of sustainable energy within the city.

In 2021, Mendota Heights joined GreenStep Cities, the program to assist and encourage sustainability in municipalities around Minnesota. Mendota Heights has achieved steps one, two and three. Being part of this organization shows continued efforts to improve the sustainability of Mendota Heights. The City also has a Natural Resources Management Plan (2022), which incorporates information and implementation strategies in planning for climate change and sustainability as it pertains to the city's natural resources.

Creating an Energy Action Plan will strategize the steps to greater energy efficiency, significantly benefiting the environment. By focusing on reducing energy use in homes and businesses, switching to renewable energy sources, or upgrading to more energy efficient appliances, everyone can contribute to a more sustainable future! Additionally, making energy efficient choices not only helps the planet but also saves money. These efforts will lead to lasting advantages for both the community and the environment, making Mendota Heights an even better place to live, work and play.



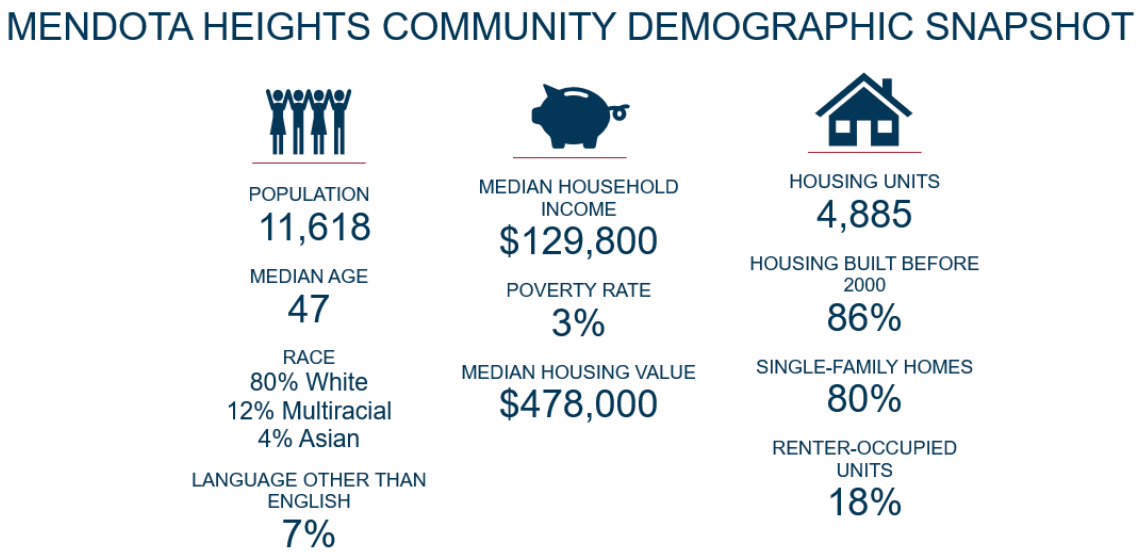
WHERE WE ARE NOW

An integral part of the Partners in Energy planning process is reviewing historical energy data that informs the community's energy baseline. Xcel Energy provided data on energy use, participation counts and utility energy conservation program savings for Mendota Heights, as detailed in the following sections. See Appendix B: Baseline Energy Analysis for a comprehensive picture of Mendota Heights' baseline energy data.

Community Demographics

As of 2021, Mendota Heights' population of almost 12,000 residents lived in approximately 4,900 housing units. With lower levels of diversity compared to the Twin Cities metro area, 7% of residents speak a language other than English, 12% of residents identify as multiracial and 4% identify as Asian. A poverty rate of 3% and a median household income of $130,000 make this a wealthier community compared to some peer cities. With 86% of housing built before 2000, most Mendota Heights residents live in housing stock with significant opportunity for energy efficiency improvements given the lower energy efficiency standards and general wear and tear on older buildings. Additionally, 18% of units in Mendota Heights are renter-occupied, presenting unique opportunities for energy efficiency measures that target renter-occupied units. Figure 1 displays the community demographic profile.

Figure 1. Overview of Mendota Heights community demographics[1]



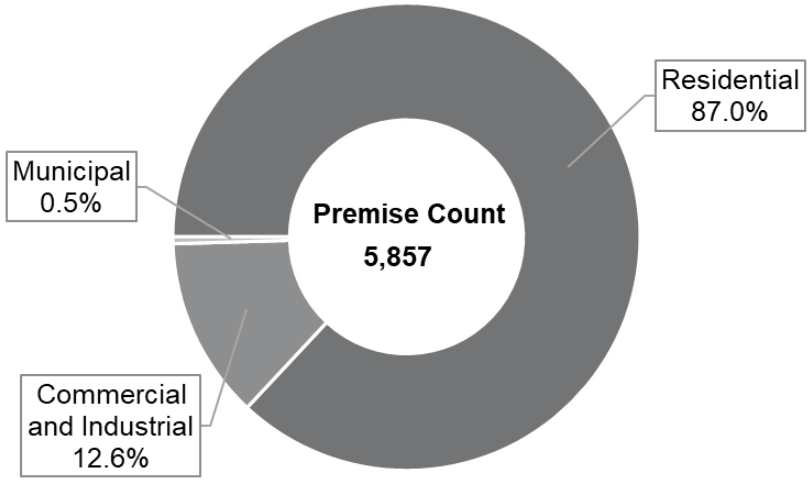
Energy Use and Savings

Premises

Xcel Energy provides electricity and natural gas to Mendota Heights residents and businesses. In 2023, Mendota Heights consisted of 5,872 distinct utility premises, which are a unique combination of service address and meter. For residential customers, this is the equivalent of an individual house or dwelling unit in a multi-tenant building. For business customers, it is an individual business, or for a larger business, a separately metered portion of the business' load at that address. Most Mendota Heights premises are residential, with a small number of commercial and industrial premises and a smaller portion of municipal premises rounding out the total (Figure 2).

[1] Source: U.S. Census Bureau American Community Survey, 2022 five-year estimates

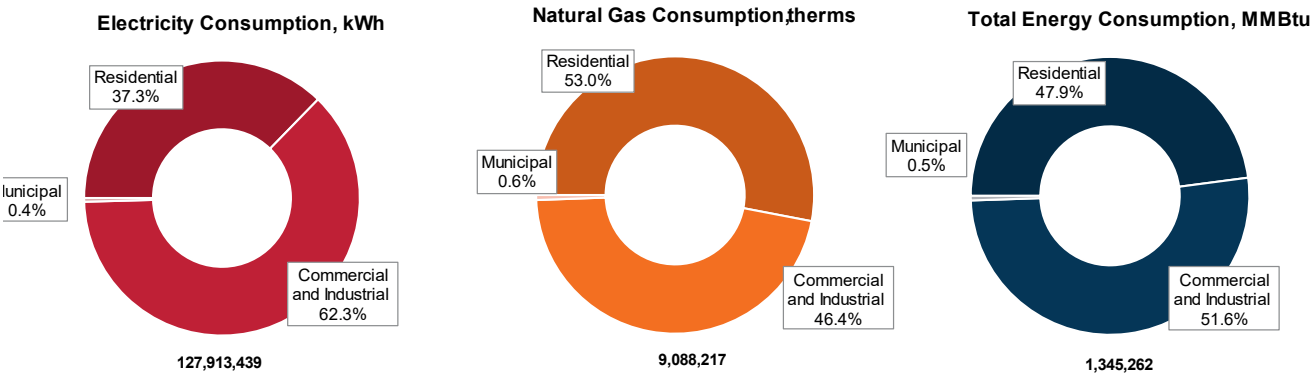
Figure 2. Total premises by sector, 2023



Grid Energy Use

On average during the 2021–2023 baseline period, the Mendota Heights community consumed 128 million kWh of electricity and 9.1 million therms of natural gas across all sectors per year (Figure 3). In order to compare energy use between electricity and natural gas consumption on a common measure of energy savings potential, total energy consumption (below right) was calculated using both electricity and natural gas consumption converted into British thermal units (MMBTu). Although the commercial and industrial sector only makes up 13% of premises in Mendota Heights, it accounts for over half of total energy consumption. Commercial and industrial premises use significantly more energy on average per premise than residential premises, a typical pattern for cities like Mendota Heights.

Figure 3. Average annual energy consumption by sector, 2020–2022



During the three-year baseline period (2021–2023), Mendota Heights' overall electricity consumption decreased slightly by almost 1%. Electricity consumption in the residential sector decreased almost 3% during the three-year baseline, while commercial consumption increased by 0.15% (Figure **4**). Mendota Heights' natural gas consumption increased by 2% overall the

baseline period, driven by a 6% increase in the commercial and industrial sector (Figure **5**). At the same time, the residential sector experienced a decrease of 1%. Total energy consumption during the baseline period varied in each sector consistent with variation in weather. Hotter summers (those with more cooling degree days) and colder winters (those with more heating degree days) had higher energy consumption. For example, of the three years considered, Mendota Heights' natural gas consumption was at its highest level in 2022, which was also the coldest year with the most heating degree days.

Figure 4. Electricity consumption by sector, 2021–2023

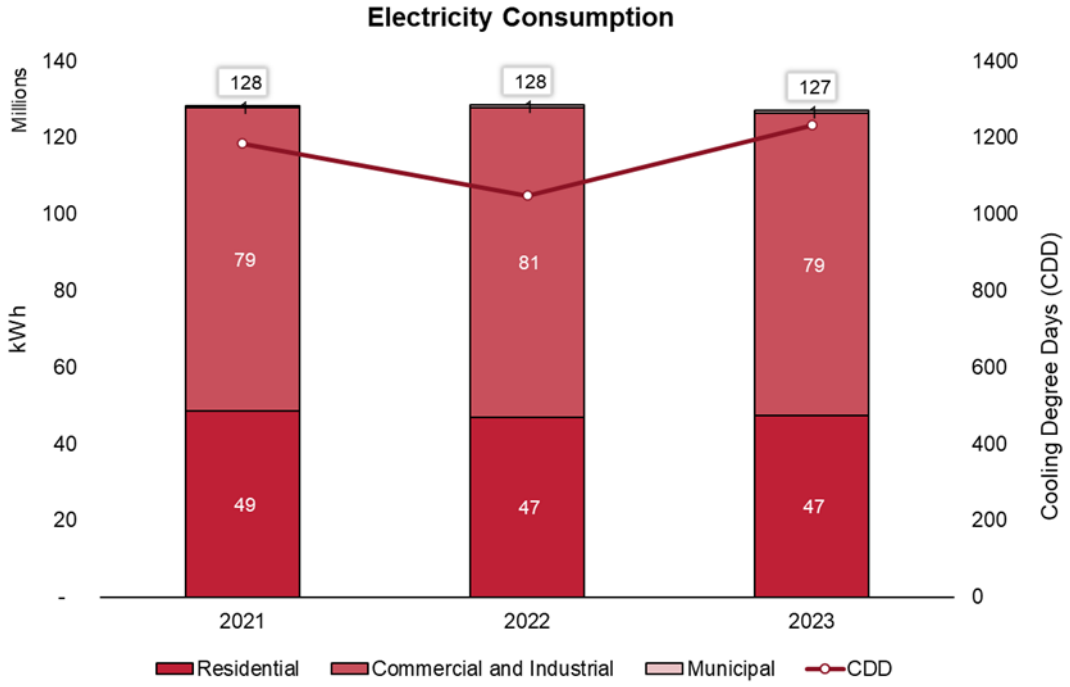
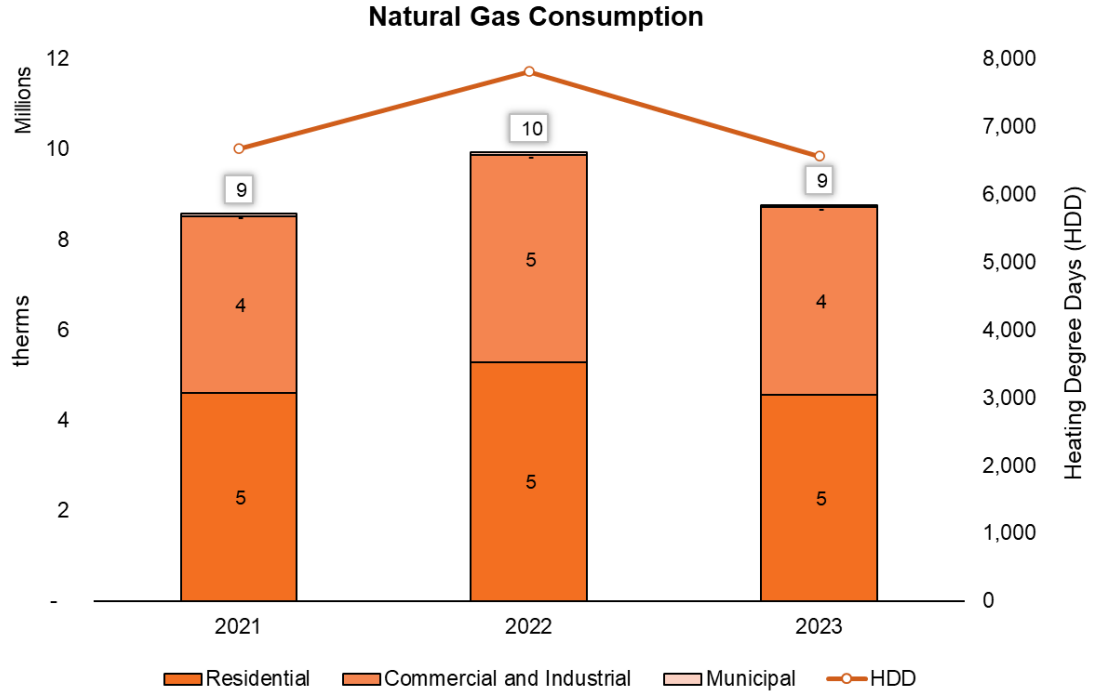


