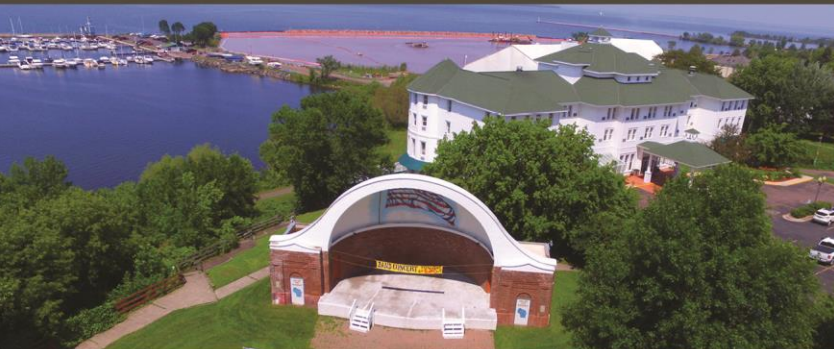




AN ENERGY ACTION PLAN FOR ASHLAND

October 2021



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. Additional thank you to the community members who participated in focus group conversations to help inform strategy development for how to engage different target audiences in the Ashland community.

The content of this plan is derived from a series of planning workshops hosted by Xcel Energy's Partners in Energy. Xcel Energy is the main electric and gas utility serving Ashland. 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 3: Xcel Energy's Partners in Energy Planning Process*.

City of Ashland

Deb Lewis, Mayor
Megan McBride, Director of Planning & Development

Xcel Energy

Julie Poepping
Mike BeBeau
Tami Gunderzik

Sustainability Committee

Cheyenne Reeves
Dale Kupczyk
Jessica Eckhardt
Laura Graf
Lissa Radke
Parker Garver
Tamara Sylte

Focus on Energy

Steve Craker

Partners in Energy Facilitators

Marisa Bayer
Megan Weck

Community Representatives

Bill Bailey
Carver Harries
Kate Ullman
Karl Solibakke
Melodie Phipps
Nathan Kilger

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

TABLE OF CONTENTS

| | |
|---|----|
| Introduction..... | 1 |
| 25 X 25 for Energy Independence..... | 1 |
| Why an Energy Action Plan | 2 |
| Where We Are Now | 3 |
| Community Demographics..... | 3 |
| Energy Use and Savings..... | 4 |
| Achieving our Energy Vision | 9 |
| Focus Areas..... | 9 |
| Target Audiences..... | 9 |
| Goals | 11 |
| Strategies | 11 |
| Energy Action Plan Impact..... | 12 |
| How We Stay On Course..... | 15 |
| Implementation Support from Partners in Energy..... | 15 |
| Implementation Support from the City of Ashland | 16 |
| Implementation Support from the Ashland Community and Energy Action Team..... | 16 |
| Appendix 1: Near-Term Strategy Work Plan | 17 |
| Appendix 2: Methodology for Measuring Success..... | 18 |
| Appendix 3: Xcel Energy’s Partners in Energy Planning Process | 20 |
| Appendix 4: Baseline Energy Analysis..... | 21 |
| Appendix 5: Implementation Memorandum of Understanding..... | 28 |

GLOSSARY OF TERMS

Behind the Meter Generation: Refers to energy production and storage systems that directly supply homes and buildings with electricity.

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.

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

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 both 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 one 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 Credit (REC): For every megawatt-hour of clean, renewable electricity generation, a renewable energy credit (REC) is created. A REC embodies all the environmental attributes of the generation and can be tracked and traded separately from the underlying electricity. Also known as a Renewable Energy Certificate.

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): 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 to service, install, and provide 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.



INTRODUCTION

The City of Ashland teamed up with Xcel Energy’s Partners in Energy and a planning team representing Ashland to create an energy vision to reduce the impact of climate change, make homes and businesses more energy efficient, and protect our natural resources.

25 X 25 for Energy Independence

The City of Ashland updated their 25 X 25 Plan for Energy Independence in 2018, which identifies several strategies to achieve the City’s goal to source 25% of its energy from renewable sources by 2025. Strategies include reducing energy consumption through energy efficiency upgrades like new insulation and HVAC system replacement, installing on-site photovoltaic solar systems, and subscribing to renewable energy programs.

Improving Energy Efficiency and Renewable Energy

The City of Ashland has implemented several energy efficiency strategies from the 25 X 25 plan, including HVAC system upgrades, new lighting in buildings and parking lots, and other improvements. In addition, the City has installed a 34-kW solar array on the new police station and subscribes to a community solar garden support renewable energy at the new fire station.

The City of Ashland has been recognized for its sustainability efforts with SolSmart Silver and Green Tier Legacy Community designations. The Ashland City Council adopted an Eco-Municipality Designation to serve as a model for other cities and encourage sustainable economic development in the community.

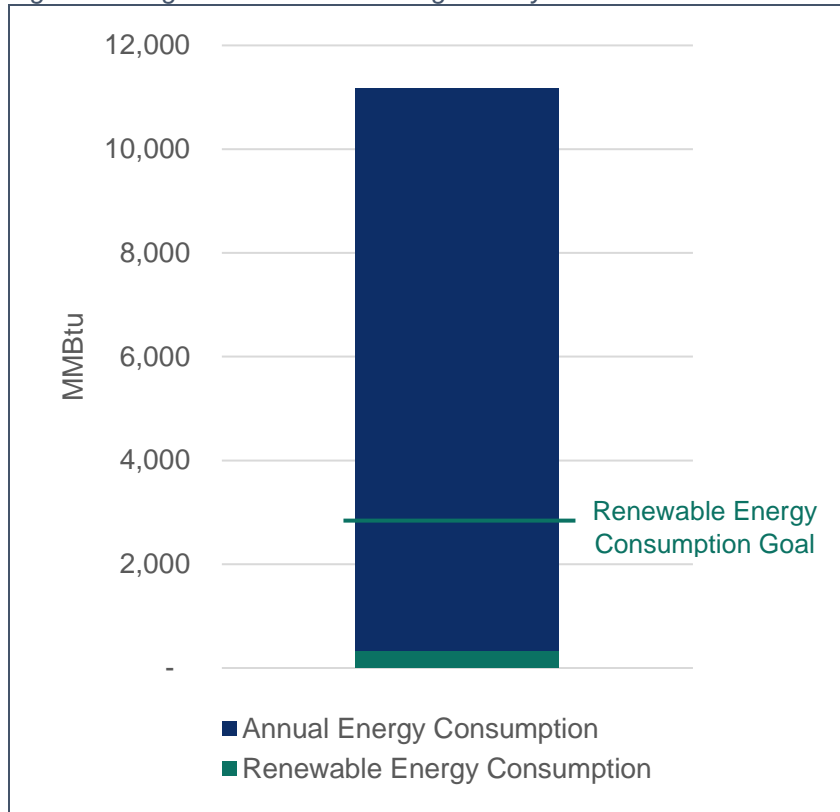
Progress Toward Goal

Community energy data, including municipal energy consumption, was provided as part of the Partners in Energy process. The City of Ashland will need to consume approximately 2,800 MMBtu annually from renewable energy sources to meet its 25 X 25 goal. Reviewing grid energy consumption for municipal buildings, behind the meter generation, and renewable energy program participation, the City

Term Definition: Behind the Meter Generation: Refers to energy production and storage systems that directly supply homes and buildings with electricity.

consumes approximately 340 MMBtu of energy annually from renewable energy sources (*Figure 1*).¹ This represents 3.1% of its annual energy use. To achieve its goal, the City of Ashland will need to generate an additional 2,450 MMBtu from renewable sources by participating in programs where the City retains the Renewable Energy Credit and can make the claim toward powering their facilities with renewable energy.

Figure 1: Progress Toward Achieving the City's 25 X 25 Goal



Why an Energy Action Plan

Ashland’s 25 X 25 plan is focused on City-owned buildings. Acknowledging that Ashland residents, businesses, and institutions should be part of this conversation, the City identified Xcel Energy’s Partners in Energy as an opportunity to engage the Ashland community to increase energy efficiency and renewable energy across all sectors.

This plan creates intention, focuses efforts, and identifies actions to engage our community. This plan’s scope encompasses all residents, businesses, nonprofits, and education institutions within the city of Ashland. Neighboring cities and the broader Ashland area may benefit from outreach to increase their understanding of the benefits of energy efficiency and renewable energy, but this outreach will not be the focus of our efforts.

¹ To measure progress toward Ashland’s 25 X 25 goal, this plan estimates city facilities consume 11,180 MMBtu of energy annually and assumes a maximum annual production of 342 MMBtu from Ashland’s on-site solar array and community solar garden subscription. Renewable energy consumption assumes the City of Ashland retains the REC for the on-site solar generation. Actual energy consumption and renewable energy production may vary.



WHERE WE ARE NOW

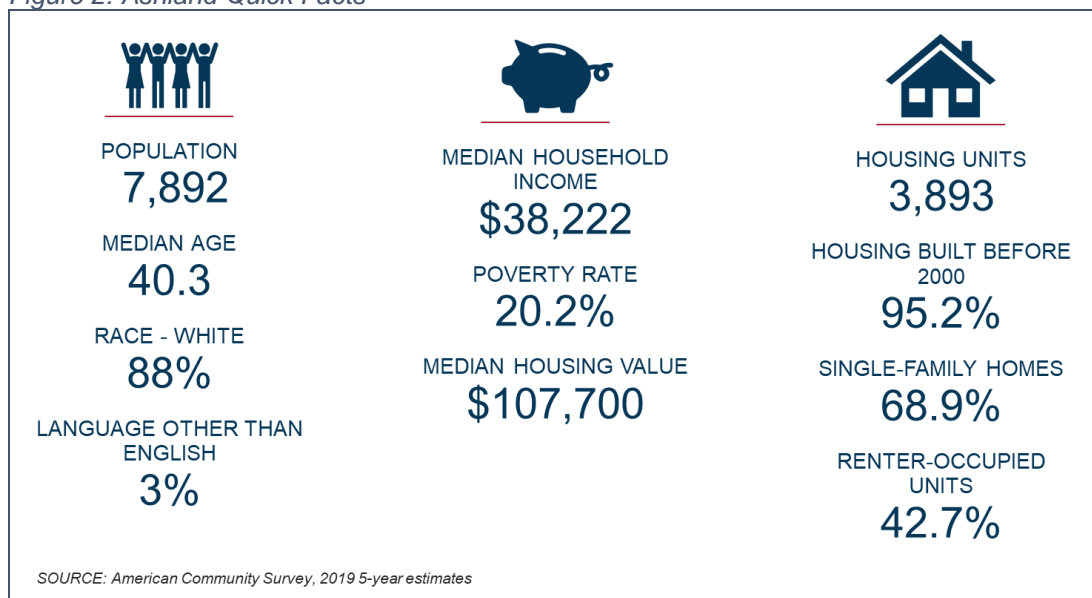
Reviewing community demographic and historic energy data is integral to the Partners in Energy planning process to ensure data-driven decisions for focus areas and strategies. See *Appendix 4: Baseline Energy Analysis* for a comprehensive overview of the baseline data.

