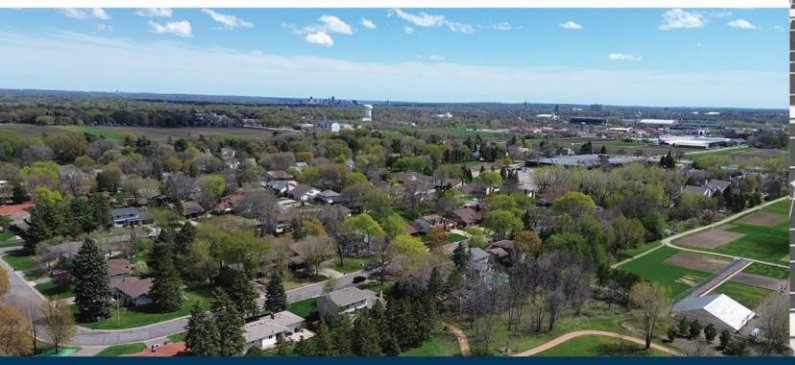
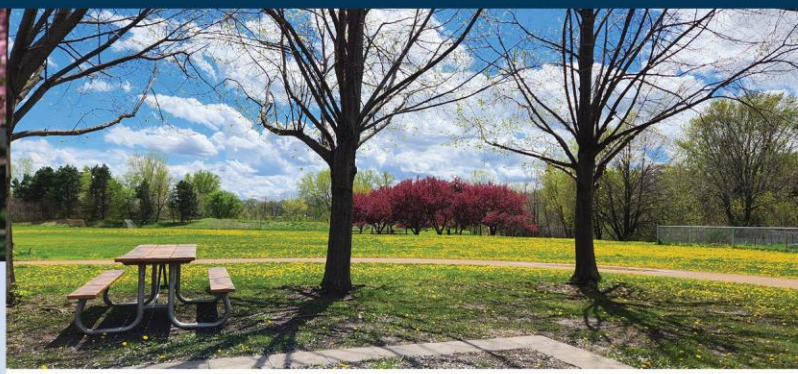
FALCON HEIGHTS
THE CITY THAT SOARS



An Energy Action Plan for Falcon Heights

October 2024



Xcel Energy®

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An Xcel Energy Community Collaboration

ACKNOWLEDGEMENTS

Thank you to the following individuals who contributed to developing this Energy Action Plan. The content of this plan is derived from a series of planning workshops hosted by Xcel Energy's Partners in Energy. Partners in Energy is a two-year collaboration to develop and implement a community's energy goals. For information about the planning workshops, see Appendix D.

Energy Action Team

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Lois Braun	Resident
Amy Christiansen	Environment Commission
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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: Xcel Energy defines beneficial electrification (BE) as the replacement of fossil fuel use with electricity 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.

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.

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 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 ($MTCO_2e$): A unit of measure for greenhouse gas emissions. The unit "CO_2e" represents an amount of a greenhouse gas whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide (CO_2), 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: For the purposes of this Energy Action Plan, renewable energy refers to solar and wind energy. Residents and businesses currently have the opportunity to subscribe to programs offered by Xcel Energy limited to these two renewable energy sources. Other forms of clean energy may be considered when programs become available to the community.

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.

FALCON HEIGHTS
Energy Action Plan

Community Commitment

In the heart of Falcon Heights, a community nestled amongst the State Fair grounds and the University of Minnesota, citizens and City leaders embarked on a transformative journey to prioritize energy strategies that lead to a sustainable and equitable future.

Our Vision

Falcon Heights prioritizes energy strategies that lead to a sustainable and equitable future.

Focus Areas

Alleviating the Energy Burden

Enhancing Energy Efficiencies in Buildings

Embracing Clean, Renewable Energy

The Energy Action Plan guides the city of Falcon Heights by outlining actions that connect the community through engaging residents, schools, businesses, and community organizations. The actions help connect people to resources to meet their energy needs while reaching the energy goals of the community as a whole.

THE CONTENT OF THIS PLAN IS DERIVED FROM A SERIES OF PLANNING WORKSHOPS AND EVENTS HOSTED BY XCEL ENERGY'S PARTNERS IN ENERGY AND THE CITY OF FALCON HEIGHTS. THANK YOU TO THE FALCON HEIGHTS ENERGY ACTION TEAM WHO CONTRIBUTED MANY HOURS OF SERVICE TO CREATING OUR VISION, GOALS, AND STRATEGIES FOR THIS PLAN.

FALCON HEIGHTS
THE CITY THAT SOARS

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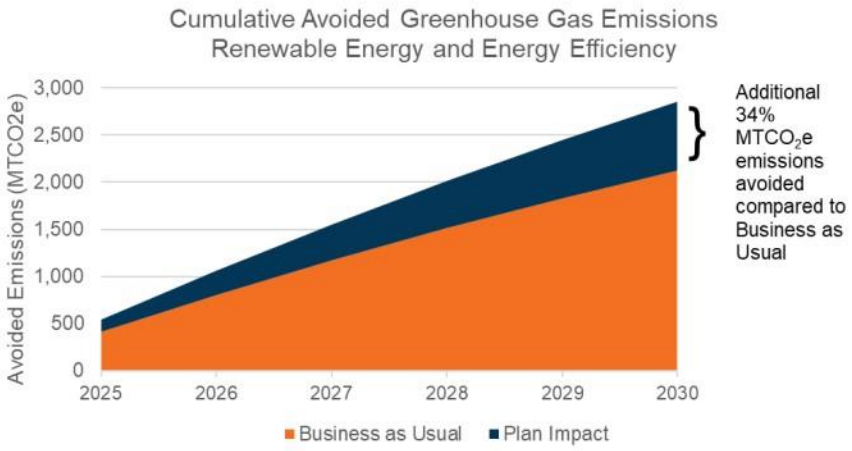
Energy Action Plan Goal

Falcon Heights will increase our energy savings by 50% and avoid and additional 34% of community-wide greenhouse gasses by 2030 through additional participation in energy efficiency programs and on-going renewable energy participation.

This will result in a substantial 65% increase in dollars saved in our community.



Achieving the goal

Some of the strategies in the plan that will help reach our goal include

Partner

Work alongside the University of Minnesota and the Minnesota State Fair to collectively achieve greenhouse gas reduction in our community.

Engage

Host community workshops on energy topics and program opportunities.

Conduct outreach to building owners and managers with energy information.

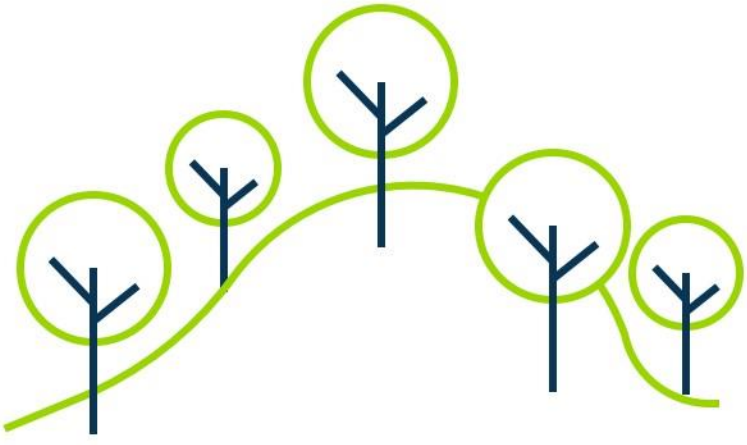
Support

Connect residents and businesses with resources to meet their energy needs.

Create incentives for the community to take energy actions.

Impact and Results of Plan Implementation

This is the equivalent of avoiding over 11 million pounds of coal or 1,125,000 gallons of gasoline being burned, and the equivalent sequestering of carbon from 165,351 trees seedlings grown for 10 years!



INTRODUCTION

Falcon Heights has made great progress toward their energy goals in our 2020 Comprehensive Plan through the creation of an Environmental Commission, GreenStep city participation, EV Smart Cities Program, SolSmart city participation, and renewable energy commitments. With an eye toward climate planning, an energy plan will advance and accelerate these efforts.

Our Engagement & Outreach Process

The creation of this Energy Action Plan was a six-month process to help support our community by characterizing its energy use, identifying our energy-related goals, and developing engaging strategies to guide change toward our energy future. Starting in January 2024, the Energy Action Plan was driven by a series of open houses and planning workshops held in the community with a planning team committed to representing local energy priorities in collaboration with City of Falcon Heights and Xcel Energy Partners in Energy. By the numbers, we engaged the community through 3 surveys, 3 workshops, 2 open houses, 17 Energy Action Team participants, 63 community energy survey respondents and over 100 people at open houses. See Appendix D for more information about the planning process and Xcel Energy Partners in Energy.

Figure 1. Photographs from Falcon Height's Spring Together event in Curtis Park, May 2024

Why We Want An Energy Action Plan

The City of Falcon Heights recognizes the urgency of addressing climate change and has committed to taking action by signing a resolution in January 2023 that declares a climate crisis. This commitment involves developing a City Climate Action Plan with input from residents, businesses and nonprofit organizations, in collaboration with other entities working on climate action in the community.

As a GreenStep City, Falcon Heights aims to contribute to Minnesota's goal of achieving net-zero emissions by 2040. A key aspect of this effort is addressing the energy inefficiency of the city's older homes and multi-family buildings. Partners in Energy can provide valuable expertise to assess the current energy situation and guide the City in implementing effective measures.

The Energy Action Plan is crucial for addressing several pressing issues, including inefficient housing, emissions from the State Fair, idling vehicles, potential redevelopment of the University of Minnesota golf course, and gaining a comprehensive understanding of the city's current energy landscape. By identifying and focusing on the most significant concerns, Falcon Heights can ensure that its efforts are strategic and impactful.

WHERE WE ARE NOW

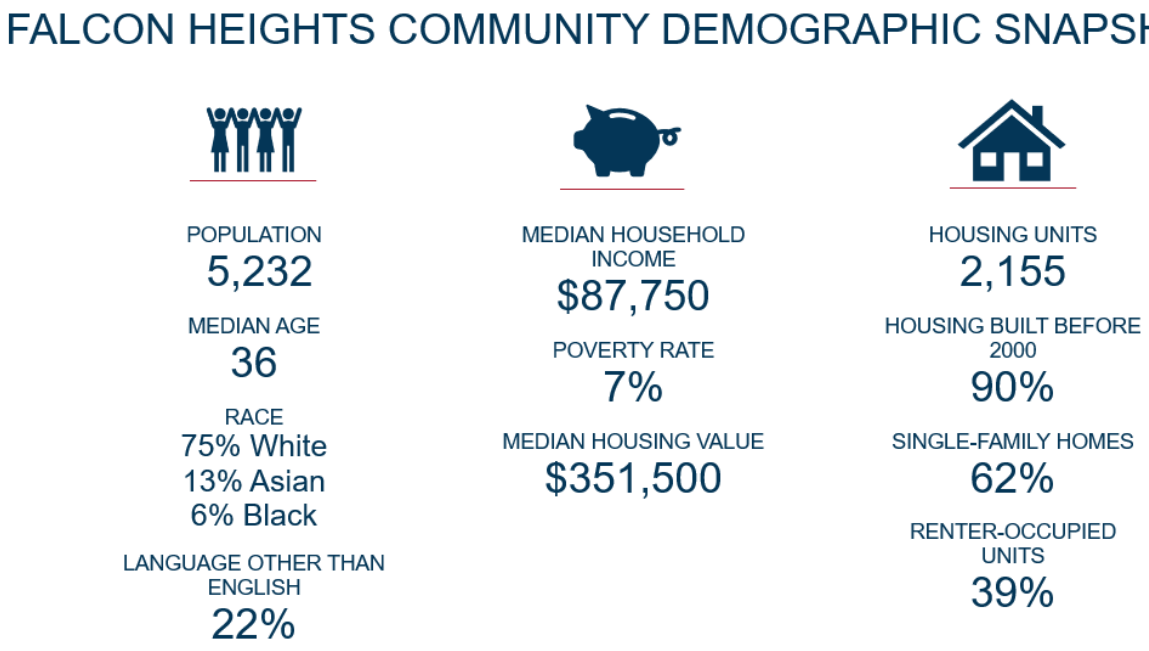
An integral part of the Partners in Energy planning process is reviewing historical energy data to inform our community's energy baseline. Xcel Energy provided data on energy use, participation counts and utility energy conservation program savings for Falcon Heights, as detailed in the following sections.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

Community Demographics

As of 2022, Falcon Heights had a population of just over 5,200 people living in approximately 2,200 housing units.[1] Falcon Heights residents identify as White (75%), Asian (13%) and Black (6%), and 22% of residents speak a language other than English. Falcon Heights has a poverty rate of 7%, with a median household income of $87,750. With 90% of its housing built before 2000, most Falcon Heights residents live in housing stock with significant opportunity for energy efficiency improvements because of aging buildings and equipment. Additionally, 39% of the housing units in Falcon Heights are renter-occupied, presenting unique opportunities for energy efficiency measures targeted at renters and property owners. *Figure 1* shows a community demographic profile for Falcon Heights.

