



An Energy Action Plan for City of Plymouth

September 2025



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.

The content of this plan is derived from a series of planning workshops hosted by Xcel Energy’s Partners in Energy. Xcel Energy and Wright-Hennepin Cooperative Electric Association are the main electric utilities and CenterPoint Energy is the main gas utility serving the City of Plymouth. 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.

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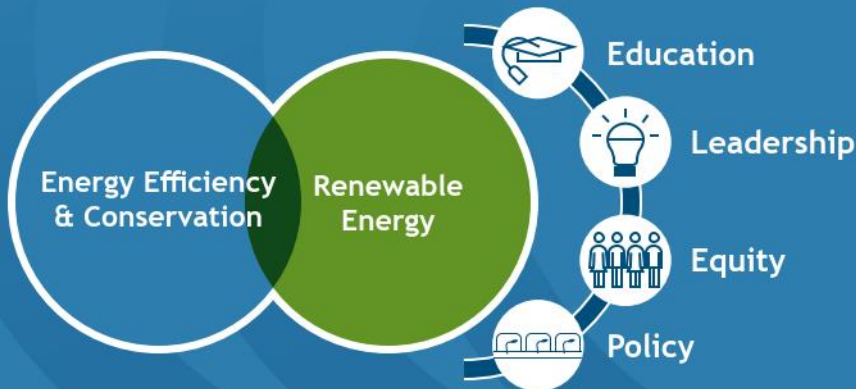
PLYMOUTH Energy Action Plan

Plymouth is a thriving community that conserves and uses clean and resilient energy, so everyone has a healthy environment and enough energy to meet our communities' needs into the future.



Focus Areas

Plymouth developed two focus areas with four cross-cutting themes to prioritize strategies and resources.



Goals

Working together, the Team set near-term and long-term goals and targets to measure success. Together those goals and targets culminate into a community-wide goal that speaks to the community's energy sentiment and is intended to be met by 2030, so that the community can revisit progress and set new goals as new technologies, community direction, and opportunities are presented.

By 2030, Plymouth will increase its community-wide energy savings by **30%** to save residents and businesses money on their utility bills.

In total, this will result in almost 1.3 million MMBtu in energy savings by 2030. This is equivalent to:



60,000 homes' electricity use for 1 year



CO₂ sequestered from **327,000** acres of U.S. forests in 1 year



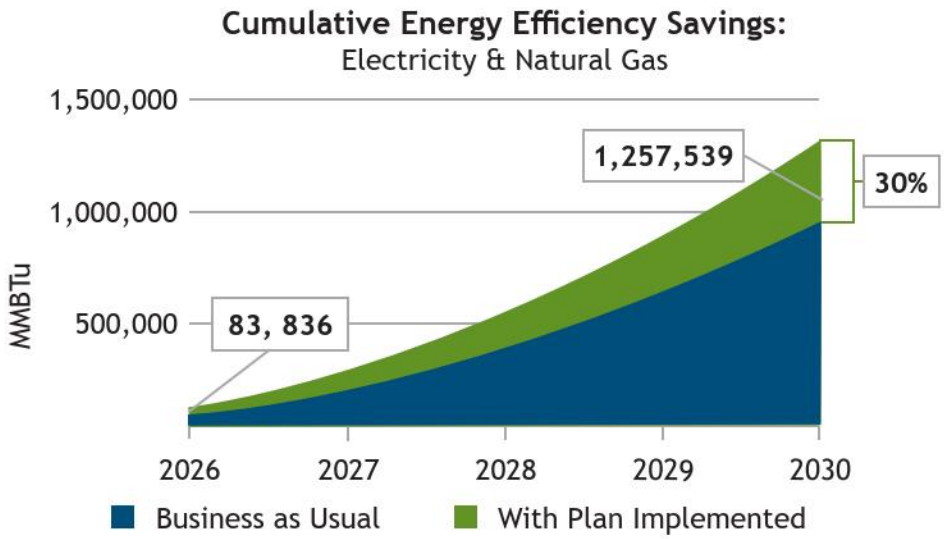
76,000 gas-powered cars driven for 1 year



98 wind turbines running for 1 year



CO₂ sequestered by **5.4 million** tree seedlings grown for 10 years

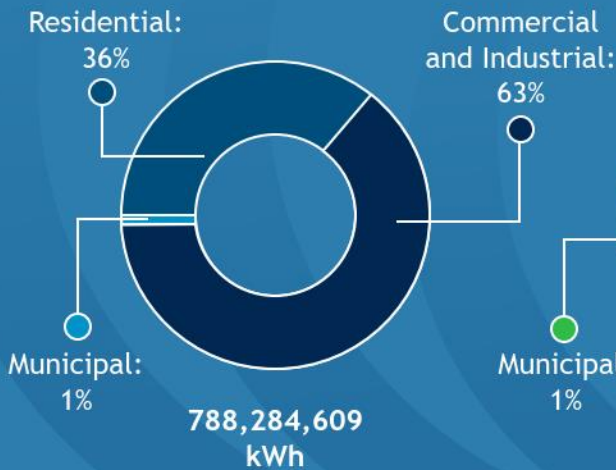


High-Level Strategies

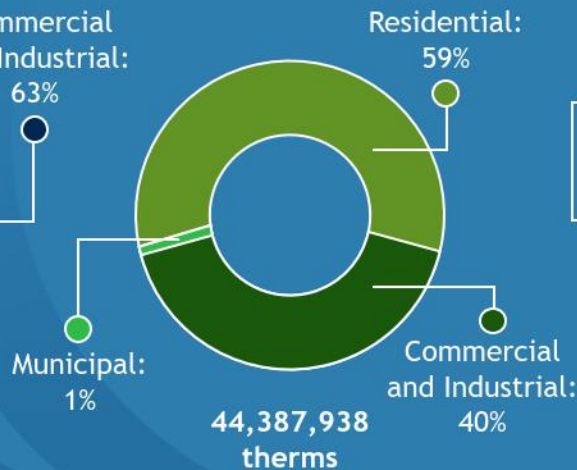
The plan has strategies to reach business and residential audiences, remove barriers to energy efficiency and renewable energy, and help navigate energy programs. The strategies are all actionable, developed to connect community resources, and need little funding or seek funding from outside the city. Each strategy has desired outcomes and timelines outlined to help guide their implementation.

Energy Baseline

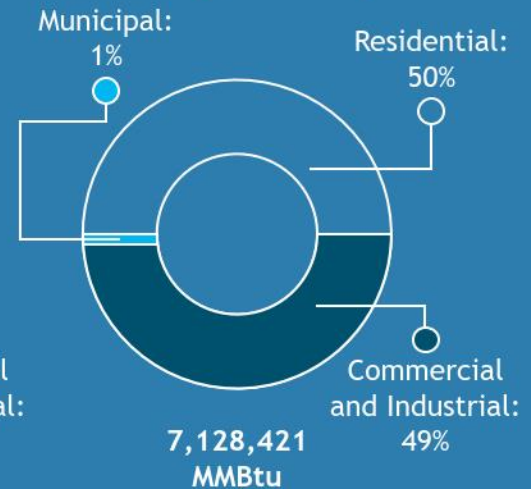
Electricity Consumption



Natural Gas Consumption

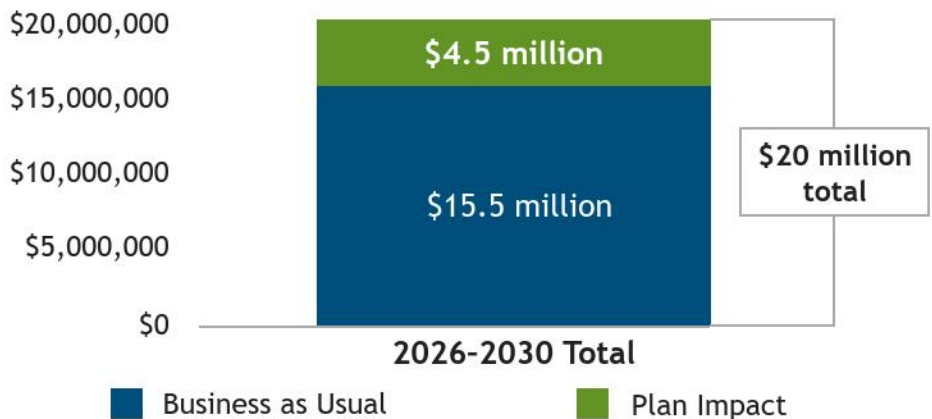


Total Energy Consumption



Impact and Results of Plan Implementation

Total Estimated Dollar Savings, 2026-2030



Cost savings are estimated using deemed energy savings and a residential cost of \$0.11/kwh and \$.72/therm and a commercial cost of \$0.087/kwh and \$.59/therm





INTRODUCTION

Plymouth is a vibrant and forward-thinking city located just west of Minneapolis. As one of Minnesota’s largest suburbs, Plymouth is known for its exceptional quality of life, strong economic base, and commitment to sustainability and innovation. With a population of nearly 80,000, the City boasts a diverse and engaged community, top-tier schools, expansive park systems, and a thriving business environment. Plymouth continues to attract families, entrepreneurs, and professionals alike, thanks to its strategic location, robust infrastructure, and a shared vision for inclusive growth.

Plymouth began working with Partners in Energy in the fall of 2024 and is proud to be a community that values innovation, resilience, and environmental stewardship. As one of the state’s most dynamic cities, Plymouth is committed to creating a sustainable future that benefits all residents—today and for generations to come.

About This Plan

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 and three stakeholder surveys conducted between February and August 2025. The Energy Action Team included Plymouth residents, business owners, students, and City staff, as well as representatives from Xcel Energy, CenterPoint Energy, and Wright-Hennepin Cooperative Electric Association (see **Acknowledgements** for full list of participants). Team members coordinated throughout the process to share information and identify potential opportunities for partnership during implementation.

Additionally, Partners in Energy solicited community feedback via a community survey that was open from mid-April to early-June. The survey asked for community input on energy priorities, energy action motivations and barriers, and desired level of ambition for Plymouth’s energy goals. 101 community members responded to the survey. See Appendix D:

Community Energy Survey Results for more information about the planning process and Xcel Energy Partners in Energy.

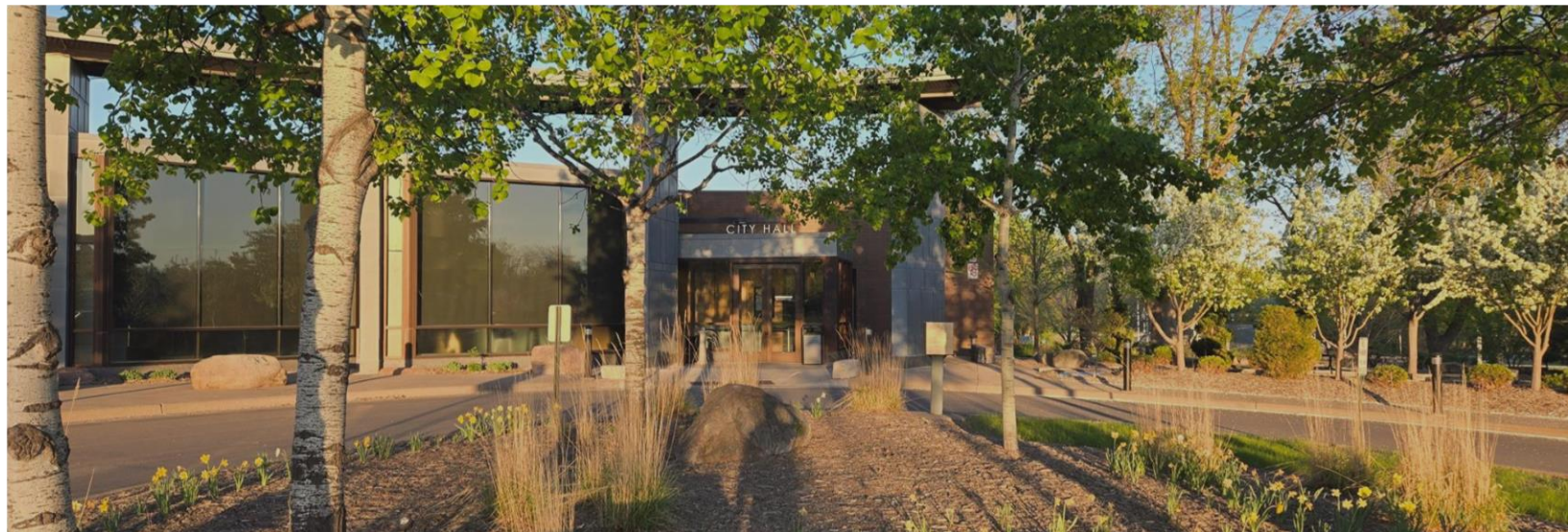
Plymouth joined more than 34 other Minnesota communities that have developed Energy Action Plans through Xcel Energy's Partners in Energy, an offering that provides resources for community energy planning. Partners in Energy also supports 18 months of plan implementation in the form of marketing and communications, data tracking and analysis, program expertise, and project management.

Why an Energy Action Plan

The City of Plymouth is the 7th largest city in the state of Minnesota. Plymouth has many industrial and commercial customers, as well as over 33,000 homes. Plymouth's City Council identified environmental stewardship as a strategic priority and, in 2024, Plymouth hired its first environmental stewardship coordinator.

Plymouth is committed to advancing environmental stewardship through energy action. In 2020, Plymouth City Council adopted a goal to explore ways to reduce the City's carbon footprint. Since then, the City has implemented nine facility projects that collectively resulted in an annual reduction of 397 metric tons of CO₂. Additionally, the City installed solar photovoltaic panels on the Plymouth Community Center and is planning to add solar photovoltaic panels on Fire Stations 2 and 3. Plymouth is a GreenStep Cities participant and hosts a Plymouth Environmental Academy, which has included education on energy conservation in the past. In 2025, Plymouth launched a [home energy rebate program](#), to help lower the upfront costs of energy efficiency, EV charging, and renewable energy projects.