Community Demographics

The team gathered information about Ashland’s community makeup from the U.S. Census Bureau American Community Survey data, which highlighted the characteristics of Ashland’s population and residences. Three key takeaways from the demographic data are as follows.

- Ashland is a small, older city compared to the state and peer cities.
- Ashland residents are low to moderate income and at least 20% of residents are in poverty.
- Most of Ashland’s housing was built before 2000 and 43% of housing is rental.

Figure 2: Ashland Quick Facts



Population and Income

Ashland is a small, older community. According to the American Community Survey, Ashland has 7,892 residents and a median age of 40.3 (compared to the state’s median age of 39.3). Median household income is just above \$38,000 and 20% of Ashland residents are in poverty. Both data points are below the state’s: the state’s median household income is almost \$62,000 and the state’s poverty rate is 10.4%.

Housing Stock

There are approximately 3,893 housing units in Ashland, with 69% of units in single-family homes. Most of the housing stock is over 20 years old — 95% of units were built before 2000. There are also numerous rentals in the community; 43% of housing units are occupied by renters.

Energy Use and Savings

In addition to demographic data, the stakeholder team also reviewed data from Xcel Energy and Focus on Energy for all residents and businesses located in the City of Ashland. Xcel Energy provided data on energy use by sector and participation in renewable energy programs; Focus on Energy provided data on participation in energy efficiency programs. Key takeaways from the energy data include the following.

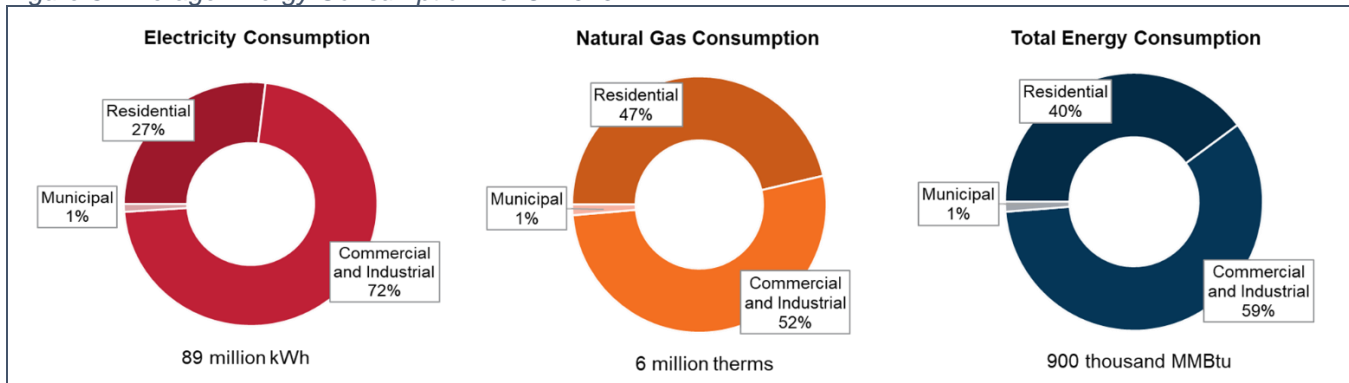
- Majority of energy users are residential.
- Commercial and industrial customers consumed more electricity and natural gas than other sectors.
- Ashland residents and businesses spend \$13 million on energy in an average year.
- More residents participate in renewable energy than businesses.
- Ashland residents and businesses earned over \$600,000 in utility incentives between 2018 and 2020.

Grid Energy Use

There are 4,516 premises in Ashland. Most premises are residential (3,660), followed by commercial and industrial (811), and municipal (37). In an average year, Ashland premises consume 89.3 million kWh of electricity and 6 million therms of natural gas, spending more than \$13 million on energy bills in all sectors. Commercial and industrial premises, which represent 18% of total premises, consumed 72% of electricity and 52% of natural gas.

Term Definition: Premise
A premise is 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.

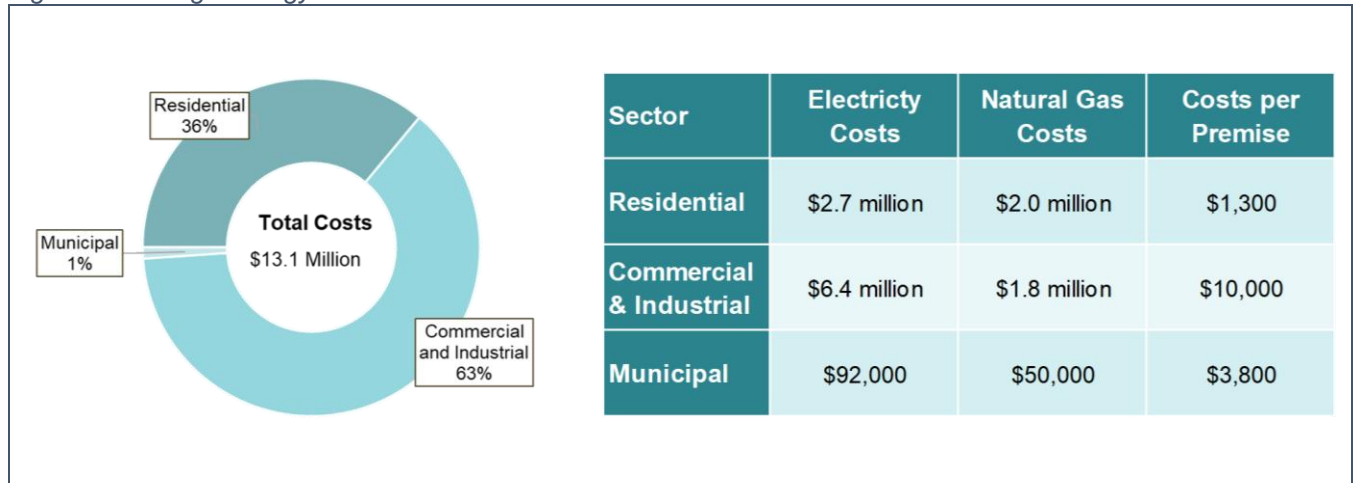
Figure 3: Average Energy Consumption 2018–2020



Energy Costs and Energy Burden

The average residential premise in Ashland spends \$1,300 a year on energy. Commercial and industrial premises' energy costs vary with the size of the business (e.g., a retail store versus a large industrial facility) but on average spend \$10,000 per premise.

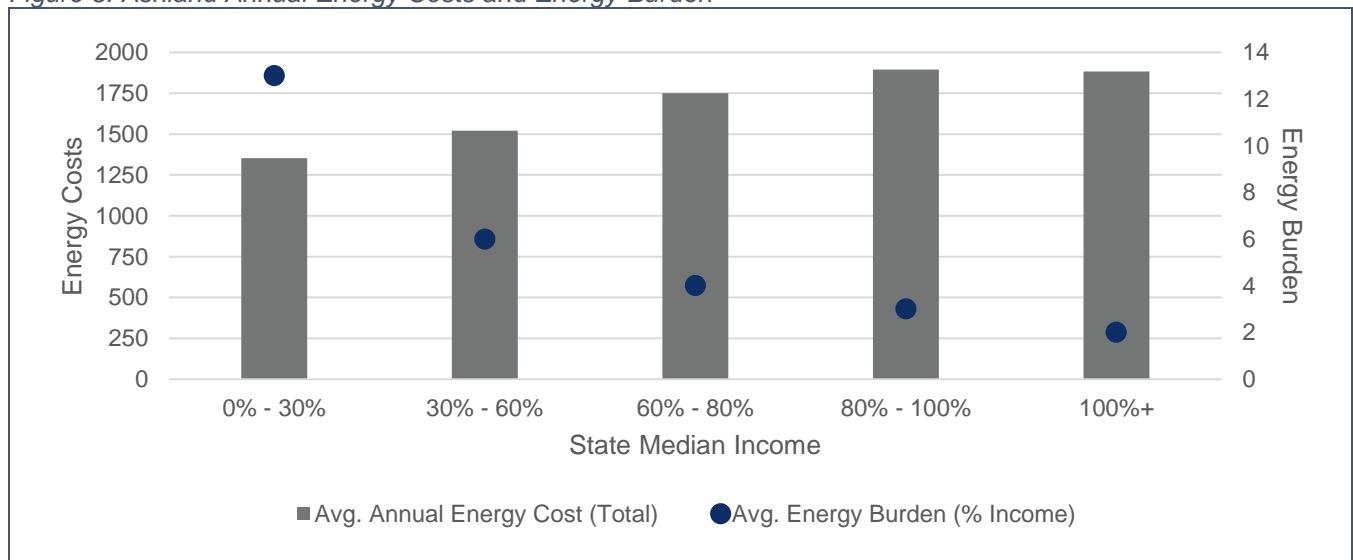
Figure 4: Average Energy Costs 2018–2020



As a low to moderate income community, a high percentage of Ashland residents' income goes to energy costs. Figure 5 shows average annual energy costs and energy burden across different income brackets. Households at 100% state median income (SMI) spend the most each year on average, but only experience an energy burden of 2%. For different income brackets, energy burden increases as overall dollars spent decreases. The lowest income households, at 30% SMI, spend the least amount of money on energy but experience the highest energy burden at 13%.

