



# Leading the Clean Energy Transition

We are transforming our industry-leading clean energy goals into action, with plans approved and projects moving forward across our service areas.

Addressing the risks from climate change is one of our highest priorities at Xcel Energy. We've led the clean energy transition for nearly two decades, moving forward at a pace and scale that allows us to reach net-zero carbon emissions responsibly. To do this, we need to fulfill other customer priorities, maintaining reliable, secure energy service while keeping their energy bills as low as possible.

- We were the first U.S. energy provider with the goal of delivering 100% carbon-free electricity by 2050, and the first to add our net-zero goal for natural gas use in buildings and zero-carbon transportation goal — covering three sectors that represent the most significant ways our customers use energy.
- In 2022, we were inducted into the Climate Leadership Hall of Fame sponsored by The Climate Registry
  and the Center for Climate and Energy Solutions. The hall of fame celebrates organizations that have
  won multiple Climate Leadership Awards over the past decade. Xcel Energy has been recognized for
  excellence in greenhouse gas management and industry-leading carbon reduction efforts.
- To ground our goals in climate science, climate modeling experts have validated that our projected
  emissions reductions under our electricity and natural gas goals align with science-based scenarios
  likely to meet the targets of the Paris agreement for limiting global warming to 1.5 degrees Celsius
  from preindustrial levels.

Advanced clean technology will be needed to reach these milestones. Xcel Energy is partnering with industry, government and technology developers on initiatives to move innovation forward.

#### Governance

Each committee of Xcel Energy's Board of Directors plays a role in managing risks associated with climate change. The Operations, Nuclear, Environmental and Safety Committee holds specific responsibility for overseeing the company's environmental strategy and performance. In 2005, Xcel Energy was one of the first companies to tie carbon reduction to executive compensation, and our board has overseen environmental performance since 2000. Within the company, the chief sustainability officer reports to the CEO and is responsible for ESG-related policy, strategy, governance and reporting, managing climate-related risks, and regular sustainability discussions with the board.



Xcel Energy clean energy reports: Building a Carbon-free Future, Net-Zero Vision for Natural Gas. Drive Toward a Carbon-free **Future: Electric Transportation Vision** 

Climate science analysis reports for electricity and natural gas use in buildings

Report responding to the Task Force on **Climate-Related Financial Disclosures** 

**Sustainability Report Data Summary** 

**Energy Innovation Brief** 

**Renewable Energy Brief** 

**Public Policy Brief** 

Affordable, Safe, Reliable and Resilient **Energy Brief** 

**Carbon Offset Pilot Project** 

# Net-Zero Energy Provider by Goals that cover the most significant





ways our customers use energy



Electricity\*

emissions











2050

2030





**NET-ZERO** gas service



**ZERO-CARBON FUEL** accessible within



- \*Companywide goal; work also underway to meet state clean energy goals in our service area
- \*\*Spans natural gas supply, delivery and customer use
- \*\*\*Includes the Xcel Energy fleet; zero-carbon fuel is electricity or other clean energy

# Combined Carbon Savings

(2005-2030) Electricity, Natural Gas and Transportation Goals

2030

Million Tons CO2e Reduced



CO2e = carbon dioxide equivalent

# Carbon-Free Electricity

Delivering electricity with zero carbon emissions by 2050 is the bedrock of our clean energy vision. Using today's wind, solar and battery technologies, we can reduce carbon dioxide emissions at least 80% by 2030 — reliably and affordably for customers.

As we look beyond 2030, we need technologies that are dispatchable — available whenever we need them — to maintain system reliability while operating high levels of wind and solar generation. Through collaborations with industry partners, researchers, technology developers and venture investors, we're engaged in advancing affordable, zero-carbon, 24/7 power technologies.



#### **Clean Electricity Plans Move Forward**

With pathbreaking resource plans underway across our service area, Xcel Energy will retire all coal-fueled generation on our system by the end of 2030.

In our two largest operating regions, Colorado and the Upper Midwest, Xcel Energy received approval in 2022 on clean energy plans expected to beat our target by reducing carbon emissions 85% and delivering electricity from more than 80% carbon-free sources. New transmission infrastructure is also moving forward after approvals in Colorado and the Upper Midwest.

In our southwest region, we've proposed plans in Texas and New Mexico.