[1] Data source: U.S. Census Bureau American Community Survey, 2022 5-year estimates

Figure 1. Overview of Falcon Heights community demographics

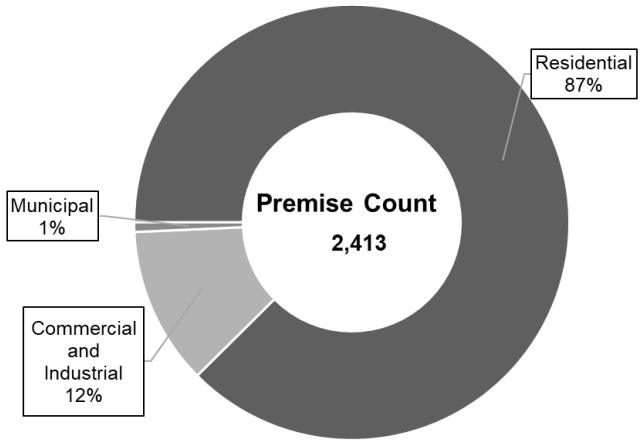


Energy Use and Savings

Premises

Xcel Energy provides electricity and natural gas to Falcon Heights residents and businesses. In 2023, Falcon Heights consisted of 2,413 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 Falcon Heights premises are residential, followed by a portion of commercial and industrial premises, and finally a small number of City-owned municipal premises (Figure 2).

Figure 2. Total premises by sector, 2022

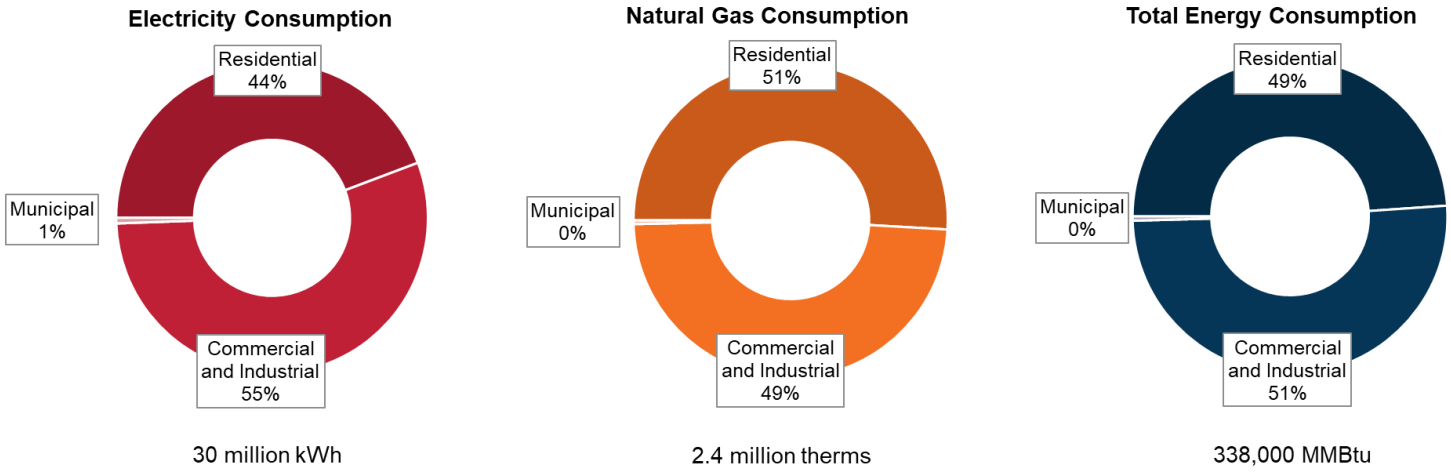


Grid Energy Use

On average over the baseline period (2021–2023), the Falcon Heights community consumes nearly 30 million kWh and about 2.4 million therms of natural gas each year across all sectors (Figure 3). To compare electricity and natural gas consumption on a common measure of energy, total energy consumption can be calculated by converting both electricity and natural gas into British thermal units, displayed here as million British thermal units (MMBtu).

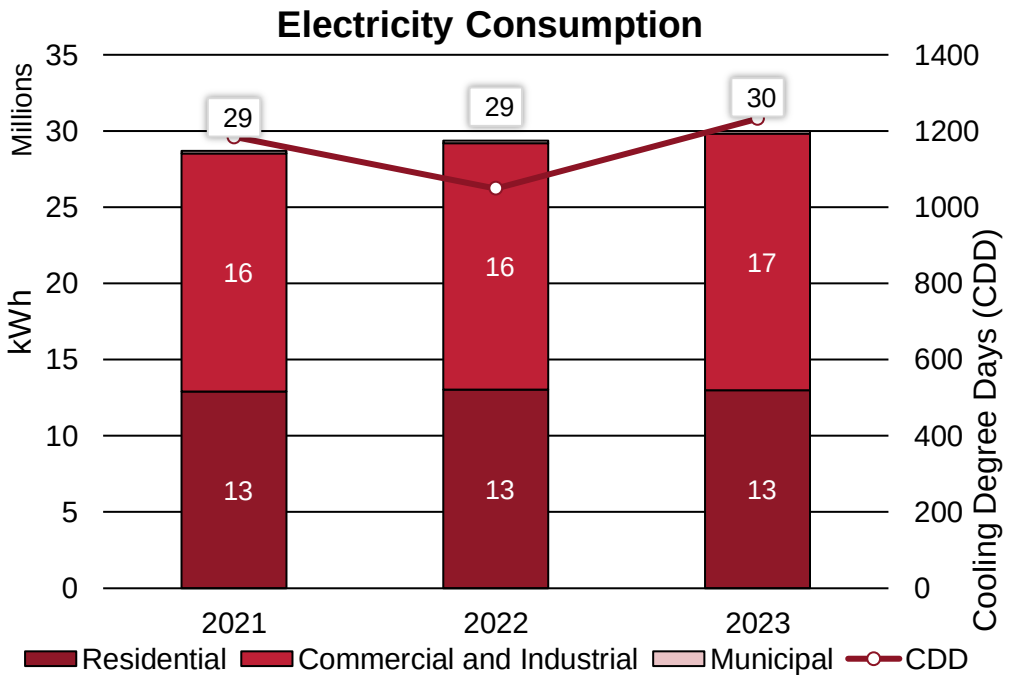
Although the commercial and industrial sector only makes up 12% of total premises in Falcon Heights, it accounts for over half the total energy consumption. Commercial and industrial premises use significantly more energy on average per premise than residential premises, a typical pattern for cities like Falcon Heights.

Figure 3. Average annual energy consumption by sector, 2021–2023



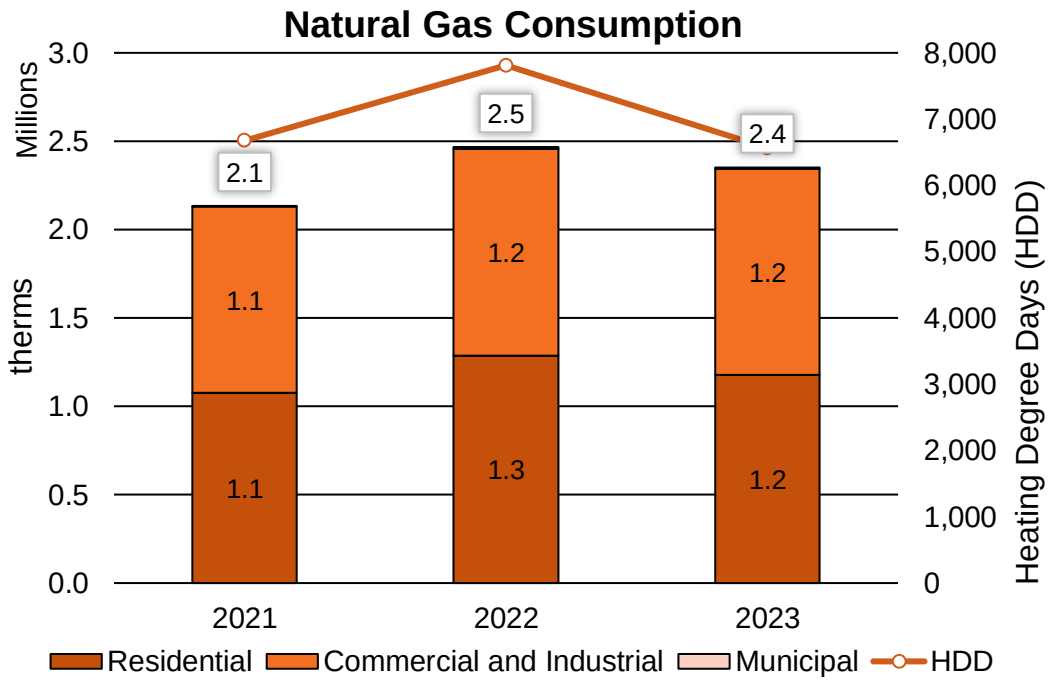
During the three-year baseline period, Falcon Heights saw an overall increase in electricity consumption, with a 5% increase in electricity consumption in 2023 compared to 2021. Electricity use in the residential sector increased slightly by 1% between 2021 and 2023, while the commercial and industrial sector increased by 8% over the same period; the municipal sector in Falcon Heights increased by 15% (Figure 4).

Figure 4. Electricity consumption by sector and cooling degree days, 2021–2023



Similarly, natural gas consumption in Falcon Heights was greater in 2023 compared to 2021, with an overall increase of 10% in community-wide usage. Natural gas consumption in the residential sector increased by 9% between 2023 and 2021, and 11% in the commercial and industrial sector over this period; the municipal sector saw an increase of nearly 50%, though the municipal sector makes up only a small portion of community-wide consumption (Figure 5). The fluctuations in natural gas consumption between 2021 and 2023 correlate with cooler temperatures, measured by heating degree days (HDD), as shown in the figure below.

Figure 5. Natural gas consumption by sector and heating degree days, 2021–2023



Energy Costs and Energy Burden

During an average year, Falcon Heights spends a total of about $6.2 million on energy fuel costs for electricity and natural gas (Figure 6). More than half (54%) of these costs are spent by the commercial and industrial sector, with total annual average fuel costs at just over $3.3 million. The remaining 46% is spent primarily by the residential sector, with an annual total of $2.8 million, and the municipal sector, spending about $30,000 annually on average.