Term Definition: Energy Burden
 Percentage of gross household income spent on energy costs. The [Home Energy Affordability Gap Analysis](#) defines households with a 6% energy burden or higher to experience a high burden.

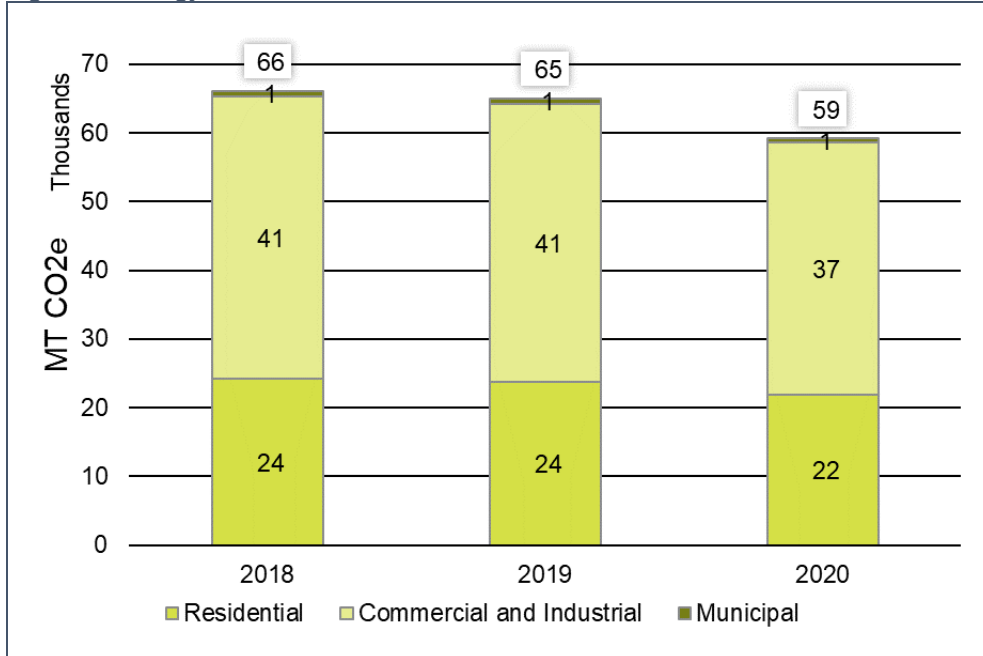
Figure 5: Ashland Annual Energy Costs and Energy Burden



Greenhouse Gas Emissions

In an average year, Ashland’s grid energy use results in approximately 63,400 metric tons of carbon dioxide equivalent greenhouse gas emissions (MTCO₂e). This is equivalent to the greenhouse gas emissions from 13,795 passenger vehicles driven for one year.² Commercial and industrial premises account for the largest percentage of emissions, representing 63% of total energy-related greenhouse gas emissions in 2019.

Figure 6: Energy-related Greenhouse Gas Emissions 2018–2020



In an average year, greenhouse gas emissions by fuel source (electricity and natural gas) are about equal in Ashland (*Figure 7*). To achieve its goal of providing all customers with carbon-free electricity by 2050, Xcel Energy is decarbonizing its electricity generation by adding more solar and wind energy. Carbon-free sources added to the grid will reduce the proportion of greenhouse gas emissions from grid electricity use.³

Term Definition: 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.

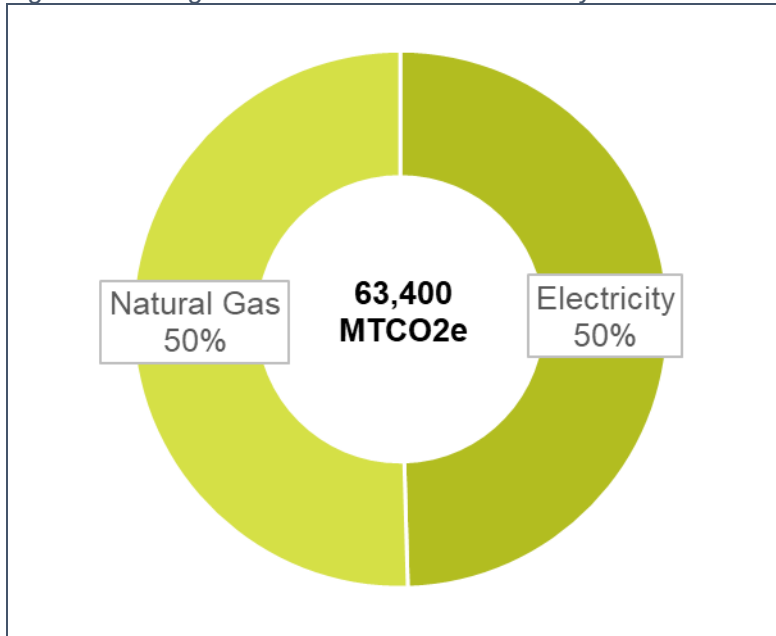
Xcel Energy is the first major U.S. electricity provider with a vision to serve customers with 100% carbon-free electricity by 2050, with an interim goal to reduce carbon emissions 80% by 2030 from company-wide 2005 levels. Read more about Xcel Energy’s carbon-free vision on their [website](#).

² U.S. Environmental Protection Agency Greenhouse Gas Equivalencies Calculator. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

³ Xcel Energy’s Upper Midwest Energy Plan.

https://www.xcelenergy.com/company/rates_and_regulations/resource_plan_overview/upper_midwest_energy_plan.

Figure 7: Average Greenhouse Gas Emissions by Fuel Source



Renewable Energy

Local renewable energy use is a result of both customer subscription programs and on-site installations with a majority of renewable energy generation coming from subscription programs. In 2019, 307 residential premises and 10 commercial and industrial premises subscribed to a renewable energy program. On-site solar installations were less popular; Focus on Energy only paid eight incentives for photovoltaic systems from 2018 to 2020.

Table 1: Renewable Energy Participation 2019

| | Residential | Commercial & Industrial |
|--|-------------|-------------------------|
| Xcel Energy Subscription Programs | | |
| Subscriber Count | 298 | 4 |
| Total Annual Electricity Subscribed (kWh) | 333,462 | 31,053 |
| Community Solar Gardens | | |
| Subscriber Count | 9 | 6 |
| Total Annual Electricity Subscribed (kWh) | 26,651 | 477,733 |
| On-site Solar Installations | | |
| Focus on Energy Incentives Paid ⁴ | 7 | 1 |

Energy Efficiency Program Participation and Savings

Xcel Energy and Focus on Energy offer programs to Ashland residents and businesses to increase energy savings at their homes or buildings. Rebates for new equipment, audit programs, and discounted and no-cost energy measures are available in addition to load management programs. From 2018 to 2020, more than 5,500 Ashland residents and businesses participated in Focus on

⁴ Data from Focus on Energy participation summaries 2018–2020.

Energy programs, resulting in \$530,000 in incentives from Focus on Energy. The average incentive paid to program participants is \$29 per resident and \$258 per business. In addition to the incentives paid by Focus on Energy, Xcel Energy also offers bonus incentives for certain Focus on Energy rebates and programs. Almost \$80,000 in bonus incentives were paid in Ashland over the baseline period.

Table 2: Program Participation Summary by Sector 2017–2019

| | Residential Programs | Business Programs |
|--|-----------------------------|--------------------------|
| Total Focus on Energy Program Participation | 3,978 | 1,606 |
| Total Focus on Energy Electricity Savings (kWh) | 412,498 | 4,764,858 |
| Total Focus on Energy Natural Gas Savings (therms) | 25,526 | 103,449 |
| Total Focus on Energy Incentives Paid | \$114,900 | \$415,097 |
| Total Xcel Energy Bonus Incentives Paid | \$21,440 | \$57,916 |
| Average Focus on Energy Participation | | |
| Average Focus on Energy Participation | 1,326 | 535 |
| Average Focus on Energy Incentive per Participant | | |
| Average Focus on Energy Incentive per Participant | \$29 | \$258 |



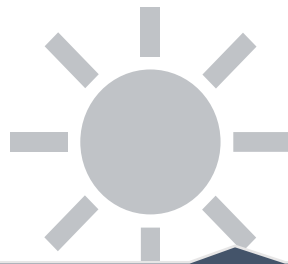
ACHIEVING OUR ENERGY VISION

This section outlines the focus areas, target audiences, goals, and strategies for achieving Ashland's energy vision to reduce the impacts of climate change, make homes and businesses more energy efficient, and protect our natural resources.

Focus Areas



Energy efficiency through equipment upgrades and behavior changes



Renewable energy support, including both on-site installation and off-site subscriptions



Electric vehicle education to promote local charging stations and educate community about EV options

Target Audiences

The strategies and tactics outlined in this plan will benefit all in Ashland, including government organizations like the City of Ashland, homeowners and renters, rental property managers, businesses, nonprofit organizations, and education institutions. In addition, contractors and trade partners will benefit from increased engagement in Focus on Energy and Xcel Energy programs via equipment upgrades and building improvements.

To inform strategy development, the Energy Action Team identified perceived and actual barriers to increasing energy efficiency and participating in a renewable energy program. The team also explored these actions' benefits to identify what might motivate a target audience to overcome a barrier.