#### Colorado Clean Energy Plan

We anticipate the final decision on specific new energy resources in late 2023, following an ongoing request for proposal process. Preliminary modeling indicated that we might add:

- 2,400 megawatts of wind and 1,600 megawatts of large-scale solar capacity.
- 1,200 megawatts of distributed solar capacity.
- 1,300 megawatts of dispatchable resources and 400 megawatts battery storage.

We will work with impacted communities as we phase down all remaining Colorado coal operations, including:

- Comanche Station Unit 3 retirement by Jan. 1, 2031, with reduced operations beginning in 2025.
- Pawnee Station conversion from coal to natural gas by 2026.
- Hayden Station and Craig Station Unit 2 retirement by the end of 2028.

# **Upper Midwest Energy Plan (Minnesota, North and South Dakota, Wisconsin, Michigan)** Under the plan, we will:

- Add 2,150 megawatts of wind and 2,500 megawatts of large-scale solar by 2032, with another 1,100 megawatts of wind and solar capacity beyond 2032.
- Retire all remaining coal plants by 2030.
- Extend the generation of carbon-free nuclear energy at our Monticello plant 10 years to 2040.
- Build on current energy efficiency programs and create new demand response options to manage energy load.
- Develop new transmission infrastructure, reusing important connections near retiring coal plants, to help maintain reliability.

We also need 1,100 megawatts of firm dispatchable generation, including up to 800 megawatts of hydrogenready capacity. Nearly all that new capacity will require additional regulatory approval, and we expect to need more capacity by 2030 and beyond.

#### **Southwest Energy Plans**

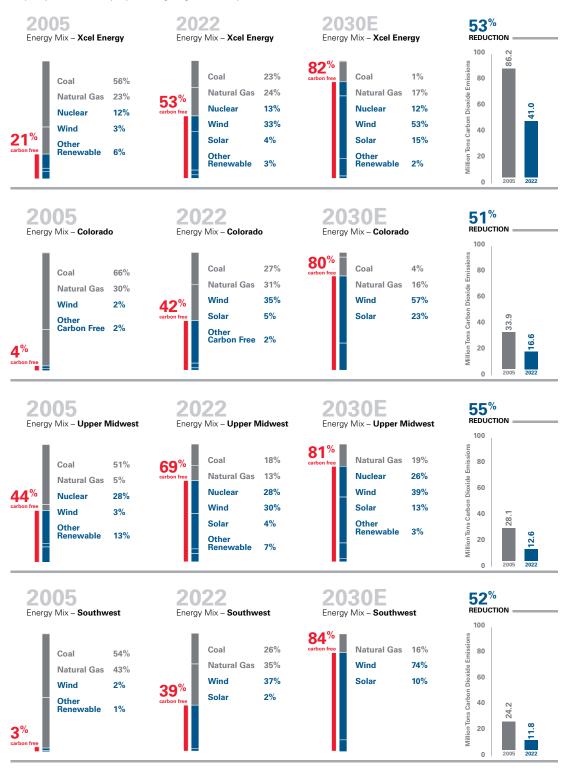
In our southwest region, our plans include converting one coal-fueled plant to natural gas in 2024 and a proposal to end coal operations by 2028 at Tolk Station, which is located about 70 miles northwest of Lubbock, Texas. Retiring coal at the plant more than four years earlier than previously planned is estimated to save Xcel Energy's customers in Texas and New Mexico more than \$70 million.

After evaluating projects submitted through an all-source, competitive solicitation issued in fall 2022, we plan to propose three company-owned solar projects with a combined capacity of 418 megawatts. If approved by regulators, the new facilities could be in service between 2026 and 2027. Xcel Energy is also further evaluating battery storage proposals received through the solicitation. Additional resources for the region beyond 2027 will be scoped through an Integrated Resource Plan filed in fall 2023 in New Mexico and evaluated following our next all-source, competitive solicitation to be issued in mid-2024.



### **Progress Toward Carbon-Free Electricity**

Xcel Energy's clean energy vision includes all the electricity that serves our customers, including owned and purchased power. The charts below show our energy mix and carbon dioxide emissions (short tons), companywide and by operating region, compared to the 2005 baseline.