Figure 6. Total average annual electricity and natural gas fuel costs by sector, 2021–2023

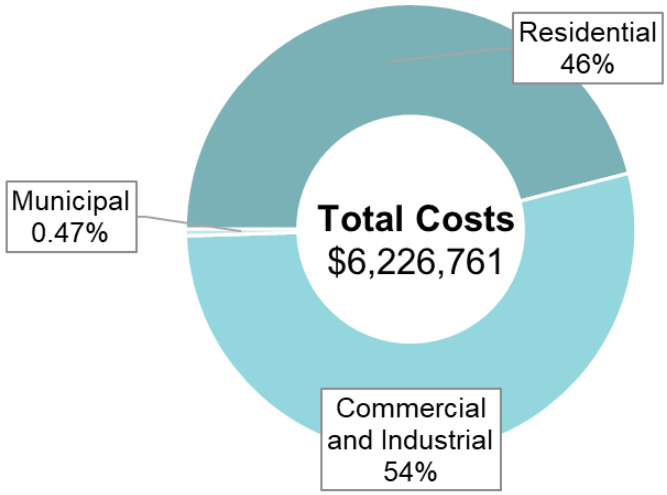


Table 1. Annual fuel costs by sector and fuel type, 2021–2023

Sector	Annual Electricity Costs	Annual Natural Gas Costs	Annual Cost per Premise
Residential	$1,820,262	$1,044,552	$1,384
Commercial & Industrial	$2,403,249	$929,222	$11,873
Municipal	$22,055	$7,421	$1,734
Total	$4,245,566	$1,981,195	-

Energy burden is the percentage of income that a resident spends on energy bills. A high energy burden is defined as spending 6% or more of household income on energy costs, while a severe energy burden is 10% or greater of household income.[2] In Falcon Heights, the residents with the highest energy burden are those living in owner-occupied housing with incomes between 0–30% of area median income (AMI), with an estimated energy burden of 24% (Figure 7).[3] Approximately **52** owner-occupied housing units fall within this category. Energy burden remains high for owner-occupied residents even as household income increases, until AMI is met. In renter-occupied housing, energy burden is highest for those with the lowest incomes but alleviated at higher rates of household income. *Figure 8* shows the distribution of households across these ranges of AMI, by owner status.

[2] ACEEE: *How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burdens across the U.S.* https://www.aceee.org/research-report/u2006
[3] Energy burden data sourced from Department of Energy Low-Income Energy Affordability Data (LEAD) tool. https://www.energy.gov/scep/slsc/lead-tool

Figure 7. Average energy burden by owner status and median income

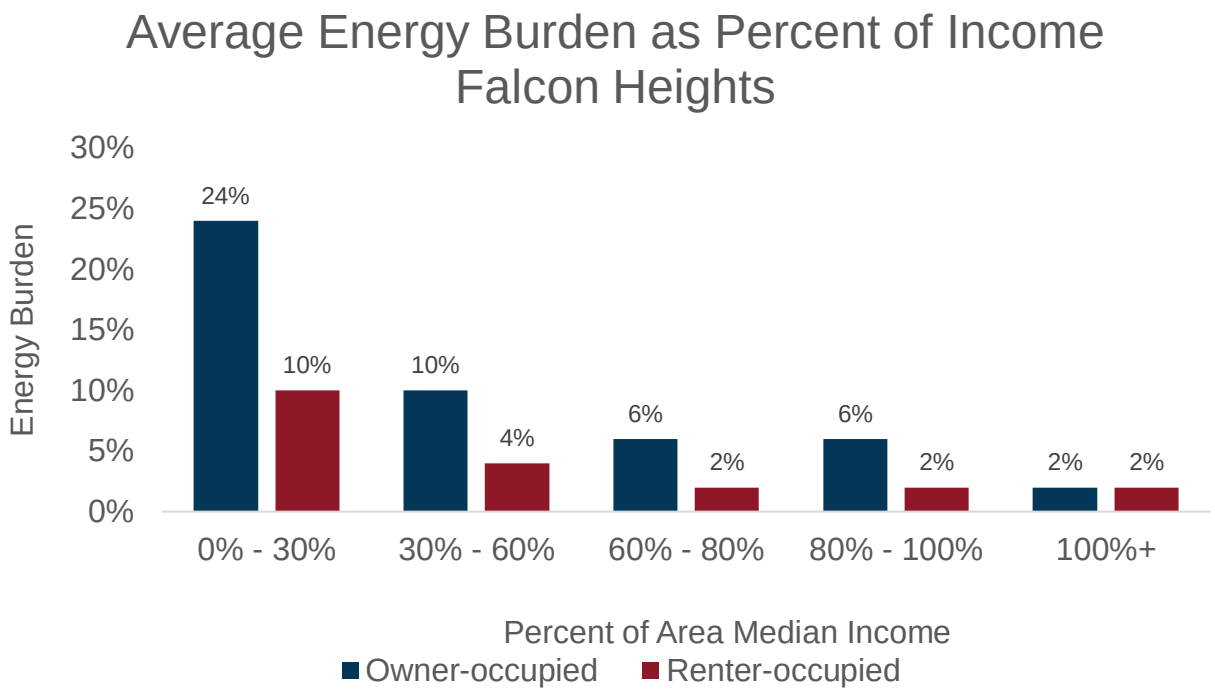
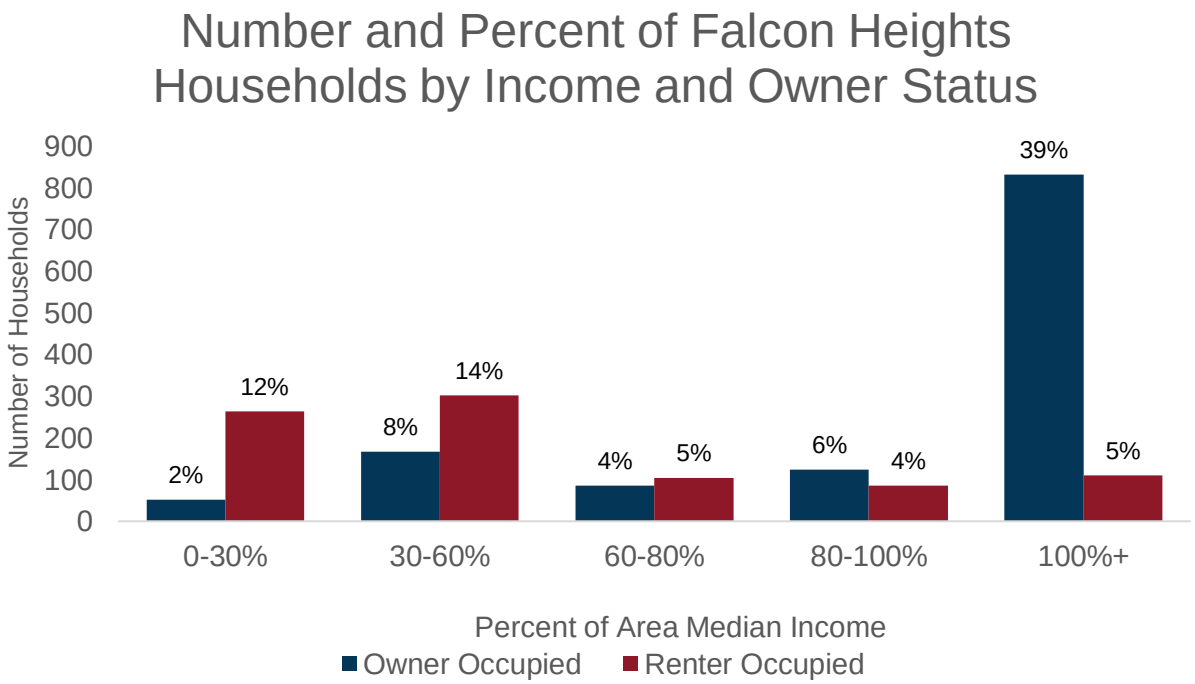


Figure 8. Household count and percent of total households by income and owner status in Falcon Heights



Greenhouse Gas Emissions

Greenhouse gas emissions are calculated for both electricity and natural gas consumption for all sectors in Falcon Heights (Figure 9). Energy-related greenhouse gas emissions in Falcon Heights in 2023 totaled to over 20,000 metric tons of carbon dioxide equivalent ($MTCO_2e$). In 2023, the commercial and industrial sector accounted for 52% of the total emissions, the residential sector made up about 47% of total emissions, and the municipal sector was responsible for the remaining nearly 1%.

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

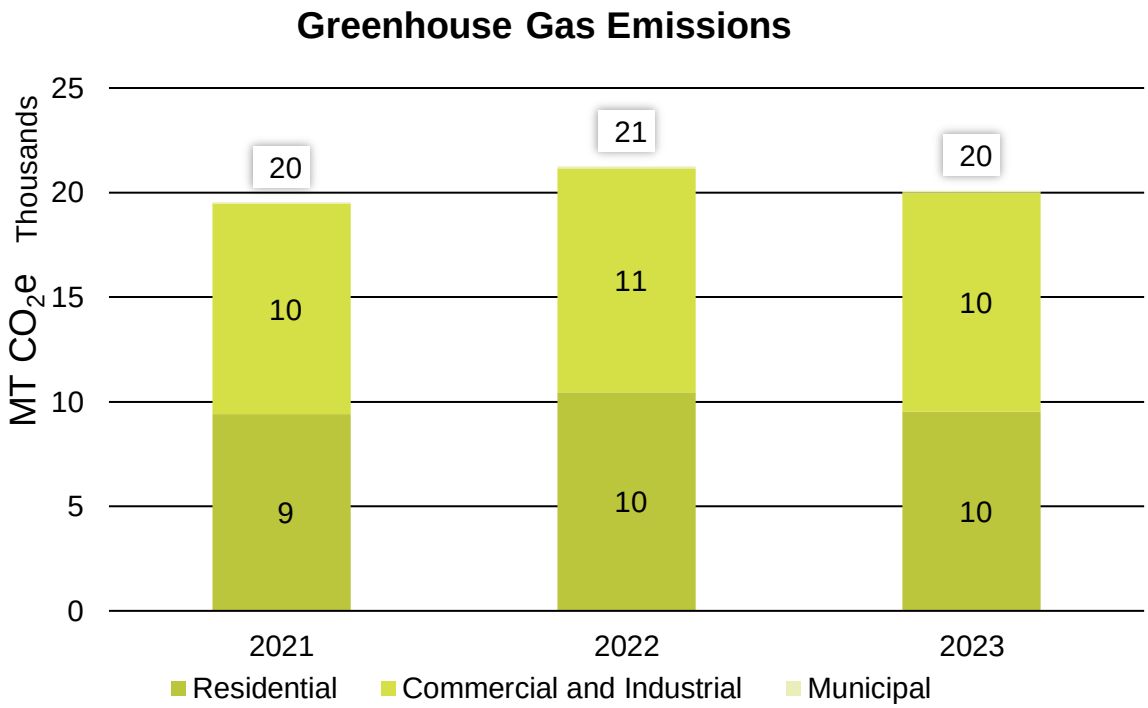
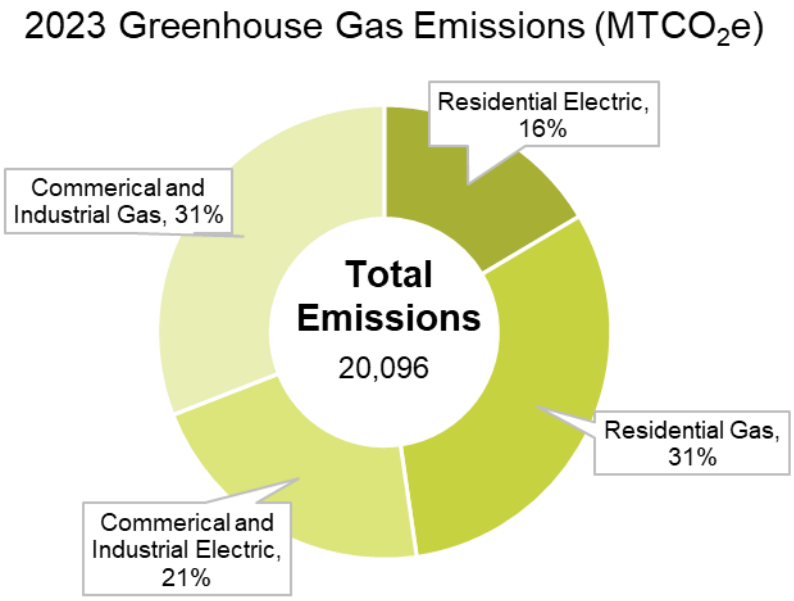


Figure 10 shows the breakdown of greenhouse gas emissions by both sector and fuel type in 2023. The largest proportion of greenhouse gas emissions (62%) came from natural gas consumption, with an even split between the commercial and industrial and residential sectors. The remaining energy-related emissions were from electricity emissions, where the commercial and industrial sector accounted for about 21% of community-wide electricity emissions and the residential sector accounted for 16%. As Xcel Energy decarbonizes its grid, the overall proportion of electricity emissions is expected to decrease over time, which will make natural gas emissions higher as a proportion of total energy-related emissions.