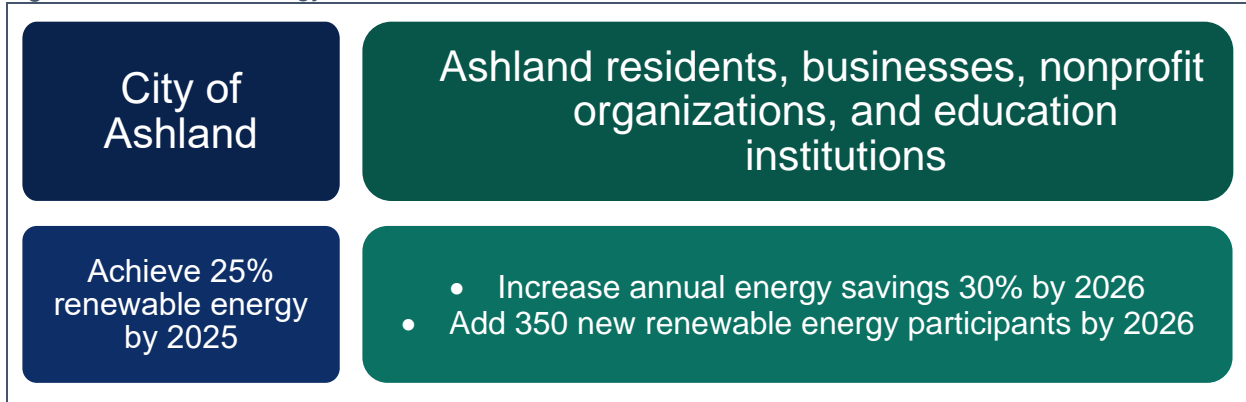
Table 3: Barriers and Benefits by Target Audience

| | Barriers | Benefits |
|--|---|---|
| Homeowners & Renters | <ul style="list-style-type: none"> • Lack of knowledge and awareness about programs and how to access • Upfront capital costs for improvements too high • Split incentive with property manager when you rent a property • Inability to make capital improvements to rental property • Reluctance to upgrade with rapidly changing technology • Lack of trust that information is current and accurate • Learning curve for using new technology • Difficulty prioritizing energy efficiency and renewable energy among other projects • Limited contractors to complete work • Older housing stock typically require more than just one upgrade • Tight rental market | <ul style="list-style-type: none"> • Cost savings and payback periods when you upgrade to new technology and equipment • Energy savings from more efficient energy use • Pride in being green and being sustainable • Reduced carbon footprint through cleaner energy use • Tourism opportunities to attract new visitors and continue to be a destination • Growing sense of environmental stewardship • Improvements and upgrades add value to homes |
| Rental Property Owners and Managers | <ul style="list-style-type: none"> • Lack of knowledge and awareness about programs and how to access them • Upfront capital costs make return on investment too difficult • Split incentive with renters who pay their own utility bills • Improvements don't necessarily increase rent revenue • Tenants won't see the value of improvements and increased rents • Tight rental market • Difficult to find time to replace equipment unless it fails or is on schedule for replacement • Difficult to prioritize energy efficiency and renewable energy with other projects • Landlords will do work themselves and won't qualify for rebates | <ul style="list-style-type: none"> • Energy savings with more efficient energy use • Growing sense of environmental stewardship • Pride in being green and being sustainable • Reduced carbon footprint through cleaner energy use • Improvements and upgrades add value to properties • Being green and sustainable carries PR benefits that attract new tenants |
| Businesses, Nonprofit Organizations, and Education Institutions | <ul style="list-style-type: none"> • Lack of knowledge and awareness about programs and how to access • Upfront capital costs make return on investment too difficult • Split incentive with property tenants who pay their own utility bills • Difficult to find time to replace equipment unless it fails or is on schedule for replacement • Difficulty prioritizing energy efficiency and renewable energy with other projects • Unreliable funding sources for small nonprofits | <ul style="list-style-type: none"> • Energy savings from more efficient energy use • Growing sense of environmental stewardship • Pride in being green and being sustainable • Reduced carbon footprint through cleaner energy use • Improvements and upgrades add value to properties • PR benefits of being green and sustainable • Upgrades preserve buildings and retain community charm and aesthetic |

Goals

Building off the City of Ashland's initial goal to achieve 25% renewable energy by 2025, the following goals were created to target energy efficiency and renewable energy for private buildings.

Figure 8: Ashland's Energy Goals



Strategies

Near-term Strategies: 2022–2025

The Energy Action Team identified near-term strategies to increase energy efficiency and renewable energy participation in Ashland. Our recipe for success includes championing the City of Ashland, businesses, institutions, and residents to lead by example and demonstrate best practices, providing education and awareness about the benefits of energy efficiency and renewable energy, and using community connections to increase engagement across all Ashland sectors.

Outreach and Education

- Promote energy efficiency, renewable energy and electric vehicle programs, resources, and behavior changes.
- Engage large industry and education institution leadership to champion energy action plan and lead by example.
- Connect renters and homeowners to free and low-cost energy assistance programs.
- Connect businesses to free energy assessments.

Process and Policy Updates

- Update development review and permitting process with energy efficiency and renewable energy program information.
- Benchmark City-owned building energy consumption and share data with community in public dashboard.
- Prioritize sustainability standards in new construction and renovation of City-owned buildings.
- Advocate State energy initiatives as recommended by the 2020 Climate Change Task Force Report.
- Maintain SolSmart Silver designation and pursue additional recommended process changes to reduce on-site solar barriers and achieve Gold designation.

Capital Investment and Financing

- Create energy audit and recommissioning schedule for city-owned buildings.

- Update existing loans and grants to include energy efficiency and renewable energy improvements as eligible costs.

Medium-Term Strategies: 2026–2030

Several medium-term strategies were identified. These are beyond our goals’ timeline but important to continue engaging our community and mitigate the impacts of climate change. If additional human and financial resources are identified, these strategies could be implemented earlier.

Outreach and Education

- Create a sustainability navigator program to support renters and rental property owners.

Process and Policy Updates

- Adopt an energy benchmarking ordinance for private-owned buildings.
- Update purchasing policy to prioritize energy efficient equipment in replacement schedules.
- Create a sustainable building policy to require sustainability standards in new construction and redevelopment projects.
- Advocate new policies to allow master metering.
- Complete fleet analysis for City-owned fleet vehicles and transition vehicles based on recommendations.

Capital Investment and Financing

- Complete solar suitability analysis on City-owned buildings to power them with renewable electricity.
- Create incentive programs, like bonus rebates or group buy, for residents, property owners, and businesses who increase their building’s energy efficiency or support renewable energy.
- Fund demonstration projects for innovative energy efficiency and renewable energy projects.

Long-term Strategies: 2030 and Beyond

In addition to medium-term strategies, two long-term strategies were identified to achieve Ashland’s energy priorities but are best suited for long-term implementation because of limited financial and human resources.

- Create clean energy training programs and career paths.
- Invest in community resilient energy systems, such as back-up generation and microgrids.

Energy Action Plan Impact

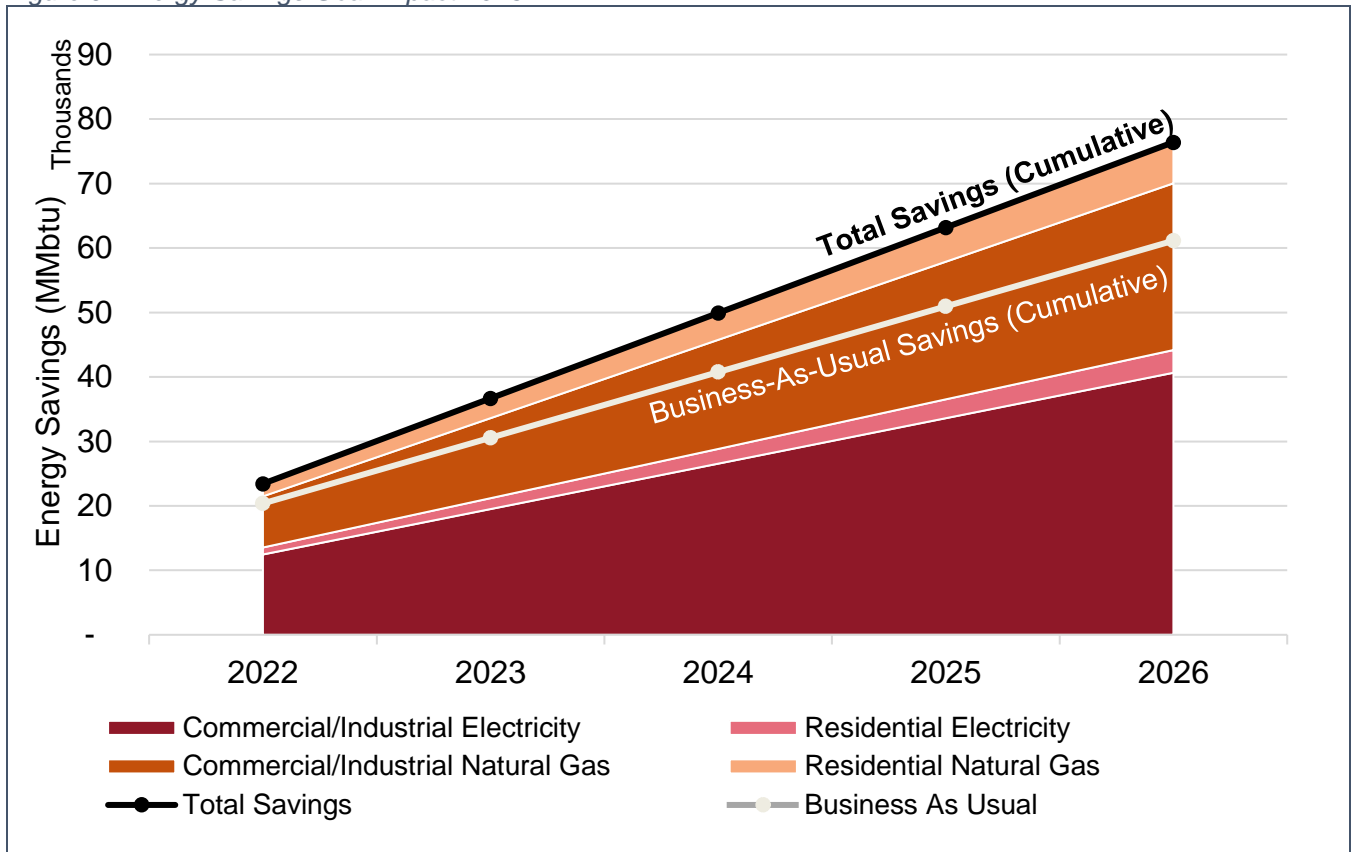
Successfully implementing this plan’s strategies will allow Ashland to increase cumulative energy savings 30% by 2026 and add 350 new renewable energy participants.