Figure 5. Natural gas consumption by sector, 2021–2023



Energy Costs and Energy Burden

During an average year over the three-year baseline period, Mendota Heights spent an estimated $25 million on fuel costs for both electricity and natural gas (Figure 6). Not quite half of these costs were paid by residents, with total annual average fuel costs at $11 million. A residential premise spent an average of $2,180 annually on electricity and natural gas. The commercial sector averaged $13 million annually on fuel costs. While costs vary greatly for commercial and industrial premises based on size and industry, on average these premises spent more than $18,000 annually.

Figure 6. Total average annual energy costs by sector, 2021–2023

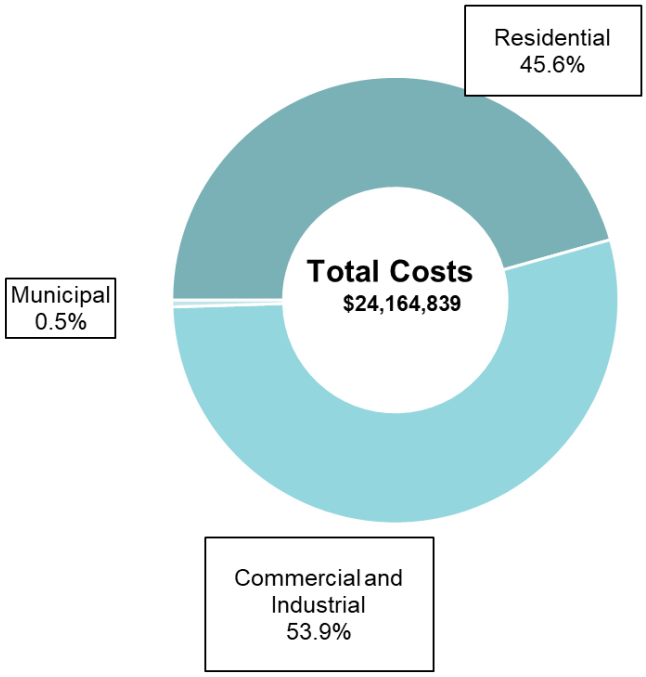


Table 1. Average annual fuel costs by sector and fuel type, 2021–2023

Sector	Annual Electricity Costs	Annual Natural Gas Costs	Annual Cost per Premise
Residential	$6,761,896	$4,265,189	$2,180
Commercial & Industrial	$9,663,943	$3,355,895	$18,150
Municipal	$73,905	$44,011	$4,314
Total	$16,499,744	$7,665,095	

Energy burden is the percentage of income that community members spend on energy. A high energy burden is defined as spending greater than 6% of income on energy, while a severe energy burden is greater than 10% of income.[2] The group of Mendota Heights residents with the greatest energy burden are those who own their homes and make 30% or less of the area median income. This group spends up to 10% of their income on energy costs (Figure 7). The household data in

Figure **8** show that 4% of Mendota Heights residents fall into this category. As a point of reference, 55% of Mendota Heights residents are homeowners who make more than the area median income, a group with a 1% energy burden.

[2] APPRISE (Applied Public Policy Research Institute for Study and Evaluation). 2005. LIHEAP Energy Burden Evaluation Study. Washington, DC: HHS (Department of Health and Human Services). www.acf.hhs.gov/sites/default/files/ocs/comm_liheap_ energyburdenstudy_apprise.pdf.

Figure 7. Energy burden by income and owner status[3]

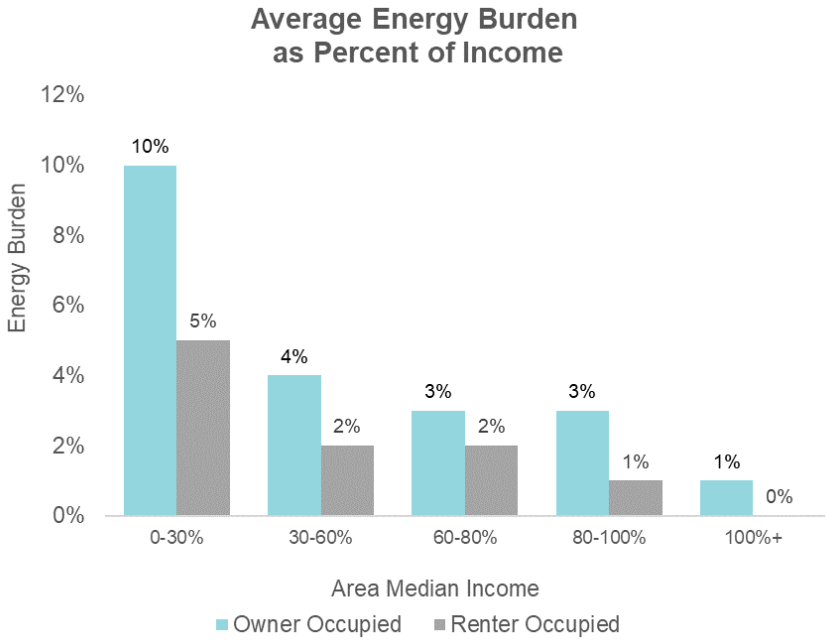
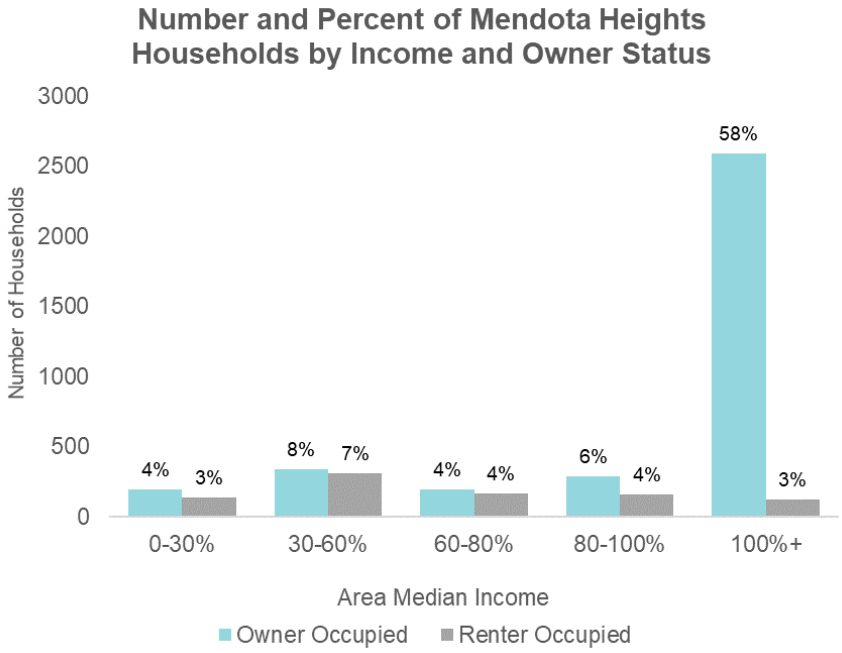


Figure 8. Household count by income and owner status



[3] Source: Department of Energy Low-Income Energy Affordability Data Tool.

Greenhouse Gas Emissions

Greenhouse gas emissions are calculated for both electricity and natural gas consumption for all sectors in Mendota Heights (Figure 9). Mendota Heights' energy-related greenhouse gas emissions in 2023 amounted to almost 79,000 metric tons of carbon dioxide equivalent (MTCO2e). Mendota Heights' residential sector accounts for 46% of energy-related greenhouse gas emissions. Emissions have decreased by 4% between 2021 and 2023, with an increase in only the municipal sector. Figure 10 breaks down the 2023 energy-related emissions by sector and fuel type. The largest proportion of emissions (31%) comes from natural gas in the residential sector, and in total, the residential sector generated 46% of Mendota Heights' energy-related greenhouse emissions while the commercial sector generated 54% of the emissions. Natural gas consumption made up the largest proportion of total emissions, adding up to 59% of all energy-related emissions. The proportion of energy-related emissions from natural gas is expected to increase over time as grid decarbonization results in cleaner electricity.

Figure 9. Energy-related greenhouse gas emissions, 2021–2023

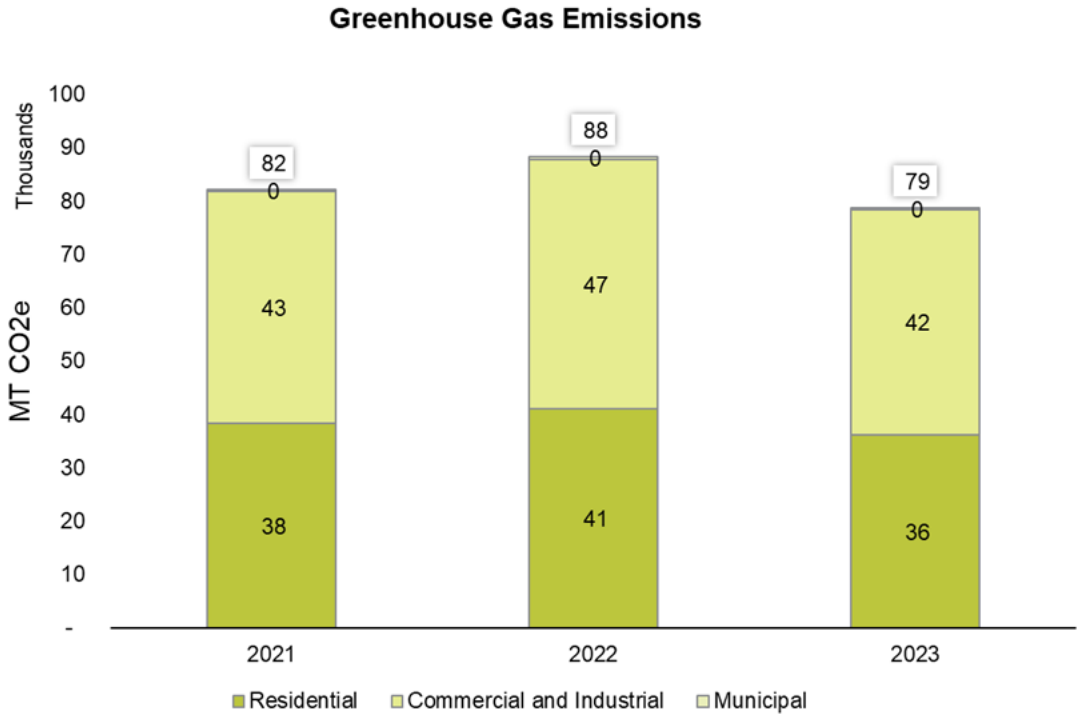
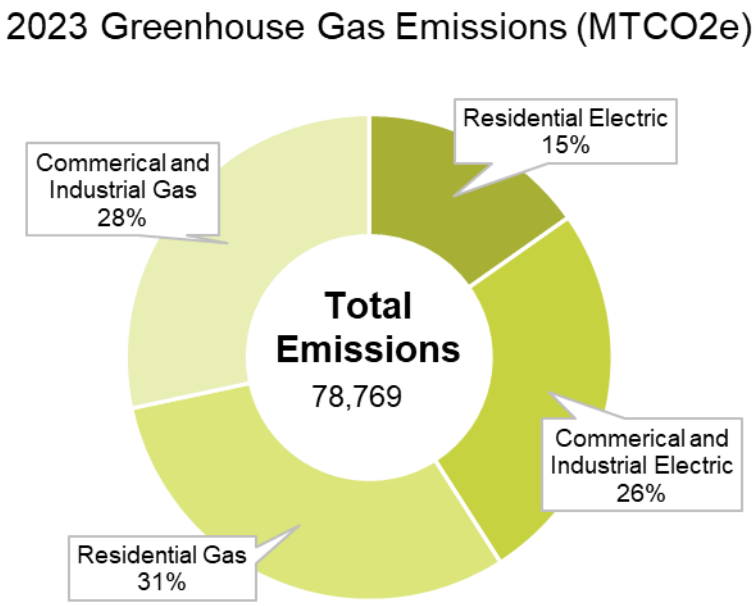