Figure 10. Energy-related greenhouse gas emissions by sector and fuel type, 2021–2023



Renewable Energy

Falcon Heights residents and businesses support renewable energy through Xcel Energy subscription programs, community solar gardens and on-site offerings (Table 2). In Falcon Heights, most renewable energy support comes from the residential sector, where 180 residents subscribe to Renewable*Connect and Renewable*Connect Flex amounting to a total of 818,449 kWh subscribed in 2022. Additionally, as of 2023, 36 residents have on-site solar and 25 residents participate in Solar*Rewards Community, which allows residents and businesses to subscribe to community solar gardens without needing equipment installed.

Table 2. Participation and kWh subscriptions in Xcel Energy renewable energy offerings, 2022 and 2023[4]

	Residential	Commercial & Industrial	Municipal
Renewable*Connect & Renewable*Connect Flex® (2022)			
Subscriber Count	180	0	0
Total Annual Electricity Subscribed (kWh)	818,449	0	0
Community Solar Gardens – Solar*Rewards® Community (2023)			
Subscriber Count	25	5	6
Total Annual Electricity Subscribed (kWh)	169,924	180,904	55,508
On-Site Solar – Solar*Rewards® and Net-Metering (2023)[5]			
Subscriber Count	44	8	-
Total Electricity Capacity (kW)	316	742	-

In addition to renewable energy program participation from residents, as of 2023, five commercial and industrial customers in Falcon Heights have on-site solar, one of those installations is on the City Hall building. Five commercial and industrial customers subscribe to Solar*Rewards Community along with six municipal subscribers.

Energy Efficiency Program Participation & Savings

Both residential and commercial and industrial premises in Falcon Heights are already participating in Xcel Energy's efficiency offerings for which they can receive rebates for upgrading equipment, receiving a building audit or managing their demand through rate savings programs, among other opportunities. Participation in these programs results in energy savings for participants. In Falcon Heights, residents and businesses saved an annual average of 222,000 kWh of electricity per year over the three-year baseline period, and 39,000 therms of natural gas (Table 3).

[4] 2023 metrics for Renewable*Connect and Renewable*Connect Flex program participation in Falcon Heights were not available at the time of energy action planning.
[5] Source: Xcel Energy 2023 Community Energy Report for Falcon Heights

Table 3. Falcon Heights average program participation and savings by sector in Xcel Energy DSM offerings, 2021–2023

Program Sector	Average Annual Participation	Average Electricity Savings (kWh)	Average Natural Gas Savings (therms)
Residential	200	35,374	15,660
Income-Qualified	2	517	63
Commercial & Industrial	32	186,183	23,326
Total	233	222,074	39,049

Program participation in Falcon Heights occurs most in select Xcel Energy efficiency offerings for each sector. Residents participated in and saw the most energy savings from Residential Heating and Cooling, where residents receive rebates for upgrading to more efficient equipment (Table 4). In the income-qualified sector, residents are participating in Home Energy Savings Program and the low-income version of Home Energy Squad (Table 5). In the commercial and industrial sector, businesses are already participating in numerous programs, with the highest participation in HVAC+R Efficiency, the highest electricity savings from the Lighting Efficiency program and the greatest natural gas savings from Efficiency Controls (Table 6).

Table 4. Average program participation and savings in Xcel Energy residential DSM programs, 2021–2023

Residential Program	Average Annual Participants	Average Annual Electricity Savings (kWh)	Average Annual Natural Gas Savings (therms)
Home Energy Audit	18	-	-
Home Energy Squad	11	5,894	388
Insulation Rebate	7	1,515	2,524
Refrigerator Recycling	7	6,237	-
Residential Heating and Cooling	87	20,551	12,201
Residential Saver's Switch	22	24	-
Smart Thermostat	39	1,074	380

Table 5. Average program participation and savings in Xcel Energy income-qualified residential DSM programs, 2021–2023

Income-Qualified Program	Average Annual Participants	Average Annual Electricity Savings (kWh)	Average Annual Natural Gas Savings (therms)
Home Energy Savings Program	1	381	52
Low-Income Home Energy Squad	1	136	11

Table 6. Average program participation and savings in Xcel Energy commercial and industrial DSM programs, 2021–2023

Commercial & Industrial Program	Average Annual Participants	Average Annual Electricity Savings (kWh)	Average Annual Natural Gas Savings (therms)
Efficiency Controls	2	0	9,207
HVAC+R Efficiency	19	13,419	3,817
Lighting Efficiency	1	27,060	-
Multi-Family Building Efficiency	2	21,091	1,044
Small Business Lighting	1	4,428	0
Smart Thermostats for Business	5	1,294	257

WHERE WE ARE GOING

Energy Vision Statement

During the planning process, the Energy Action Team created a vision statement for this Energy Action Plan. This statement helped guide the planning process and reflects the intention of the community.

Vision Statement

Falcon Heights prioritizes energy strategies that lead to a sustainable and equitable future.

Focus Areas

To achieve a community-wide commitment to energy stewardship, the Energy Action Team identified the following focus areas to prioritize strategies and resources. They used the data to guide the selection of the following focus areas and stress the importance that these focus areas have in engaging and connecting the community.

Energy Burden
- Renters
- Homeowners

Building Energy
- Multi-family buildings
- Large and small business
- Municipal Energy

Clean Energy
- Electrification
- Renewables
- EVs

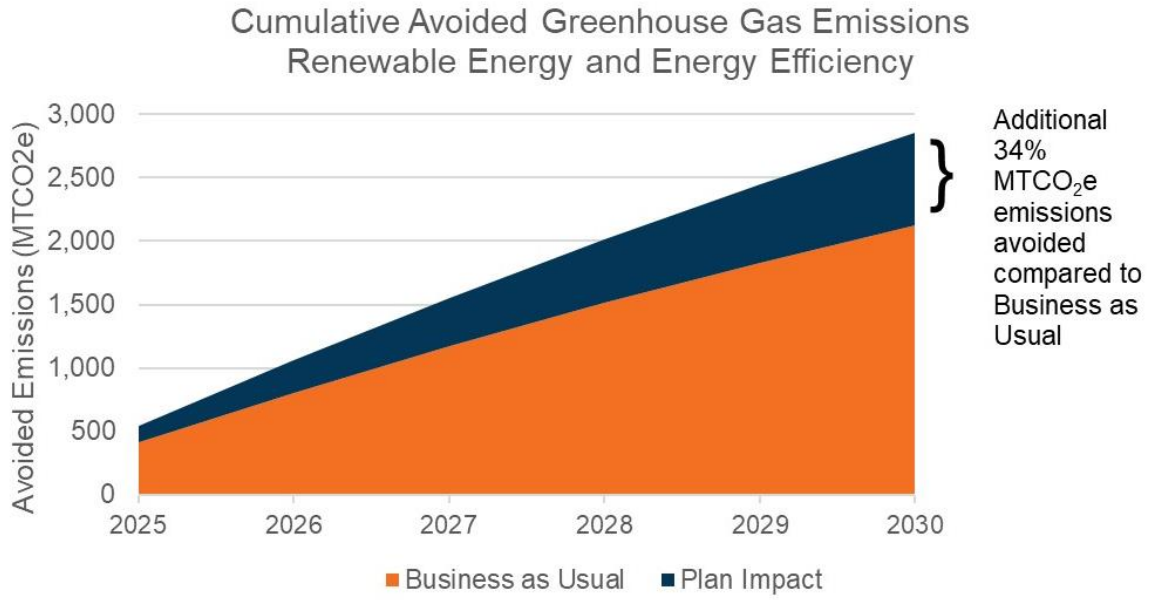
These focus areas were chosen to provide a holistic approach to energy stewardship and aid in meeting the community's energy needs and goals.

Community Goal

The Energy Action Team set goals that complement the existing energy and climate goals using the utility data, a feel for the community's ambition level and a feasible timeline.

Goal: Falcon Heights will increase energy savings by 50% and avoid an additional 34% of community-wide greenhouse gas emissions by 2030.

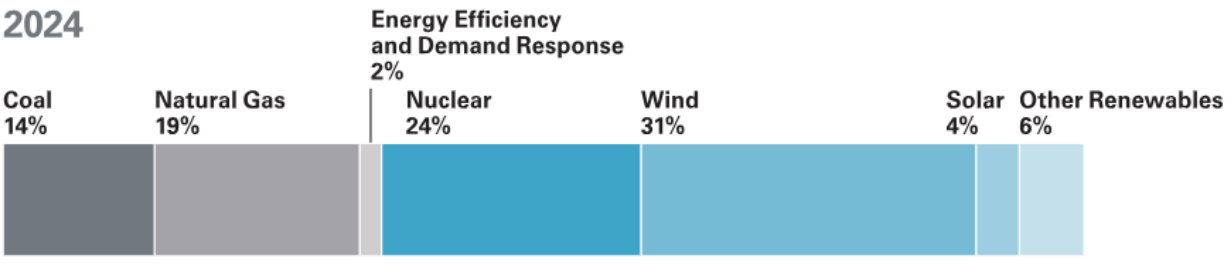
Figure 11. Cumulative Avoided Greenhouse Gas Emissions (Xcel Energy Data)



Xcel Energy Fuel Mix, Certified Renewable Percentage and Goals

Falcon Heights is served by Xcel Energy for the community's electric and natural gas needs. Community members can understand their own fuel mix by understanding the utilities current mix and goals for the future. An energy portfolio can be found on the Xcel Energy website, as well as the Certified Renewable Percentage and future energy goals.

Figure 12. Xcel Energy 2024 Power Generation in the Upper Midwest



HOW WE ARE GOING TO GET THERE

The following strategies, organized by focus area, have timelines that help prioritize the work into short, medium and long-term actions. The timeframes associated with these categories are meant to fit within the Partners in Energy implementation period for the program to best support these actions as Falcon Heights continues to implement this plan in subsequent years. The Energy Action Team also identified specific communication tools, financing options and community partners as a part of this plan. These potential partners and communication organizations have not yet agreed to be a part of this work but are mentioned in each strategy to be considered.

Our community also intends to consider the full lifespan of any product or program that might be a part of these strategies, with the intent to create a more circular economy as a part of our goal to reduce greenhouse gasses.

A Connected and Educated Community

Through these comprehensive high-level strategies, Falcon Heights will foster a more connected and more educated community. By addressing energy burdens, enhancing building efficiencies and embracing clean and renewable energy, the city will create a sustainable and resilient environment for all its residents. United by a common goal, the people of Falcon Heights will not only improve their own lives but also set an inspiring example for communities everywhere.

Focus Area 1:
Alleviating Energy Burden on Homeowners and Renters

The City of Falcon Heights understands that energy costs can be a significant burden, especially for those with limited incomes and inefficient homes. The City will launch a series of strategic actions aimed at easing high energy burden and ensuring that all residents can afford to keep their homes warm and lights on.

Strategy 1: Conduct Energy Outreach in Schools

Falcon Heights Elementary School will be encouraged to integrate energy education into their curriculum, teaching students about conservation and efficiency. These young ambassadors can take their knowledge home, sharing energy-saving tips and resources with their families.

Actions:	Partnerships / Resources:
A) Identify school and teacher partnerships and work with those partners to understand classroom needs.	Teachers, School Board, City of Falcon Heights, Empowered Schools (see action 1D)
B) Develop materials and activities that support appropriate energy engagement according to school partners.	Partners in Energy, City of Falcon Heights, Xcel Energy student toolkit
C) Ask school library or other entities to host educational events regarding energy efficiency and clean energy.	Elementary school library and University of Minnesota libraries
D) Encourage partnering with EmPowered Schools program to Neighboring School Districts	Empowered Schools, Falcon Heights Elementary School, Roseville School District
E) Utilize the Minnesota GreenStep School Program to show students that their school is leading the way in energy conservation and reducing environmental impacts.	MN GreenStep School Program, Falcon Heights Elementary School, City of Falcon Heights
Communication:	Direct communication with elementary school and City of Falcon Heights
Timeline:	1–6 months

Strategy 2: Develop Neighborhood Energy Liaisons

Local liaisons, equipped with energy knowledge, will play a crucial role in bridging the gap between resources and residents. These trusted neighborhood figures will provide personalized guidance on energy-saving practices and available support programs, focusing on equity and inclusion.