Carbon dioxide emissions are from electricity delivered to customers in 2022 and are considered preliminary until third-party verified (expected first quarter 2024). Energy mix includes electricity produced at Xcel Energy plants, purchased from others and supplied for customers through Xcel Energy renewable energy choice programs.

#### Net-Zero Natural Gas

From drill head to burner tip, we're taking action to reduce greenhouse gas emissions across the entire natural gas value chain, from production, delivery and customer use. By 2050, we aim to provide natural gas service with net-zero emissions while also achieving an important 2030 interim goal: to reduce greenhouse gas emissions from natural gas service by 25% from 2020 levels, including net-zero methane emissions from our own infrastructure.

#### Net-zero methane emissions from distribution

The clean energy transition starts with our own system, where we have already made significant progress. We joined the Environmental Protection Agency's Natural Gas STAR program in 2008 to voluntarily reduce methane emissions. As a founding member of the Methane Challenge, we have reduced methane emissions from venting of pipelines during scheduled construction projects by an average of 86% over the past four years.

Among initiatives for achieving our methane reduction goal, we are:

- Exploring the use of advanced mobile or aerial leak detection technologies for surveying the system to supplement our annual compliance inspections.
- Accelerating efforts to find and fix methane leaks.
- Reducing methane emissions on construction projects we've reduced venting of natural gas from pipelines on transmission projects and can expand the practice to distribution construction projects.
- Participating in a pilot study with GTI-Veritas to establish protocols for improving methane reporting by developing a system-specific methane emissions inventory, as opposed to using general industry or regulatory emissions factors to estimate emissions.

Xcel Energy belongs to industry collaborations, including Our Nation's Energy Future, an industry partnership that seeks to limit methane emissions across the natural gas supply chain to 1% or less by 2025. In 2021, ONE Future surpassed its goal for the fifth year in a row, with a methane intensity at member companies of 0.462%. Xcel Energy reports emissions in the Processing, Transmission and Storage, and Distribution segments of the value chain, and in 2021, we surpassed specific goals for each of these segments.

Another collaboration, the Natural Gas Sustainability Initiative, sponsored by the Edison Electric Institute and American Gas Association, focuses on creating consistent, transparent disclosures among natural gas providers. Xcel Energy uses the NGSI reporting protocols to calculate methane emissions from our natural gas distribution operations. Find results of our methane emissions calculations using the NGSI protocol in the Sustainability Report Data Summary.

#### Natural gas with certified low-methane emissions

While we have no direct control over our suppliers' activities, we can use our purchasing power to move them toward improved transparency and lower methane emissions. We are striving to purchase only certified low-emission natural gas from suppliers by 2030 and are working with multiple industry groups and regulatory agencies to improve transparency and develop this market for the future.

During winter 2021-2022, we worked with Project Canary in Colorado to demonstrate the viability of emissions measurement. In 2022, we purchased certified low-emission natural gas at no additional cost to serve a portion of our operational needs in Colorado, Texas and Minnesota. The purchases were equivalent to 18 million dekatherms daily, enough to heat about 100,000 homes during the winter.

#### Offering customers new cost-effective options for lower carbon emissions

About 85% of Xcel Energy customers heat their homes and businesses reliably with natural gas. While our system continues to grow as we deliver to new customers, individual customers have reduced their gas use nearly 20% since 2000 through more efficient appliances, better building practices and our extensive portfolio of conservation programs.

We support customer choice and will offer voluntary options to let customers choose the solutions that work best for them, including conservation, electrification and clean fuels, such as hydrogen and renewable natural gas. Efficient electric heating technologies are a primary customer option for achieving our goals, but they can't do it all. We need natural gas furnaces for backup and are pursuing clean fuels like hydrogen and other new energy sources, such as heating networks that connect homes and businesses through a system of ground-source heat pumps.

#### Carbon offsets

Carbon offsets are one way to address emissions from the natural gas business that we expect will be too costly or technically difficult to remove. They are an addition — not a substitution — to our work reducing emissions by tackling methane on our system and in the supply chain, developing clean fuels and offering customers options to reduce their use of natural gas. Investing in carbon offsets now is something we can do to cost-effectively reduce greenhouse gas emissions today while we wait for new clean energy technologies to mature and become more affordable and mainstream for consumers.