Figure 10. Energy-related greenhouse gas emissions by sector and fuel type, 2023



Renewable Energy

Mendota Heights residents and businesses use subscription programs and on-site options to support renewable energy (Table 2 and Table 3). In Mendota Heights, most renewable energy support is in the residential sector, where 521 residents receive renewable energy through subscription programs for a combined total of 3.6 million kWh. 86 residents have on-site solar installations. Fewer commercial and industrial customers participate in renewable energy offerings than residents, with 26 renewable energy program subscribers totaling 11.2 million kWh and 16 on-site installations. Across both residential and business premises, the total renewable energy subscribed is equivalent to almost 12% of total electricity consumption, which is equivalent to taking 1,466 gas-powered cars off the road for a year[4]. The total excludes generation from on-site solar because those installations are "behind the meter" – that is, on the customer's side of the utility meter. Overall, there is potential to increase renewable energy use in Mendota Heights.

[4] Source: EPA, https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

Table 2. Xcel Energy subscription renewable energy program support, 2023

Renewable*Connect® & Renewable*Connect Flex®[5]	Residential	Commercial & Industrial	Total
Subscriber Count	318	1	319
Total Annual Electricity Subscribed (kWh)	1,327,967	1,672,376	3,000,343
Community Solar Gardens – Solar*Rewards® Community			
Subscriber Count	203	25	228
Total Annual Electricity Subscribed (kWh)	2,276,067	9,499,458	11,775,525
Total Xcel Energy Subscription Renewable Energy Support			
Subscriber Count	521	26	547
Total Annual Electricity Subscribed (kWh)	3,604,034	11,171,834	14,775,868
Percent of Sector Xcel Energy Electricity Use	7.6%	14.0%	11.6%

Table 3. Xcel Energy on-site solar program support, 2023[6]

On-site Solar – Solar*Rewards® and Net-Metering	Residential	Commercial & Industrial	Total
Participant Count	86	16	102
Total Electricity Capacity (kW)	811	740	1551

[5] The Windsource® program is now called Renewable*Connect Flex®
[6] Source: Xcel Energy Community Energy Report for Mendota Heights, 2023

Energy Efficiency Program Participation & Savings

Both residents and commercial and industrial premises participate in Xcel Energy's efficiency programs where they can receive rebates for upgrading equipment, arrange a building audit to understand their efficiency opportunities or manage their demand through rate savings programs. Participation in these programs results in energy savings for participants. Mendota Heights' residents and commercial and industrial premises saved an annual average of 1.7 million kWh and 93,000 therms during the baseline period by participating in Xcel Energy's efficiency programs (Table 4).

Table 4. Average annual program participation and energy savings, 2021–2023

Program Sector	Average Annual Participation	Average Electricity Savings (kWh)	Average Natural Gas Savings (therms)
Residential	629	141,093	46,512
Commercial & Industrial	57	1,520,599	46,698
Total	**686**	**1,661,692**	**93,210**

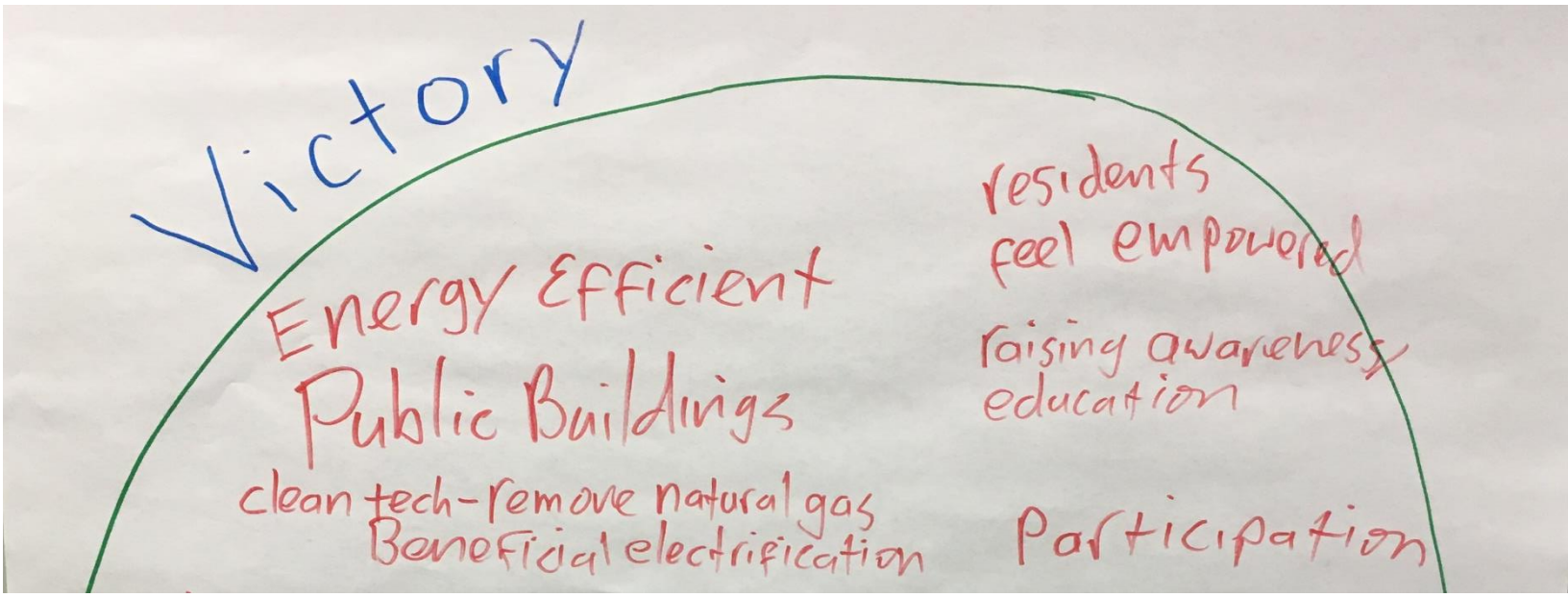
Mendota Heights residents and businesses rely on a few key programs from Xcel Energy to help them improve efficiency (Table 5 and Table 6). These tables are sorted by participants, with the program at the top representing the largest number of participations. The Residential Heating and Cooling rebate program, where residents receive rebates for upgrading to more efficient equipment, had the most participants and results in the most savings, but programs like Refrigerator Recycling, a recycling rebate program, and Home Energy Squad, a home energy assessment with some equipment installation, also resulted in significant savings. In the commercial and industrial sector, the Lighting Efficiency and Small Business Lighting programs that offer audits and rebates for businesses to upgrade to more energy efficient lighting had the most participants and highest savings. Energy Design Assistance and Energy Efficient Buildings had lower participation but significant savings.

Table 5. Average annual participation in top residential programs, 2021–2023

Residential Program	Average Annual Participation	Average Electricity Savings (kWh)	Average Natural Gas Savings (therms)
Residential Heating & Cooling	268	80,551	37,174
Refrigerator Recycling	23	21,589	0
Home Energy Squad	23	20,008	781
Insulation Rebate	22	8,631	6,128
Efficient New Home Construction	3	4,469	982

Table 6. Average annual participation in top commercial and industrial programs, 2021–2023

Commercial Program	Average Annual Participation	Average Electricity Savings (kWh)	Average Natural Gas Savings (therms)
Lighting Efficiency	18	482,954	0
Small Business Lighting	16	318,984	818
Energy Efficient Buildings	3	130,874	1,214
Energy Design Assistance	2	443,202	26,764
Fluid System Optimization	1	118,482	0



WHERE WE ARE GOING

Energy Vision

During the planning process, the Energy Action Team created a vision statement for this Energy Action Plan to guide the process and reflect the community's intentions.

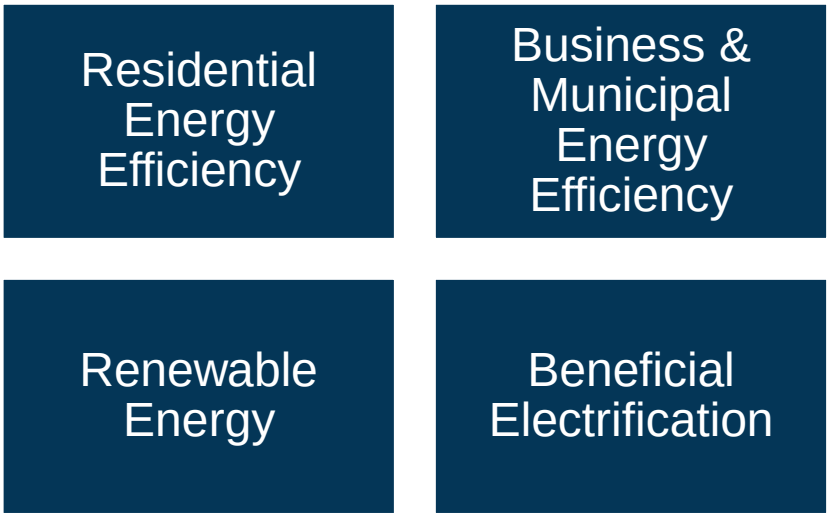
Vision

Mendota Heights is a leader in the transition to a clean energy future. This plan guides the city, residents and businesses to take action to increase energy efficiency and use renewable resources to create a more resilient community.

Focus Areas

To achieve the energy vision and community-wide commitment to energy stewardship, the Energy Action Team identified the following focus areas to prioritize strategies and resources. These focus areas were chosen to provide a holistic approach to energy stewardship, while focusing efforts on specific sectors and audiences.

Figure 11. Mendota Heights' Focus Areas



Residential Energy Efficiency

Residential Energy Efficiency will focus on encouraging residents conserve energy through energy efficiency projects, behavior changes and Demand Side Management (DSM) program participation (DSM programs are voluntary 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.) The residential sector consists of living quarters for private households, such as single-family homes, duplexes, rentals, and other housing units.

Business & Municipal Energy Efficiency

Business & Municipal Energy Efficiency will focus on helping businesses and municipal buildings in Mendota Heights save energy by implementing energy efficient technologies, weatherizing their buildings and participating in utility programs. The commercial and industrial sector consists of service-providing facilities, schools, strip malls, office space, health care, manufacturing and food processing facilities. The municipal sector includes buildings owned and operated by the City of Mendota Heights like City Hall, fire stations, parks facilities and others.

Renewable Energy

The Renewable Energy focus area includes options to use both wind and solar energy to power homes and businesses in Mendota Heights. Renewable energy can be accessed through utility subscription programs, community solar gardens or on-site solar.