This Energy Action Plan seeks to provide a strategic roadmap to help Plymouth continue its commitment to advancing environmental stewardship through energy conservation and renewable energy for residents, businesses, and municipal facilities.



WHERE WE ARE NOW

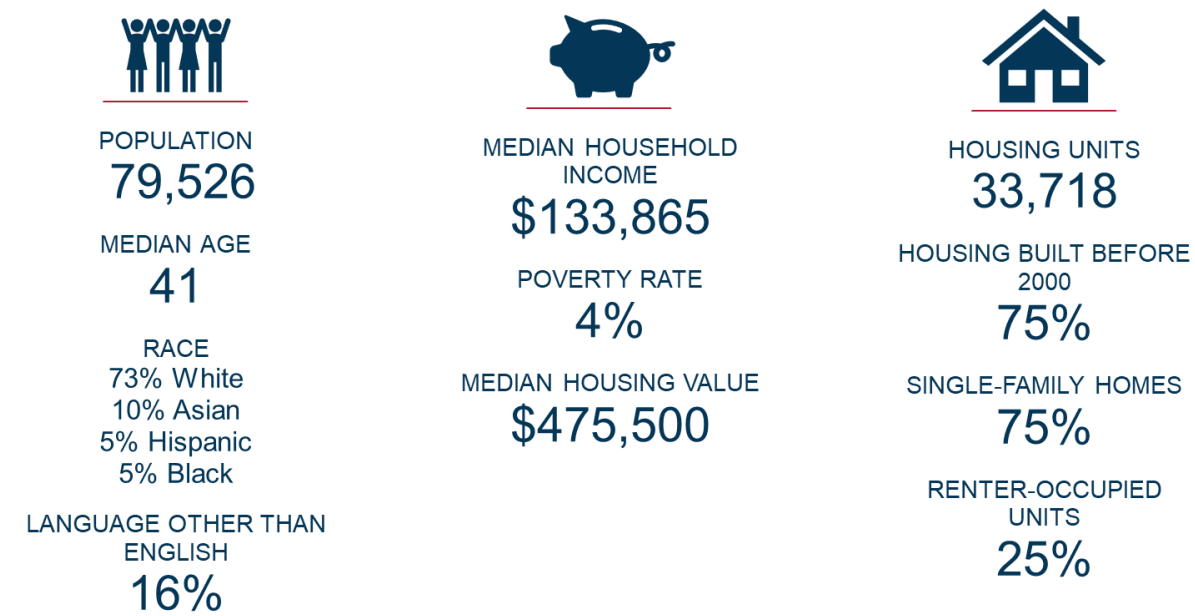
An integral part of the Partners in Energy planning process is reviewing historical community demographic data and energy data that informs our community’s energy baseline. Xcel Energy provided data on energy use, energy efficiency and renewable energy program participation counts, and utility energy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

Community Demographics

Plymouth is a relatively large suburb of Minneapolis, with nearly 80,000 residents and over 33,000 housing units. Most homes are single-family (75%) and most housing units are owner-occupied (75%). Note, owner-occupied units may include a mix of single-family and non-single family. Single-family homes that are owner-occupied tend to face fewer barriers to making home energy improvements, installing EV charging, and installing solar panels. Additionally, most housing units were built before 2000 (75%). Homes more than 20 years old may have more opportunities for energy improvements compared to newer homes, which were built to higher energy standards. Compared to peer cities like Minnetonka and Maple Grove, Plymouth households have a higher median household income (\$134,000). Plymouth residents are also more diverse than peer communities; 16% of residents speak a language other than English. This highlights an opportunity to provide engagement opportunities in multiple languages, to maximize the accessibility and equity of energy engagement efforts. See Figure 1 for more detail.¹

¹ Source: U.S. Census Bureau American Community Survey, 2023 five-year estimates

Figure 1. Community demographic snapshot¹



Energy Use and Savings

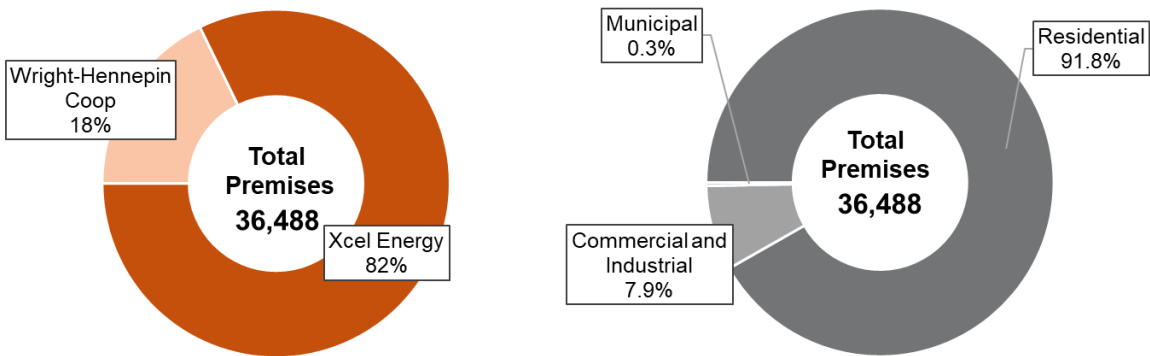
Premises

In 2023, there were 36,488 total residential and commercial premises in Plymouth. In 2023, Xcel Energy provided electricity to 82% of premises and Wright-Hennepin Cooperative Electric Association served the remaining 18%. CenterPoint Energy provides natural gas to all of Plymouth’s residents and businesses. Most of the premises in Plymouth are residential (92%). See Figure 2 for more detail.

Term Check: What Is a Premise?

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

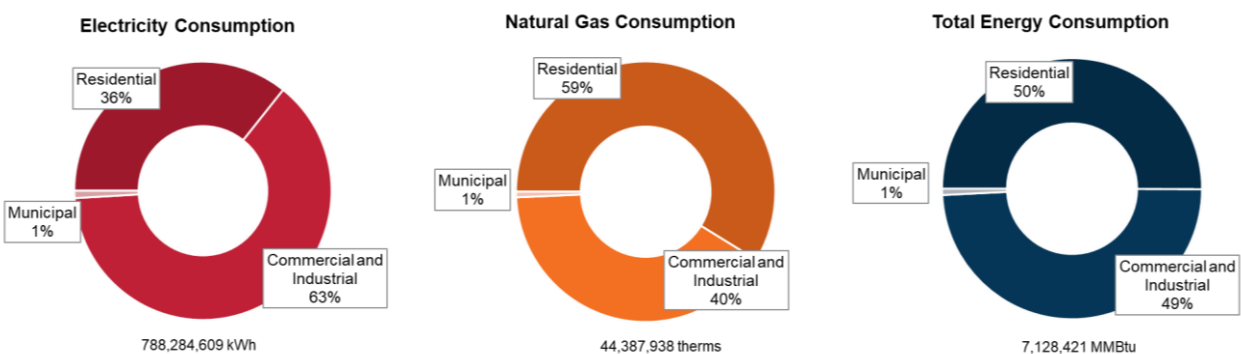
Figure 2. Electricity premise count by utility and sector, 2023



Energy Use (Combined Xcel Energy, CenterPoint Energy, and Wright-Hennepin Cooperative Electric Association usage data)

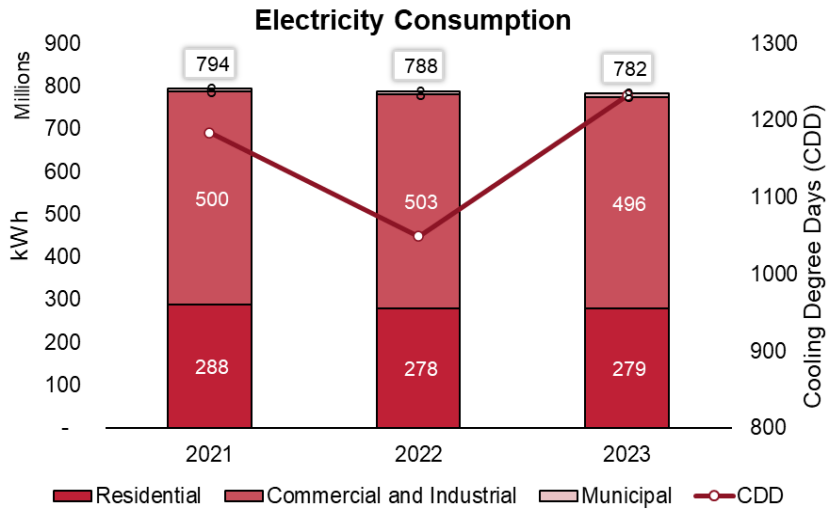
On average during the 2021-2023 baseline period, the Plymouth community consumed over 788 million kWh of electricity and over 44 million therms of natural gas across all sectors. To compare energy use between electricity and natural gas consumption on a common measure of energy savings potential, total energy consumption was calculated using both electricity and natural gas consumption converted into British thermal units (MMBTu). Although the commercial and industrial sector only makes up 8% of premises in Plymouth, it accounts for nearly 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 Plymouth. See Figure 3 for more detail.

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



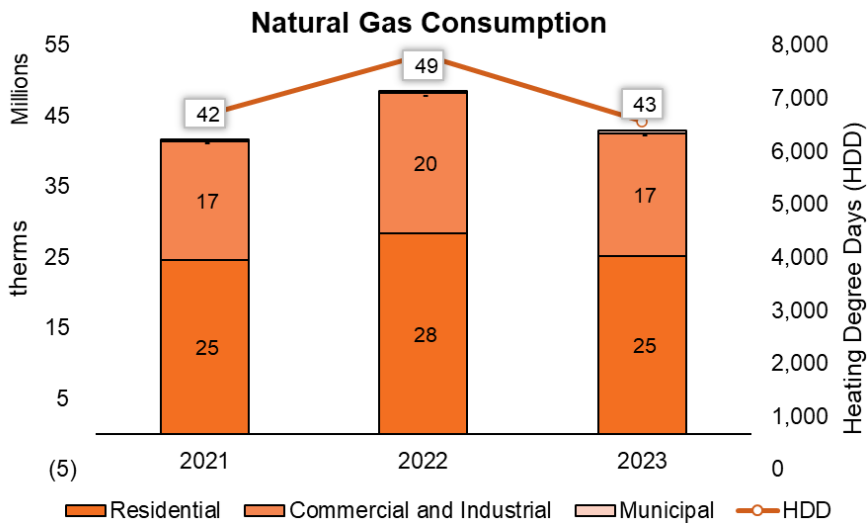
During the three-year baseline period (2021-2023), Plymouth’s overall electricity consumption decreased by 1.5%, driven by decreases in both residential and commercial and industrial electricity use. Total electricity consumption during the baseline period did not seem impacted by weather, as the year with the most cooling degree days (hottest weather) had the lowest electricity use. See Figure 4 for more detail.

Figure 4. Electricity consumption by sector, 2021-2023



During the three-year baseline period (2021-2023), Plymouth’s natural gas consumption increased by 3.1%. Total natural gas consumption during the baseline period is associated with winter temperatures, where natural gas use went up in years with more heating degree days (colder weather) and down in years with fewer heating degree days. See Figure 5 for more detail.

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



Energy Costs and Energy Burden

During the three-year baseline period, Plymouth spent an estimated \$137 million per year on fuel costs for both electricity and natural gas, with residential fuel costs representing 48% of the total fuel costs in an average year. During this time, residents spent an annual average of \$2,000 per premise on both electricity and natural gas.

While costs vary greatly for commercial and industrial premises based on size and industry, the average commercial and industrial premise spent \$24,000 annually on energy. Total average annual energy costs for City facilities were \$1.2 million or an average of around \$10,000 per premise.

How Do You Compare?

How do your annual electricity and natural gas bills compare to Plymouth's average resident or commercial premise? Think about why your bill might be higher or lower (size of your building, number of occupants, how you use your building). What action could you take to lower your electricity or natural gas use for the year?

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

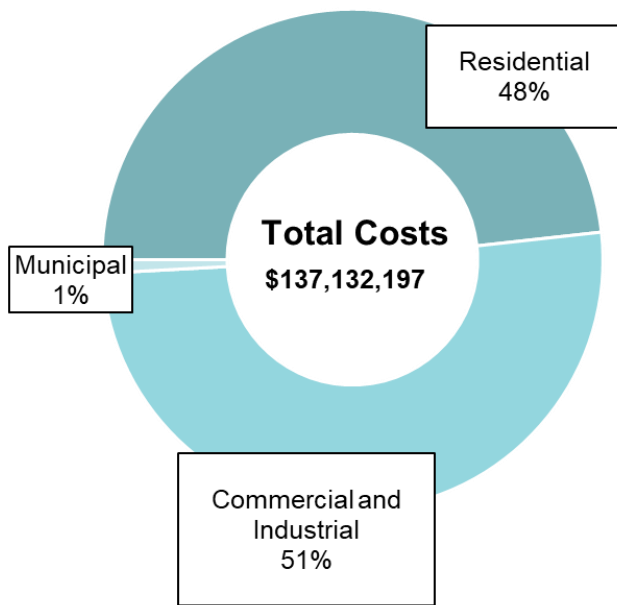


Table 1. Average annual fuel costs by sector and fuel type, 2021-2023

Sector	Annual Electricity Costs	Annual Natural Gas Costs	Annual Cost per Premise
Residential	\$37,112,021	\$29,042,764	\$1,986
Commercial & Industrial	\$55,297,395	\$14,496,216	\$24,355
Municipal	\$916,698	\$267,103	\$10,445
Total	\$93,326,114	\$43,806,083	

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 Plymouth residents with the greatest energy burden are those who own their homes and make less than \$35,000 per year, which is 30% or lower than the area median income. This group spends up to 14% of their income on energy costs (

Figure 7). The household data in Figure 8 show that 3% of Plymouth residents fall into this category. As a point of reference, 36% of Plymouth residents are homeowners who make more than the area median income, a group with a 1% energy burden. Addressing energy burden was identified as a priority by the City and Energy Action Team. While the pool of energy burdened residents reflects a small portion of the total city population, addressing this issue could have meaningful impacts for the larger community.