Actions:	Partnerships / Resources:
A) Call for community volunteers by the City.	Community Engagement Commission (CEC), Environment Commission, City of Falcon Heights
B) Provide Xcel Energy and supporting energy resources to the volunteers to share with their neighbors / associations.	Neighborhood Liaisons at CEC, Homeowner Associations, City of Falcon Heights, Partners in Energy
C) Develop resources for volunteers to share with neighbors (e.g., template emails, National Night Out activities, NextDoor posts, website content, etc.).	Neighborhood Liaisons at CEC, City of Falcon Heights, Partners in Energy, Falcon Heights GreenCorps Member
Communication:	City of Falcon Heights website / newsletter, handouts, emails, social media
Timeline:	1–6 months

Strategy 3: Increase Access to Renter Resources

To support renters, the City will promote access to various Xcel Energy programs and resources, including assistance programs for energy bills and weatherization services. The City will ensure that renters are well-informed and can easily access the help they need.

Actions:	Partnerships / Resources:
A) Provide renters with information about applicable energy rebates	Xcel Energy, City of Falcon Heights, resident groups, Multi-family building owners/managers, Falcon Heights GreenCorps Member
B) Raise awareness of assistance programs for those renters who are affected by a higher energy burden or lower-income household.	Xcel Energy, City of Falcon Heights, census data, resident advocacy groups, food shelves
Communication:	City of Falcon Heights direct to renter community
Timeline:	1–6 months

Strategy 4: Promote Home Energy Assessments

An emphasis on free home energy audits will empower residents to identify inefficiencies in their homes. Armed with this information, they will be able to take steps to reduce their energy consumption and costs. They may also become more aware of available rebates and other incentives.

Actions:	Partnerships / Resources:
A) Promote home energy assessments	Partners in Energy, City of Falcon Heights, Xcel Energy
B) Showcase residents who have had home energy assessments and made improvements in their home as a result.	City communications, Partners in Energy
Communication:	Events, CEC, Environment Commission, NextDoor website or other websites
Timeline:	6-12 months

Strategy 5: Provide Accessible Energy Communication

Developing clear and accessible communication channels will be vital. The City of Falcon Heights will establish partnerships with local media and/or community organizations to disseminate information about energy resources, ensuring that all residents are aware of the support available to them.

Actions:	Partnerships / Resources:
A) Create an Energy Action Hub on the City of Falcon Heights' website to disseminate information about energy resources.	Partners in Energy, City of Falcon Heights, Falcon Heights GreenCorps Member
B) Establish partnerships with community organizations and/or Falcon Heights specific publications to bring awareness to residents.	Park Bugle (nonprofit community newspaper), City of Falcon Heights, Falcon Heights Church
C) Include energy educational resources on the City of Falcon Heights email newsletter.	City of Falcon Heights
Communication:	City communications
Timeline:	1-6 months

Strategy 6: Highlight Energy Saving and Clean Energy Testimonials

Promoting positive experiences that residents have had with the home assessments and other energy projects could increase their demand. The City of Falcon Heights will encourage residents to share their testimonials and experiences publicly to inspire more residents and business owner to participate.

Actions:	Partnerships / Resources:
A) Showcase positive testimonials in the City's newsletter, blog and articles in local media.	Park Bugle, Partners in Energy, City of Falcon Heights
B) Postcard mail out campaign of testimonials from residents to other residents,	Partners in Energy, City of Falcon Heights
C) Postcard mail out campaign of testimonials from business owners to other businesses.	Partners in Energy, City of Falcon Heights
D) Share testimonials at St Paul Chamber of Commerce meetings.	Energy Action Team members, St Paul Chamber of Commerce, Environment Commission
Communication:	Post card mail outs, newsletters, emails, blogs, and presentation
Timeline:	6–12 months

Strategy 7: Develop and Sustain Partnerships that Support Community Energy Equity Goals

Developing relationships with key partners will help reach Falcon Heights energy and equity goals while helping community members thrive.

Actions:	Partnerships / Resources:
A) Connect with Commonwealth Terrace Cooperative (CTC) to Improve Living Conditions through energy projects for Student Housing	CTC, Xcel Energy, U of MN,
B) Form partnership with neighboring city councils to coordinate energy equity projects that are mutually beneficial	City of Falcon Heights, St. Paul, Roseville, Lauderdale
Communication:	Energy Action Team, City Communications
Timeline:	12-24 months

Focus Area 2:

Enhancing Energy Efficiencies in Buildings

Improving energy efficiency in buildings will be another cornerstone of Falcon Heights' strategy. The City's approach will combine regulatory measures, incentives, and outreach to create a culture of energy efficiency across all types of buildings.

Strategy 1: Support Energy Improvements

To encourage landlords to invest in energy efficient upgrades, the City will tie energy improvements in rental properties to deductions in rental license fees. This will make it financially beneficial for landlords to improve living conditions for tenants.

Actions:	Partnerships / Resources:
A) Create and promote City incentives and/or recognition for energy efficient multi-family buildings.	City of Falcon Heights, Partners in Energy
B) Review and revise City code to remove barriers to more energy efficient multi-family buildings.	City of Falcon Heights, Planning Commission, Environment Commission, City Council
C) Encourage multi-family buildings to periodically re-invest in energy efficient improvements that have a reasonable payback period.	City of Falcon Heights, City Council
D) Support incentives for retrofits and redevelopment of existing multi-family buildings to improve energy while respecting the historic integrity of buildings and communities.	City of Falcon Heights, City Council
Communication:	City communications
Timeline:	12–24 months

Strategy 2: Incentivize and Recognize Energy Efficiency Projects

The City of Falcon Heights will introduce creative motivations to motivate residents and businesses to reduce their energy consumption. E.g. Monthly drawings for gift cards, yard signs recognizing energy efficient homes and public acknowledgments

Actions:	Partnerships / Resources:
A) Be present at community events with resources and tips to encourage businesses and residents to reduce energy consumption.	City of Falcon Heights, Falcon Heights Elementary School, Senior Center, State Fair, Falcon Heights Farmers' Market
B) Request that homeowners who have made significant energy efficiency improvements temporarily display an energy conservation yard sign.	Partners in Energy, City of Falcon Heights
C) Publicly acknowledge homeowners and business owners in the City's email newsletter for energy conservation efforts.	Falcon Heights' Email Newsletter, Partners in Energy
Communication:	City website and e-newsletter, in-person community events
Timeline:	6-12 months

Strategy 3: Partner with the State Fair to Encourage Energy Projects

The annual State Fair can become a platform for promoting energy projects. Interactive exhibits and demonstrations could showcase innovative energy solutions, inspiring residents and visitors alike to adopt more sustainable practices.

Actions:	Partnerships / Resources:
A) Draft proposal to partner with State Fair to encourage joint energy projects.	Minnesota State Fair, City of Falcon Heights, Environment Commission
Communication:	City communications
Timeline:	6-12 months

Strategy 4: Encourage Efficient Electric Heating Technologies

To further enhance energy efficiency, Falcon Heights will encourage the adoption of electric heating options in buildings. Incentive programs and educational campaigns will highlight the long-term savings and environmental benefits of switching to cold climate heat pumps and heat pump rooftop units.

Actions:	Partnerships / Resources:
A) Create targeted outreach programs to educate business owners and owners of multi-family buildings about the benefits of electric heating options.	City of Falcon Heights, Partners in Energy, Falcon Heights GreenCorps Member
B) Host workshops and informational sessions to highlight benefits of adopting efficient electric heating technologies.	Owners/managers of multi-family buildings, City of Falcon Heights, Partners in Energy
C) Encourage building owners who have already installed air source heat pumps to share their success stories with other building owners through presentations, open houses and business networking events.	Owners/managers of multi-family buildings, City of Falcon Heights, Chamber of Commerce
D) Assist businesses and workforce to keep up to date on technological advances in building energy. Provide outreach to local businesses to assist in these educational efforts.	Owners/managers of multi-family buildings, City of Falcon Heights, Chamber of Commerce, Partners in Energy
E) Recommend energy improvements for rental properties during annual inspections. Provide an opportunity to educate building owners about energy improvements annually, giving updates on electrification technology and available incentives.	Owners/managers of multi-family buildings, City of Falcon Heights
Communication:	City communications, City e-newsletter
Timeline:	6–12 months

Strategy 5: Form Climate Action Partnership with the University of Minnesota

Partnering with the University of Minnesota could reduce carbon emissions. The City will seek collaboration with the University to reduce carbon in the atmosphere and add electric vehicle (EV) chargers.

Actions:	Partnerships / Resources:
A) Draft a proposal for collaboration between the City Council and the University of Minnesota and find a way forward.	City Council, University of Minnesota, Energy Action Team
B) Advocate for increasing EV charging infrastructure on and off campus.	University of Minnesota, Partners in Energy, EV toolkit, City of Falcon Heights
C) Encourage charging infrastructure on new developments and retrofits, especially multi-family buildings and businesses. Support the continued development of charging infrastructure for EVs.	University of Minnesota, Partners in Energy, EV toolkit, MF building owners/managers, City of Falcon Heights, Environment Commission, Planning Commission
Communication:	City communications to University of Minnesota
Timeline:	6-12 months

Strategy 6: Collaborate with Metro Transit

Work with Metro Transit to have electric buses on the Rapid Transit A Line and Route 121 to reduce GHG emissions. The City will make official requests and inquiries to Metro Transit to help make this possible.

Actions:	Partnerships / Resources:
A) Draft, send and follow up on a request to Metro Transit to have electric buses on routes.	City Council, Metro Transit, and Energy Action Team
Communication:	City communications to Metro Transit
Timeline:	12-24 months

Strategy 7: Reduce Costs of Home Energy Assessments for Residents

Create a program that would pay for residents to have complimentary or reduced cost home energy assessment visits. The City could eliminate any financial objection for residents.

Actions:	Partnerships / Resources:
A) Address economic barriers for residents who may be hard to reach or under-represented in the community and increase home energy assessment visits by promoting free visits.	Community Engagement Commission (CEC), Environment Commission, City of Falcon Heights
Communication:	City communications through CEC, City newsletter
Timeline:	6-12 months

Strategy 8: Showcase Existing Energy Projects in Homes and Businesses

Provide opportunities for tours of voluntary residents' homes or local businesses who have exemplary energy efficient integrations. These could also be showcased at a local energy fair. The City will encourage and support events like these to increase the adoption of energy efficient technologies.

Actions:	Partnerships / Resources:
A) Identify homes and businesses that have already undergone energy projects.	City of Falcon Heights, Partners in Energy
B) Recognize those who would wish to participate in open house tours and set up tour dates for groups to visit.	City of Falcon Heights, Resident volunteers
C) Host a local energy fair in Falcon Heights and encourage citizen and local business participation.	City of Falcon Heights, Partners in Energy, Business Partners
Communication:	City e-newsletter to residents
Timeline:	1–6 months

Focus Area 3:

Embracing Clean, Renewable Energy

In our quest for a sustainable future, Falcon Heights residents will also focus on clean, renewable energy. Our strategies will aim to make renewable energy accessible and practical for everyone in our community. For the purposes of this plan, renewable energy is focused on solar and wind programs as that is what is available to residents through the utility. Should other clean energy programs become available, those will also be considered in these strategies.

When a resident or business participates in an Xcel Energy renewable energy program, renewable energy credits (RECs) may be kept by the customer or delegated back to Xcel Energy depending on the program. To learn more about RECs and how they work, visit https://mn.my.xcelenergy.com/s/renewable/renewable-energy-claims

Strategy 1: Support a Group-Buy Solar Option

The City of Falcon Heights will support or organize a group-buy solar option, making it easier and more affordable for residents to install solar panels. By pooling their purchasing power, residents may access significant discounts on solar installations.