Beneficial Electrification

Beneficial electrification (BE) is the replacement of direct fossil fuel use that results in either lower costs, reduced emissions or more effective use of the power grid. In practice, this means replacing fossil fuel-powered appliances like gas water heaters and HVAC equipment with more efficient versions that run on electricity. This focus area involves helping residents, businesses and the City to upgrade to efficient electric technologies and take advantage of available incentives, resources and planning support.

Goals

The Energy Action Team set an overall goal during the planning process by deciding which metrics were important to measure and communicate, reviewing the community's energy baseline data to discuss ambitions and feasibility, and constructing a timeline to achieve these goals.

Community-wide Goal

We will measure our success against the community-wide goal, which will guide the actions of this plan.

Our Goal

By 2030, the Mendota Heights community will save an estimated $1.6 million through energy efficiency projects and avoid 9,000 MTCO2e of greenhouse gas emissions.

Achieving Mendota Heights' goal will avoid greenhouse gas emissions equivalent to removing over 2,100 gas-powered cars from the road for a year or the carbon sequestered by 10,500 acres of U.S. forests in one year.[7]

The total estimated greenhouse gas emissions avoided of 9,000 MTCO2e are calculated from both energy efficiency and renewable energy program participation in Mendota Heights and grid decarbonization by Xcel Energy. The cost savings of $1.6 million are calculated from the costs avoided by participating in energy efficiency programs offered by Xcel Energy. The energy savings equate to saving 1.7 million kWh in electricity and 93,000 therms in natural gas by 2030.

Energy Action Plan Impact

To visualize the energy savings from the goal, Figure **12** shows the business-as-usual scenario with the goal impact. The business-as-usual scenario shows what would happen in Mendota Heights if the city participation trends follow the same pattern as in years past. The navy-blue wedge shows the impact the Energy Action Plan would have on total energy savings in the

[7] U.S. Environmental Protection Agency Greenhouse Gas Equivalencies Calculator, https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

community. As a result of energy savings, cost savings would also accrue — these are shown in Figure 13 totaling $1.6 million by 2030. It is important to note that that these are the first-year cost savings of the energy efficiency improvements, rather than lifetime savings. We cannot guarantee what the energy savings will be in future years, but this calculation is the most conservative and we would expect lifetime energy savings to outpace this goal

Figure 12. Energy savings from Energy Action Plan impact through 2030

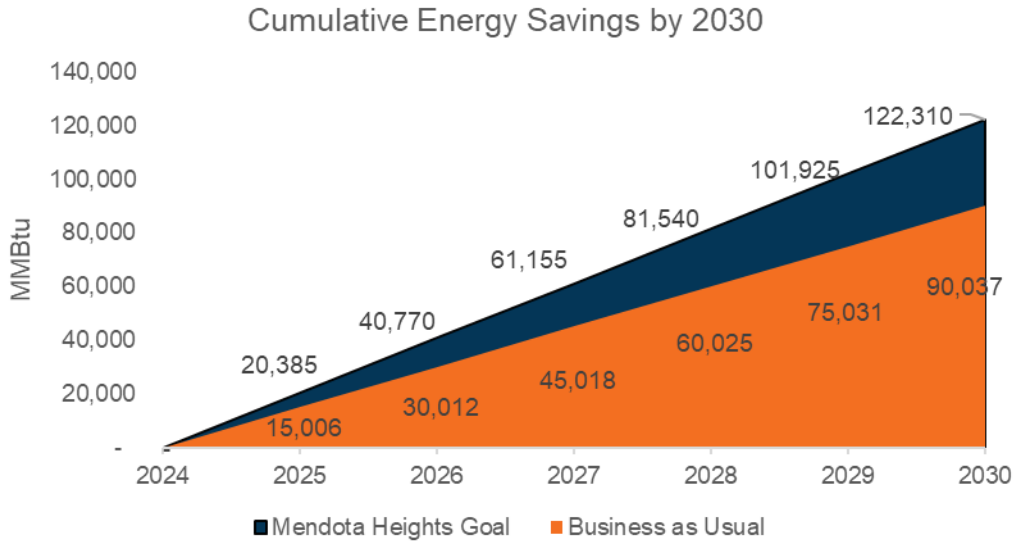
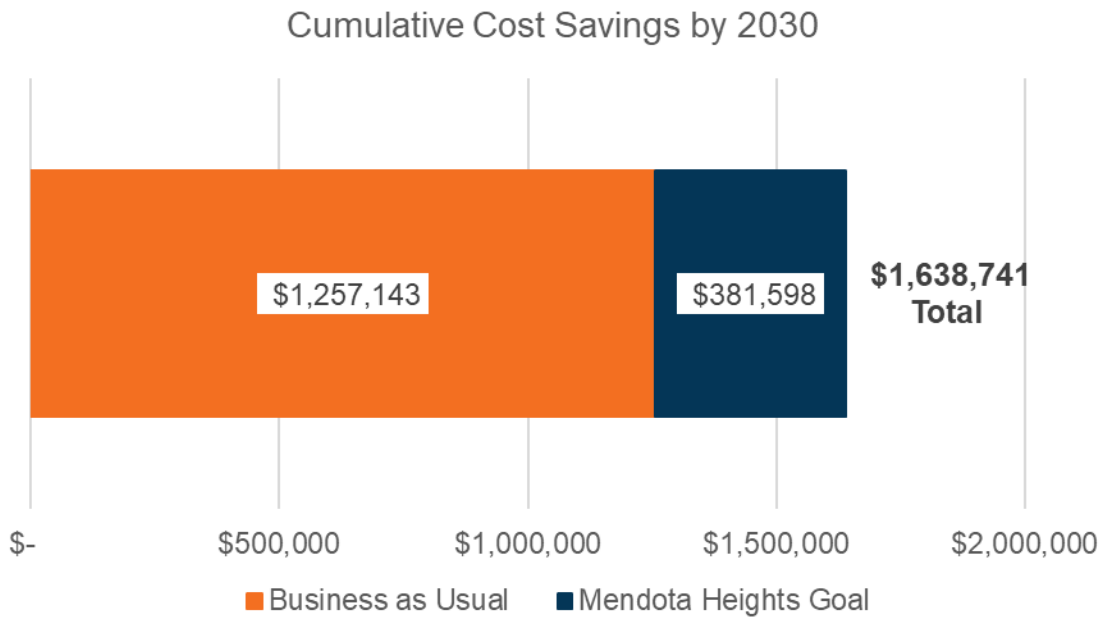
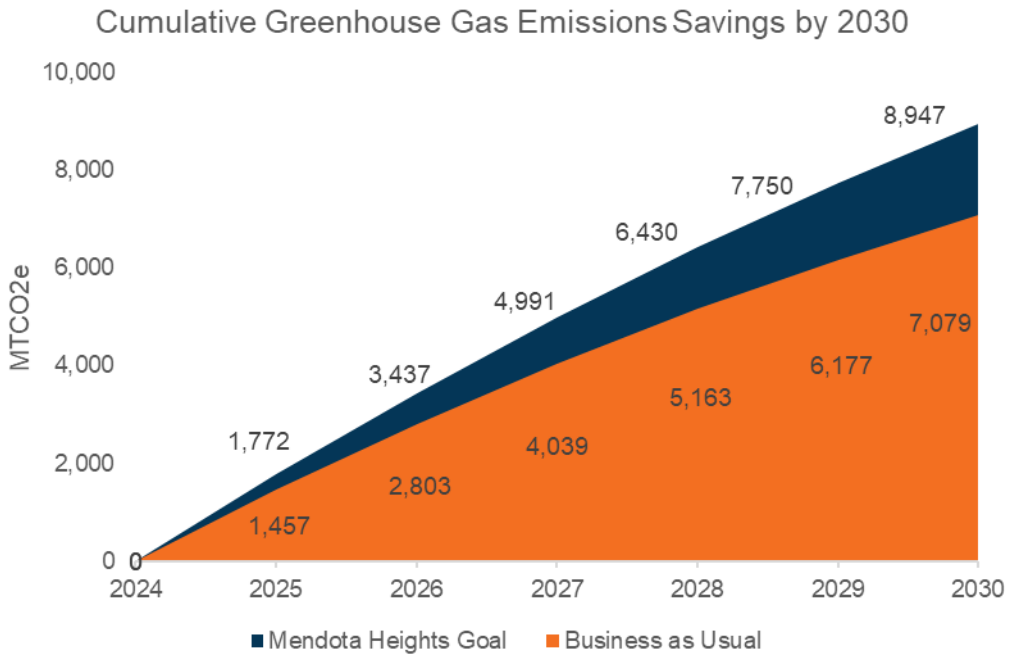


Figure 13. Cost savings from Energy Action Plan impact by 2030



Mendota Heights' goals will also impact energy-related greenhouse gas emissions. The plan will avoid an additional 26% of greenhouse gas emissions by the end of 2030 compared to business-as-usual. Greenhouse gas emissions savings are due to both avoided emissions attributable to participation in energy efficiency programs, as well as reduced emissions from renewable energy participation. Figure 14 includes only renewable energy programs in which the customer retains the Renewable Energy Credit (REC) and total kWh can be measured[8] for the purpose of greenhouse gas emissions accounting.

Figure 14. Greenhouse gas emissions savings from energy action plan impact by 2030



[8] While some customers who install on-site solar retain the RECs, the data is not available to estimate the total kWh due to behind-the-meter generation.

HOW WE ARE GOING TO GET THERE

The following section outlines the implementation work plan, including focus areas, strategies and tactics to help achieve Mendota Heights' goals. These initiatives will be a collaboration between the City of Mendota Heights and Partners in Energy, Xcel Energy and the Energy Action Team. Each focus area has background information, three to four strategies and specific tactics describing the actions we will take.

The Energy Action Team, composed of Mendota Heights residents, commission members and City staff, developed these strategies by considering the unique strengths and abilities of the Mendota Heights community. As a whole, these strategies are an effort to connect energy efficiency, renewable energy and electrification to both save energy and reduce carbon emissions. They offer points of access for businesses and residents at any point on their energy action journey. Whether someone is considering energy efficiency for the first time or installing your second bank of solar panels, this plan has something for Mendota Heights community members.

Strategies

Residential Energy Efficiency

1. Create outreach campaign to promote residential energy efficiency programs, rebate information and approved contractors.
2. Showcase local residential energy efficiency projects.
3. Explore sources of funding to support residential energy efficiency and renewable projects.

Business & Municipal Energy Efficiency

4. Showcase business energy efficiency projects.
5. Partner with area businesses to promote progress to current and prospective Mendota Heights businesses.
6. Explore a suite of energy efficiency practices for the City of Mendota Heights.
7. Direct business outreach with existing programs.

Renewable Energy

8. Highlight Mendota Heights solar gardens to lead by example.
9. Explore residential and business funding opportunities for solar projects.
10. Share and educate about existing solar success stories.

Beneficial Electrification

11. Design and execute education and outreach campaign for existing electrification opportunities.
12. Explore opportunities to connect residents, businesses and the City with funding for electrification projects.
13. Explore feasibility of incorporating electrification into City practices.
14. Facilitate peer-to-peer learning from residents who have already implemented electrification measures (EVs, heat pumps, etc.).

Focus Area: Residential Energy Efficiency

As a primarily residential community, Mendota Heights' energy future is largely in the hands of the people who live there. Resident team members voiced enthusiasm for taking action and encouraging their neighbors and community to do the same. While there is already significant participation in energy efficiency programs in Mendota Heights, there are opportunities for more residents to save energy. As Table 7: Average annual program participation and energy savings, 2021–2023Table 7 shows, there are an average of 629 participations per year in energy efficiency programs, a tiny fraction of Mendota Heights' overall population.

Table 7: Average annual program participation and energy savings, 2021–2023

Program Sector	Average Annual Participation	Average Electricity Savings (kWh)	Average Natural Gas Savings (therms)
Residential	629	141,093	46,512
Commercial & Industrial	57	1,520,599	46,698
Total	**685**	**1,661,692**	**93,210**

Strategy 1: Create outreach campaign to promote residential energy efficiency programs, rebate information and approved contractors.

The team noticed that Mendota Heights residents are not broadly aware of energy efficiency programs, so they wanted to focus on promotion and outreach. This strategy uses a mixture of pre-existing and new channels to share information on some programs the team felt would be most useful to the community.