Figure 7. Energy burden by income and owner status³

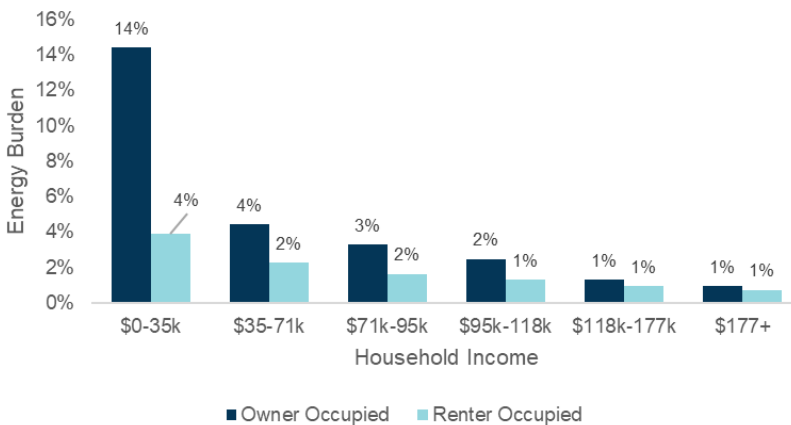
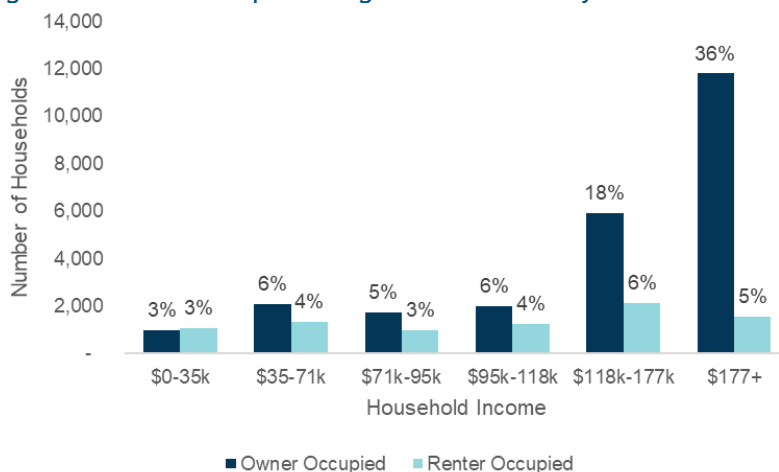


Figure 8. Number and percentage of households by income and owner status³



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.

³ Source: Department of Energy Low-Income Energy Affordability Data

Greenhouse Gas Emissions

Energy related greenhouse gas emissions are calculated for both electricity and natural gas consumption for all sectors in Plymouth (

Figure 9). Plymouth’s energy-related greenhouse gas emissions in 2023 amounted to almost 439,000 metric tons of carbon dioxide equivalent (MTCO_{2e}). Emissions have decreased by 5.8% between 2021 and 2023, with an increase in only the municipal sector. Municipal emissions are represented at the top of the bar chart, a make up only a small proportion of overall city emissions. Figure 10 breaks down the 2023 energy-related emissions by sector and fuel type. Commercial and industrial electricity as well as residential natural gas each make up 30% of emissions. In total, the residential sector generated 48% of Plymouth’s energy-related greenhouse emissions while the commercial sector generated 51% of the emissions. Natural gas consumption made up the largest proportion of total emissions, adding up to 51% 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; however, it could decrease with the implementation of beneficial electrification strategies.

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

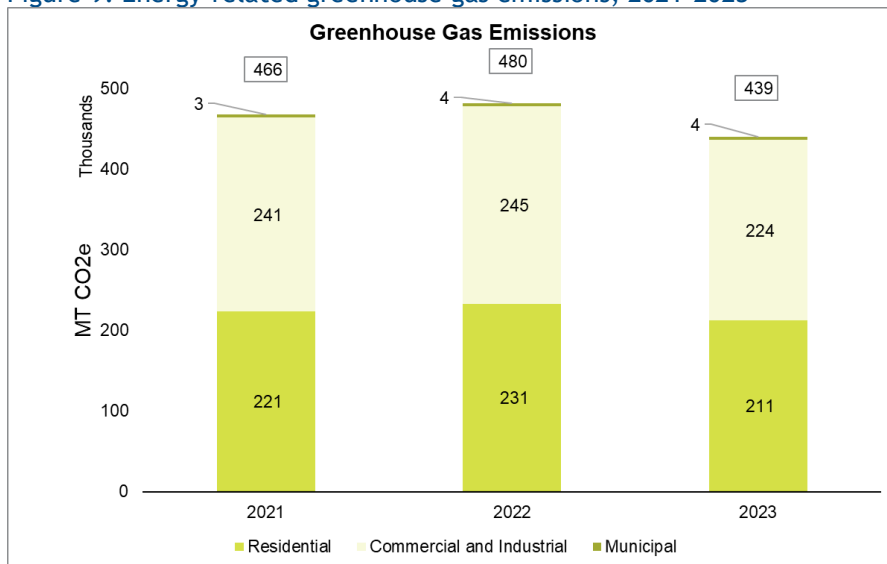
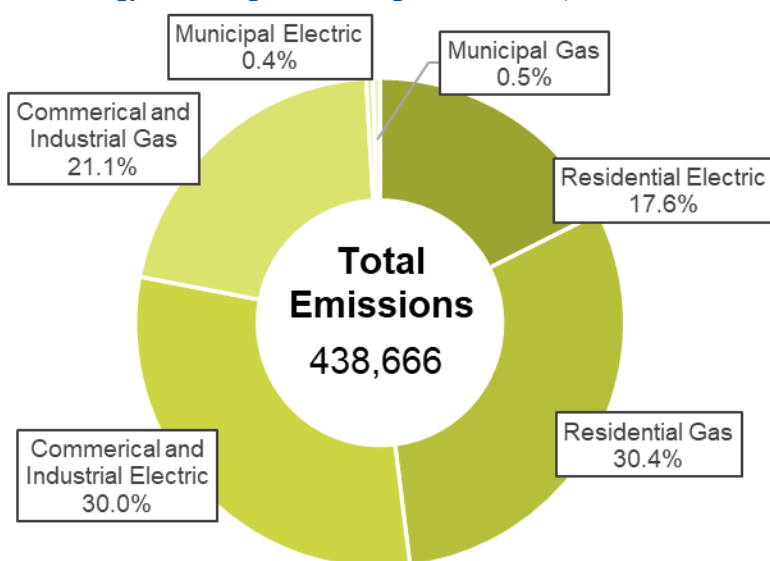


Figure 10. Energy-related greenhouse gas emissions (metric tons CO₂e) by sector and fuel type, 2023



Renewable Energy

Plymouth residents and businesses use subscription programs and on-site options to support renewable energy (Table 2 and Table 3). In Plymouth, most renewable energy participation is in the residential sector, where during 2023, 1,559 residents received renewable energy through subscription programs for a combined total of 6.1 million kWh. In 2023, 255 residents had on-site solar installations⁴. Fewer commercial and industrial customers participated in renewable energy offerings than residents in 2023, with 23 renewable energy program subscribers totaling 19.4 million kWh and 37 on-site installations. However, commercial customers participating in subscriptions programs generate over three times the amount of electricity. Across both residential and business premises, the total renewable energy subscribed is equivalent to almost 4% of total electricity consumption. Overall, there is potential to increase renewable energy use in Plymouth. For more details on participation and subscriptions by electricity utility, see Appendix B: Baseline Energy Analysis.

Table 2. Xcel Energy and Wright-Hennepin Cooperative Electric Association subscription renewable energy program support, 2023

Green Power Purchase Subscriptions	Residential	Commercial & Industrial	Total
Subscriber Count	1,361	18	1,379
Total Annual Electricity Subscribed (kWh)	4,873,053	17,812,269	22,685,322
Community Solar Gardens			
Subscriber Count	198	5	203
Total Annual Electricity Subscribed (kWh)	1,228,022	1,614,393	2,842,415
Total Subscription Renewable Energy Support			
Subscriber Count	1,559	23	1,582

Total Annual Electricity Subscribed (kWh)	6,101,075	19,426,662	25,527,737
Percent of Sector Xcel Energy Electricity Use	2.8%	4.4%	3.8%

Table 3. Xcel Energy and Wright-Hennepin Cooperative Electric Association on-site solar program support, 2023⁴

On-site Solar - Solar*Rewards® and Net-Metering	Residential	Commercial & Industrial
Participant Count	255	37
Total Electricity Capacity (kW)	2,904	8,568
Total Electricity Produced (kWh)	2,387,018	19,442,692

Energy Efficiency Program Participation and Savings

Both residents and commercial and industrial premises participate in Xcel Energy, Wright-Hennepin Electric Cooperative Association⁵, and CenterPoint Energy’s efficiency programs in which 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. Plymouth residents and commercial and industrial premises saved an annual average of more than 6.8 million kWh and more than 383,000 therms during the baseline period by participating in CenterPoint Energy and Xcel Energy’s efficiency programs (Table 4 and Table 5).

Table 4: Average annual Xcel Energy program participation and energy savings, 2021-2023⁶

Program Sector	Average Annual Participation	Average Electricity Savings (kWh)
Residential	2,579	641,818
Low-Income	35	19,469
Commercial & Industrial	288	6,118,172
Total	2,902	6,779,459

⁴ Source: Xcel Energy Community Energy Report for Plymouth, 2023; data provided by Wright-Hennepin Cooperative Electric Association to Partners in Energy, 2023

⁵ Comparable program participation and energy savings data are not available for Wright-Hennepin Cooperative Electric Association, but their 2024 participation data included more than 3,000 residential participants, and several custom commercial participants with large electricity savings.

Table 5: Average annual CenterPoint Energy program participation and energy savings, 2021-2023^{6,7}

Program Sector	Average Annual Participation	Average Natural Gas Savings (therms)
Residential	1,764	236,270
Low-Income	26	4,951
Commercial & Industrial	69	141,898
Total	1,859	383,119

Plymouth residents and businesses rely on a few key programs from Xcel Energy to help them improve efficiency (Table 6 and Table 7). The Residential Heating and Cooling rebate program, where residents receive rebates for upgrading to more efficient equipment and adding or updating insulation, 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 higher savings were seen, though high savings were through the commercial HVAC program. Participation and savings data from 2021-2023 for all Xcel Energy and CenterPoint Energy programs are provided in Appendix B: Baseline Energy Analysis.

Table 6: Average annual participation in top Xcel Energy residential programs, 2021-2023

Residential Program	Average Annual Participation	Average Total Electricity Savings (kWh)
Efficient New Home Construction	80	112,032
Home Energy Squad	129	119,676
Refrigerator Recycling	106	81,351
Residential HVAC	837	313,161
Smart Thermostat	653	13,997

⁶ Home Energy Squad is a program jointly offered by Xcel Energy and CenterPoint Energy. Data in these tables counts Home Energy Squad participation separately for Xcel Energy and CenterPoint Energy. The Home Energy Squad participation counts for Xcel Energy and CenterPoint Energy are not unique residents, and in many cases overlap, but therms and kWh savings from Home Energy Squad are unique to CenterPoint Energy and Xcel Energy, respectively.

⁷ Participation and savings data excludes DIY energy efficiency kits, home energy reports and school kits from the residential sector, and code compliance, training and education, and benchmarking from the commercial sector.

Table 7: Average annual participation in top Xcel Energy commercial and industrial programs, 2021-2023

Commercial Program	Average Annual Participation	Average Electricity Savings (kWh)
Custom Efficiency	1	195,858
Energy Design Assistance	1	299,653
HVAC+R Efficiency	36	710,307
Lighting Efficiency	92	3,036,907
Small Business Lighting	52	1,544,959



WHERE WE ARE GOING

Developing an outlook of where the City of Plymouth would like to be at the end of this plan's timeline was a large part of the City's planning effort. This section gives an overview of what the successful implementation of this plan looks like according to the Energy Action Team.

Energy Vision

During the planning process, the Energy Action Team created the following vision statement for this Energy Action Plan. This statement guided the planning process and reflected the intention of the community. See Appendix D: Community Energy Survey Results.

Plymouth is a thriving community that conserves and uses clean and resilient energy, so everyone has a healthy environment and enough energy to meet our communities' needs into the future.

Goals

Working together, the Energy Action Team set near-term and long-term goals and targets to measure success. Together those goals and targets culminate into a community-wide goal that speaks to the community's energy sentiment and is intended to be met by 2030. The community can revisit progress at that point, and set new goals as new technologies, community direction, and opportunities are presented. This is a fairly ambitious goal per the team and the wider community's input, that will require some resources and promotion of projects and programs that will keep Plymouth on track.

By 2030, Plymouth will increase its community-wide energy savings by 30% to save residents and businesses money on their utility bills.