Increased Energy Efficiency

In a business-as-usual scenario, where there is no additional support or collaboration with the Ashland community or energy utilities, Ashland premises will cumulatively save 8.6 million kWh of electricity and 215,000 therms by 2026 through Focus on Energy’s energy efficiency programs. Increasing cumulative energy savings by 2026 will result in residential premises saving 894,000 kWh and 55,300 therms and commercial and industrial premises saving 10.3 million kWh and 224,100 therms. *Figure 9* illustrates each sector’s potential contribution. Commercial and industrial electricity savings would contribute the most toward the energy savings goal.

The cumulative impact of these energy savings will save Ashland almost \$1.17 million in energy costs, which can be used to invest in Ashland homes and buildings and to spend at local businesses.

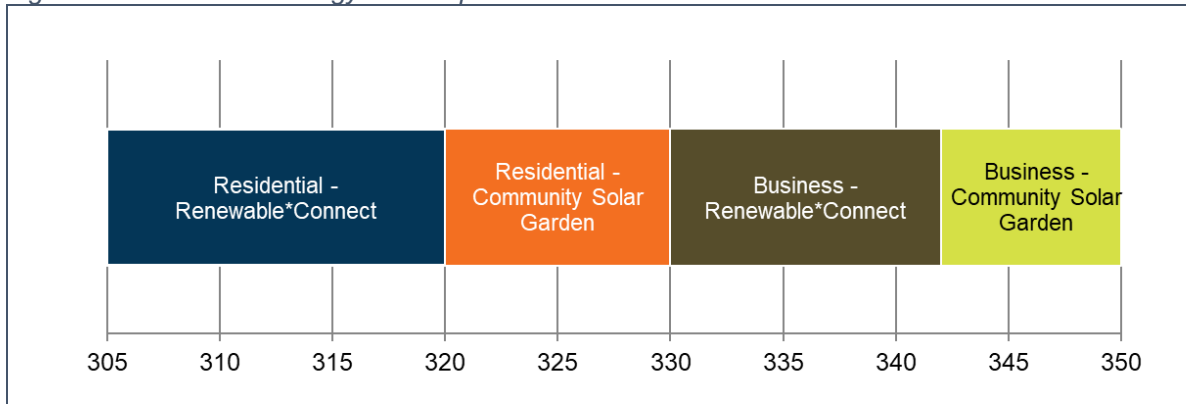
Figure 9: Energy Savings Goal Impact 2026



Renewable Energy Support

By focusing resources to promote renewable energy programs and add 350 new renewable energy participants, Ashland’s total renewable energy support will increase to 667 participants and more than 2.27 million kWh of electricity will be generated from renewable sources by 2026. Assuming business-as-usual participation, most new renewable energy supporters will be subscribed to Xcel Energy’s Renewable*Connect program, which allows premises to subscribe some or all their electricity from 100% clean energy.

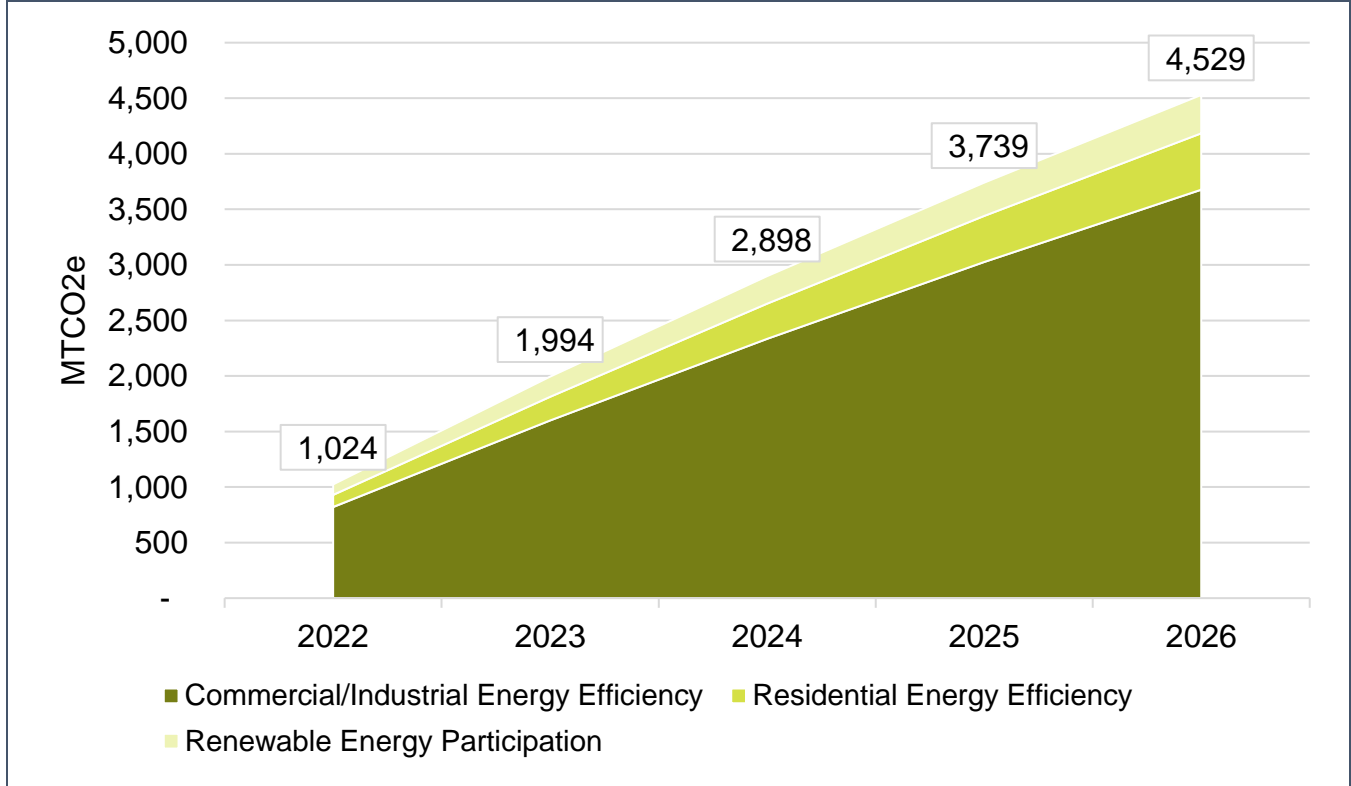
Figure 10: Renewable Energy Goal Impact 2026



Greenhouse Gas Impact

Increases in energy savings and renewable energy participation will also benefit the environment by reducing energy-related greenhouse gas emissions. Improved energy efficiency in the commercial and industrial sector will contribute most to greenhouse gas reductions—a 30% increase in energy savings will avoid an estimated 4,200 MTCO₂e. Renewable energy strategies will generate more electricity from carbon-free sources, and adding 350 new renewable energy subscribers will avoid an estimated 345 MTCO₂e. Energy efficiency and renewable energy’s combined greenhouse gas impact is equivalent to removing 985 passenger vehicles from the road for a year.⁵

Figure 11: 2026 Goals Cumulative Greenhouse Gas Emission Impact



⁵ U.S. Environmental Protection Agency Greenhouse Gas Equivalencies Calculator. <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 progress toward goals and community and staff capacity.

Implementing the strategies outlined in this plan will require leadership and collaboration among the City of Ashland, members of Energy Action Team, community representatives, Focus on Energy, and Xcel Energy.

Implementation Support from Partners in Energy

Xcel Energy’s Partners in Energy commits to 18 months of implementation support, including marketing and communications support and program expertise. It will also provide a dedicated community facilitator to serve as a primary point of contact. Partners in Energy digital resources, including office hours, community portal, and community events will also be available to the Ashland team.

Xcel Energy will also leverage its communication channels promote programs and resources as well as leverage staff expertise to connect the City of Ashland and Ashland Xcel Energy customers with the right resources.

Figure 12: Actions and Tracking

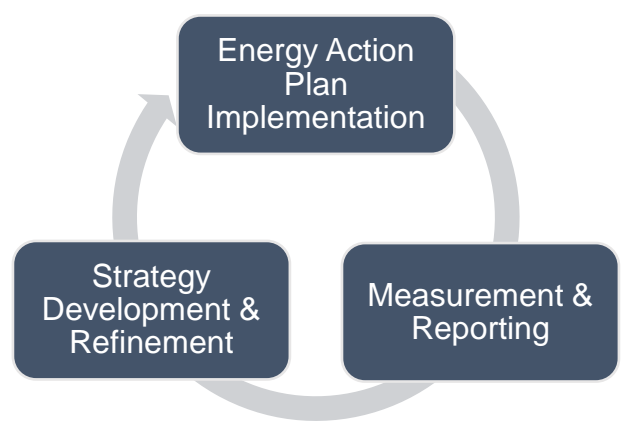


Figure 13: Partners in Energy Implementation Resources



Data and Reporting

We will provide biannual progress reports with success metrics and the overall progress toward Xcel Energy and Focus on Energy's goals during the first phase of implementation. These reports will include program participation, energy savings by sector, and energy consumption by sector. If available, ad-hoc participation reports for specific programs will be provided to measure success of campaigns and determine whether we need to change course.

Project Management and Tracking

Partners in Energy will host regular project management check-in calls with City staff to ensure that we stay on course to achieve our strategies for the first 18 months of implementation. In addition, Partners in Energy facilitators will support the Energy Action Team and community connectors with one-on-one outreach to facilitate strategy implementation.

At the implementation midpoint, we will convene the Energy Action Team to assess progress toward goals and discuss strategy refinement as needed.