Actions:	Partnerships / Resources:
A) Explore a collaboration with solar groups to help residents and businesses bulk buy solar.	City of Falcon Heights
B) Pursue grants to assist with the installation of solar panels on homes and businesses. This financial support will make renewable energy a viable option for more residents, reducing the City's overall carbon footprint.	City of Falcon Heights
Communication:	City communications to SUN
Timeline:	12-24 months

Strategy 2: Solar Arrays on Future Buildings

The City will continue to lead by example, installing solar panels on future public buildings like what was done for City Hall as well as promote future buildings in the city to accommodate arrays where feasible.

Actions:	Partnerships / Resources:
A) Request proposals for solar installations on any future municipal buildings.	City of Falcon Heights
B) Partner with one or more solar installation companies to recommend to buildings in the City.	City of Falcon Heights and solar installation companies
C) Explore grants for installation of solar for businesses and buildings.	City of Falcon Heights, State and Federal grant programs
Communication:	City Staff to Solar Installation companies
Timeline:	12-24 months

Strategy 3: Promote Renewable Subscription and On-site Options for Residents

Existing Xcel Energy programs allow residents to install on-site solar as well as subscribe to wind and solar energy programs to support renewable energy. These programs can be especially helpful to renters and homeowners with shaded roofs families who cannot, or don't want to invest in on-site options.

Actions:	Partnerships / Resources:
A) Encourage subscription and on-site opportunities to residents during events and on the City website.	City of Falcon Heights, Partners in Energy, Xcel Energy
B) Share incentives for renewable energy options with renters though email and mailing campaigns.	Partners in Energy, Multi-family building owners/managers, resident groups
Communication:	City e-newsletter to residents, workshops, events, etc.
Timeline:	6-12 months

Strategy 4: Partner with the University of Minnesota to Encourage Clean Energy

A partnership with the University will bring cutting-edge research and innovation to the community. Collaborative energy projects will benefit the City, providing new solutions and technologies to enhance sustainability.

Actions:	Partnerships / Resources:
A) Reach out to the University of Minnesota to form a collaboration centered on clean energy technologies.	City of Falcon Heights, University of Minnesota, Partners in Energy
B) Partner with the University of Minnesota to help share incentives for clean energy programs to multi-family building owners, residents and students.	University of Minnesota, Multi-family building owners/managers, Partners in Energy
Communication:	City communications to University of Minnesota
Timeline:	6-12 months

Strategy 5: Establish a Reliable Workforce in Clean Energy Applications

Falcon Heights will establish support systems to help residents enter and access skilled workforce versed in current energy technologies that support the City's growing energy initiatives.

Actions:	Partnerships / Resources:
A) Host workshops to educate the community on clean and renewable energy topics and resources while connecting professionals with residents and residents with training options.	Partners in Energy, Xcel Energy, public spaces/hosts, resident and business partners
B) Support and promote workforce opportunities in the clean energy industry	Xcel Energy, City of Falcon Heights, Partners in Energy, workforce partners
Communication:	City e-newsletter to residents, workshops, events
Timeline:	12-24 months

Energy Action Plan Impact

Achieving the energy efficiency and renewable energy targets laid out in this plan will result in increased energy efficiency program participation, greater electricity and natural gas savings, and an increase in avoided greenhouse gas emissions compared to a business as usual (BAU) scenario. Compared to the BAU scenario of 1,352 program participants between 2025 and 2030, the goal scenario projects an additional 384 participants in Xcel Energy DSM offerings over this time for a total of 1,736 participants (Table 7).

Table 7. Business as usual and goal scenario target participation in Xcel Energy DSM offerings, by sector, 2025–2030

Sector	Participation Count – Business as Usual	Participation Count – Goal Scenario	Plan Impact (Count)
Residential	1,164	1,524	360
Commercial & Industrial	188	211	24
Total	1,352	1,726	384

As a result of additional participation in Xcel Energy efficiency program offerings, residents and businesses will save energy. Electricity and natural gas savings can be compared by converting each fuel to the common denominator of million British thermal units (MMBtu). As a result of the energy action plan implementation, energy savings in Falcon Heights are modeled to increase by 52% in the goal scenario as compared to the BAU scenario (
Table 8).

Table 8. Business as usual and goal scenario target first-year energy savings in Xcel Energy DSM offerings, by sector, 2025–2030

Sector	MMBtu Savings – Business as Usual	MMBtu Savings – Goal Scenario	Plan Impact (MMBtu Savings)
Residential	10,168	13,878	3,719
Commercial & Industrial	17,807	28,591	10,783
Total	27,975	42,469	14,493

These energy savings may translate into dollar savings for residents and businesses, which are estimated using sector-specific rates per kWh of electricity and per therm of natural gas. The projected increase in energy efficiency programs would result in an estimated 65% increase in dollar savings community-wide from first-year energy savings.

Table 9. Business as usual and goal scenario target dollar savings from first-year energy efficiency savings, by sector, 2025–2030

Sector	Dollar Savings – Business as Usual	Dollar Savings – Goal Scenario	Plan Impact (Dollar Savings)
Residential	$92,256	$126,290	$34,034
Commercial & Industrial	$179,622	$321,424	$141,803
Total	$271,878	$447,715	$175,837

Taken together, this increase in program participation for energy efficiency offerings, as well as ongoing participation in renewable energy offerings, will result in a 34% increase in avoided greenhouse gas emissions community-wide compared to BAU (Table 10).

Table 10. Business as usual and goal scenario greenhouse gas emissions avoidance from energy efficiency and renewable energy program participation, by sector, 2025–2030

Sector	Greenhouse Gas Avoided – Business as Usual ($MTCO_2e$)	Greenhouse Gas Avoided – Goal Scenario ($MTCO_2e$)	Plan Impact ($MTCO_2e$)
Residential	1,229	1,414	194
Commercial & Industrial	907	1,439	532
Total	2,126	2,853	726

Greenhouse Gas Community Goal Equivalencies

The greenhouse gas goal number equivalencies are equal to the following according to estimates from the EPA[6]:

[6] US EPA, OAR. *Greenhouse Gas Equivalencies Calculator*. 28 Aug. 2015, https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

HOW WE STAY ON COURSE

This Energy Action Plan is a living document. Goals and strategies will be assessed and refined as needed based on data and community staff capacity.

Data and Reporting

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.

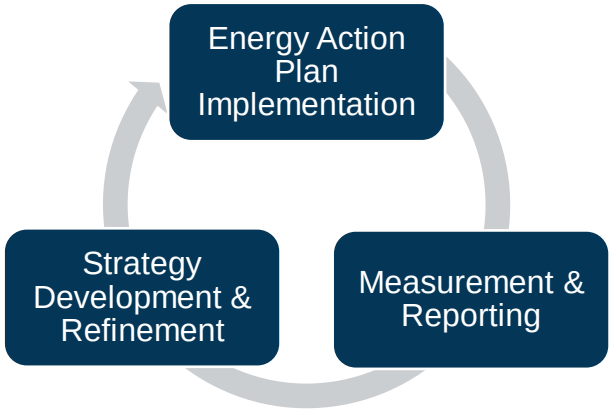


Figure 13. Actions and Tracking

If available, ad hoc participation reports for specific Xcel Energy programs (e.g., Home Energy Squad) can be provided to measure success of campaigns and to determine if we need to change course.

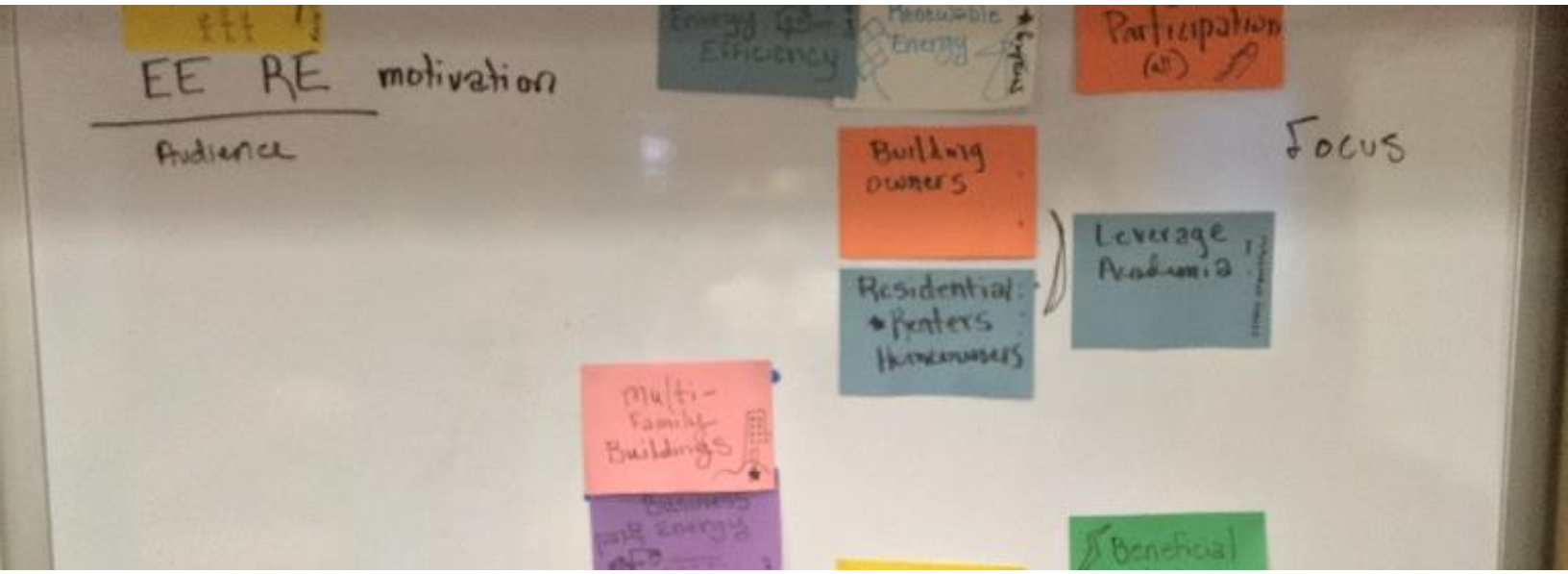
Project Management and Tracking

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

If necessary, an implementation check-in meeting with the Energy Action Team can be convened to assess progress toward goals and discuss strategy refinement.

Energy Action Team Commitment

The Energy Action Team formed to create this plan will support implementation by participating in the strategies that they are passionate about and by connecting the City to networks and resources that they uniquely have access to.



APPENDIX A: IMPLEMENTATION WORK PLAN

This appendix gives additional detail for each strategy, including the implementation team and tasks, timeline, and goals. This appendix will serve as a work plan for the Energy Action Team and Partners in Energy.