In total, this will result in almost 1.3 million MMBtu (a combined measure of gas and electric energy) in energy savings by 2030 compared to the savings of a business-as-usual (BAU) scenario. This is equivalent to:

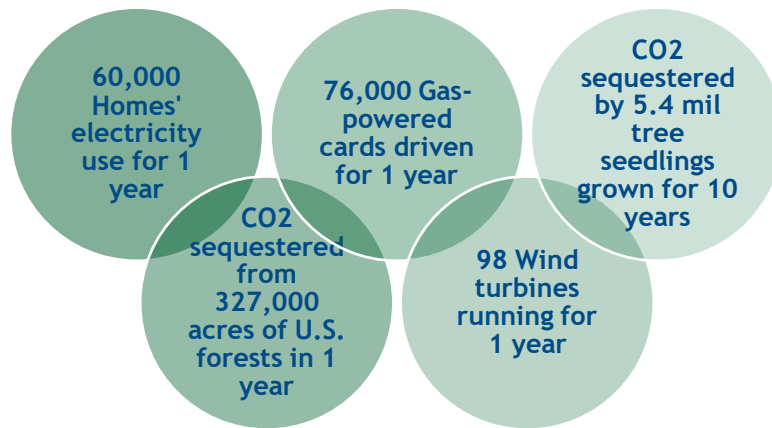
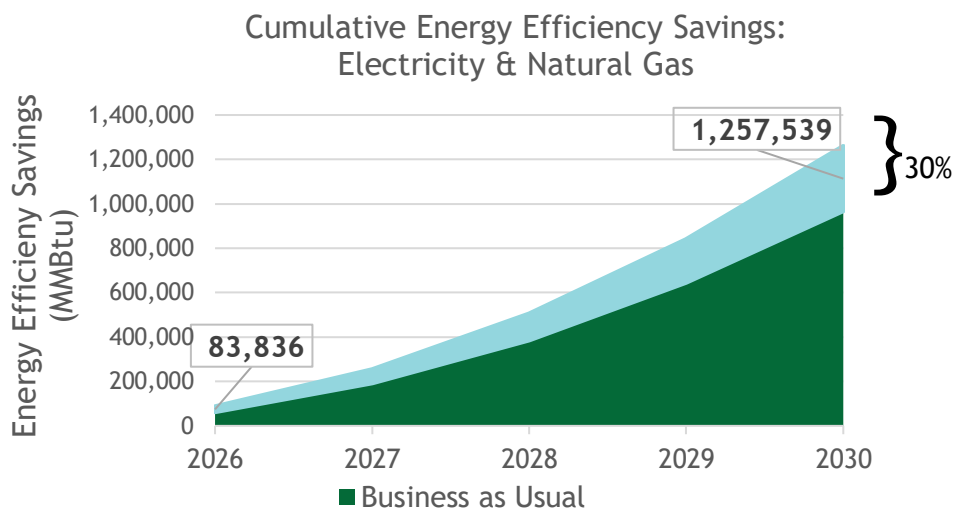
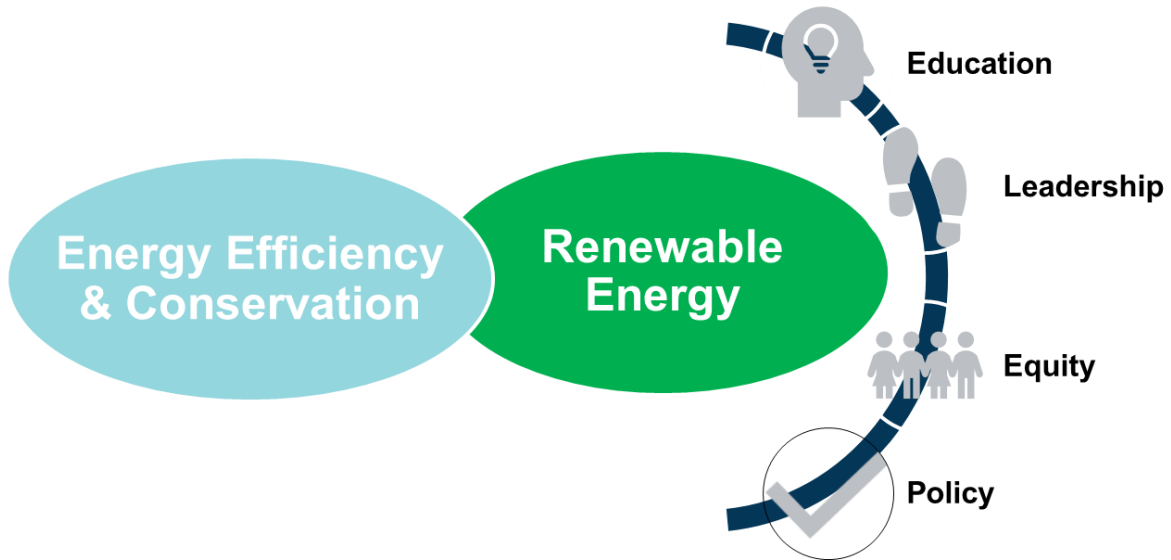


Figure 11. Model of a 30% increase in energy savings derived from utility program participation targets.



Focus Areas

The Energy Action Team identified two focus areas with four cross-cutting themes to prioritize strategies and resources. The focus areas are the two organizing topics for the strategies within the plan. The cross-cutting themes are types of actions or concepts to elevate through each strategy. There are strategies that intersect with both focus areas or themes, giving those strategies the benefit of extra support and resources identified in the planning process. We've labeled these as fundamental strategies.



Focus Area 1: Energy Efficiency and Conservation is key to the Plymouth community for saving residents and businesses money on utility bills and preparing homes and buildings for electrification and renewable energy options. Energy efficiency is also important to Plymouth to help the most energy burdened people in the community from over-spending on their energy.

Focus Area 2: Renewable Energy is important to Plymouth to build the resilience of homes and buildings, reduce greenhouse gas emissions, and save the community money into the future.

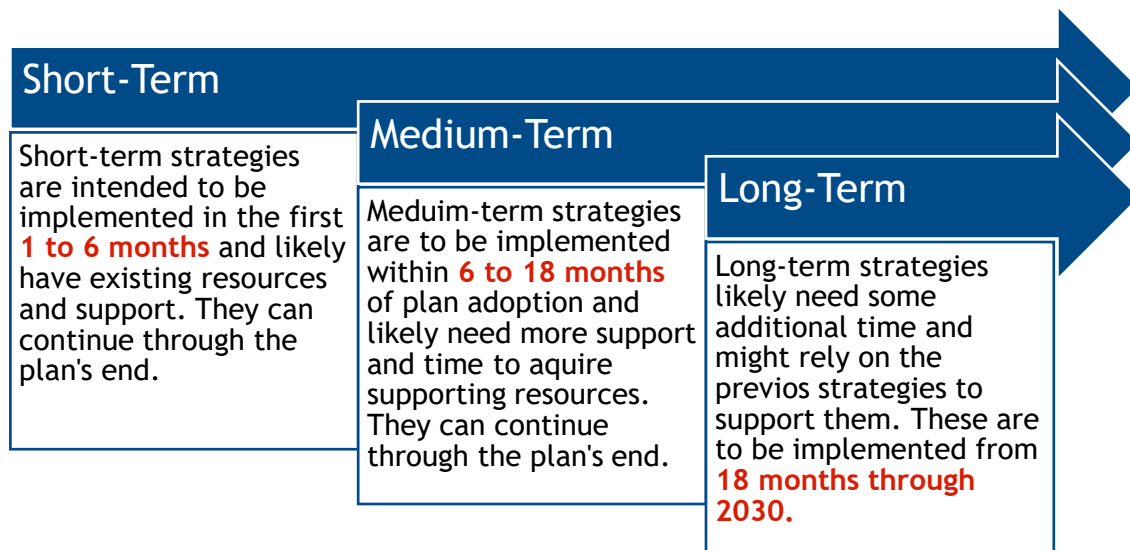
Focus Area 3: Fundamental Strategies that fall within both focus areas 1 and 2.



HOW WE ARE GOING TO GET THERE

To achieve the community’s energy vision and goal, the Energy Action Team identified a set of strategies to support plan implementation. The following sections organize strategies by focus area and include baseline information, desired outcomes, potential barriers, available resources, and a timeline of action steps.

Timeline of Strategies



Fundamental Strategies

These strategies didn't fall within just one of the focus area categories but rather applied both the Energy Efficiency and Conservation and Renewable Energy focus areas and therefore are named as Fundamental Strategies to cover both of the plan's focuses.

FS-1 Communicate Partners in Energy Impact with Community to Highlight Successes

Report Partners in Energy impacts (e.g., implementation highlights, program participation, progress toward goals) for all sectors, in a special section of the City's newsletter.

Desired Outcome

- Show the City's progress toward goals in real time
- Community members are educated about energy efficiency and renewable energy

Actions and Roles

Action	Roles
FS-1a. Highlight case studies and example energy projects in public communications.	Partners in Energy will draft information and the City will distribute it through website, social media, and events.
FS-1b. Report energy savings and greenhouse gas emissions avoidance in a dedicated energy section of City newsletter.	Partners in Energy will share data at 6-month intervals with the City, and the City will collect other utility data and develop a section of the newsletter to share publicly.
FS-1c. Develop case studies of energy efficiency or renewable energy projects as exemplary models.	Partners in Energy and the City will seek relevant projects in the community to develop case studies. Partners in Energy will create case studies, and the City will communicate the results.
FS-1d. Showcase how to understand your energy bill information on the City website that highlights customers' energy breakdowns and opportunities.	Partners in Energy and City to work together to identify relevant information and format for the City's website.
FS-1e. Show progress toward Energy Action Plan goals	City will host a web page that shows goal progress, Partners in Energy will provide updated data and program participation numbers.
FS-1f. Create an information hub on the City website – a one-stop shop to help people know about all the actions and programs available to them. Link to this hub in other energy promotional materials.	City to host a web-hub with support from Partners in Energy for program language, hub formatting, and relevant information.
Timeline: Short- to Medium-term 1-18 Months	
Resources: City and partner communication channels, City council, community programming	

FS-2: Pursue Funding to Bolster Implementation Efforts

As state and federal funding become available, there will be additional opportunities to promote stacking incentives, but also opportunities to pursue funding to expand city incentives or to support related projects (municipal electrification/efficiency, community solar, community wind, etc.).

Desired Outcome

- Increase impacts of projects through larger funding opportunities.

Actions and Roles

Action	Roles
FS-2a. Leverage state and federal funding for energy projects in Plymouth	Partners in Energy and the City will seek funding opportunities for the City to apply for, and Partners in Energy will provide letters of support.
Timeline: Short- to Long-term 1 month to 5 years	
Resources: Department of Energy, Minnesota Pollution Control Agency, Metropolitan Council, etc.	

Energy Efficiency and Conservation

Energy Efficiency and Energy Conservation were identified by the Energy Action Team and by the community energy survey as a high priority that will benefit residents and businesses, and is the first step to renewable energy, electrification and more.

Strategy EEC-1: Conduct a Home Energy Efficiency Campaign for Existing Residents

Plymouth’s community survey identified several barriers to residential energy action, including knowledge and upfront cost. This strategy focuses on connecting residents with information and incentives to reduce these barriers and encourage energy action.

Desired Outcomes

- 1500 Home Energy Squad visits by 2030
- 40% increase in insulation, air sealing and heating & cooling rebates

Actions and Roles

Action	Roles
EEC-1a. Share energy efficiency information through City channels, with a focus on navigating audits, insulation and air sealing, efficient heating and cooling, and FAQs.	Partners in Energy will draft information and the City will distribute through website, social media, and events. Partners in Energy will develop a refrigerator magnet with energy actions.
EEC-1b. Connect older homes with information about insulation and air sealing.	Partners in Energy and the City will partner to identify up to 2 target neighborhoods. Partners in Energy will create a postcard to send to identified homes.
EEC-1c. Host a National Night Out campaign.	Partners in Energy to create energy efficiency promotional materials and City to connect with neighborhood leaders, fire stations, and police to distribute.
EEC-1d. Conduct a follow-up campaign with residents who completed an energy assessment.	Partners in Energy and City work together to identify qualifying residents and share targeted messaging to encourage them to implement a recommendation.
EEC-1e. Distribute energy evaluation kits to help residents measure home usage.	City to partner with the local library (or other community spaces) to create an energy kit rental/giveaway system with utility donations and grant funds.
EEC-1f. Organize a group buy for residential heat pumps.	Partners in Energy and the City will support group-buy opportunities through the county/state or peer community collaborations. Partners in Energy will develop promotional materials.
Timeline: Short-term 1-6 Months	
Resources: Youth groups and clubs, city council participation/case study, word of mouth, HOAs, neighbor-to-neighbor communication	

Strategy EEC-2: Promote Energy Efficiency for New Homes

New construction presents a great opportunity to promote resilient and sustainable energy because many of the energy systems in new homes last 10 years or more. This strategy focuses on encouraging energy efficient systems from the start.

Desired Outcomes

- 422 participants in Xcel Energy’s Efficient New Home Construction Program by 2030
- New homes in Plymouth that are more energy efficient and therefore resilient, electrification, and renewable ready.

Actions and Roles

Action	Roles
EEC-2a. Encourage local builders to build with more energy efficient practices.	Partners in Energy will draft information and the City will distribute through relevant relationships with permitting staff, contractor partnerships, etc.
EEC-2b. Create an energy efficiency packet for realtors to share with new residents.	Partners in Energy will develop a packet of information, and the City will identify realtor partnership opportunities to share packets.
EEC-2c. Explore an energy efficiency audit/score as part of home sale inspections as a voluntary option for sellers.	City will explore opportunities and parameters.
Timeline: Medium-term 6-18 Months	
Resources: A targeted newsletter, builder and realtor group lists, permitting office/professionals	

Strategy EEC-3: Promote Income-qualified Programs to Low-income Residents to Reduce Energy Burden

Reducing the energy burden that Plymouth’s lowest resourced residents bear, is beneficial to all in the Plymouth community. This strategy will not only have savings impacts, but will also increase residents’ ability to thrive in the community.

Desired Outcomes

- 100% increase in income-qualified programs
- More residents can afford utility bills

Actions and Roles

Action	Roles
EEC-3a. Build partnerships with community-based organizations (CBOs) who serve income-qualified residents (e.g., IOCP).	The City will build relationships with CBOs in the community and Partners in Energy will support any efforts with materials and meeting opportunities.