Tactics
1A: Promote energy efficiency via sustainability programs, City social media, neighborhood groups and the Mendota Heights Natural Resources Commission.
1B: Add energy efficiency information to City website.
1C: Table at Mendota Heights events.
1D: Promote refrigerator recycling as a quick win first step for energy efficiency.
1E: Promote energy assessments as a first step to increasing energy efficiency.

Strategy 2: Showcase local residential energy efficiency projects.

This plan contains many strategies that highlight existing projects to inspire others. This strategy leverages the energy efficiency projects that residents have already undertaken, like Home Energy Squad visits, refrigerator recycling, insulation upgrades and more.

Tactics
2A: Identify residents and businesses that have implemented energy efficiency projects.
2B: Call for citizen-submitted content on energy wins from residents.
2C: Work with neighborhood groups.

Strategy 3: Explore sources of funding to support residential energy efficiency and renewable projects.

This strategy recognizes that there are currently significant funding opportunities for energy projects. This strategy leverages the work done on the Energy Action Plan to demonstrate Mendota Heights' commitment to energy action, which could be used to win funding.

Tactics
3A: Attend webinars and other resource-sharing opportunities.
3B: Research federal, state and other grant and loan opportunities for these projects.

Focus Area: Business and Municipal Energy Efficiency

There are two main reasons the Energy Action Team adopted this focus area. First, institutions like businesses and municipalities play a significant role in saving energy in Mendota Heights. The Energy Action Team noticed that the average business participation in energy saving programs resulted in large energy savings compared to residential participation. Second, City staff and team members wanted the City to lead by example. Specifying how the City can help save energy is part of that theme.

Strategy 4: Showcase business energy efficiency projects.

Like many strategies in the plan, this one seeks to highlight existing projects in the Mendota Heights community to inspire community members to take action. The strategy also leverages businesses interest in self-promotion, creating an opportunity for them to be recognized for their energy saving measures.

Tactics
4A: Call for business-submitted content detailing these projects (e.g., a business owner does a video or social media walkthrough of their business or is interviewed about their experience).
4B: Incorporate this content into a business outreach campaign.

Strategy 5: Partner with area businesses to promote progress to current and prospective Mendota Heights businesses.

This strategy is part of the overall outreach approach to leverage existing connections and relationships.

Tactics

5A: Reach out to businesses by tabling at City events where business community will be present, phone and email to share information about Energy Action Plan and business-related programs.
5B: Identify businesses with existing sustainability policies.

Strategy 6: Explore a suite of energy efficiency practices for the City of Mendota Heights.

As part of its lead-by-example approach, Mendota Heights will examine multiple energy-saving programs for City operations. These are non-binding considerations but could lead to both avoided greenhouse gas emissions and avoided costs. The recent Geothermal Planning Grant Program from the Department of Commerce could be an early implementation opportunity for this strategy.

Tactics

6A: Explore a City LED light retrofit.
6B: Consider energy audits for City buildings.

Strategy 7: Conduct direct business outreach with existing communication channels.

This strategy aims to use the existing connections and communications channels that the City already has with its businesses, incorporating energy efficiency outreach into them. Utilizing these existing channels presents a low-hanging-fruit opportunity for outreach.

Tactic

7A: Promote business energy efficiency projects to businesses with which City has existing relationships.

Focus Area: Renewable Energy

As part of the overall goal of avoiding 9,000 $MTCO_2e$ of greenhouse gas emissions, Mendota Heights will share opportunities for switching to renewable energy. The City of Mendota Heights is leading by example by subscribing 15 of its premises to community solar gardens. In addition, residents and businesses are already participating in renewable energy programs, with over 547 subscribers to renewable energy programs in 2023. There is ample room for growth of these programs in Mendota Heights and encouraging participation in them will be the cornerstone of this focus area.

Table 8: Xcel Energy subscription renewable energy program support, 2023

Renewable*Connect® & Renewable*Connect Flex®[9]	Residential	Commercial & Industrial	Total
Subscriber Count	318	1	319
Total Annual Electricity Subscribed (kWh)	1,327,967	1,672,376	3,000,343
Community Solar Gardens – Solar*Rewards® Community			
Subscriber Count	203	25	228
Total Annual Electricity Subscribed (kWh)	2,276,067	9,499,458	11,775,525
Total Xcel Energy Subscription Renewable Energy Support			
Subscriber Count	521	26	547
Total Annual Electricity Subscribed (kWh)	3,604,034	11,171,834	14,775,868
Percent of Sector Xcel Energy Electricity Use	7.6%	14.0%	11.6%

Strategy 8: Highlight Mendota Heights community solar gardens to lead by example.
Mendota Heights would like to inspire other institutions to support renewable energy by communicating the success of their community solar garden subscriptions.

Tactics
8A: Share information about community solar gardens in City social media, Sustainable Solutions and newsletters.
8B: Share information about on- and off-site solar options for residents and businesses.

[9] The Windsource® program is now called Renewable*Connect Flex®.

Strategy 9: Explore residential and business funding opportunities for solar projects.

The team identified knowledge of and funding for solar projects as a significant barrier for Mendota Heights community members. This strategy addresses that barrier by gathering and sharing information.

Tactics
9A: Identify active solar installers in Mendota Heights.
9B: Research funding opportunities and publish in outreach campaign.
9C: Explore specific sites in Mendota Heights that would be suitable for solar installation.

Strategy 10: Share and educate about existing solar success stories.

Mendota Heights residents and businesses are already getting energy from solar. This strategy leverages existing success stories to inspire residents and businesses to consider making their own move to renewable energy.

Tactics
10A: Request citizen-submitted content on solar projects in Mendota Heights.
10B: Roll this content into City newsletter, social media and other promotions.

Focus Area: Beneficial Electrification

Beneficial electrification is the process of switching from fossil fuel energy sources to electric energy sources, while maintaining current levels of greenhouse gas emissions or reducing them. Two examples are switching from an internal combustion vehicle to an electric vehicle or from a natural gas boiler to an air source heat pump, and in both cases getting the electricity from renewable sources.

The Energy Action Team identified beneficial electrification as a key component of their community's energy future. This focus area dovetails with the renewable energy and energy efficiency focus areas. As Mendota Heights becomes more energy efficient and sources its energy from renewables, and as Xcel Energy sources more and more of the electrical grid's energy from renewable sources, powering appliances with electricity will become the easiest way to avoid carbon emissions.

Strategy 11: Design and execute education and outreach campaigns for existing electrification opportunities.

Team members noted that most Mendota Heights community members don't know much about electrification and the important role it will play in transitioning to a low-carbon future. This campaign will focus on education, bringing Mendota Heights residents and businesses up to speed on how electrification can improve their lives and reduce carbon emissions. It will emphasize measures like heat pumps, electric water heaters, lawn care equipment and other electrification measures. It can also work in tandem with the outreach strategies for energy efficiency and renewable energy.

Tactics
11A: Promote electric lawncare equipment as quick-win electrification measure.

11B: Connect with neighborhood groups and HOAs to educate and share resources about electrification.
11C: Meet residents and businesses where they are on their electrification journey.

Strategy 12: Explore opportunities to connect residents, businesses and the City with funding for electrification projects.

There are significant funding opportunities from the Inflation Reduction Act, the ECO Act, Xcel Energy and other sources to fund electrification projects. This strategy gives the City a path to explore these opportunities and connect them to potential projects in Mendota Heights.

Tactics
12A: Research electrification funding opportunities.
12B: Attend webinars and other resource-sharing opportunities.
12C: Incorporate learnings into outreach and education campaign.

Strategy 13: Explore feasibility of incorporating electrification into City practices.

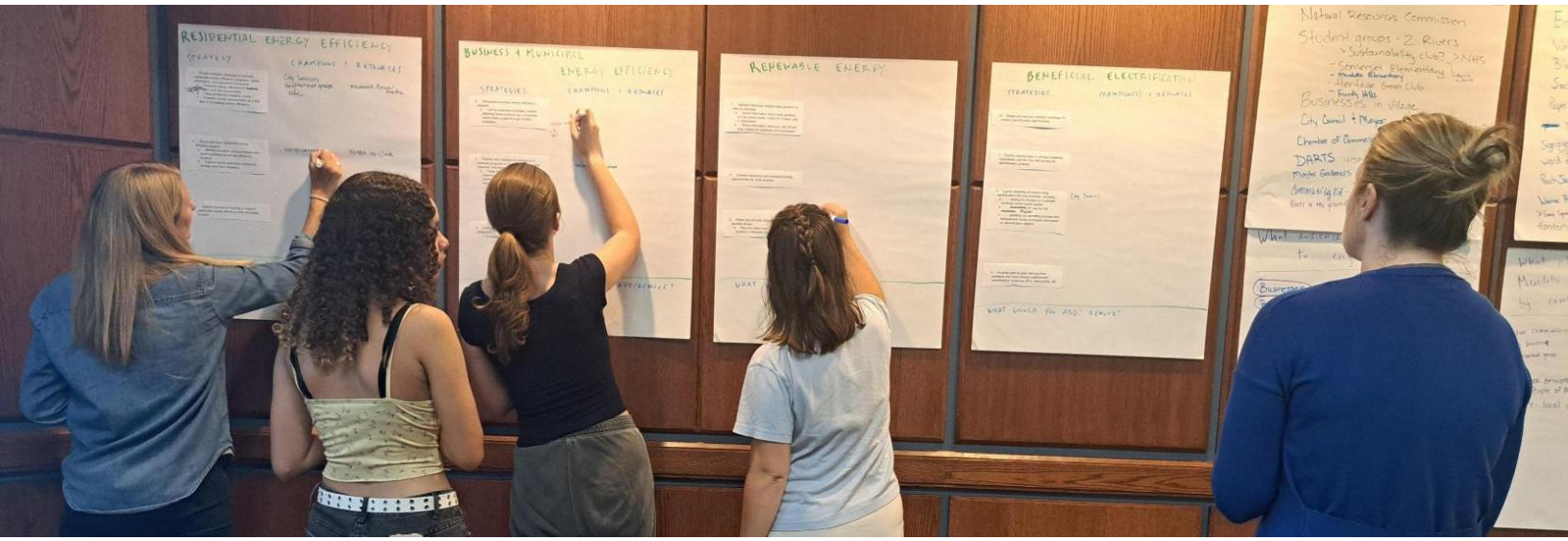
As part of its lead by example ethos, Mendota Heights staff felt it was important to consider how the City itself might implement electrification in its operations. This strategy offers a set of non-binding opportunities for staff to do so and opens the door for other electrification paths as staff see fit.

Tactics
13A: Explore adding EV chargers to municipal buildings and/or public spaces.
13B: Evaluate City fleet for conversion to EVs.
13C: Consider updating City permitting process and development review to include information on electrification options.
13D: Explore group buy of electrification infrastructure.

Strategy 14: Facilitate peer-to-peer learning from residents who have already implemented electrification measures (EVs, heat pumps, etc.).

The team included members who had already begun their electrification journey with heat pumps and electric vehicles. This strategy leverages those and similar experiences in the Mendota Heights community, relying on resident pride and community members to share knowledge. This strategy can also fit with similar resident-driven content in the energy efficiency and renewable strategies.

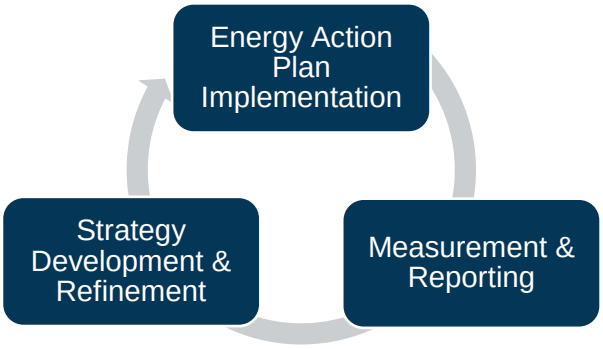
Tactics
14A: Use City social media to identify residents and businesses who have already installed electrification measures.
14B: Facilitate sharing these community members' experiences with electrification in outreach campaigns.
14C: Consider hosting a workshop for these community members to share their experiences.
14D: Recruit residents who have already installed electrification measures.