Focus Area	Strategy		Action Items	2024 Q4	2025 Q1	2025 Q2	2025 Q3	2025 Q4	2026 Q1
Alleviating energy burden for homeowners and renters	1) Conduct Energy Outreach in Schools	A	Identify school and teacher partnerships and work with those partners to understand classroom needs.						
		B	Develop materials and activities that support appropriate energy engagement according to school partners						
		C	Ask school library or other entities to host educational events regarding energy efficiency and clean energy						
		D	Encourage partnering with "EmPowered Schools" program to Neighboring School Districts						
		E	Utilize the Minnesota GreenStep School Program to show students that their school is leading the way in energy conservation and reducing environmental impacts						
	2) Develop Neighborhood Energy Liaisons	A	Call for community volunteers by the City						
		B	Provide Xcel Energy and supporting energy resources to the volunteers to share with their neighbors / associations						
		C	Develop resources for volunteers to share with neighbors (e.g., template emails, National Night Out activities, NextDoor posts, website content, etc.)						
	3) Increase Access to Renter Resources	A	Provide renters with information about applicable energy rebates						
		B	Raise awareness of assistance programs for those renters who are affected by a higher energy burden or lower-income household						
	4) Promote Home Energy Assessments	A	Promote home energy assessments						
		B	Showcase residents who have had home energy assessments and made improvements in their home as a result						
	5) Provide Accessible Energy Communication	A	Create an Energy Action Hub on the City of Falcon Heights' website to disseminate information about energy resources						
		B	Establish partnerships with community organizations and/or Falcon Heights specific publications to bring awareness to residents						
		C	Include energy educational resources on the City of Falcon Heights email newsletter						
	6) Highlight Energy Saving and Clean Energy Testimonials	A	Showcase positive testimonials in the City's newsletter, blog and articles in local media						
		B	Postcard mail out campaign of testimonials from residents to other residents						
		D	Postcard mail out campaign of testimonials from business owners to other businesses						
		D	Share testimonials at St Paul Chamber of Commerce meetings						
	7) Develop and Sustain Partnerships that Support Community Energy Equity Goals	A	Connect with Commonwealth Terrace Cooperative (CTC) to Improve Living Conditions through energy projects for Student Housing						
		B	Form partnership with neighboring city councils to coordinate energy equity projects that are mutually beneficial						

Enhancing Energy Efficiencies in Buildings	1) Support Energy Improvements	A	Create and promote City incentives and/or recognition for energy efficient multi-family buildings						
		B	Review and revise City code to remove barriers to more energy efficient multi-family buildings						
		C	Encourage multi-family buildings to periodically re-invest in energy efficient improvements that have a reasonable payback period						
		D	Support incentives for retrofits and redevelopment of existing multi-family buildings to improve energy while respecting the historic integrity of buildings and communities						
	2) Incentivize and Recognize Energy Efficiency Projects	A	Be present at community events with resources and tips to encourage businesses and residents to reduce energy consumption						
		B	Request that homeowners who have made significant energy efficiency improvements temporarily display an energy conservation yard sign						
		C	Publicly acknowledge homeowners and business owners in the City's email newsletter for energy conservation efforts						
	3) Partner with the State Fair to Encourage Energy	A	Draft proposal to partner with State Fair to encourage joint energy projects						
	4) Encourage Efficient Electric Heating Technologies	A	Create targeted outreach programs to educate business owners and owners of multi-family buildings about the benefits of electric heating options						
		B	Host workshops and informational sessions to highlight benefits of adopting efficient electric heating technologies						
		C	Encourage building owners who have already installed air source heat pumps to share their success stories with other building owners through presentations, open houses and business networking events						
		D	Assist businesses and workforce to keep up to date on technological advances in building energy. Provide outreach to local businesses to assist in these educational efforts						
		E	Recommend energy improvements for rental properties during annual inspections. Provide an opportunity to educate building owners about energy improvements annually, giving updates on electrification technology and available incentives						
	5) Form Climate Action Partnership with U of M	A	Draft a proposal for collaboration between the City Council and the University of Minnesota and find a way forward						
		B	Advocate for increasing EV charging infrastructure on and off campus						
		C	Encourage charging infrastructure on new developments and retrofits, especially multi-family buildings and businesses. Support the continued development of charging infrastructure for Evs						
	6) Collaborate with Metro Transit	A	Draft, send and follow up on a request to Metro Transit to have electric buses on Route 121 and on the Rapid Transit A Line						
	7) Reduce Costs of Home Energy Assessments for Residents	A	Address economic barriers for residents who may be hard to reach or under-represented in the community and increase home energy assessment visits by promoting free visits						
	8) Showcase Existing Energy Projects in Homes and Businesses	A	Identify homes and businesses that have already undergone energy projects						
		B	Recognize those who would wish to participate in open house tours and set up tour dates for groups to visit						
		C	Host a local energy fair in Falcon Heights and encourage citizen and local business participation						
Embracing Clean and Renewable Energy	1) Support a Group-Buy Solar Effort	A	Explore a collaboration with solar groups to help residents and businesses bulk-buy solar						
		B	Pursue grants to assist with the installation of solar panels on homes and businesses. This financial support will make clean energy a viable option for more residents, reducing the City's overall carbon footprint						
	2) Solar Arrays on Future Buildings	A	Request proposals for solar installations on future municipal buildings						
		B	Partner with one or more solar installation companies to recommend to buildings in the City.						
		C	Explore grants for installation of onsite solar on businesses and buildings						
	3) Promote Renewable Subscription and On-site Options for Residents	A	Encourage subscription and on-site opportunities to residents during events and on the City website						
		B	Share incentives/benefits for clean energy options with renters though email and mailing campaigns						
	4) Partner with the University of Minnesota to Encourage Clean Energy	A	Reach out to the University of Minnesota to form a collaboration centered on clean energy technologies						
		B	Partner with the University of Minnesota to help share incentives for clean energy programs to multi-family building owners, residents and students						
	5) Establish a Reliable Workforce in Clean Energy Applications	A	Host workshops to educate the community on clean energy topics and resources while connecting professionals with residents and residents with training options						
		B	Support and promote workforce opportunities in clean energy industry						

APPENDIX B: BASELINE ENERGY ANALYSIS

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

Electricity and Natural Gas Premises

As of 2023, there were 2,413 distinct premises in Falcon Heights (Table 11). Most premises are residential (2,113), followed by commercial and industrial (283) and finally municipal buildings (17).

Table 11. Premise counts by sector, 2021–2023

Sector	2021	2022	2023	Average
Residential	1,985	2,113	2,113	2,070
Commercial & Industrial	280	279	283	281
Municipal	17	17	17	17
Total	**2,282**	**2,409**	**2,413**	**2,368**

Electricity and Natural Gas Consumption and Trends by Sector

In an average year, Falcon Heights consumes about 29 million kWh of electricity and 2.3 million therms of natural gas community-wide

Table 12). Total energy consumption increased by 8.4% over the baseline period, stemming from a 4.6% increase in electricity consumption and 10.2% increase in natural gas consumption over the baseline period.

Table 12. Annual energy consumption by sector and fuel type, 2021–2023

Fuel Type	Sector	2021	2022	2023	Average
Electricity (kWh)	Residential	12,936,232	13,060,714	12,989,092	12,995,346
	Commercial & Industrial	15,591,597	16,149,072	16,827,067	16,189,245
	Municipal	156,347	172,349	179,618	169,438
	Total	28,684,176	29,382,135	29,995,777	29,354,029
Natural Gas (therm)	Residential	1,076,235	1,287,519	1,177,128	1,180,294
	Commercial & Industrial	1,052,794	1,170,143	1,165,722	1,129,553
	Municipal	6,088	10,494	9,110	8,564
	Total	2,135,117	2,468,156	2,351,960	2,318,411
Total (MMBtu)	Residential	151,762	173,315	162,032	162,370
	Commercial & Industrial	158,478	172,115	173,986	168,193
	Municipal	1,142	1,637	1,524	1,434
	Total	311,382	347,067	337,542	331,997

Electricity and natural gas consumption often vary in accordance with weather patterns. Hotter summers indicate a greater need for cooling, which may correlate with increased electricity use for space cooling. The need for cooling is measured in cooling degree days (CDD). Colder winters indicate a higher need for heating, which may correlate with increased natural gas usage for space heating. The need for heating is measured in heating degree days (HDD). The coldest winter over the baseline period occurred in 2022, which correlated with the highest annual natural gas consumption in the community (Table 13).

Table 13. Degree days in Falcon Heights, 2021–2023

	2021	2022	2023
Cooling Degree Days	1,184	1,049	1,232
Heating Degree Days	6,678	7,812	6,565

Greenhouse Gas Emissions and Trends

In Falcon Heights, overall energy-related greenhouse gas emissions, as measured in metric tons of carbon dioxide equivalent ($MTCO_2e$), increased in 2023 compared to 2021 by about 3%

Table 14). To calculate energy-related emissions in Falcon Heights, preliminary and third-party verified emissions factors from Xcel Energy's Upper Midwest Fuel Mix were used, as well as a standard emissions factor for natural gas consumption (Table 15). As Xcel Energy completes third-party verification for its latest grid emissions factors, the emissions factors used to estimate greenhouse gas emissions may change slightly.

Table 14. Energy-related greenhouse gas emissions in $MTCO_2e$ by sector and fuel type, 2021–2023

Fuel Type	Sector	2021	2022	2023	Average
Electricity emissions ($MTCO_2e$)	Residential	3,703	3,626	3,299	3,543
	Commercial & Industrial	4,463	4,483	4,274	4,407
	Municipal	45	48	46	46
	Total	8,210	8,157	7,619	7,995
Natural Gas emissions ($MTCO_2e$)	Residential	5,712	6,833	6,247	6,264
	Commercial & Industrial	5,587	6,210	6,187	5,995
	Municipal	32	56	48	45
	Total	11,331	13,099	12,482	12,304
Total Energy-Related Emissions ($MTCO_2e$)	Residential	9,414	10,459	9,547	9,806
	Commercial & Industrial	10,050	10,693	10,461	10,401
	Municipal	77	104	94	92
	Total	19,541	21,255	20,101	20,299

Table 15. Emissions factors used to calculate energy-related greenhouse gas emissions, 2021–2023[7]

Fuel Type	2021	2022	2023
Electricity Emissions Factor (lbs/MWh)	631	612	560
Natural Gas Emissions Factor ($MTCO_2e$/Dth)	0.05307	0.05307	0.05307

[7] Xcel Energy 2022. Carbon Dioxide Emission Intensities, https://www.xcelenergy.com/staticfiles/xe-responsive/Environment/Carbon/Carbon-Emission-Intensities-Info-Sheet.pdf

Energy Costs

In an average year, all premises in Falcon Heights spent a collective total of $6.2 million on fuel costs for both electricity and natural gas (Table 16). Falcon Heights residents accounted for 46% of the total spend in an average year ($2.9 million), business customers made up more than half of the total at 53.5% ($3.3 million), while the municipal sector made up the remaining 0.5% ($30,000). Residential premises spent an annual average of $1,384 per premise on fuel costs; commercial and industrial premises spent $11,973 per premise; and municipal premises spent $1,734 on average.

Table 16. Annual energy costs by sector and fuel type, 2021–2023

Fuel Type	Sector	2021	2022	2023	Average	Average Annual Cost Per Premise
Electricity	Residential	$1,666,640	$1,850,931	$1,943,769	$1,820,447	$879
	Commercial & Industrial	$1,942,398	$2,569,858	$2,697,491	$2,403,249	$8,634
	Municipal	$18,354	$23,584	$24,226	$22,055	$1,297
	Total	$3,627,392	$4,444,373	$4,665,486	$4,245,750	-
Natural Gas	Residential	$711,950	$1,300,086	$1,121,104	$1,044,380	$504
	Commercial & Industrial	$607,201	$1,131,086	$1,049,379	$929,222	$3,339
	Municipal	$3,451	$9,968	$8,843	$7,421	$437
	Total	$1,322,602	$2,441,140	$2,179,326	$1,981,023	-
Total	Residential	$2,378,590	$3,151,017	$3,064,873	$2,864,827	$1,384
	Commercial & Industrial	$2,549,599	$3,700,944	$3,746,870	$3,332,471	$11,973
	Municipal	$21,805	$33,552	$33,069	$29,475	$1,734
Total		**$4,949,994**	**$6,885,513**	**$6,844,812**	**$6,226,773**	

Energy Burden

Energy burden is the percentage of income that residents spend on energy. In Falcon Heights, residents who own their homes and make 30% or less of the area median income (AMI) spend up to 24% of their household income on energy costs (Table 17). In the same AMI group, residents who rent their homes are estimated to spend up to 10% of their household income on energy costs. Energy burden is higher for residents in owner-occupied housing compared to renters in Falcon Heights.

Table 17. Energy burden by unity occupancy and area median income[8]

	Energy Burden		Household Count	
Percent of Area Median Income	Own	Rent	Own	Rent
0–30%	24%	10%	52	263
30–60%	10%	4%	166	301
60–80%	6%	2%	86	104
80–100%	6%	2%	123	86
100%+	2%	2%	831	110
Total	2%	1%	1,258	864

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

Program Participation and Savings

Residents and businesses in Falcon Heights are already participating in energy efficiency offerings from Xcel Energy, which result in energy savings for residents and commercial customers. While fewer commercial and industrial premises participated in these programs during the baseline period, their participation resulted in larger overall savings per premise.

Over the baseline period, the residential sector saved an average of 35,374 kWh annually and 15,660 therms from 200 participants on average annually (Table 18). The income-qualified residential sector saved an average of 517 kWh and 63 therms from two participants on average.

Table 19). Finally, the commercial and industrial sector saved an average of 186,183 kWh and 23,326 therms from 32 participants on average (Table 20).