EEC-3b. Develop a robust campaign aimed at the most energy-burdened areas of the community to share energy resources and support.	Partners in Energy will develop a campaign plan and marketing materials for the City to implement with relevant partners.
Timeline: Short-term 1-6 Months	
Resources: LIRC List, housing department, CBO partners, additional/increased City incentives, state and federal resources, utility program participation maps, manufactured home parks, community education	

Strategy EEC-4: Develop a Green Business Program

Pilot a green business program to recognize and promote local businesses that take energy actions that support the Energy Action Plan’s goals. This strategy intends to incentivize businesses to take energy actions in new build and retrofitting projects.

Desired Outcomes

- Establish a green business program.
- Recognize at least two green businesses in first year of program.

Actions and Roles

Action	Roles
EEC-4a. Research green business program models.	Partners in Energy and the City will collaborate to find relevant examples of recognition programs for the City to build on.
EEC-4b. Develop green business certification criteria based on research.	The City will develop a set of criteria for businesses to meet, and Partners in Energy will incorporate those criteria into campaign materials.
EEC-4c. Establish and promote a green business program and marketing materials.	The City will seek approval on a recognition program and implement with Partners in Energy support with marketing and communication tools.
EEC-4d. Organize a business energy-saving campaign to promote the green business program and encourage participation.	Partners in Energy and City to work together to identify opportunities to promote the program and recognize businesses.
Timeline: Medium-term 6-18 Months	
Resources: LEED, Rotary, Air Source Heat Pump Collaborative, Chamber of Commerce, business groups	

Strategy EEC-5: Participate in Energy Efficiency Workforce Development

Support workforce development for energy efficiency related professions, such as HVAC, plumbing, and electrical work.

Desired Outcomes

- A workforce that can provide Plymouth residents with energy services, equipment replacement, and knowledgeable advice on new technologies and energy efficient priorities.

Actions and Roles

Action	Roles
EEC-5a. Research existing workforce development opportunities, programs, and partners.	Partners in Energy and the City will identify workforce support opportunities.
EEC-5b. Identify opportunities to train key vendors (HVAC installers, plumbers) on electric appliances (e.g., heat pumps).	The City will partner with peer communities, county opportunities, or other organizations and groups to host/co-host contractor training on relevant energy topics. Partners in Energy will support event planning and secure speakers/trainers.
EEC-5c. Pursue grade school and high school engagement and education opportunities	The City will identify interested school opportunities and Partners in Energy will support with the school kit program or creating other materials.
Timeline: Long-term 18 months to 5 years	
Resources: Utility workforce programs, schools, Sabathani, Hennepin County, intern opportunities, homeschool groups	

Strategy EEC-6: Energy Efficient City Facilities

Pursue opportunities to replace City of Plymouth equipment with more energy efficient equipment.

Desired Outcomes

- More efficient municipal buildings to lead by example for other commercial properties.

Actions and Roles

Action	Roles
EEC-6a. Continue to change streetlights to LEDs with light sensors, when new bulbs are needed.	The City will identify opportunities to make streetlights more efficient.
EEC-6b. Continue to install energy efficiency and electrification measures in all City buildings.	The City will identify energy measures in City-owned buildings. Partners in Energy will provide program support opportunities and project communications materials.
Timeline: Medium-term 6-18 Months	
Resources: Building staff, City council, state and federal programs	

Renewable Energy

Strategy RE-1 Encourage Residential Use of Renewable Energy

This strategy is focused on encouraging residents to participate in renewable energy programs (on-site and subscription). There is a need within the renewable energy sector to better explain programs so that residents can understand how to participate and what the customer experience looks like.

Desired Outcomes

- Increase subscriptions to renewable energy programs by 5% annually from business-as-usual

Actions and Roles

Action	Roles
RE-1a. Develop an incentive for homes to enroll in renewable energy programs (subscription and on-site programs).	The City will develop an incentive program for participating in renewable energy programs (e.g., recognition or financial). Partners in Energy will support with web-language, program materials, and communications/campaign planning.
RE-1b. Promote rooftop solar to homes.	Partners in Energy will develop promotional materials and a decision tree, and the City will distribute to its communications channels.
RE-1c. Develop and share case studies on local renewable energy projects.	The City will identify City projects for Partners in Energy to do a case study on. The City will promote through communications channels.
RE-1d. Market renewable energy subscription programs to residents (renters and homeowners).	Partners in Energy will develop promotional materials and the City will distribute to its communications channels.
RE-1f. Promote or collaborate on group-buy opportunities for residential rooftop solar.	Partners in Energy and the City will support group-buy opportunities through the county/state or peer community collaborations. Partners in Energy will develop promotional materials.
Timeline: Short to Medium-term 1-18 Months	
Resources: Geo-focused social media ads, HOAs, Buyers Club, farmers market, library	

Strategy RE-2 Encourage Commercial Use of Renewable Energy

This strategy focuses on encouraging businesses and institutions to participate in renewable energy programs (on-site and subscription). This strategy also intends to better communicate renewable energy program opportunities that resonate with the business community.

Desired Outcomes

- Increase subscriptions to renewable programs by 5% annually from business-as-usual

Actions and Roles

Action	Roles
RE-2a. Provide an incentive for businesses to enroll in renewable energy programs.	The City will develop an incentive program for participating in RE programs (e.g., recognition or financial). Partners in Energy will support with web-language, program materials, and communications/campaign planning.
RE-2b. Promote rooftop solar to businesses and home builders (particularly during roof replacements).	Partners in Energy will develop promotional materials and the City will distribute to its communications channels, chamber, and other business partnerships.
RE-2c. Encourage public schools to install rooftop solar and/or subscribe to renewable energy programs.	The City will identify school contacts and Partners in Energy will develop school communications materials with relevant program and funding opportunities.
Timeline: Medium-term 6-18 Months	
Resources: Permitting staff and lists, Housing department, Chamber of Commerce	

Strategy RE-3 Assist in Navigating On-site Solar Vendors

The Energy Action Team recognized that there are many solar scams that have been pertinent throughout the community, and that residents may be hesitant to adopt on-site solar for those reasons. This strategy aims to overcome that trust barrier.

Desired Outcomes

- Reduce solar scams and promote reputable projects.

Actions and Roles

Action	Roles
RE-3a. Guide residents to third-party renewable energy vendor lists or Xcel Energy approved vendor list.	The City will develop a place on the web-hub to help residents access third-party vendor lists. Partners in Energy will suggest possible relevant vendor lists.
RE-3b. Create a guide for residents to navigate solar pathways.	Partners in Energy will develop promotional materials and the City will

	distribute and host on the energy web-hub.
Timeline: Short-term 1-6 Months	
Resources: Local nonprofit renewable organizations, utilities, faith orgs, community ed.	

Strategy RE-4 Explore Opportunities to Reduce Barriers to Renewable Energy Projects

Barriers can present themselves when residents or businesses want to install solar or subscribe to renewable energy programs. The City can get ahead of those barriers by addressing them in this strategy.

Desired Outcomes

- Minimize barriers to renewable energy.

Actions and Roles

Action	Roles
RE-4a. Review opportunities to update Plymouth permits, zoning requirements (solar requirements updated in 2024).	The City will monitor opportunities to update ordinances/policy.
RE-4b. Review reasons for solar interconnection time delays and inform Plymouth residents about how they can facilitate and expedite the process.	Partners in Energy will coordinate efforts.
RE-4c. Guide interested parties to solar interconnection link.	Partners in Energy will develop language for the City to include in materials/web.
Timeline: Short-term to Long-term 2030	
Resources: Guides to renewable energy zoning, utility information	

Strategy RE-5 Power Municipal Electricity with Renewable Energy

The City of Plymouth wants to lead by example. The City has undertaken energy efficiency projects, which puts the City in a good position for renewable energy and electrification. This strategy focuses on continuing to explore opportunities to power municipal electricity with renewable energy through on-site solar or participation in renewable energy subscription programs.

Desired Outcomes

- Get 100% of City electricity from renewable energy.
- Increase municipal participation in renewable energy programs.
- Reduce the municipal building contribution to greenhouse gas emissions.

Actions and Roles

Action	Roles
RE-5a. Install on-site solar/wind power and energy efficiency in City buildings where possible.	The City will identify opportunities to participate in programs on a building-by-building case. Partners in Energy will connect the City to relevant program information and develop project communications.
RE-5b. Subscribe municipal buildings to renewable programs where feasible.	The City will identify opportunities to participate in programs on a building-by-building case. Partners in Energy will connect with programs and develop project communications.
Timeline: Medium-term 6-18 Months	
Resources: Utility account managers, City building staff, City council	

Strategy RE-6 Explore Opportunities to Develop or Promote Solar Gardens to Residents

Solar gardens can provide options for renewable energy for people who aren't able to do on-site solar. This provides for more equitable access for renters and homeowners who need pre-renewable energy upgrades. It adds renewable energy to the grid, which can benefit the resilience of the community.

Desired Outcomes

- More residents can access renewable energy with reduced electric costs.

Actions and Roles

Action	Roles
RE-6a. Explore site opportunities for a community solar garden.	The City will explore options for a community solar garden through internal or third-party assessments.
RE-6b. Seek funding for solar garden.	The City and Partners in Energy will identify/explore funding opportunities when they become available.
RE-6c. Secure necessary partners and construct solar garden.	The City will explore partnerships and contractors for any potential installations.
RE-6d. Promote solar garden, with a focus on low-income residents.	Partners in Energy will develop communications and City will promote participation.
Timeline: Long-term 18 Months to 5 Years	
Resources: Solar garden owners/developers, utility maps	

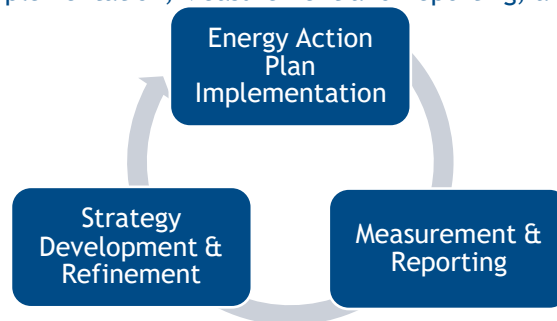


HOW WE STAY ON COURSE

Adapting to a Changing Landscape

This Energy Action Plan is a living document that is cyclical in nature (Figure 12). Goals and strategies will be assessed and refined as needed based on data and community staff capacity.

Figure 12: Cycle of Implementation, Measurement and Reporting, and Strategy Development



It will be important that strategies are evaluated and updated 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 City staff to ensure we stay on course to achieve our strategies. The City will request data from CenterPoint Energy and Wright-Hennepin Cooperative Electric Association, to add to the data provided by Xcel Energy to complete the energy data updates to track progress toward goals and program participation targets.

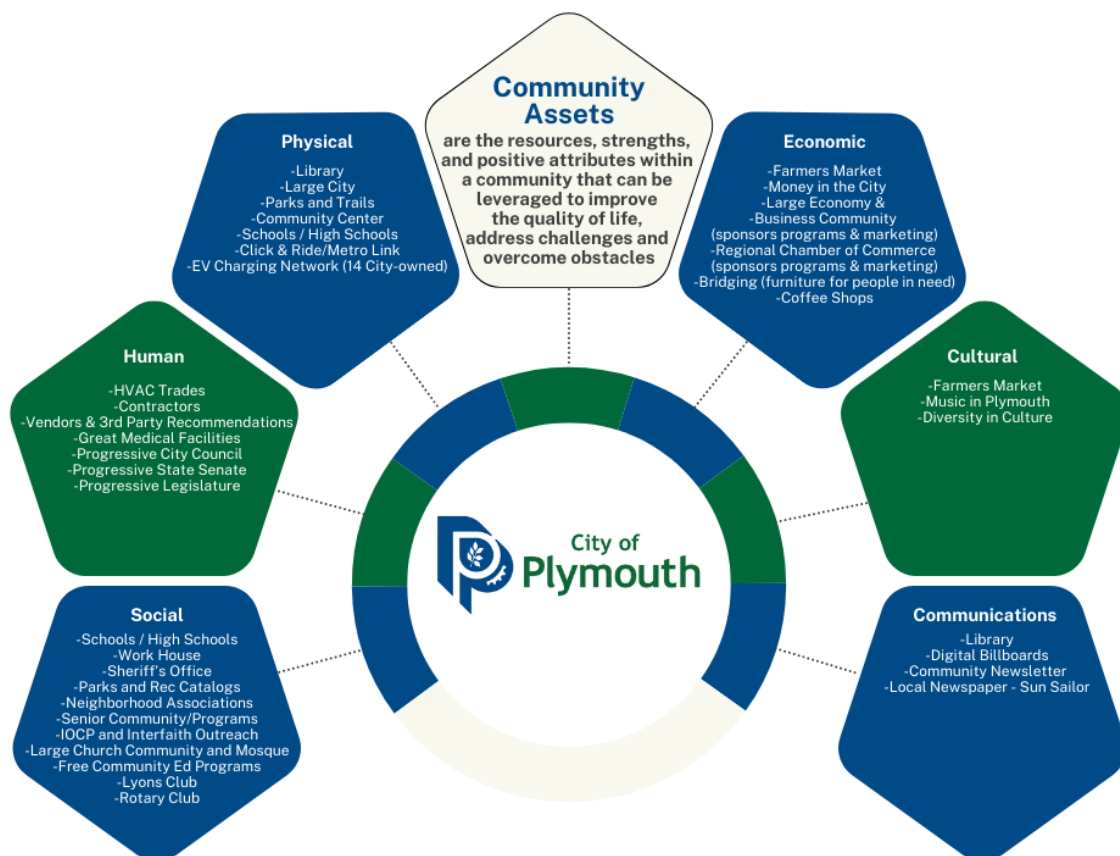
Partners in Energy will provide biannual progress reports with metrics of success and overall progress toward goals for Xcel Energy rebates and programs. These reports will be available publicly and shared with both the community and Energy Action Team. If available, ad hoc participation reports for 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 hitting the plan targets. At critical milestones, Plymouth will publish updates on progress, share successes, and congratulate participants and partners.