Implementation Support from the City of Ashland

The City of Ashland will provide a primary point of contact for implementation and will assign members to attend regular project management check-ins. The City commits to leveraging existing communication channels and community connections for outreach and engagement strategies. In addition, the City of Ashland will lead strategies specific to City-owned buildings and policies.

Implementation Support from the Community and Energy Action Team

The Energy Action Team formed to create this plan will support implementation by serving as community connectors to their networks and will promote our energy vision, encourage participation in programs and outreach campaigns, and share success stories. When available, the Energy Action Team will serve as partners and leaders in strategies, including those that target small and medium-sized businesses, large industry, and education institutions.

Communication Channels

Several communication channels were identified by the Energy Action Team.

- City of Ashland website and social media
- Community events
- Local TV news
- Ashland Daily Press
- Visit Ashland
- Neighborhood groups and social media
- Word of mouth
- Social media groups on Facebook
- Direct contact with trade partners
- Chamber newsletter
- Xcel Energy MyAccount and bill inserts
- Water utility bill inserts
- Education institution networks and channels
- Community boards/kiosks at gathering places
- Nonprofit and civic organization mailing lists
- Local radio station

Community Connectors

Community connectors — individuals and organizations who will champion the Energy Action Plan — are an important resource for implementation success. A community connector uses their network of contacts to share and champion calls to action and advocate the Energy Action Plan strategies. Community connectors include those represented on the Energy Action Team and other community members.

APPENDIX 1: NEAR-TERM STRATEGY WORK PLAN

This appendix summarizes near-term strategies, implementation team, and timeline.

| Strategy | Implementation Lead | Implementation Support | Implementation Support from Partners in Energy | | | | | | | | | | | | |
|---|---|--|--|------|----|----|----|------|----|----|----|------|------|---|---|
| | | | 2021 | 2022 | | | | 2023 | | | | 2024 | 2025 | | |
| | | | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | | | |
| Promote energy efficiency, renewable energy and electric vehicle programs, resources, and behavior changes. | City Staff Partners in Energy | Energy Action Team Xcel Energy Focus on Energy | x | x | x | x | x | x | x | x | x | x | x | x | |
| Engage large industry and education institution leadership to champion energy action plan and lead by example. | Large Industry Education Institutions | City Staff Partners in Energy Focus on Energy | | x | x | x | | | x | x | x | | | x | x |
| Connect residents to free and low-cost energy assistance programs. | City Staff Partners in Energy Focus on Energy | Service Providers | x | | | | x | x | | | | x | x | x | x |
| Connect businesses with free energy assessments. | Xcel Energy | City Staff Partners in Energy Focus on Energy | | x | x | x | | | x | x | x | | | x | x |
| Update development review and permitting process with energy efficiency and renewable energy program information. | City Staff | Xcel Energy Focus on Energy Partners in Energy | | x | x | | | | | | | | | | |
| Benchmark city-owned building energy consumption and share data in public dashboard for community. | City Staff | Xcel Energy | | x | | | | | x | | | | | x | x |
| Prioritize sustainability standards in new construction and renovation of city-owned buildings | City Staff | Xcel Energy Focus on Energy | x | x | | | | x | x | | | | x | x | x |
| Advocate for State energy initiatives as recommended by the 2020 Climate Change Task Force Report. | City Council | City Staff | | x | | | | | x | | | | | x | x |
| Maintain SolSmart Silver designation and pursue additional recommended process changes to reduce the barriers to on-site solar to achieve Gold designation. | City Staff | Xcel Energy | | | | x | x | x | | | | | | | |
| Create energy audit and recommissioning schedule for city-owned buildings. | City Staff | Xcel Energy Focus on Energy | x | x | | | | | | | | | | | |
| Update existing loans and grants to include energy efficiency and renewable energy improvements as eligible costs. | City Staff | Sustainability Committee Xcel Energy Focus on Energy | | | | | x | x | x | x | | | | | |

APPENDIX 2: METHODOLOGY FOR MEASURING SUCCESS

As part of implementation support, Partners in Energy will provide biannual progress reports from Xcel Energy for energy consumption, program participation, and savings data during the first phase of implementation. All goals will be measured against Ashland’s three-year baseline of 2018–2020 unless otherwise noted.

Energy Savings Goal

- Increase annual energy savings 30% above business as usual by 2026.

This goal assumes a business-as-usual (BAU) savings scenario based on the three-year baseline. The energy savings goal will be measured by comparing cumulative electricity and natural gas savings over the five years between 2022 and 2026 for all sectors against projected BAU savings over the same time period. This goal includes all Focus on Energy programs available to every sector and measures the first-year savings data provided by Focus on Energy.

Table 4: 2021–2026 Cumulative Energy Savings by Scenario

| | 2026 Cumulative BAU Scenario | 2026 Cumulative Goal Scenario |
|----------------------|---------------------------------|----------------------------------|
| kWh savings | 8,628,925 | 11,217,603 |
| Therm savings | 214,960 | 279,448 |
| MMBtu savings | 50,938 | 66,219 |

In order to achieve Ashland’s 2026 goal, the community will need to save 30% more electricity and natural gas annually than the BAU scenario. The chart below outlines the annual savings needed to meet both the 2026 goal scenario and the BAU scenario.

Table 5: 2021–2026 Average Annual Energy Savings Targets

| | Annual Targets BAU Scenario | Annual Targets 2026 Goal Scenario |
|----------------------|--------------------------------|--------------------------------------|
| kWh savings | 1,725,785 | 2,243,521 |
| Therm savings | 42,992 | 55,890 |
| MMBtu savings | 10,188 | 13,244 |

To estimate dollar savings impacts, the following rates were used for electricity and gas. These are based on average rates for residential and commercial and industrial customers in the area.

Table 6: Cost Savings Assumptions by Sector and Fuel Source

| | Residential | Commercial and Industrial |
|---------------------------------------|-------------|------------------------------|
| Electricity, dollars per kWh | \$0.113 | \$0.087 |
| Natural Gas, dollars per therm | \$0.72 | \$0.589 |

To estimate the greenhouse gas emissions impact, projected emission factors will be applied to the electricity and natural gas savings. For the purposes of this Energy Action Plan, all projected greenhouse gas emission assumptions are based on Xcel Energy’s 2019 Carbon Emissions

Reporting.⁶ Greenhouse gas emissions avoided will be calculated during implementation using Xcel Energy's latest carbon emissions reporting.

Renewable Energy Participation Goal

- Add 350 renewable energy program participants by 2026.

This goal will be measured by comparing actual renewable energy program participation against 2019 participation numbers. All renewable energy programs available from Xcel Energy and Focus on Energy are included, with a focus on Renewable*Connect, Solar*Connect Community, and on-site solar installations. As of 2021, Windsource is no longer available to Wisconsin customers. As new subscription and on-site renewable energy programs become available, they will be included to measure progress toward the 2026 goal.

Table 7: Renewable Energy Goal versus 2019 Baseline

| | 2019 Baseline | 2026 Goal Scenario |
|-----------------------------|---------------|--------------------|
| Participation Totals | 317 | 667 |

Table 8: Baseline Participation Data 2019

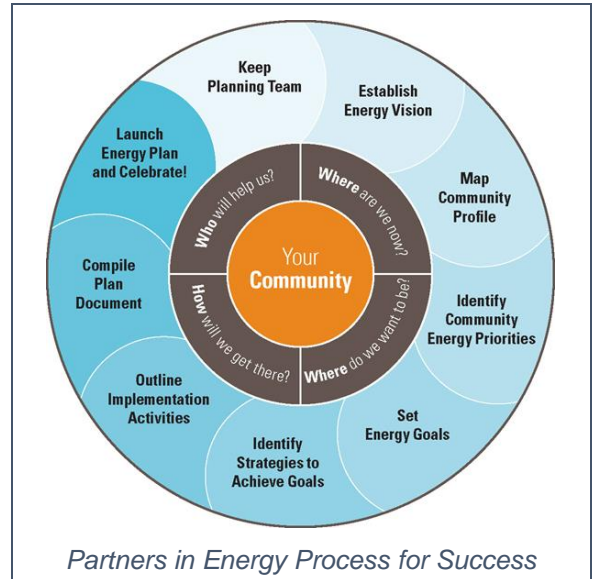
| | Residential | Commercial and Industrial |
|--|-------------|---------------------------|
| Xcel Energy Windsource | 146 | 2 |
| Xcel Energy Renewable*Connect | 152 | 2 |
| Xcel Energy Solar*Connect Community | 9 | 6 |

⁶ Energy and Carbon Emissions Reporting 2019 Summary by Xcel Energy.
<https://www.xcelenergy.com/staticfiles/xe-responsive/Environment/Carbon/Xcel-Energy-Carbon-Dioxide-Emission-Intensities.pdf>.

APPENDIX 3: 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 and communities lead 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 offers 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 plan's content is derived from a series of planning workshops hosted online with a team committed to representing Ashland's energy priorities. The City of Ashland actively recruited stakeholders to participate in this process.

Figure 14: Ashland's Energy Action Plan Development Process



APPENDIX 4: BASELINE ENERGY ANALYSIS

This appendix includes data from many sources to establish a community baseline to compare progress toward goals in the future.

Demographic Baseline

Demographic data was sourced from the U.S. Census Bureau 2018 American Community Survey’s five-year estimates. Two databases — DP04 Housing Characteristics and DP05 Population Characteristics — were the primary sources for the demographic baseline.

Housing Characteristics

There are approximately 3,893 housing units in Ashland and 69% of units are in single-family homes. Most of the housing stock is over 20 years old — 95% of units were built before 2000. There are also several rentals in the community and renters occupy 43% of housing units.