HOW WE STAY ON COURSE

This Energy Action Plan is a living document that is cyclical in nature (Figure 15). Goals and strategies will be assessed and refined as needed based on data and community staff capacity.

Figure 15: Cycle of Implementation, Measurement and Reporting and Strategy Development



It will be important to evaluate and update strategies throughout implementation to reflect advancements in technology and new offerings from government entities and Xcel Energy. Throughout the planning process, we worked to build relationships between City staff and Xcel Energy staff that will foster the collaboration and cooperation required to successfully navigate the changing energy landscape.

Project Management and Tracking Progress

Partners in Energy will host regular project management check-in calls with staff to ensure we stay on course to achieve our strategies.

Partners in Energy will provide biannual progress reports with metrics of success and overall progress toward goals for Xcel Energy rebates and programs. These reports will be available publicly and shared with both the community and Energy Action Team. If available, ad hoc

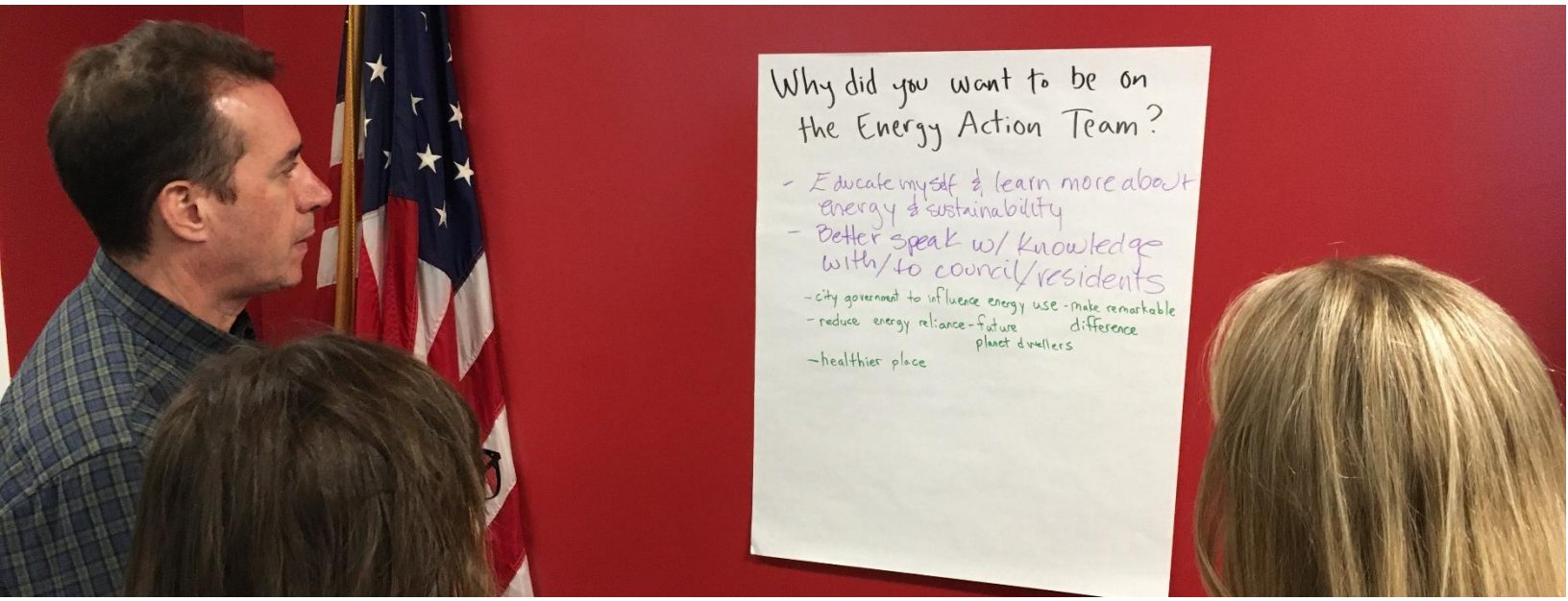
participation reports for specific Xcel Energy programs can be provided to measure the success of campaigns and to determine if we need to change course.

It will be important to let the wider community know how things are progressing and to recognize the collaborative efforts of those involved in achieving the plan targets. At critical milestones, Mendota Heights will publish updates on progress, share successes and congratulate participants and partners.

Energy Action Team Commitment

The Energy Action Team formed to create this plan has contributed an immense amount of time and effort to this plan. Each member is committed to remaining updated throughout the implementation period and supporting the plan as they have the capacity and enthusiasm. Some possible areas of support are:

- Telling their friends, neighbors and networks about the plan.
- Sharing their experiences implementing energy efficiency, renewable energy and electrification projects with the City and other Mendota Heights residents.
- Choosing a specific strategy from the plan and championing it in their community.



APPENDIX A: XCEL ENERGY'S PARTNERS IN ENERGY PLANNING PROCESS

About Xcel Energy's Partners in Energy

Xcel Energy is an electric and natural gas utility that provides the energy that powers millions of homes and businesses across eight western and midwestern states. Each community Xcel Energy serves has its own unique priorities and vision for its energy future. The energy landscape is dynamically changing with communities leading the way in setting energy and sustainability goals. To continue to innovatively support their communities, Xcel Energy launched Partners in Energy in the summer of 2014 as a collaborative resource with tailored services to complement each community's vision. The program offerings include support to develop an energy action plan, tools to help implement the plan and deliver results, and resources designed to help each community stay informed and achieve their outlined goals.

Partners in Energy Process for Success

Resources from Xcel Energy for Implementation

Plan Development Process

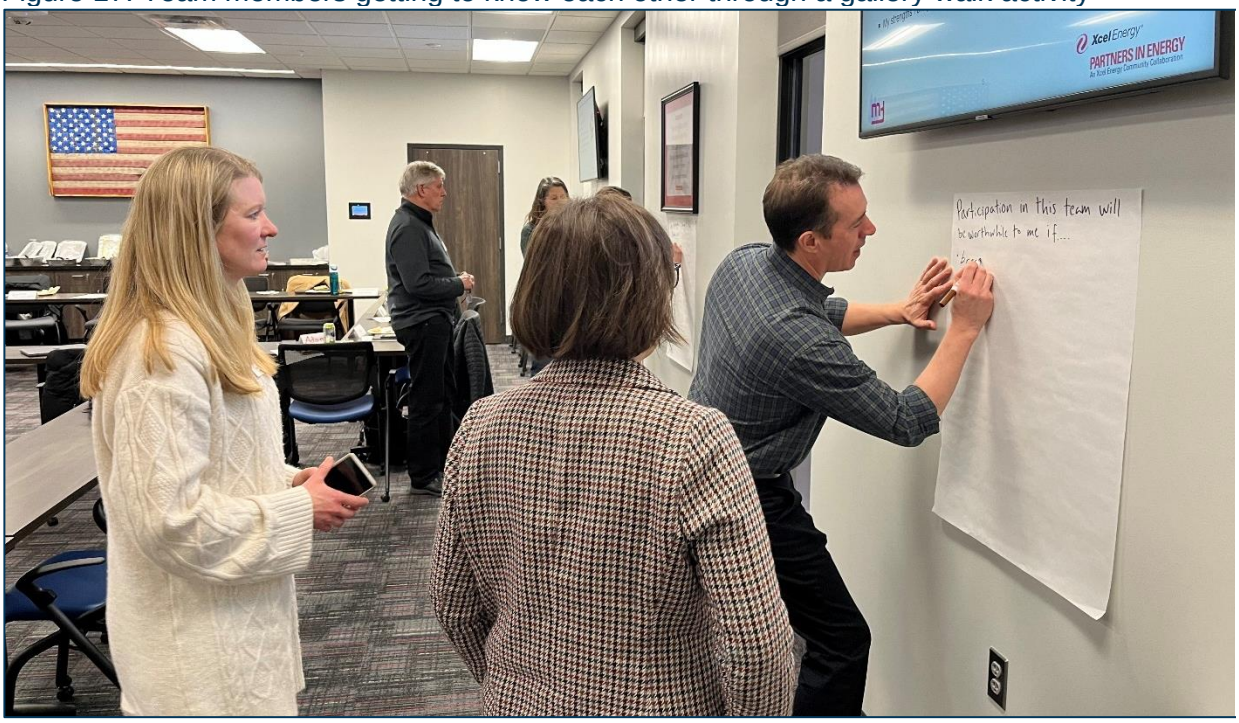
The content of this plan is derived from a series of planning workshops held in the community with a planning team committed to representing local energy priorities and implementing plan strategies. The engagement process included a series of five in-person workshops from February 2024 through August 2024, as well as multiple surveys between workshops.

Figure 16. Mendota Heights Energy Action Team members

Workshop 1: What should Mendota Heights' energy future look like?
February 2024

The Energy Action Team got to know each other and learned about the Partners in Energy Process. The team brainstormed what victory would look like if this plan was successful and used those ideas to create a vision statement for the plan. The team also discussed priorities in the community that could be possible focus areas, leaning toward using audiences as the focus areas.

Figure 17. Team members getting to know each other through a gallery walk activity



Workshop 2: Using energy data to focus our efforts and achieve our vision.
March 2024

The Energy Action Team learned about Mendota Heights baseline energy use through energy consumption and program participation data. With the baseline data in mind, the team finalized energy vision for Mendota Heights and confirmed focus areas of residential energy efficiency, business and municipal energy efficiency, renewable energy, and beneficial electrification. The team also discussed goal metrics, timeline and ambition level to formulate the community-wide goal.

Workshop 3: How will we measure success?
May 2024

The team learned about Xcel Energy programs and how historical participation could be used to model their goals. With knowledge of the programs, the team decided on a bottom-up approach to model the Mendota Heights community-wide goal and solidified their decision to measure the goal with energy savings, cost savings and greenhouse gas emissions avoided by 2030.

Figure 18. Team members deciding goal ambition level

Workshop 4: What are we going to do?
June 2024

Team members worked together in small groups to generate strategy ideas for each focus area from their unique perspectives and knowledge of Mendota Heights. The team decided how ambitious they wanted to be with their goal by reviewing two scenarios. The team chose to set a goal between ambitious and aspirational.

Workshop 5: How are we going to do the work?
August 2024

The team learned about the elements of the Energy Action Plan and the process for providing feedback, along with reviewing the support that accompanies the plan's implementation for 18 months. Facilitators shared draft strategies and tactics for each focus area for the team to review. They prioritized strategies depending on their impact and feasibility and provided more details on the resources and assets available to make these strategies successful. The team closed out the workshop and planning process by reflecting on what they had achieved and sharing what they were taking with them.

Figure 19. Team members adding tactics and champions to strategies

APPENDIX B: BASELINE ENERGY ANALYSIS

Data was provided by Xcel Energy for all Mendota Heights premises for 2021–2023. Xcel Energy provides electric and natural gas service to the community. The data helped the Energy Action Team understand Mendota Heights' energy use and opportunities for energy conservation and renewable energy. Data included in this section establishes a baseline against which progress toward goals will be compared in the future.

Electricity and Natural Gas Premises

Most Mendota Heights premises are residential. Of the 5,876 distinct premises in Mendota Heights in 2023, 87% (5,112) are residential, 12.6% (736) are commercial and industrial, and the remaining 0.5% are municipal buildings (28).

Table 9. Premise counts by sector, 2021–2023

Sector	2021	2022	2023	Average
Residential	5,027	5,042	5,105	5,058
Commercial & Industrial	711	717	724	717
Municipal	27	27	28	27
Total	**5,765**	**5,786**	**5,857**	**5,803**

Electricity and Natural Gas Consumption and Trends by Sector

On average, the Mendota Heights community consumes 128 million kWh of electricity and 9.1 million therms of natural gas across all sectors per year. Total energy consumption increased by 1.2% over the baseline period, which can be attributed to an increase of 2.3% in natural gas consumption and small 1% decrease in electricity consumption.