Energy Action Team Commitment and Other Community Assets

The Energy Action Team formed to create this plan will support implementation by helping connect their networks to the campaigns that are developed as a part of this plan. They will also help by being resources for case studies and community examples for program participation. The team helped create a community asset map (Figure 13) to be considered when implementing this plan as assets that will help the success of plan strategies.

Figure 13. Community Assets identified by the Energy Action Team in Workshop 4





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, beneficial electrification 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.

Partners in Energy held five workshops with the Energy Action Team, City, and utility representatives. The Energy Action Team provided input on surveys between workshops to help make decisions. A survey went out to the broader community asking about their energy priorities, which the Energy Action Team took into consideration when developing plan strategies and goals.

Figure 14. Energy Action Team Members Workshop 3 Activity – Goal Creation



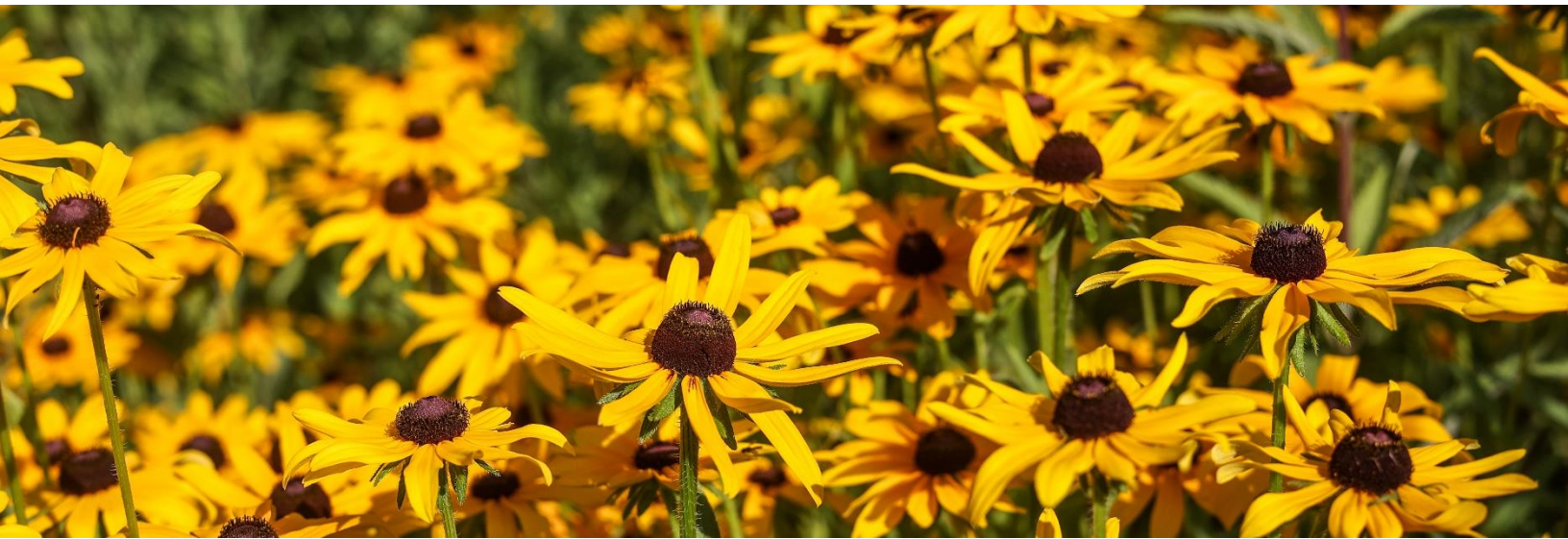
Plan Implementation

Partners in Energy provides 18 months of support for implementation of an Energy Action Plan. This support is designed to supplement both technical analysis and community outreach. Services offered by the Partners in Energy team are shown in Figure 15.

Figure 15. Partners in Energy Resources for Implementation



Strategies that will be supported by Partners in Energy are identified in the Energy Action Plan, and a Memorandum of Understanding will be developed between Xcel Energy and Plymouth to outline the scope of support.



APPENDIX B: BASELINE ENERGY ANALYSIS

Data was provided by Xcel Energy, CenterPoint Energy, and Wright-Hennepin Cooperative Electric Association for all Plymouth premises for 2021-2023. Both Xcel Energy and Wright-Hennepin Cooperative Electric Association provide electric service to the community, while CenterPoint Energy provides natural gas service to the community. The data helped the Energy Action Team understand Plymouth’s 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 Plymouth premises are residential. Of the 36,488 distinct electricity premises in Plymouth in 2023, 91.8% (33,485) are residential, 7.9% (2,889) are commercial and industrial, and the remaining 0.3% are municipal premises (114). The number of natural gas premises is lower than electricity premises since multi-family buildings tend to be individually metered for electricity but metered at the building level for natural gas. In 2023, the total number of natural gas premises in Plymouth was 30,977. Both Xcel Energy and Wright-Hennepin Cooperative Electric Association deliver electricity to the community of Plymouth, with Xcel Energy servicing 81% of residential premises and 94% of business premises.

Table 8. Electricity premise counts by sector, 2021-2023

Utility	Sector	2021	2022	2023	Average
Xcel Energy	Residential	26,869	27,038	27,180	27,029
	Commercial & Industrial	2,658	2,686	2,708	2,684
	Municipal	112	114	114	113
Wright-Hennepin	Residential	6,244	6,281	6,305	6,277

	Commercial & Industrial	182	182	181	182
All Electric Utilities	Residential	33,113	33,319	33,485	33,306
	Commercial & Industrial	2,840	2,868	2,889	2,866
	Municipal	112	114	114	113
Total	All Utilities	36,065	36,301	36,488	36,285

Electricity and Natural Gas Consumption and Trends by Sector

On average, the Plymouth community consumes 788 million kWh of electricity and 44 million therms of natural gas across all sectors per year. Total energy consumption increased by 1.3% over the baseline period, which can be attributed to an increase of 3.0% in natural gas consumption and a 1.5% decrease in electricity consumption.

Table 9. Total energy consumption by sector and fuel type, 2021-2023

Fuel Type	Sector	2021	2022	2023	Average
Electricity (kWh)	Residential	287,521,156	278,393,306	278,956,484	281,623,649
	Commercial & Industrial	500,454,024	502,514,728	495,517,816	499,495,523
	Municipal	6,240,896	7,543,085	7,712,331	7,165,437
	Total	794,216,076	788,451,119	782,186,631	788,284,609
Natural Gas (therm)	Residential	24,689,235	28,415,913	25,157,100	26,087,416
	Commercial & Industrial	16,782,169	19,766,784	17,424,945	17,991,299
	Municipal	216,613	331,396	379,660	309,223
	Total	41,688,017	48,514,093	42,961,705	44,387,938
Total (MMBtu)	Residential	3,449,946	3,791,469	3,467,510	3,569,641
	Commercial & Industrial	3,385,766	3,691,259	3,433,201	3,503,409
	Municipal	42,955	58,877	64,280	55,371
	Total	6,878,667	7,541,605	6,964,991	7,128,421

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, Plymouth’s natural gas consumption was at its highest level in 2022, which was also the coldest year with the most heating degree days.

Table 10. 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

Plymouth’s overall energy-related greenhouse gas emissions remained steady from 2021-2023. However, a disaggregation by fuel type shows electricity emissions decreased by 13.8% while natural gas emission increased by 3.1% during this time. To calculate Plymouth’s energy-related emissions, an “emissions factor” is used. This emissions factor describes the amount of CO₂ emitted per unit of energy (Table 12). Specifically, the certified emissions factors from Xcel Energy’s Upper Midwest Fuel Mix, from Wright-Hennepin Cooperative Electric Association 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 11. Energy-related greenhouse gas emissions in MTCO₂e, 2021-2023

Fuel Type	Sector	2021	2022	2023	Average
Electricity	Residential	90,374	79,997	77,200	82,524
	Commercial & Industrial	152,266	140,419	131,530	141,405
	Municipal	1,786	2,008	1,935	1,910
	Total	244,427	222,425	210,664	225,839
Natural Gas	Residential	131,028	150,806	133,511	138,449
	Commercial & Industrial	89,065	104,904	92,476	95,482
	Municipal	1,150	1,759	2,015	1,641
	Total	221,242	257,469	228,002	235,571
Total	Residential	221,403	230,803	210,711	220,972
	Commercial & Industrial	241,331	245,323	224,006	236,887
	Municipal	2,936	3,767	3,949	3,551
Total		465,669	479,894	438,666	461,410

Table 12. Emissions factors used to calculate energy-related greenhouse gas emissions, 2021-2023⁸

Fuel Type	2021	2022	2023
Xcel Energy Electricity Emissions Factor (lbs/MWh)	631	587	553
Wright-Hennepin Cooperative Electric Association Electricity Emissions Factor (lbs/MWh)	907	790	801
Natural Gas Emissions Factor (MTCO ₂ e/Dth)	0.05307	0.05307	0.05307

Energy Costs

In total, Plymouth premises spent an annual average of \$137 million on energy during the baseline period. Plymouth residential premises made up almost half of that spending (\$66.1 million or 48%), 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 almost \$2,000 per premise on fuel costs. Commercial premises spent much more per premise on energy, with an annual average of \$24,355 per premise.

Table 13. Annual energy costs by sector and fuel type, 2021-2023

Fuel Type	Sector	2021	2022	2023	Average	Average Annual Cost Per Premise
Electricity	Residential	\$35,064,469	\$37,255,201	\$39,016,392	\$37,112,021	\$1,114
	Commercial & Industrial	\$50,415,533	\$57,536,703	\$57,939,949	\$55,297,395	\$19,297
	Municipal	\$725,618	\$1,003,401	\$1,021,076	\$916,698	\$8,089
	Total	\$86,205,620	\$95,795,305	\$97,977,416	\$93,326,114	
Natural Gas	Residential	\$23,733,820	\$33,857,705	\$29,536,767	\$29,042,764	\$872
	Commercial & Industrial	\$11,349,302	\$16,974,340	\$15,165,007	\$14,496,216	\$5,059
	Municipal	\$139,690	\$316,363	\$345,257	\$267,103	\$2,357
	Total	\$35,222,812	\$51,148,407	\$45,047,030	\$43,806,083	
Total	Residential	\$58,798,289	\$71,112,905	\$68,553,158	\$66,154,784	\$1,986

⁸ [Xcel Energy 2022. Carbon Dioxide Emission Intensities.](#)

	Commercial & Industrial	\$61,764,835	\$74,511,044	\$73,104,956	\$69,793,611	\$24,355
	Municipal	\$865,308	\$1,319,764	\$1,366,333	\$1,183,801	\$10,445
Total		\$121,428,432	\$146,943,713	\$143,024,447	\$137,132,197	

Energy Burden

Energy burden is the percentage of income that residents spend on energy. Plymouth residents who own their homes and make 30% or less of the median area income spend up to 14% of their income on energy costs. This group comprises 1,002 households, 3% of total households in the City. Notably, energy burden is higher across almost every income group for homeowners than renters.

Table 14. Energy burden by unit occupancy and median income⁹

Percent of Area Median Income	Energy Burden		Household Count	
	Own	Rent	Own	Rent
0-30%	14%	4%	1,002	1,091
30-60%	4%	2%	2,091	1,343
60-80%	3%	2%	1,755	992
80-100%	2%	1%	1,996	1,238
100-150%	1%	1%	5,913	2,116
150%+	1%	1%	11,803	1,569
Total	2.2%	1.6%	24,560	8,349

Program Participation and Savings

Plymouth already has a significant number of participants in energy efficiency programs from Xcel Energy, Wright-Hennepin Cooperative Electric Association,¹⁰ and CenterPoint 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

⁹ Source: Department of Energy Low-Income Energy Affordability Data Tool

¹⁰ Comparable program participation and energy savings data are not available for Wright-Hennepin Cooperative Electric Association, but their 2024 participation data included more than 3,000 residential participants, and several custom commercial participants with large electricity savings.

annual average of 6,118,172 kWh and 141,898 therms, while participation in residential programs saved an annual average of 641,818 kWh and 236,270 therms.

Home Energy Squad is a residential program jointly offered by Xcel Energy and CenterPoint Energy, and Xcel Energy also maintains a separate program designation for income-qualified residents. [Table 15](#), [Table 16](#), and

Table 18 show the Home Energy Squad participation and energy savings for Xcel Energy and CenterPoint Energy separately. The Home Energy Squad participation counts for Xcel Energy and CenterPoint Energy are not unique residents, and in most cases overlap; however, the electricity savings are exclusive to Xcel Energy, and the gas savings to CenterPoint Energy.