Table 18. Annual residential sector participation in and savings from Xcel Energy efficiency offerings, 2021–2023

Residential Program	2021			2022			2023		
	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)
Home Energy Audit	5	0	0	19	0	0	29	0	0
Home Energy Squad	5	3258	318	10	6368	275	19	8056	571
HomeSmart	6	0	0	8	0	0	8	0	0
Insulation Rebate	10	1801	3384	4	474	1104	8	2269	3085
Refrigerator Recycling	15	12260	0	4	4305	0	3	2147	0
Residential HVAC	89	26492	11058	93	16619	13888	80	18543	11657
Residential Saver's Switch	21	24	0	43	45	0	3	3	0
Smart Thermostat	34	1674	920	36	598	165	47	950	55
Whole Home Efficiency	0	0	0	1	235	499	0	0	0
Total	**185**	**45,509**	**15,680**	**218**	**28,644**	**15,931**	**197**	**31,968**	**15,368**

Table 19. Annual income-qualified participation in and savings from Xcel Energy residential efficiency offerings, 2021–2023

Income-Qualified Residential Program	2021			2022			2023		
	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)
Home Energy Savings Program	1	1,065	0	0	0	0	2	79	156
Low-Income Home Energy Squad	0	0	0	1	408	18	1	0	15
Multi-Family Energy Savings Program	0	0	0	0	0	0	0	0	0
Total	**1**	**1,065**	**0**	**1**	**408**	**18**	**3**	**79**	**171**

Table 20. Annual commercial and industrial program participation in and savings from Xcel Energy efficiency offerings, 2021–2023

Commercial & Industrial Program	2021			2022			2023		
	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)
Custom Efficiency	0	0	0	0	0	0	1	0	8,430
Data Center Efficiency	0	0	0	0	0	0	0	0	0
Energy Design Assistance	0	0	0	1	356,667	17,820	0	0	0
HVAC+R Efficiency	2	1,761	142	6	0	6,741	49	38,496	4,568
Lighting Efficiency	2	76,608	0	1	682	0	1	3,891	0
Multi-Family Building Efficiency	5	63,274	3,133	0	0	0	1	0	0
Saver's Switch for Business	1	2	0	0	0	0	0	0	0
Small Business Lighting	2	8,181	0	0	0	0	1	5,104	0
Smart Thermostats for Business	6	1,933	385	10	1,950	385	0	0	0
Total	**18**	**151,759**	**3,660**	**18**	**359,299**	**24946**	**53**	**47,491**	**12,998**

Renewable Energy Support

There is existing support for renewable energy in Falcon Heights, with 241 residents, 10 commercial and industrial customers and 6 municipal buildings supporting renewable energy through either subscriptions or on-site solar (Table 21, Table 22). At the time of the planning process, 2023 Renewable*Connect and Renewable*Connect Flex data were not available.

Table 21. Xcel Energy renewable energy subscription program participation and electricity subscribed in Falcon Heights, 2022 and 2023

	Residential	Commercial & Industrial	Municipal
Renewable*Connect & Renewable*Connect Flex® (2022)			
Subscriber Count	180	0	0
Total Annual Electricity Subscribed (kWh)	818,449	0	0
Community Solar Gardens – Solar*Rewards® Community (2023)			
Subscriber Count	25	5	6
Total Annual Electricity Subscribed (kWh)	169,924	180,904	55,508
Total Xcel Energy Subscription Renewable Energy Support			
Subscriber Count	205	5	6
Total Annual Electricity Subscribed (kWh)	988,373	180,904	55,508

Table 22. Xcel Energy on-site solar program support in Falcon Heights, 2023

On-Site Solar – Solar*Rewards® and Net-Metering (2023)[9]	Residential	Commercial & Industrial
Subscriber Count	44	8
Total Electricity Capacity (kW)	316	742

[9] Source: Xcel Energy 2023 Community Energy Report for Falcon Heights

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 Falcon Heights. All goals will be measured against the Falcon 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 programs included in the baseline.

Community-Wide Goal

Falcon Heights will increase energy savings by 52% and avoid an additional 34% of community-wide greenhouse gas emissions by 2030 through additional participation in energy efficiency programs and on-going renewable energy participation. This amounts to an additional 14,000 MMBtu of energy savings and 700 additional $MTCO_2e$ of greenhouse gas emissions avoided.

Focus Area Goals

Alleviating Energy Burden on Homeowners and Renters: Residential Energy Efficiency

- Engage 248 residents annually in Xcel Energy's energy efficiency programs.
- Save 2,292 MMBtu of energy annually, for a total of 13,751 MMBtu saved through residential energy efficiency program participation between 2025 and 2030.

This goal will be measured by comparing actual program participation against the business as usual (BAU) scenario. Total goal progress will be measured from January 2025 through December 2030. *Table 23* identifies annual program participation targets and total energy efficiency savings to meet this goal. These targets are based on current Xcel Energy programs and estimated savings. If Xcel Energy offers new programs for residents, these will be included in this calculation at the discretion of the City of Falcon Heights and Partners in Energy.

Table 23. Annual residential energy efficiency participation and total savings from select Xcel Energy offerings, 2025–2030

Program	Annual BAU Participation	Annual Participation Target	Total Participants, 2025–2030	Total Energy Savings, 2025–2030 (MMBtu)
Efficient New Home Construction	0	1	6	86
Home Energy Audit	18	23	136	-
Home Energy Squad	11	21	128	665
Insulation Rebate	7	12	74	2,599
Residential Heating and Cooling[10]	87	112	674	9,957
Refrigerator Recycling	7	7	44	128
Residential Saver's Switch	22	22	134	0
Smart Thermostat	39	49	294	314

Alleviating Energy Burden on Homeowners and Renters: Income-Qualified Residential Energy Efficiency

- Engage 6 income-qualified residents annually in Xcel Energy energy efficiency programs.
- Save a total of 116 MMBtu through income-qualified residential energy efficiency program participation between 2025 and 2030.

This goal will be measured by comparing actual program participation against the BAU scenario. Total goal progress will be measured from January 2025 through December 2030. *Table 24* identifies annual program participation targets and total energy efficiency savings to meet this goal. These targets are based on current Xcel Energy income-qualified programs and estimated savings. If Xcel Energy offers new income-qualified programs for residents, these will

[10] Xcel Energy filed a new Triennial DSM plan in 2021, which resulted in some programs being reorganized and renamed. The Residential HVAC group now includes Residential Cooling, Residential Heating, Residential Heating and Cooling, and Water Heater Rebate.

be included in this calculation at the discretion of the City of Falcon Heights and Partners in Energy.

Table 24. Annual income-qualified residential energy efficiency participation and total savings from select Xcel Energy offerings, 2025–2030

Program	Annual BAU Participation	Annual Participation Target	Total Participants, 2025–2030	Total Energy Savings, 2025–2030 (MMBtu)
Home Energy Savings Program	1	2	12	78
Low Income Home Energy Squad	1	3	16	38
Low Income Multi-family Building Efficiency	0	1	6	-

Enhancing Energy Efficiencies in Buildings: Business Energy Efficiency

- Engage 42 commercial & industrial customers annually in Xcel Energy energy-efficiency programs.
- Save 4,765 MMBtu annually for a total of 28,591 MMBtu saved through commercial & industrial energy efficiency program participation between 2025 and 2030.

This goal will be measured by comparing actual program participation against the BAU scenario. Total goal progress will be measured from January 2025 through December 2030.

Table 25 identifies annual program participation targets and total energy efficiency savings to meet this goal. These targets are based on current Xcel Energy commercial and industrial programs and estimated savings. If Xcel Energy offers new commercial and industrial programs for businesses, these will be included in this calculation at the discretion of the City of Falcon Heights and Partners in Energy.

Table 25. Annual commercial and industrial energy efficiency participation and total savings from select Xcel Energy offerings, 2025–2030[11]

Program	Annual BAU Participation	Annual Participation Target	Total Participants, 2025–2030	Total Energy Savings, 2025–2030 (MMBtu)
Business Energy Assessments	0	1	6	4,816
Custom Efficiency	0	1	2	1,686
Energy Design Assistance	0	1	4	10,496
Efficiency Controls	2	2	10	5,524
HVAC+R Efficiency	19	23	138	3,105
Lighting Efficiency	1	3	20	1,385
Multi-Family Building Efficiency	2	2	12	1,058
Saver's Switch for Business	0	0	2	0
Small Business Lighting	1	3	18	272
Smart Thermostats for Business	5	7	44	248

Embracing Clean, Renewable Energy

- Retain residential participants in Xcel Energy's renewable energy subscription programs, Renewable*Connect and Renewable*Connect Flex.
- Save 687 $MTCO_2e$ of greenhouse gas emissions.

This focus area will be measured by comparing actual program participation in Renewable*Connect and Renewable*Connect Flex against the BAU scenario. No increase in participation was projected for this goal between January 2025 and December 2030.

Table 26 identifies the 2030 participation and kWh target to meet this goal. These targets are based on current participation and subscriptions to Renewable*Connect and Renewable*Connect Flex. If Xcel Energy offers renewable subscription programs for

[11] The sum of total Custom Efficiency and Energy Design Assistance participants does not add to the annual participation target over the goal period due to rounding.

residents, these will be included in this calculation at the discretion of the City of Falcon Heights and Partners in Energy.

Table 26. Annual renewable energy subscription participation and total GHG savings 2025–2030

Program	Baseline Residential Participants	Baseline kWh Subscribed	Target Residential Participants in 2030	Total Greenhouse Gas Emissions Saved, 2025–2030 (MTCO2e)
Renewable*Connect Flex	189	733,692	189	646
Renewable*Connect[12]	14	46,650	14	41
Total	203	780,342	203	687

[12] As of 2024, Renewable*Connect is at capacity and not accepting new subscribers

APPENDIX D: 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 or electric vehicle plan, tools to help implement the plan and deliver results, and resources designed to help each community stay informed and achieve their outlined goals.

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.

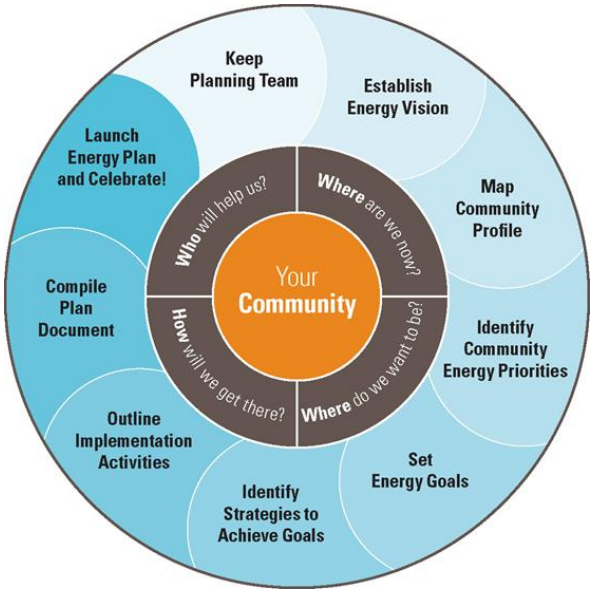
The planning process **began with an open house** at City Hall where the people came to give input into the plan's vision and strategy. The open house also served as a place for residents to ask questions about the Partners in Energy Program, Xcel Energy's goals, and what resources and support will be provided for the plan. There was also a community energy survey in English, Spanish, and Somali that launched at that time to seek similar input into the plan.

The Energy Action Team, made up of Environment Commission members, residents, and city staff, then met for a **workshop** to digest the community's input, survey responses, and look at the community's energy baseline data. They also shaped the vision and focus areas of the plan.

The team then met for a **virtual meeting** to hear about utility programs and more community energy survey results and review workshop outcomes.

A **second open house** set at the Falcon Heights Spring Together Event, showcased the community energy data, invited community input while engaging families, youth, and the business community.

Finally, the Energy Action Team came together for a **workshop** that rounded out the planning effort by bringing together a full picture of the community's input, developed strategies, and discussed the implementation of the plan.



Partners in Energy Process for Success

Resources from Xcel Energy for Implementation