We're committed to investing only in high-quality offset projects that meet the following criteria:

- Third-party verified and offered by select carbon-offset registries with their own verification processes.
- Follows scientifically robust protocols and rules.
- Operate in one of the states we serve.
- Provide other benefits economic, environmental and social.
- Reflect our corporate values and DEI goals.

Through a pilot program now underway, we've purchased offsets from six local projects to gain experience and help build the market for high-quality offsets in our service area.





#### Plans for Clean Heat Underway in Colorado and Minnesota

In 2023, Xcel Energy will file comprehensive plans in both Colorado and Minnesota, in compliance with Colorado's Clean Heat Standard and Minnesota's Natural Gas Innovation Act. Both were initiated by legislation in 2021 and provide a pathway for recovering important investments to reduce greenhouse gas emissions within cost caps to help keep customer bills low.

These groundbreaking plans will include a portfolio of projects to achieve state greenhouse gas emissions reduction goals.

Possible solutions include:

- Expanding customer conservation programs.
- Developing voluntary programs to encourage adoption of electric water heaters, air source heat pumps and new all-electric buildings.
- Piloting the use of renewable natural gas and hydrogen blending in our natural gas distribution system.
- Advancing leak repair on our system beyond federal and state regulations. Our net-zero vision exceeds these requirements to fully address methane emissions from both the supply and distribution of natural gas.

In spring 2023, Xcel Energy submitted our first-ever Gas Infrastructure Plan in Colorado, which is a complement to the Clean Heat Plan. The infrastructure plan details the investment projects critical to continuing to provide customers with reliable, safe natural gas service.

The plans will be decided through state public utilities commissions and will include stakeholder input, similar to our electric resource plans. We anticipate regulators to decide on the plans by second quarter 2024.

#### **Progress Toward Net-Zero Gas**

In 2022, we began developing the metrics to report our progress toward reducing greenhouse gas emissions from the natural gas business, compared to a 2020 baseline. We expect GHG levels from our natural gas business will increase over the next several years, due to system growth, while we launch initiatives for lowering them.

We provide 2022 emissions below, which are calculated using different protocols. The current methodologies include:

- Supplier methane emissions are estimated using 1% average production intensity.
- Natural gas system operations are based on NGSI reporting protocols that include natural gas
  delivered to customers (throughput) normalized to reflect typical weather conditions. The reporting
  uses emissions factors from EPA's Greenhouse Gas Inventory Program for pipeline mains and
  service connections.
- Carbon dioxide from customer end-use of natural gas is calculated based on EPA's Subpart NN reporting protocol and multiplied by total actual throughput.

Under Clean Heat and NGIA requirements, states will determine their own methodology for reporting and tracking emissions. We will engage with stakeholders to support those decisions.

## **Natural Gas Emissions Reporting (in metric tons)**

| Source of Emissions  | 2020  | 2021  | 2022  |
|--|-------|-------|-------|
| Natural gas supplier emissions (estimated from supply for both electric generation and distribution) | 2.88  | 2.59  | 2.62  |
| Natural gas system operations  | 0.41  | 0.32  | 0.33  |
| Customer emissions from natural gas use (estimated)  | 15.96 | 14.65 | 16.25 |
| Total  | 19.25 | 17.56 | 19.20 |

To convert metric tons to short tons, multiply by 1.1023.

# Transportation Electrification

With electric vehicle sales surging in the U.S., Xcel Energy is poised to take our clean energy leadership in new directions. Our diverse transportation programs in four states have a unified aim: to make the transition to electric transportation easier for customers.

We have an ambitious vision to enable zero-carbon transportation in our service area by 2050, providing the fueling infrastructure and energy to run all vehicles on carbon-free electricity or other clean energy sources. In 2022, we counted 95,583 electric vehicles on the road in our service area — a 44% increase over 2021. By 2030, we plan to provide programs and infrastructure that deliver affordable charging at home, work and on the go to all our customers, as part of our plan to boost EV growth in our states to one in five vehicles.



#### **Electrification in the Xcel Energy Fleet**

Transitioning our vehicle fleet is a key component of Xcel Energy's zero-carbon transportation vision. By the end of 2022, we met our initial goal of electrifying all sedans in our fleet by 2023. We've replaced the gasoline-powered sedans originally in the fleet when we first set the goal in 2020 with EVs. However, we still maintain some gasoline-powered sedans for limited use due to original equipment manufacturer shortages. We intend to transition all light-duty vehicles and 30% of medium- and heavy-duty vehicles by 2030.