Table 15. Annual Xcel Energy residential energy efficiency program participation and savings, 2021-2023

Residential Program	2021		2022		2023	
	Count	Savings (kWh)	Count	Savings (kWh)	Count	Savings (kWh)
Efficient New Home Construction	86	106,451	34	48,781	119	180,864
Home Energy Audit	32	0	137	0	212	0
Home Energy Squad	79	97,116	124	118,285	183	143,626
HomeSmart	35	0	52	0	41	0
Insulation Rebate	22	1,186	10	1,060	7	687
Refrigerator Recycling	122	87,127	125	111,404	70	45,522
Residential HVAC	1,105	425,244	659	251,385	746	262,854
Residential Saver's Switch	408	452	264	292	1,107	1,128
Smart Thermostat	444	17,684	522	7,266	992	17,040
Total	2,333	735,260	1,927	538,473	3,477	651,721

Table 16. Annual Xcel Energy income-qualified energy efficiency program participation and savings, 2021-2023

Income-Qualified Program	2021		2022		2023	
	Count	Savings (kWh)	Count	Savings (kWh)	Count	Savings (kWh)
Home Energy Savings Program	33	13,877	31	15,168	17	9,375
Low-Income Home Energy Squad	2	3,342	11	10,658	10	5,987
Total	35	17,219	42	25,826	27	15,362

Table 17. Annual Xcel Energy business energy efficiency program participation and savings, 2021-2023

Business Program	2021		2022		2023	
	Count	Savings (kWh)	Count	Savings (kWh)	Count	Savings (kWh)
Business Energy Assessments	0	0	2	64,155	2	0
Custom Efficiency	1	83,644	1	60,712	2	443,217
Efficiency Controls	1	63,381	0	0	0	0
Electric Rate Savings	19	-20,409	0	0	12	632
Energy Design Assistance	0	0	3	898,958	0	0
Energy Efficient Buildings	0	0	4	39,833	2	47,211
Fluid System Optimization	5	113,824	6	283,885	4	77,345
Foodservice Equipment	0	0	0	0	1	9,331
HVAC+R Efficiency	46	372,499	28	729,793	35	1,028,630
InfoWise	2	0	1	0	0	0
Lighting Efficiency	123	4,353,765	85	2,687,050	69	2,069,906
Multi-Family Building Efficiency	4	100,094	7	87,681	6	12,697
Peak Partner Rewards	1	264	1	0	1	757
Process Efficiency	0	0	0	0	2	0
Recommissioning	2	69,877	0	0	0	0
Saver's Switch for Business	18	138	10	90	16	80
Small Business Lighting	54	1,575,968	58	1,220,623	45	1,838,286
Smart Thermostat for Businesses	48	36,848	60	818	71	2,932
Turn Key Services	3	0	3	0	0	0
Total	327	6,749,893	269	6,073,598	268	5,531,024

Table 18. Annual CenterPoint Energy residential energy efficiency program participation and savings, 2021-2023¹¹

Residential Program	2021		2022		2023	
	Count	Savings (therms)	Count	Savings (therms)	Count	Savings (therms)
High-Efficiency Homes	192	71,794	89	32,645	101	54,119
Home Efficiency Rebates	1,215	157,440	988	143,627	1,145	159,473
Home Energy Squad	123	4,655	174	7,859	237	10,441
Home Insulation Rebates	105	11,825	110	12,982	191	14,114
New Home Construction Rebates	371	16,139	124	5,562	127	6,136
Total	2,006	261,853	1,485	202,675	1,801	244,283

Table 19. Annual CenterPoint Energy income-qualified energy efficiency program participation and savings, 2021-2023

Income-Qualified Program	2021		2022		2023	
	Count	Savings (therms)	Count	Savings (therms)	Count	Savings (therms)
Low-Income Free Heating System Tune-up	4	84	2	42	6	127
Low-Income Multifamily Building Efficiency	1	234	2	1,003	5	8,707
Low-Income Rental Efficiency	0	0	0	0	0	0
Low-Income Weatherization	22	1,584	18	1,518	13	1,393
Non-Profit Affordable Housing	4	161	0	0	0	0
Total	31	2,063	22	2,563	24	10,227

¹¹ The CenterPoint Energy programs of DIY Efficiency, Home Energy Reports, and School Kits are excluded from this table.

Table 20. Annual CenterPoint Energy business energy efficiency program participation and savings, 2021-2023¹²

Commercial Sector Programs	2021		2022		2023	
	Count	Savings (kWh)	Count	Savings (kWh)	Count	Savings (kWh)
C&I Custom Rebates	2	32,850	0	0	1	7,400
C&I Audit Services	10	3,192	3	255	3	1,138
C&I Heating and Water Heating Rebates	33	69,524	43	102,130	76	78,114
C&I Process Efficiency	0	0	0	0	0	0
Commercial Foodservice Equipment Rebates	5	13,996	4	15,750	4	16,108
Energy Design Assistance	0	0	2	38,400	0	0
Multi-Family Building Efficiency	4	3,938	4	5,319	11	11,659
Recommissioning Study & Rebates	0	0	0	0	2	25,920
Total	54	123,500	56	161,854	97	140,339

¹² The CenterPoint Energy programs of Code Compliance, Training and Education, and Benchmarking are excluded from this table.

Renewable Energy Support

There is support for renewable energy in Plymouth where in 2023, 1,559 residential premises and 23 commercial/industrial premises subscribed to Xcel Energy and Wright-Hennepin Cooperative premises respectively, receiving a total of 6.1 million kWh and 19.4 kWh of their electricity from renewable sources. Furthermore, 255 residential premises and 37 commercial premises had on-site solar generation and generated almost 22 million kWh of electricity in 2023.

Table 21. Xcel Energy and Wright-Hennepin Cooperative Electric Association subscription renewable energy program support, 2023

Green Power Purchase Subscriptions	Residential	Commercial & Industrial	Total
Renewable Choice Participation (Wright-Hennepin)	35	1	36
Renewable Connect Flex Participation (Xcel Energy)	1,326	17	1,343
Total Subscriber Count	1,361	18	1,379
Renewable Choice Electricity Subscribed (kWh) (Wright-Hennepin)	35,000	3,054,000	3,089,000
Renewable Connect Flex Electricity Subscribed (kWh) (Xcel Energy)	4,838,053	14,758,269	19,596,322
Total Annual Electricity Subscribed (kWh)	4,873,053	17,812,269	22,685,322
Community Solar Gardens			
Solar Choice Participation (Wright-Hennepin)	31	0	31
Solar*Rewards Community Participation (Xcel Energy)	167	5	172
Total Subscriber Count	198	5	203
Solar Choice Electricity Subscribed (kWh) (Wright-Hennepin)	3,100	0	3,100
Solar*Rewards Community Electricity Subscribed (kWh) (Xcel Energy)	1,224,922	1,614,393	2,839,315
Total Annual Electricity Subscribed (kWh)	1,228,022	1,614,393	2,842,415
Total Subscription Renewable Energy Support			
Subscriber Count	1,559	23	1,582
Total Annual Electricity Subscribed (kWh)	6,101,075	19,426,662	25,527,737
Percent of Sector Xcel Energy Electricity Use	2.8%	4.4%	3.8%

Table 22. Xcel Energy and Wright-Hennepin Cooperative Electric Association on-site solar program support, 2023¹³

On-site Solar - Solar*Rewards® and Net-Metering	Residential	Commercial & Industrial
Participant Count	255	37
Total Electricity Capacity (kW)	2,904	8,568
Total Electricity Produced (kWh)	2,387,018	19,442,692

¹³ Source: Xcel Energy Community Energy Report for Plymouth, 2023; data provided by Wright-Hennepin Cooperative Electric Association to Partners in Energy, 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 Plymouth. All goals will be measured against Plymouth’s 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, CenterPoint Energy, and Wright-Hennepin Cooperative Electric Association programs included in the baseline.

The savings for residential and commercial energy efficiency are modeled to persist beyond the year of installation. For example, if an energy efficient furnace that results in energy savings is installed in one year, we count the savings for the installation year as well as for succeeding years. For the purposes of this Energy Action Plan, the first year of implementation is equivalent to year one for energy efficiency, and savings accumulate from that point forward.

Focus Area Goals

Residential Energy Efficiency

- Save 15,059,460 kWh and 4,674,314 therms by 2030, resulting in saving a total of \$6,824,767 in residential energy costs by 2030.

This goal will be measured by comparing actual program participation against the business-as-usual (BAU) scenario. Progress will be measured from October 2025 through September 2030. Table 23 identifies annual program participation targets for select programs to meet this goal. These targets are based on select Xcel Energy programs. All residential programs are aggregated for CenterPoint Energy. If Xcel Energy offers new residential efficiency rebate programs, they will be included in this calculation at the discretion of the Plymouth team and Partners in Energy.

Table 23: Residential energy efficiency focus area annual and cumulative participation targets by program

	BAU Annual Participation	Annual Target	Cumulative Target, 2026-2030
Xcel Energy Residential Programs Total	2,615	3,671	18,353
Home Energy Audit	164	329	1,643
Home Energy Squad	142	284	1,420
Low-Income Home Energy Squad	14	27	137
Home Energy Savings Program	26	51	257
Insulation Rebate	14	29	143
Residential Heating & Cooling	695	1391	6,953
Other programs	1,560	1,560	7,800
Wright-Hennepin Residential Program Total¹⁴	3,405	3,566	17,832
CenterPoint Residential Program Total	1,461	2,050	10,252
Grand Total	4,076	5,721	28,605

Business Energy Efficiency

- Save 140,803,054 kWh and 2,391,200 therms by 2030, resulting in a savings of \$12,904,017 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 October 2025 through September 2030. Table 24 identifies annual program participation targets for select programs to meet this goal. These targets are based on current Xcel Energy programs. All business programs are aggregated for CenterPoint Energy. If Xcel Energy offers new commercial and industrial efficiency rebate programs, they will be included in this calculation at the discretion of the Plymouth team and Partners in Energy.

¹⁴ Wright-Hennepin Cooperative Electric Association offers a program called Quick Cash Air Conditioning that makes up 88% of residential participations. This program is capped at current enrollment, so is not modeled for an increase.

Table 24. Business energy efficiency focus area annual and cumulative participation targets by program

	BAU Annual Participation	Annual Target	Cumulative Target, 2026-2030
Xcel Energy Business Program Total	261	321	1,607
Business Energy Assessments	3	12	58
Lighting Efficiency	85	105	527
Multi-Family Building Efficiency	10	11	53
Small Business Lighting	53	83	413
Other programs	110	110	552
CenterPoint Business Energy Program Total	68	84	418
Wright-Hennepin Business Program Total	3	3	15
Grand Total	333	407	2,040

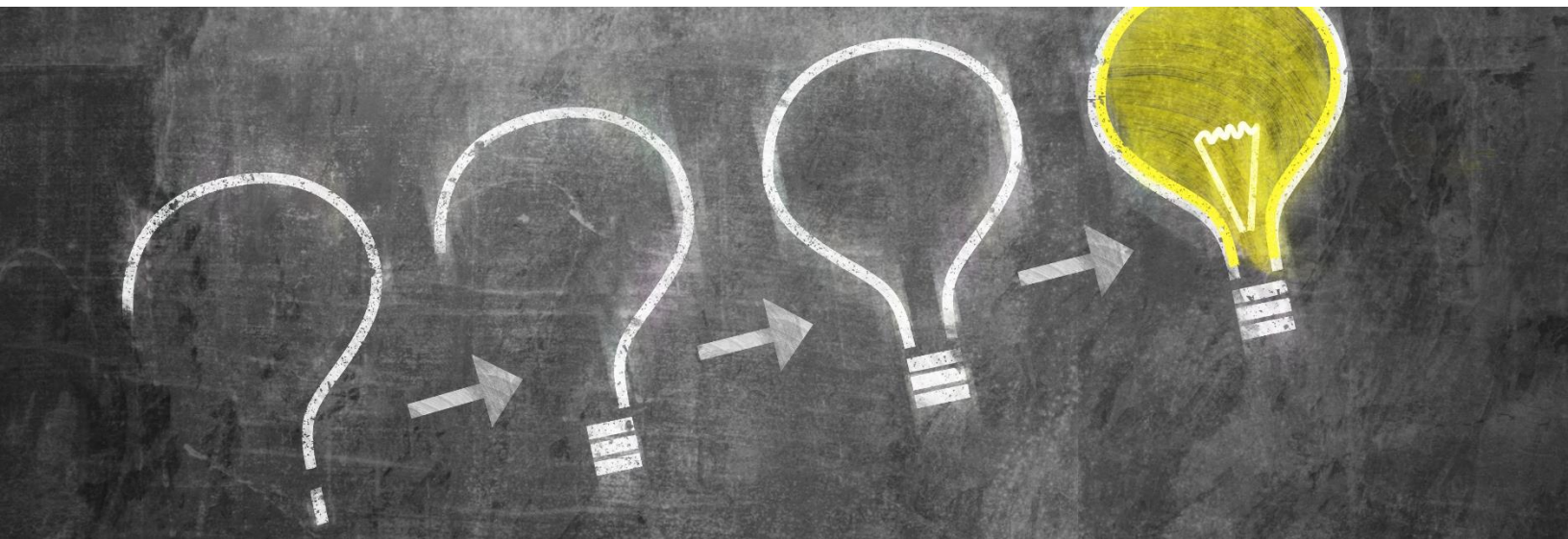
Renewable Energy

- Increase renewable energy program participation in select Xcel Energy and Wright-Hennepin Electric Cooperative Association programs by 1% annually, totaling 117,139,323 kWh of electricity generated through these programs between 2026-2030.

This goal will measure program participation by residents and businesses in Wright-Hennepin Cooperative Electric Association and Xcel Energy’s subscription renewable energy programs. The subscription programs currently offered by Xcel Energy are Renewable*Connect Flex and Solar*Rewards Community. Wright-Hennepin has similar subscription programs for both green power purchase and community solar gardens, including Renewable Choice and Solar Choice. Annual participation targets by program are shown in Table 25. By 2030, the cumulative renewable energy participation target is an additional 103 residents and businesses over the 2023 baseline.