Table 10. Annual energy consumption by sector and fuel type, 2021–2023

Fuel Type	Sector	2021	2022	2023	Average
Electricity (kWh)	Residential	48,692,561	47,009,242	47,304,869	47,668,891
	Commercial & Industrial	79,029,681	80,895,932	79,150,168	79,691,927
	Municipal	542,668	547,664	567,533	552,622
	Total	128,264,910	128,452,838	127,022,570	127,913,439
Natural Gas (therm)	Residential	4,610,240	5,287,054	4,559,143	4,818,812
	Commercial & Industrial	3,913,468	4,581,676	4,156,238	4,217,127
	Municipal	44,565	60,468	51,799	52,277
	Total	8,568,273	9,929,198	8,767,180	9,088,217
Total (MMBtu)	Residential	627,163	689,101	617,319	644,527
	Commercial & Industrial	660,996	734,185	685,684	693,622
	Municipal	6,308	7,915	7,116	7,113
	Total	1,294,467	1,431,201	1,310,119	1,345,262

Total energy consumption during the baseline period varied in each sector consistent with variation in weather. Hotter summers (those with more cooling degree days) and colder winters (those with more heating degree days) had higher energy consumption. For example, of the three years considered, Mendota Heights' natural gas consumption was at its highest level in 2022, which was also the coldest year with the most heating degree days.

Table 11. Cooling degree and heating degree days, 2021–2023

	2021	2022	2023
Cooling Degree Days	1,184	1,049	1,232
Heating Degree Days	6,731	7,849	6,565

Greenhouse Gas Emissions and Trends

Mendota Heights' overall energy-related greenhouse gas emissions decreased from 2021–2023 by 4.1%. To calculate Mendota Heights' energy-related emissions, an "emissions factor" is used. This emissions factor describes the amount of CO2 emitted per unit of energy (Table 13). Specifically, the certified emissions factors from Xcel Energy's Upper Midwest Fuel Mix and a standard emissions factor for natural gas emissions were used. As Xcel Energy completes third-

party verification, the emissions factors used during the planning process to estimate greenhouse gas emissions may change slightly.

Table 12. Energy-related greenhouse gas emissions in MTCO2e, 2021–2023

Fuel Type	Sector	2021	2022	2023	Average
Electricity	Residential	13,937	13,050	12,016	13,001
	Commercial & Industrial	22,620	22,457	20,105	21,727
	Municipal	155	152	144	151
	Total	36,712	35,659	32,266	34,879
Natural Gas	Residential	24,467	28,059	24,196	25,574
	Commercial & Industrial	20,769	24,315	22,058	22,381
	Municipal	237	321	275	277
	Total	45,473	52,695	46,528	48,232
Total	Residential	38,404	41,109	36,212	38,575
	Commercial & Industrial	43,389	46,772	42,163	44,108
	Municipal	392	473	419	428
Total		**82,185**	**88,354**	**78,794**	**83,111**

Table 13. Emissions factors used to calculate energy-related greenhouse gas emissions, 2021–2023[10]

Fuel Type	2021	2022	2023
Electricity Emissions Factor (lbs/MWh)	631	612	560
Natural Gas Emissions Factor (MTCO2e/Dth)	0.05307	0.05307	0.05307

Energy Costs

In total, Mendota Heights premises spent an annual average of $24.2 million on energy during the baseline period. Mendota Heights residential premises made up not quite half of that spending ($11 million or 46%), while commercial and industrial premises made up most of the other half. A small fraction of the spending was from municipal premises. Residential premises spent an annual average of $2,180 per premise on fuel costs. Commercial premises spent much more per premise on energy, with an annual average of $18,150 per premise.

[10] Xcel Energy 2022. Carbon Dioxide Emission Intensities.

Table 14. Annual energy costs by sector and fuel type, 2021–2023

Fuel Type	Sector	2021	2022	2023	Average	Average Annual Cost Per Premise
Electricity	Residential	$6,307,345	$6,796,021	$7,182,322	$6,761,896	$1,337
	Commercial & Industrial	$8,606,590	$10,233,476	$10,151,763	$9,663,943	$13,472
	Municipal	$66,273	$76,558	$78,885	$73,905	$2,704
	Total	$14,980,208	$17,106,055	$17,412,970	$16,499,744	
Natural Gas	Residential	$3,252,283	$5,485,768	$4,057,517	$4,265,189	$843
	Commercial & Industrial	$2,294,262	$4,329,030	$3,444,392	$3,355,895	$4,678
	Municipal	$24,811	$58,538	$48,684	$44,011	$1,610
	Total	$5,571,356	$9,873,336	$7,550,593	$7,665,095	
Total	Residential	$9,559,628	$12,281,789	$11,239,839	$11,027,085	$2,180
	Commercial & Industrial	$10,900,852	$14,562,506	$13,596,155	$13,019,838	$18,150
	Municipal	$91,084	$135,096	$127,569	$117,916	$4,314
Total		**$20,551,564**	**$26,979,391**	**$24,963,563**	**$24,164,839**	

Energy Burden

Energy burden is the percentage of income that residents spend on energy. Mendota Heights residents who own their homes and make 30% or less of the median area income spend up to 10% of their income on energy costs. This group comprises 192 households, 4% of the total households in the city. Notably, energy burden is higher across almost every income group for homeowners than renters.

Table 15. Energy burden by unit occupancy and median income[11]

	Energy Burden		Household Count	
Percent of Area Median Income	Own	Rent	Own	Rent
0–30%	10%	5%	192	140
30–60%	4%	2%	339	311

[11] Source: Department of Energy Low-Income Energy Affordability Data Tool

60–80%	3%	2%	192	166
80–100%	3%	1%	289	158
100%+	1%	0%	2,592	125
Total	**2%**	**2%**	**3,604**	**900**

Program Participation and Savings

Mendota Heights already has a significant number of participants in energy efficiency programs from Xcel Energy, resulting in energy savings for residents and commercial customers. While fewer commercial and industrial premises participated during the baseline period, their participation resulted in larger savings per premise. In total, participation in these commercial programs saved an annual average of 141,093 kWh and 46,512 therms, while participation in residential programs saved an annual average of 1,520,599 kWh and 46,698 therms.

Table 16. Annual residential sector efficiency program participation and savings, 2021–2023

Residential Sector Programs	2021			2022			2023		
	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)
Efficient New Home Construction	3	6,269	1,381	1	1,390	294	4	5,748	1,271
Home Energy Audit	11	-	-	31	-	-	41	-	-
Home Energy Savings Program	0	0	0	1	0	17	2	635	0
Home Energy Squad	13	9,343	402	28	24,584	1,012	28	26,097	928
HomeSmart	33	-	-	48	-	-	47	-	-
Insulation Rebate	31	4,666	9,546	15	1,320	3,276	21	19,908	5,561
Low-Income Home Energy Squad	2	1,047	76	1	1,256	47	4	4,979	312
Refrigerator Recycling	22	19,534	-	34	34,882	--	13	10,351	-
Residential Heating & Cooling	301	101,289	30,280	251	69,205	39,933	252	71,159	41,310
Residential Saver's Switch	13	20	-	235	255	-	33	38	-
Smart Thermostat	92	4,536	2,495	94	1,474	550	180	2,962	165
Whole Home Efficiency	0	0	0	1	333	679	0	0	0
Total	**521**	**146,704**	**44,180**	**740**	**134,699**	**45,808**	**625**	**141,877**	**49,547**

Table 17. Annual commercial/industrial sector efficiency program participation and savings, 2020–2022

Commercial Sector Programs	2020 Count	2020 Savings (kWh)	2020 Savings (therms)	2021 Count	2021 Savings (kWh)	2021 Savings (therms)	2022 Count	2022 Savings (kWh)	2022 Savings (therms)
Business Energy Assessments	0	-	-	0	-	-	1	-	-
Efficiency Controls	1	1	0	0	0	0	0	0	0
Electric Rate Savings	4	-14,248	-	0	0	-	5	-64	-
Energy Design Assistance	5	1,329,605	80,293	0	0	0	0	0	0
Energy Efficient Buildings	5	286,852	0	0	0	0	3	105,769	3,643
Fluid System Optimization	0	0	-	0	0	-	3	355,446	-
Foodservice Equipment	1	0	4,732	2	0	11,869	1	0	2,724
HVAC+R Efficiency	12	43,189	13,840	4	393	5,903	12	30,773	14,110
Lighting Efficiency	17	459,339	-	21	888,141	-	15	101,381	-
Multi-Family Building Efficiency	0	0	0	0	0	0	2	18,239	527
Saver's Switch for Business	0	0	-	1	1	-	4	28	-
Small Business Lighting	13	214,997	1,080	15	207,615	1,373	20	534,340	0
Turn Key Services	1	-	-	2	-	-	0	-	-
Total	**59**	**2,319,735**	**99,945**	**45**	**1,096,150**	**19,145**	**66**	**1,145,912**	**21,004**

Renewable Energy Support

There is support for renewable energy in Mendota Heights with 521 residential premises and 26 commercial/industrial premises (15 of which are owned by the City of Mendota Heights itself) subscribing to Xcel Energy renewable programs. These premises respectively receive a total of 3.6 million kWh and 11.2 kWh of their electricity from renewable sources. Furthermore, 86 residential premises and 16 commercial premises have on-site solar generation.

Table 18. Xcel Energy subscription renewable energy program support, 2023

Renewable*Connect® & Renewable*Connect Flex®[12]	Residential	Commercial & Industrial
Subscriber Count	318	1
Total Annual Electricity Subscribed (kWh)	1,327,967	1,672,376
Community Solar Gardens – Solar*Rewards® Community		
Subscriber Count	203	25
Total Annual Electricity Subscribed (kWh)	2,276,067	9,499,458
Total Xcel Energy Subscription Renewable Energy Support		
Subscriber Count	521	26
Total Annual Electricity Subscribed (kWh)	3,604,034	11,171,834
Percent of Sector Xcel Energy Electricity Use	7.6%	14.0%

Table 19. Xcel Energy on-site solar program support, 2023[13]

On-site Solar – Solar*Rewards® and Net-Metering	**Residential**	**Commercial & Industrial**
Participant Count	86	16
Total Electricity Capacity (kW)	811	740

[12] The Windsource® program is now called Renewable*Connect Flex®.
[13] Source: Xcel Energy Community Energy Report for Mendota Heights, 2023

APPENDIX C: METHODOLOGY FOR MEASURING SUCCESS

As part of implementation support, Partners in Energy will provide biannual progress reports for Xcel Energy participation and savings data for Mendota Heights. All goals will be measured against Mendota Heights' three-year baseline of 2021–2023 data unless otherwise noted.

The following section defines the three-year baseline against which progress is measured, including Xcel Energy program(s) included in the baseline.

Community-Wide Goal

Our Goal

By 2030, the Mendota Heights community will save an estimated $1.6 million through energy efficiency projects and avoid 9,000 MTCO2e of greenhouse gas emissions.

This goal assumes a business-as-usual (BAU) savings scenarios based on the three-year baseline. The community-wide goal will be measured comparing cumulative greenhouse gas emissions, estimated dollars saved and energy savings equivalencies for electricity and natural gas savings for all sectors between 2025 and 2030 against the estimated BAU value for the same time period. This goal includes current and future Xcel Energy efficiency programs and measures the first-year savings data the utility provides.

Table 20. Cumulative savings for Mendota Heights' goals

	BAU, 2025–2030	Goal, 2025–2030
Natural Gas Savings (therms)	559,566	797,707
Electricity Savings (kWh)	9,988,390	12,467,545
Greenhouse Gas Emissions Savings ($MTCO_2e$)	7,079	8,947
Cost Savings	$ 1,257,143	$ 1,638,741

To calculate energy savings, Partners in Energy will analyze data provided by Xcel Energy that summarizes the energy savings by program participant.

To calculate greenhouse gas emissions, Partners in Energy will use preliminary and certified emissions factors from Xcel Energy's Upper Midwest Fuel Mix. Partners in Energy will use energy savings by sector and fuel type to calculate estimated dollars saved in the community.

To meet Mendota Heights' goal, the community will need to save more electricity and natural gas annually than the BAU scenario. Table 21 below identifies the annual energy savings targets needed to stay on track to meet the goal.