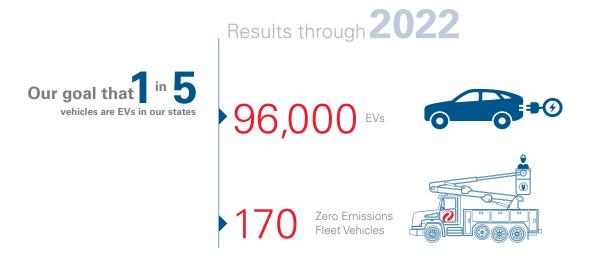
Xcel Energy also became the first energy provider in the nation to enable our crews to use new, quiet, zero-emissions electric bucket trucks as they maintain the system and respond to outages. The bucket truck technology was delivered — two years ahead of industry projections — by Terex Utilities and Navistar, maker of International Trucks. As part of a pilot project to test the vehicles under real working conditions, we acquired one truck in Colorado and another in Minnesota, with two more trucks on order.

The Xcel Energy fleet now includes more than 250 zero-emission vehicles, including Chevy Volts and Bolts, Ford Fusions and Escapes and the F-150 Lightning pickup truck. Approximately 9% of our light-duty fleet is now electrified, and we're testing new types of vehicle technology, such as an E-Transit light-duty van.

We've also electrified about 4% of the medium-duty fleet. To save fuel and reduce emissions, we're deploying electric anti-idling systems that automatically cut a truck's engine while power continues to flow to laptops, cab heat and cooling, and other systems our crews need. These include 39 Altec Jobsite Engine Management Systems, which power jobsite tools using lithium-ion batteries with plug-in charging, and eight Stealth Power systems that ultimately will run on solar panels.

To keep our electric fleet moving, we've also installed more than 140 chargers at Xcel Energy facilities and have at least 100 planned for installation in 2023.

### **Progress Toward Zero-Carbon Transportation**



### **Diverse EV Customer Programs in Four States**

Xcel Energy has offered EV solutions to customers since 2015, responding to calls from policymakers and regulators to increase our offerings each year. To do this, we're addressing the most common barriers to EV adoption:

- Improving customer understanding of their EV options and the benefits of driving electric.
- Providing rebates and other programs to lower up-front costs.
- Offering incentives to charge at off-peak times, which saves EV drivers money, benefits the grid and lowers carbon emissions for everybody.

Under our clean energy plans, an electric vehicle powered with Xcel Energy electricity in 2022 has about 55% lower carbon emissions than a conventional gasoline-powered vehicle and is expected to have at least 80% fewer carbon emissions by 2030. Besides the environmental benefits, EVs are less expensive to drive, costing about the equivalent of \$1 per gallon of gasoline when charged during off-peak rate periods.

Xcel Energy offers 13 different major EV program types (five residential and six commercial programs, plus Xcel Energy-owned public charging and the EV Accelerate Innovation program), and other advisory services across Colorado, Minnesota, New Mexico and Wisconsin.

#### **EV Options for All**

Equity is a key component of our electric transportation vision, giving underserved communities the benefits of zero-carbon transportation. By 2050, our vision is for all customers to access affordable charging at or within one mile of their homes.

- Our programs include rebates on new or used EVs and affordable charging for single- and multifamily homes, workplaces and public spaces.
- We offer a pilot program for EV car sharing in Colorado and an income-qualified rebate program for chargers and wiring in New Mexico.
- Other pilots will add electric vehicles to paratransit, school and municipal refuse fleets, and nonprofits or small businesses that serve income-qualified people or others in need.

# Climate Science Supports Our Vision

We continue to use climate science to inform our clean energy strategy.

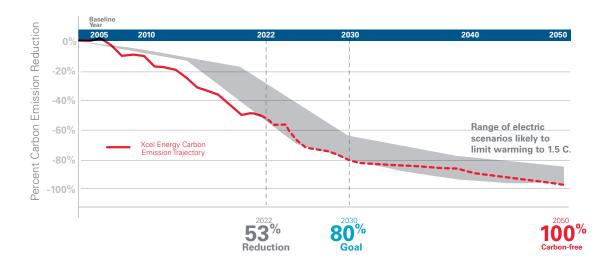
Xcel Energy contracted with a lead author for the Intergovernmental Panel on Climate Change, and his team of climate modeling experts, to understand how our carbon-free electricity and net-zero gas goals would align with global temperature goals. The studies determined that our plans to limit carbon from electric generation and natural gas use in buildings are consistent with scenarios that achieve the 1.5 and 2 degrees Celsius warming goals of the Paris agreement.