Table 25. Annual participation increases in Xcel Energy Renewable Energy Programs

Sector	Renewable Energy Program	Baseline Participation	Annual Participation Increase	2030 Goal
Residential	Xcel Energy Renewable*Connect Flex	1,177	11.8	1,236
	Xcel Energy Solar*Rewards Community (community solar)	185	1.85	194
	Wright-Hennepin Renewable Choice	35	.35	37
	Wright-Hennepin Solar Choice (community solar)	31	.31	33
Commercial	Xcel Energy Renewable*Connect Flex	15	.15	16
	Xcel Energy Solar*Rewards Community	5	0	5
	Wright-Hennepin Commercial Renewable Choice	1	0	1
	Wright-Hennepin Solar Choice (community solar)	0	0	0
Total	All Programs	1,449	14.5	1,552

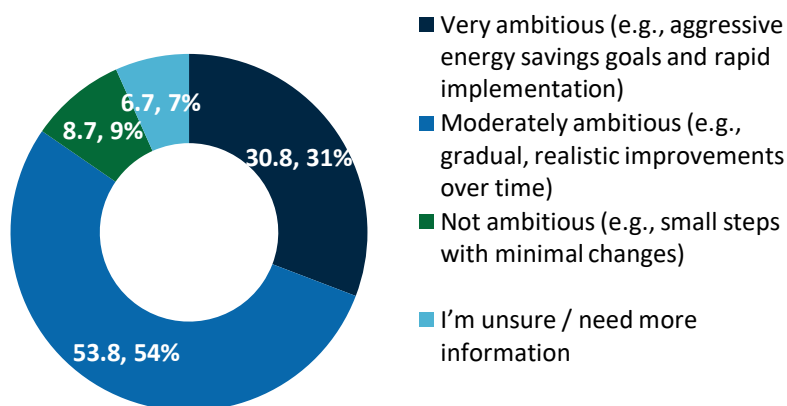


APPENDIX D: COMMUNITY ENERGY SURVEY RESULTS

A community-wide energy survey was conducted as a part of the Partners in Energy planning process. 101 people responded to this survey. These results were presented to the Energy Action Team to consider during strategy creation.

Question: We are establishing an energy savings goal as part of the plan. How ambitious should we be?

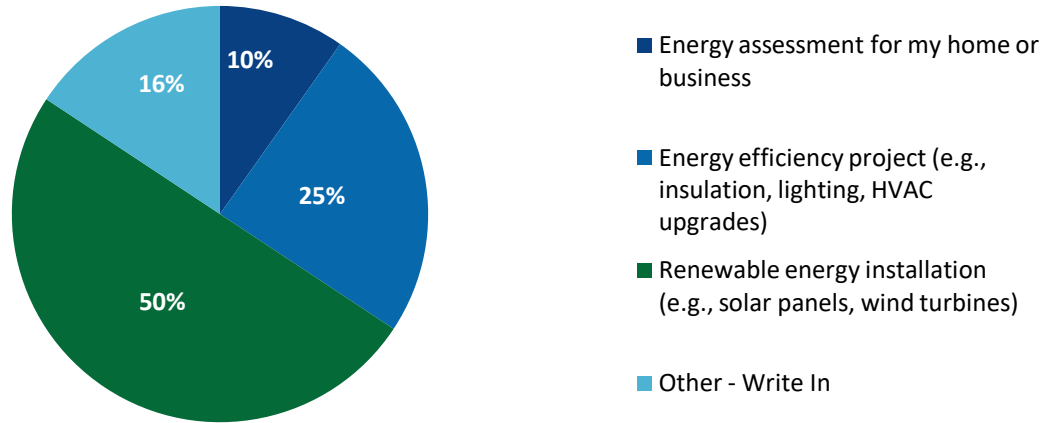
Figure 16. Plymouth's Community Energy Survey Question Results



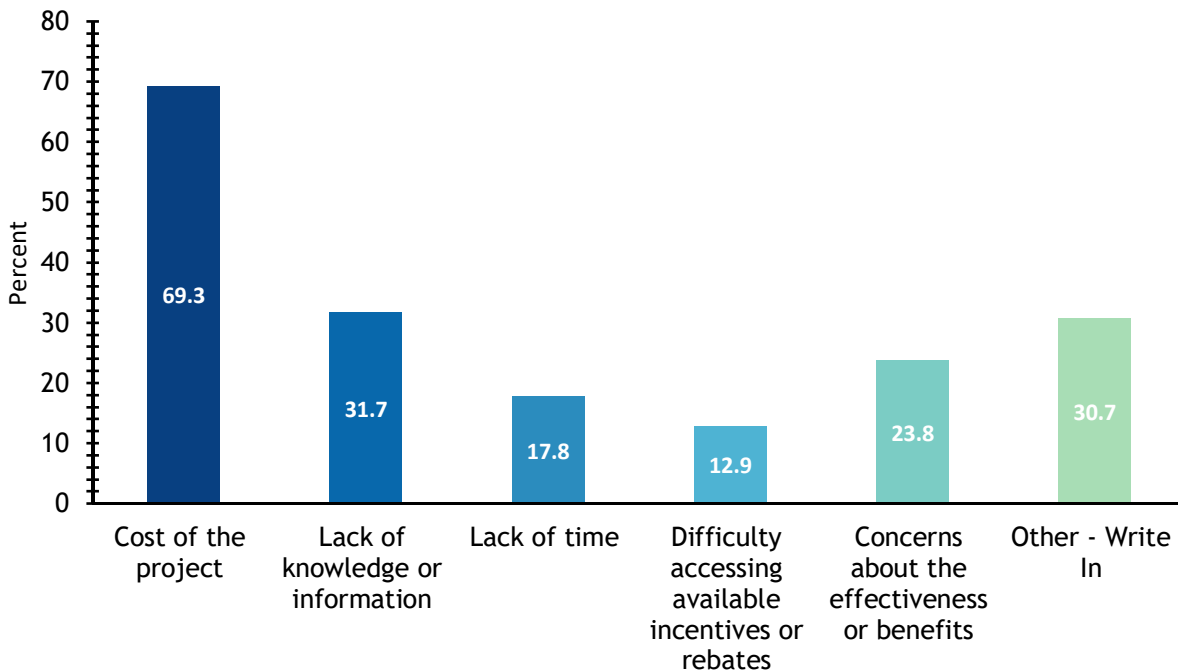
Question: The following lists the key ideas the stakeholder planning team identified to prioritize during implementation. Select the top three you think are most important to implement in the next year. (Select up to three.)

Value	Percent
Promote low-cost energy saving programs to residents (e.g., LEDs)	27.2%
Promote high-impact energy saving programs to residents (e.g., HVAC)	27.2%
Reduce energy burden for low-income residents (e.g., bill assistance, no-cost programs to reduce energy use)	22.3%
Establish and promote an income-qualified solar garden	10.7%
Promote renewable energy programs (e.g., incentives) to residents	31.1%
Help residents navigate rooftop solar purchase and installation	25.2%
Promote low-cost energy saving programs to businesses (e.g., LEDs)	9.7%
Promote high-impact energy saving programs to businesses (e.g., HVAC)	14.6%
Promote renewable energy programs (e.g., incentives) to businesses	14.6%
Adopt sustainable building codes for new construction (require more energy efficiency and renewable energy)	29.1%
Establish policies to require more energy efficient operations for businesses (e.g., commercial benchmarking, prohibiting high energy users)	10.7%
Community advocacy for local, state, and federal energy policy	10.7%
Invest in municipal energy efficiency improvements	18.4%
Invest in renewable energy to power electricity at municipal facilities	26.2%
Establish a City-led renewable energy incentive (e.g., rebate) for residents and businesses	30.1%
Other - Write In	7.8%

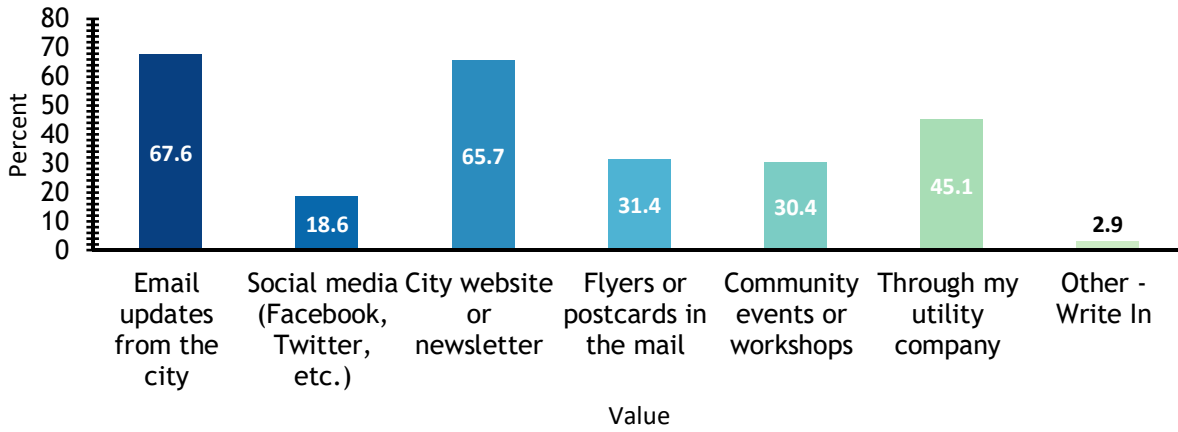
Question: What type of energy improvement would you be most excited to make if all barriers were removed (e.g., cost, time, knowledge)? (Select one.)



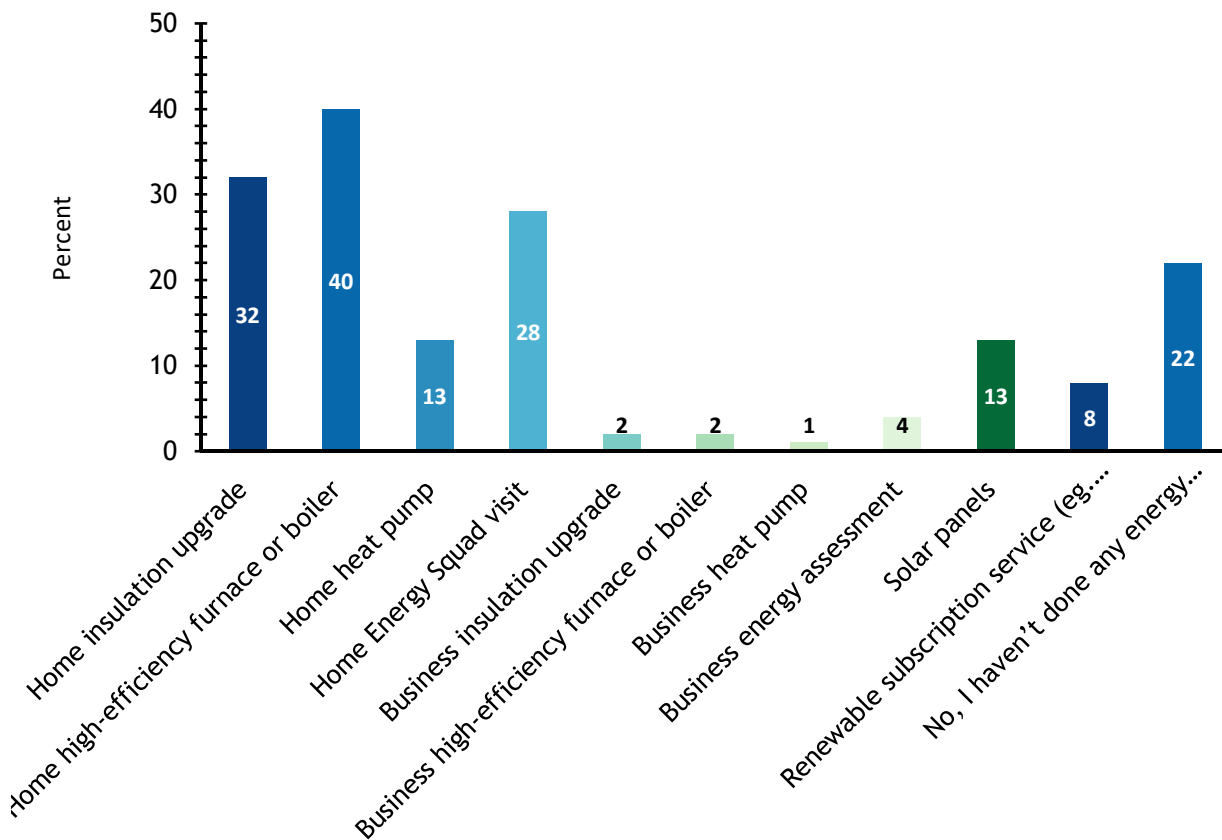
Question: What is stopping you from making the energy improvement you selected above? (Select all that apply.)



Question: How would you like to hear about community programs and incentives? (Select all that apply.)



Question: Have you implemented energy improvements in your home or business? If so, what kind? (Check all that apply.)





APPENDIX E: 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 reducing direct fossil fuel use and replacing it with electricity in a way that lowers greenhouse gas emissions and keeps energy costs as low as possible.

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

Business As Usual (BAU): The scenario where there are no additional efforts made, and the energy consumption, program participation, and other factors remain consistent.

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.

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 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 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 (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.

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

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.



APPENDIX F: WORK PLAN

ID	Strategy	Lead	Support	Timeline						
				Q4 2025	Q1 2026	Q2 2026	Q3 2026	Q4 2026	Q1 2027	Long-Term
FS-1	Communicate Partners in Energy Impact with Community to Highlight Successes	PiE	City							
FS-2	Pursue Funding to Bolster Implementation Efforts	City	PiE							
EEC-1	Conduct a Home Energy Efficiency Campaign for Existing Residents	PiE	City							
EEC-2	Promote Energy Efficiency for New Homes	PiE	City							
EEC-3	Promote Income-qualified Programs to Low-income Residents to Reduce Energy Burden	PiE	City							
EEC-4	Develop a Green Business Program	City	PiE							
EEC-5	Participate in Energy Efficiency Workforce Development	PiE	City							
EEC-6	Energy Efficient City Facilities	City	PiE							
RE-1	Encourage Residential Use of Renewable Energy	PiE	City							
RE-2	Encourage Commercial Use of Renewable Energy	PiE	City							
RE-3	Assist in Navigating On-site Solar Vendors	City	PiE							
RE-4	Explore Opportunities to Reduce Barriers to Renewable Energy Projects	City	PiE							
RE-5	Power Municipal Electricity with Renewable Energy	City	PiE							
RE-6	Explore Opportunities to Develop or Promote Solar Gardens to Residents	City	PiE							



APPENDIX G: MEMORANDUM OF UNDERSTANDING

(Doc to be attached upon signing)