Table 9: Units in Structure

| | |
|----------------------------|--------------|
| Total housing units | 3,893 |
| 1-unit, detached | 2,641 |
| 1-unit, attached | 42 |
| 2 units | 293 |
| 3 or 4 units | 236 |
| 5 to 9 units | 119 |
| 10 to 19 units | 123 |
| 20 or more units | 299 |
| Mobile home | 140 |
| Boat, RV, van, etc. | 0 |

Table 10: Housing Unit Age

| | |
|------------------------------|--------------|
| Total housing units | 3,893 |
| Built 2014 or later | 18 |
| Built 2010 to 2013 | 62 |
| Built 2000 to 2009 | 107 |
| Built 1990 to 1999 | 225 |
| Built 1980 to 1989 | 229 |
| Built 1970 to 1979 | 559 |
| Built 1960 to 1969 | 247 |
| Built 1950 to 1959 | 431 |
| Built 1940 to 1949 | 324 |
| Built 1939 or earlier | 1,691 |

Table 11: Housing Tenure

| | |
|-------------------------------|--------------|
| Occupied housing units | 3,466 |
| Owner occupied | 1,986 |
| Renter occupied | 1,480 |

Population Characteristics

Ashland is a small, older community. According to the American Community Survey, Ashland has 7,892 residents and a median age of 40.3 (compared to the statewide median age of 39.3). The population is 88% white and 3% speak a language other than English.

Table 12: Race

| | |
|---|--------------|
| Total Population | 7,892 |
| White alone | 6,946 |
| Black or African American alone | 93 |
| American Indian and Alaska Native alone | 480 |
| Asian alone | 49 |
| Native Hawaiian and other Pacific Islander alone | 6 |
| Some other race alone | 38 |
| Two or more races | 280 |

Table 13: Age

| | |
|--------------------------|--------------|
| Total Population | 7,892 |
| 5 to 14 years | 865 |
| 15 to 17 years | 290 |
| Under 18 years | 1,542 |
| 18 to 24 years | 1,041 |
| 15 to 44 years | 3,195 |
| 16 years and over | 6,546 |
| 18 years and over | 6,350 |
| 21 years and over | 5,903 |
| 60 years and over | 1,961 |
| 62 years and over | 1,710 |
| 65 years and over | 1,391 |
| 75 years and over | 670 |

Table 14: Speak a Language Other Than English

| | |
|--|--------------|
| Population 5 years and over | 7,505 |
| Speak only English | 7,301 |
| Speak a language other than English | 204 |

Energy Baseline

All energy data was provided by Xcel Energy and Focus on Energy as part of Ashland’s participation in Xcel Energy’s Partners in Energy.

Xcel Energy, Ashland’s electric and natural gas service provider, provided 2018–2020 consumption and program participation data for all customers in Menomonie. Focus on Energy, the statewide provider of energy efficiency programs in Wisconsin, provided 2018–2020 program participation, energy savings, and incentives data.

Electricity and Natural Gas Premises

In 2020, there were 4,516 total premises in Ashland. Most premises in Ashland are residential. Approximately 81% of premises are residential, while 18% are commercial and industrial. The remaining 1% in the community are municipal and owned by the City of Ashland.

Electricity and Natural Gas Consumption and Trends by Sector

While most Ashland premises are residential, they do not use as much energy as commercial and industrial premises. Commercial and industrial customers represent 18% of premises in Ashland and consume about 72% of total electricity and 52% of total natural gas in the community. By comparison, residents consume 27% of electricity and 47% of natural gas.

Over the baseline period of 2018–2020, electricity consumption remained relatively stable, but there was an increase in cooling degree days in 2020 compared to 2018. Natural gas use was more impacted by weather trends, including a decrease of heating degree days when the use of natural gas decreased in both the residential and the commercial and industrial sector.

Figure 15: Electricity Consumption by Sector 2018–2020

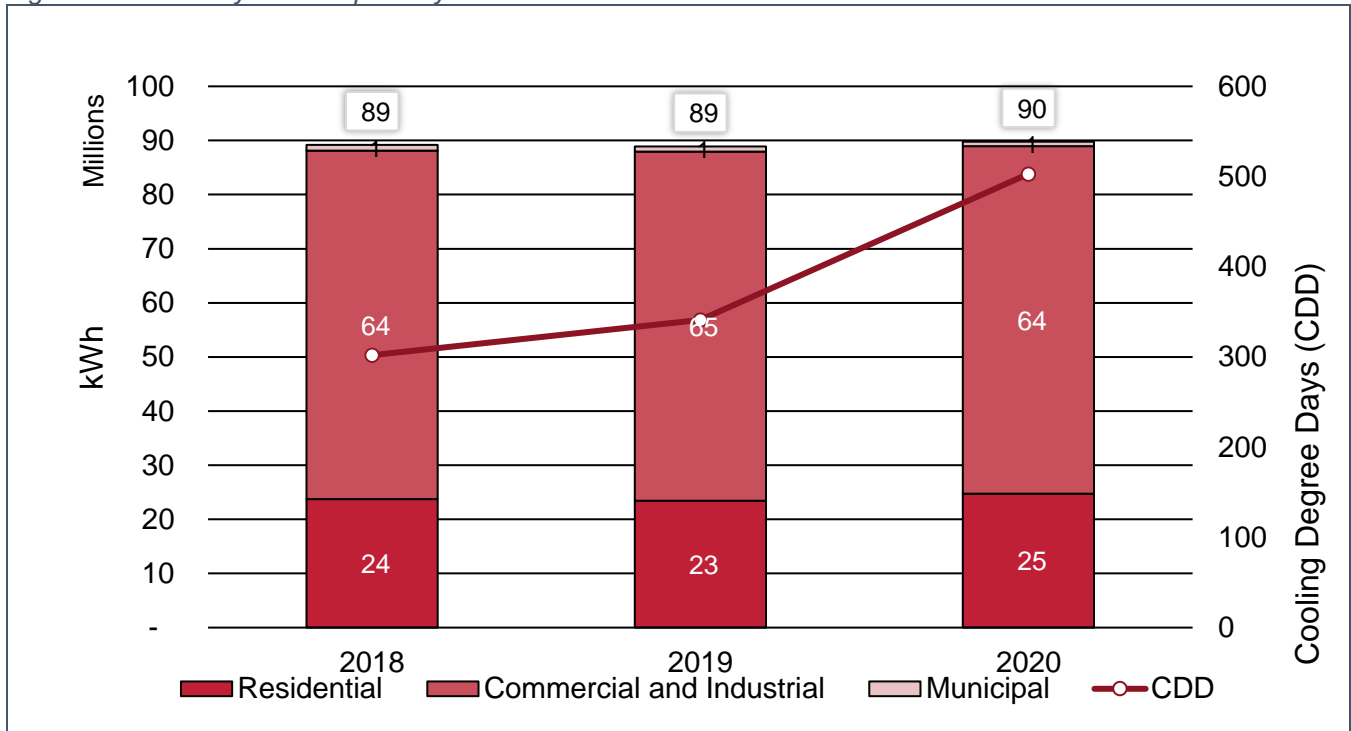
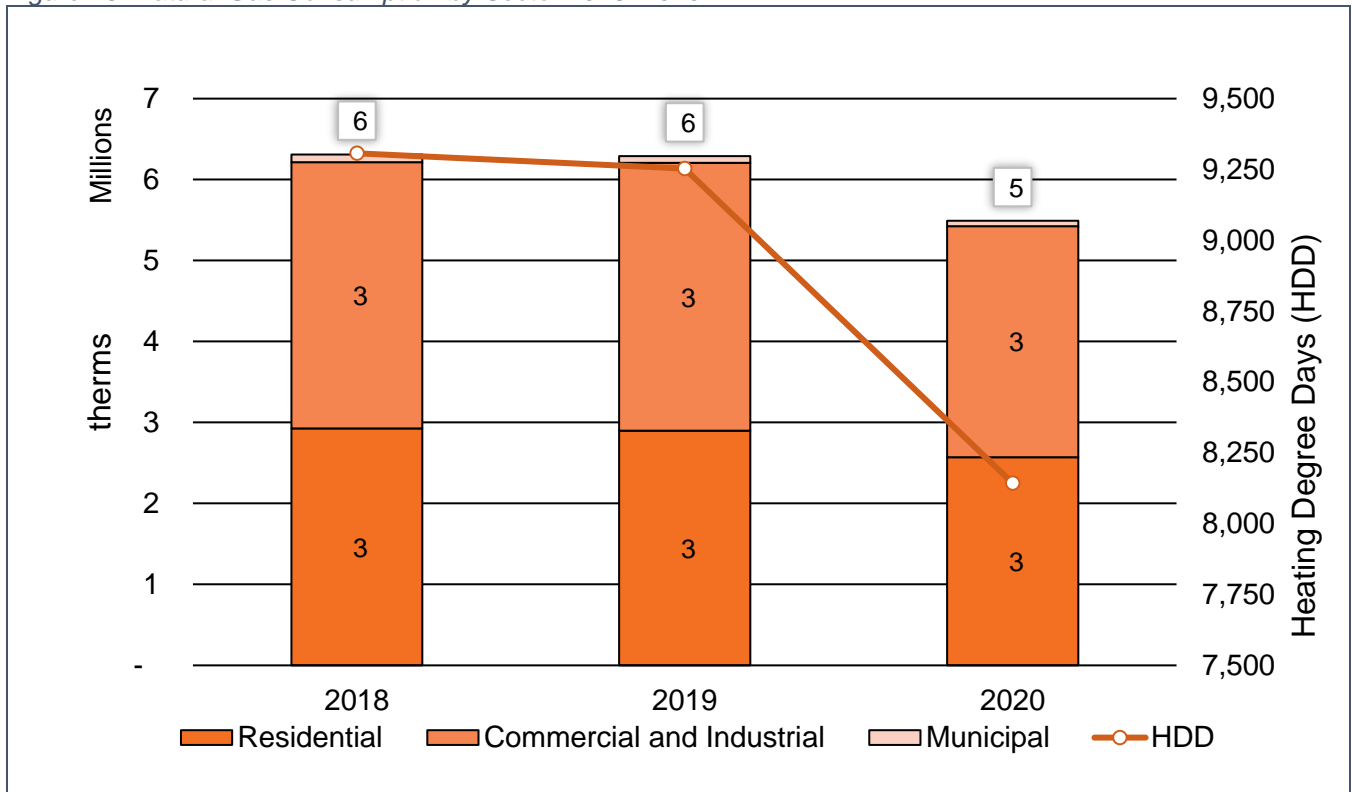