Table 21. Annual energy savings targets

	BAU	Annual Target Through 2030
Natural Gas Savings (therms)	93,261	132,951
Electricity Savings (kWh)	1,664,732	2,077,924
Cost Savings	$209,524	$273,123

Focus Area Goals

Residential Energy Efficiency Goals

- Save 1,173,465 kWh and 409,960 therms by 2030 (230 kWh and 80 therms per premise)
- Save 2,348 $MTCO_2e$ of greenhouse gas emissions by 2030 (.46 $MTCO_2e$ per premise
- Save $427,773 in residential energy costs by 2030 ($84 per premise)

This goal will be measured by comparing actual program participation against the BAU scenario. Progress will be measured from January 2025 through December 2030. Table 22 identifies annual program participation targets for select programs to meet this goal. These targets are based on select Xcel Energy programs. If Xcel Energy offers new residential efficiency rebate programs, they will be included in this calculation at the discretion of the Mendota Heights team and Partners in Energy.

Table 22. Residential energy efficiency focus area annual and cumulative participation targets by program

	BAU Annual Participation	Annual Target	Cumulative Target, 2025–2030
Xcel Energy Programs Total	**586**	**756**	**4,537**
Home Energy Audit	28	42	249
Home Energy Squad	23	35	207
Insulation Rebate	22	34	201
Residential Heating & Cooling	268	402	2,412
Other programs	245	245	1,468

Business & Municipal Energy Efficiency Goals

- Save 11,294,080 kWh and 387,747 therms by 2030
- Save 3,716 $MTCO_2e$ of greenhouse gas emissions by 2030
- Save $1,210,968 in business energy costs by 2030

This goal will be measured by comparing actual program participation against the BAU scenario. Progress will be measured from January 2025 through December 2030. Table 23 identifies annual program participation targets for select programs to meet this goal. These targets are based on select Xcel Energy programs. If Xcel Energy offers new commercial and industrial efficiency rebate programs, they will be included in this calculation at the discretion of the Mendota Heights team and Partners in Energy.

Table 23. Business energy efficiency focus area annual and cumulative participation targets by program

	BAU Annual Participation	Annual Target	Cumulative Target, 2025–2030
Xcel Energy Programs Total	**62**	**82**	**461**
Business Energy Assessments	0	1	6
Energy Design Assistance	2	3	15
HVAC +R Efficiency Rollup	9	14	81
Lighting Efficiency[14]	18	27	133
Multi-Family Building Efficiency[15]	1	1	6
Small Business Lighting[16]	16	24	120
Other programs	17	17	100

Renewable Energy Goals

- Utilize 94 million kWh of renewable energy through Solar*Rewards Community, Renewable*Connect® and Renewable*Connect Flex® from 2025–2030.
- Avoid 2,883 $MTCO_2e$ of greenhouse gas emissions through Renewable*Connect® and Renewable*Connect Flex® from 2025–2030.
- Increase renewable energy program participation by 3% annually, reaching 693 residents and 47 businesses from 2025–2030. Here, we make the assumption that all participants who subscribed to a renewable energy program prior to 2025 will continue to subscribe.

This goal will measure program participation by sector in Xcel Energy's renewable energy programs. Xcel Energy offers two programs, Renewable*Connect Flex® and Renewable*Connect®, in which customers retain the Renewable Energy Credit (REC) meaning they can be counted toward the goal. Residents can subscribe to community solar gardens, Solar*Rewards Community, in which Xcel Energy retains the REC, so this is not counted toward the goal. Finally, there are two programs for on-site solar, Solar*Rewards and Net Metering. In the latter, the customer retains the REC, but due to data limitations, we cannot estimate the kWh subscription or emissions savings from these programs. Table 24 identifies the total participation targets for the renewable energy programs.

[14] Modeled participation for Lighting Efficiency declines from 27 to 18 in 2027 to account for market saturation.
[15] Average annual baseline participation for Multi-Family Business Efficiency was 2/3, meaning that there were two participations in three years, between 2021 and 2023. It is rounded to 1 in the table for the BAU annual participation, but in the model it is projected to increase to 1 for each year.
[16] Modeled participation for Small Business Lighting declines from 24 to 16 in 2027 to account for market saturation.

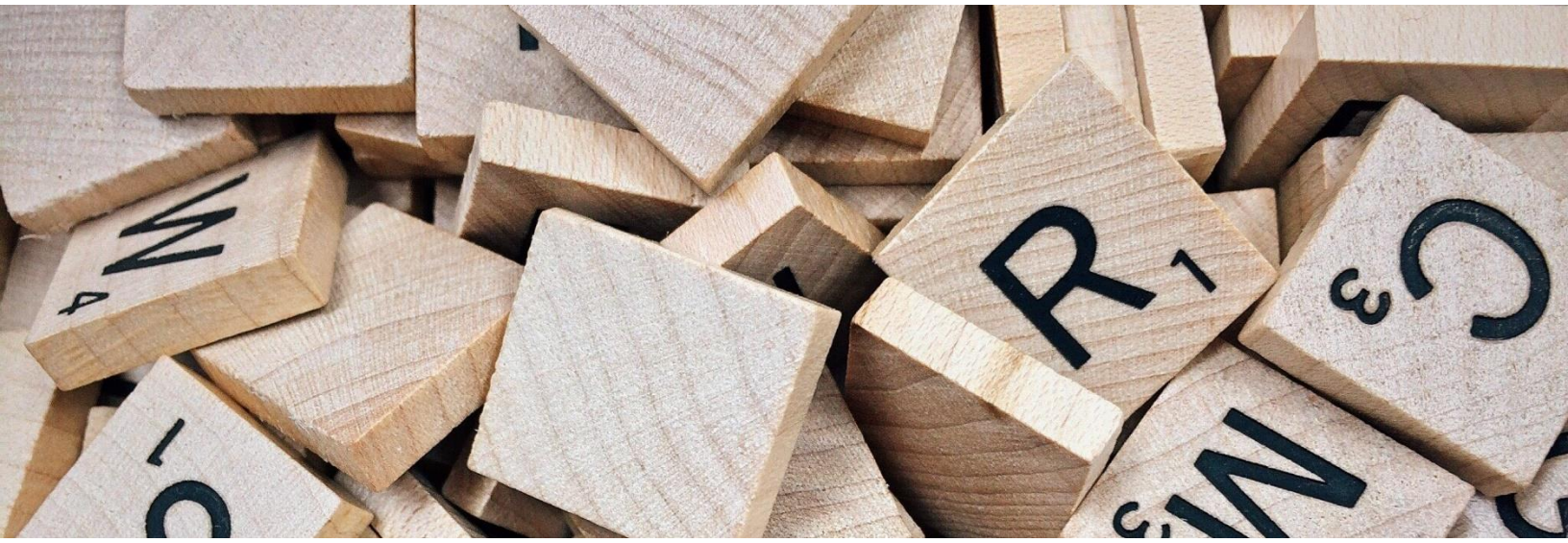
Table 24. Renewable energy focus area participation targets by sector

Program	Sector	BAU Participation	2030 Goal
Xcel Energy Programs Total	**Total**	**629**	**740**
Renewable*Connect Flex® and Renewable*Connect®	Residential	318	375
	Commercial	1	1
Solar*Rewards Community	Residential	211	249
	Commercial	25	27
On-site Solar	Residential	58	68
	Commercial	16	19

Beneficial Electrification Goal

- 10 participants annually in Xcel Energy's efficient fuel switching programs

Beginning in 2024, Xcel Energy offered rebates for replacing natural gas equipment with an electric option as part of their Efficient Fuel Switching programs. These rebates are for equipment such as an air source heat pump heating system and a heat pump water heater. Because the program is new, Mendota Heights baseline data is not yet available to determine an appropriate goal level for beneficial electrification participation. Thus, the decision was made to start with the goal of 10 participants annually. As more data becomes available, the Mendota Heights team and Partners in Energy can revisit this goal to determine whether it needs to be adjusted.



APPENDIX D: GLOSSARY OF TERMS

4 x 50: Xcel Energy's privacy rule, which requires all data summary statistics to contain at least four premises, with no single premise responsible for more than 50% of the total. Following these rules, if a premise(s) is responsible for more than 50% of the total for that data set, it is/they are removed from the summary.

Beneficial electrification (BE) is the replacement of direct fossil fuel use that results in either lower costs, reduced emissions, or more effective use of the power grid.

British Thermal Unit (BTU): The amount of heat needed to raise one pound of water at maximum density through one degree Fahrenheit.

Carbon-free: Carbon-free refers to sources of energy that will not emit additional carbon dioxide into the air. Wind, solar and nuclear energy are all carbon free sources but only wind and solar are renewable.

Carbon-neutral: Carbon-neutral, also described as "net zero", could include carbon-free sources but is broader and refers to energy that removes or avoids as much carbon dioxide as is released over a set period of time. Carbon-neutral is sometimes used to describe a site that produces an excess amount of electricity from a renewable energy source, such as solar, compared to what it consumes. That excess energy is put back into the grid in an amount that offsets the carbon dioxide produced from the electricity it draws from the grid when it is not producing renewable energy.

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

Decatherm (Dth): Quantity of energy that is equivalent to ten therms.

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.

Direct Installation: Free energy-saving equipment installed by Xcel Energy or other organization, for program participants, that produces immediate energy savings.

Energy Conservation and Optimization Programs (ECO): Portfolio of approved utility energy efficiency and demand management programs. Minnesota electric utilities have a goal of saving 1.5% of their total energy sales each year via customer conservation efforts. Minnesota natural gas utilities have a goal of saving 0.5% of their total energy sales each year via customer conservation efforts. ECO programs help Minnesota households and businesses use electricity and natural gas more efficiently, lessening the need for new utility infrastructure. The Minnesota Department of Commerce, Division of Energy Resources (DER) oversees ECO to ensure that ratepayer dollars are used effectively in achieving those goals and that energy savings are reported as accurately as possible.

Energy Burden: Percentage of gross household income spent on energy costs.

Energy Reduction: The result of behavior changes that cause less energy to be used. For example, setting the thermostat to a lower temperature *reduces* the energy used in your home during the winter. Since energy reductions can be easily reversed, they are not accounted for when calculating changes in energy usage.

Energy Savings: Comes from a permanent change that results in using less energy to achieve the same results. A new furnace uses X% less energy to keep your home at the same temperature (all things being equal), resulting in energy *savings* of X%. For accounting purposes, energy savings are only counted in the year the new equipment is installed.

Greenhouse Gases (GHG): Gases in the atmosphere that absorb and emit radiation and significantly contribute to climate change. The primary greenhouse gases in the earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.

Grid Decarbonization: The current planned reduction in the carbon intensity of electricity provided by electric utilities through the addition of low- or no-carbon energy sources to the electricity grid.

Kilowatt-hour (kWh): A unit of electricity consumption.

Million British Thermal Units (MMBtu): A unit of energy consumption that allows electricity and natural gas consumption to be combined.

Metric Tons of Carbon Dioxide Equivalent (MTCO2e): A unit of measure for greenhouse gas emissions. The unit "CO2e" represents an amount of a greenhouse gas whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide (CO2), based on the global warming potential (GWP) of the gas.

Megawatt (MW): A unit of electric power equal to 1 million watts.

Premise: A unique combination of service address and meter. For residential customers, this is the equivalent of an individual house or dwelling unit in a multi-tenant building. For business customers, it is an individual business, or for a larger business, a separately-metered portion of the business’s load at that address.

Renewable Energy Certificate (REC): For every megawatt-hour of clean, renewable electricity generation, a renewable energy certificate (REC) is created. A REC embodies all of the

environmental attributes of the generation and can be tracked and traded separately from the underlying electricity. Also known as a Renewable Energy Credit.

Resilience: The ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. Resilience includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents.

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

Solar Garden: Shared solar array with grid-connected subscribers who receive bill credits for their subscriptions.

Solar Photovoltaic (PV): Solar cells/panels that convert sunlight into electricity (convert light, or photons, into electricity, or voltage).

Subscription: An agreement to purchase a certain amount of something in regular intervals.

Therm (thm or therm): A unit of natural gas consumption.

Trade Partner: Trade Partners, also known as Trade Allies or Business Trade Partners, are vendors and contractors who work with business and residential customers servicing, installing, and providing consulting services regarding the equipment associated with utility rebate programs. Their support for utility programs can range from providing equipment and assisting with rebate paperwork, to receiving rebates for equipment sold.