Figure 16: Natural Gas Consumption by Sector 2018–2020



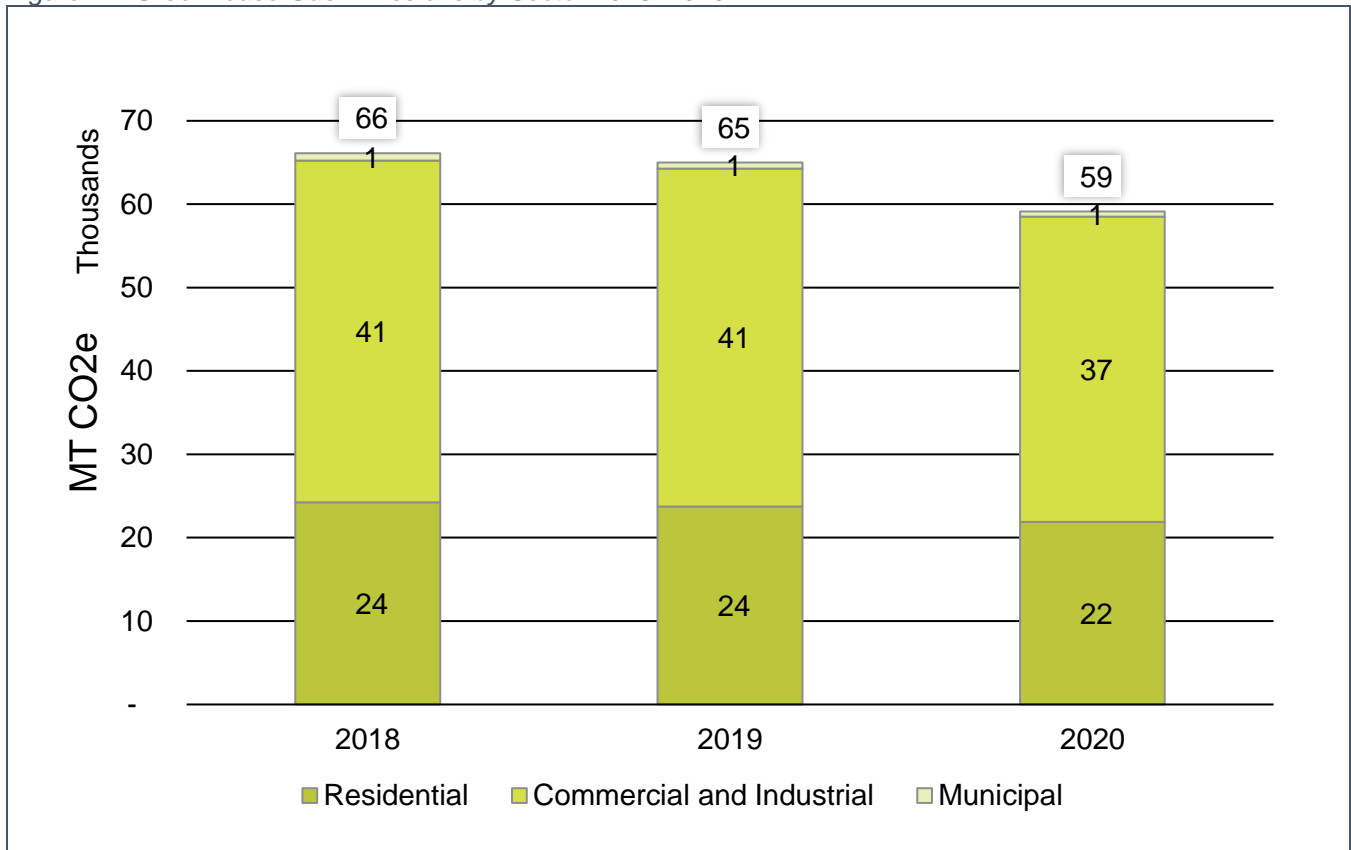
Greenhouse Gas Emissions and Trends

Greenhouse gasses created from the production of the energy consumed in Ashland for the three-year baseline averaged 63,429 MTCO₂e annually. This is equivalent to the greenhouse gas emissions from 13,795 passenger vehicles driven for one year.⁷

Annual greenhouse gas emissions in Ashland decreased over the baseline period between 2018 and 2020. While emissions decreased in all sectors, the commercial and industrial sector saw the greatest reductions in emissions. Nevertheless, this sector is still responsible for most of Ashland’s greenhouse gas emissions. The greenhouse gas emissions are consistent with the total energy consumption for the three-year baseline in Ashland.

⁷ <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

Figure 17: Greenhouse Gas Emissions by Sector 2018–2020



Energy Costs

Over the baseline period, an average of over \$13 million was spent on energy costs each year across all sectors. Electricity accounts for most energy costs in Ashland. The average residential premise spent \$1,300 annually on energy during the baseline period. Commercial and industrial customers spent nearly \$8.5 million on energy annually over the baseline period. Costs per commercial and industrial premise averaged \$10,000 annually but vary greatly depending on energy use.

Table 15: Average Annual Energy Costs by Sector and Fuel Source

| Sector | Total Costs | Electricity Costs | Natural Gas Costs |
|----------------------------------|---------------------|--------------------|--------------------|
| Residential | \$4,710,313 | \$2,696,606 | \$2,013,707 |
| Commercial and Industrial | \$8,213,066 | \$6,433,456 | \$1,779,610 |
| Municipal | \$140,861 | \$91,099 | \$49,762 |
| Total | \$13,064,240 | \$9,221,162 | \$3,843,078 |

Program Participation and Savings

Xcel Energy and Focus on Energy offer programs to Ashland residents and businesses to increase their home or buildings’ energy efficiency. Rebates for new equipment, audit programs and discounted or no-cost energy measures are available in addition to load management programs.

Ashland residents and businesses saved more than 5.2 million kWh and almost 130,000 therms through program participation during the baseline period. Program participation varied each year, depending on program availability, outreach campaigns and utility outreach. 2018 marked the highest participation among residents and businesses and most incentives paid by Focus on Energy and Xcel Energy. Program participation was higher in 2020 than 2019, but there were fewer incentives paid in 2020 than in 2019. Popular programs included lighting and rooftop unit rebates for businesses and energy savings packs for residents.

Between 2018 and 2020, customers in Ashland received almost \$530,000 in incentives from Focus on Energy. In addition to the incentives paid by Focus on Energy, Xcel Energy offers additional bonus incentives for certain Focus on Energy rebates and programs. Over the baseline period, Ashland customers received almost \$80,000 in bonus incentives from Xcel Energy.

Table 16: Focus on Energy Program Participation by Sector 2018–2020

| | 2018 | 2019 | 2020 | Total |
|---|-----------|-----------|----------|-----------|
| Residential Program Participation | 2,792 | 253 | 933 | 3,978 |
| Residential Electricity Savings (kWh) | 223,753 | 58,347 | 130,398 | 412,498 |
| Residential Natural Gas Savings (therms) | 12,694 | 7,742 | 5,090 | 25,526 |
| Residential Incentives Paid | \$63,074 | \$23,384 | \$28,442 | \$114,900 |
| Business Program Participation | 454 | 657 | 495 | 1,606 |
| Business Electricity Savings (kWh) | 2,527,419 | 1,494,557 | 742,882 | 4,764,858 |
| Business Natural Gas Savings (therms) | 50,367 | 34,068 | 19,014 | 103,449 |
| Business Incentives Paid | \$221,570 | \$129,997 | \$63,530 | \$415,097 |
| Total Participation | 3,246 | 910 | 1,428 | 5,584 |
| Total Electricity Savings (kWh) | 2,751,172 | 1,552,904 | 873,280 | 5,177,356 |
| Total Natural Gas Savings (kWh) | 63,061 | 41,810 | 24,104 | 128,975 |
| Total Incentives Paid | \$284,645 | \$153,381 | \$91,972 | \$529,997 |

Table 17: Xcel Energy Bonus Incentives Paid by Sector 2018–2020

| | 2018 | 2019 | 2020 | Total |
|------------------------------|----------|----------|---------|----------|
| Residential Customers | \$12,780 | \$5,840 | \$2,820 | \$21,440 |
| Business Customers | \$29,089 | \$19,190 | \$9,637 | \$57,916 |

Renewable Energy Support

About 2% of residential premises and 1% of commercial and industrial premises are subscribed to either a renewable energy subscription program or a community solar garden. Top renewable energy programs in Ashland were Xcel Energy’s Windsource and Xcel Energy’s Renewable*Connect for both residents and commercial and industrial customers. On-site solar installations were less popular and only eight incentives were paid for photovoltaic systems by Focus on Energy from 2018 to 2020.

Table 18: 2019 Renewable Energy Program Participation by Program and Sector

| | Residential | Commercial and Industrial |
|--|-------------|---------------------------|
| Xcel Energy Windsource® | | |
| Subscriber Count | 146 | 2 |
| Total Annual Electricity Subscribed (kWh) | 68,060 | 7,095 |
| Percentage of Sector Electricity Use | 0.29% | 0.01% |
| Xcel Energy Renewable*Connect® | | |
| Subscriber Count | 152 | 2 |
| Total Annual Electricity Subscribed (kWh) | 265,402 | 23,958 |
| Percentage of Sector Electricity Use | 1.12% | 0.04% |
| Xcel Energy Solar*Connect Community® | | |
| Subscriber Count | 9 | 6 |
| Total Annual Electricity Subscribed (kWh) | 26,651 | 477,733 |
| Percentage of Sector Electricity Use | 0% | 1% |
| Focus on Energy Renewable Rewards | | |
| Participant Count | 7 | 1 |
| Incentives Paid | \$10,285 | \$3,831 |

APPENDIX 5: IMPLEMENTATION MEMORANDUM OF UNDERSTANDING

To be inserted once approved by City Council.