### Analyzing the path to 100% carbon-free electricity

We first contracted with climate modeling experts to understand how our vision relates to global temperature goals — specifically delivering 100% carbon-free electricity by 2050 and reducing carbon emissions 80% by 2030. These experts consulted the newest IPCC emission scenarios database and analyzed carbon emissions for the electric sector in industrialized countries, within global greenhouse gas scenarios that have a high (66% or greater) probability of achieving the 2 C goal and those more likely than not (50% or greater) to achieve the 1.5 C goal.

Xcel Energy's carbon emissions reduction trajectory to 2050 was then compared with the IPCC emissions scenarios (shaded gray in the chart below). Based on this analysis, our reduction targets are clearly consistent with — even on the low end of — the electric sector reductions in scenarios that achieve the international 1.5 C goal.

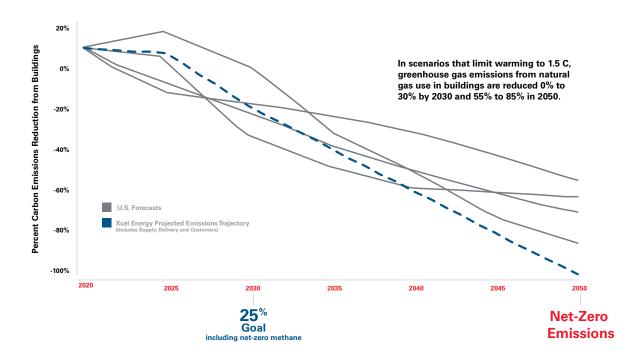
Xcel Energy's carbon emissions trajectory for the electricity provided to customers aligns with science-based scenarios likely to limit global warming to 1.5 C.



### **Analyzing the Future Use of Natural Gas in Buildings**

We engaged with the same climate modeling expert who conducted our electric system study to test the future use of natural gas in buildings against scenarios likely to achieve the 2 C and 1.5 C temperature goals of the Paris agreement.

# Xcel Energy's net-zero vision for natural gas aligns with scenarios likely to limit global warming to 1.5 C.



Study results show a range of possible outcomes that all achieve the same climate goals for natural gas in a low-carbon future, driven by the cost and availability of technology especially in colder climates that rely the most on natural gas for heating. Our strategy is consistent with and can help drive these outcomes. Over the next decade, our voluntary strategy for achieving net-zero natural gas service can achieve the same range of emission reductions as the scenarios in the study do.

# Greenhouse Gas Measurement, Tracking and Reporting

Xcel Energy has a long history of transparent disclosure. We publicly report greenhouse gas emissions to track progress toward our goals for both electricity and natural gas, and annually verify and publicly disclose GHG emissions through The Climate Registry for our electric and owned natural gas system emissions.

Our reporting is based on The Climate Registry's General Reporting Protocol and Electric Power Sector Protocol, which aligns with World Resources Institute and ISO 14000 series standards. In 2007, we joined TCR as a founding member to help establish a consistent standard for calculation, third-party verification and reporting, and have since verified our reporting following The Climate Registry's standards back to 2005. We are the only energy provider with consecutively verified data back to 2005, a baseline commonly used by standards bodies as well.

We report progress toward our carbon reduction goals (80% by 2030 and 100% by 2050) based on carbon dioxide emissions associated with the electricity we deliver to customers. When we have more electricity than we need, we sell into wholesale markets. Because the energy from those sales does not serve our customers, we exclude those carbon emissions from our reporting. If the purchasers of that energy follow accepted protocols, they will include those emissions in their reporting.

Xcel Energy is currently working to expand our greenhouse gas reporting to accurately track progress in meeting our net-zero vision for the natural gas business, which includes both methane and carbon dioxide from the supply, delivery and customer use of natural gas.



# 2022 Greenhouse Gas Emissions Reporting—Scope 1, 2 and 3 Emissions (CO2e)

| Source of Emissions   | Million Metric<br>Tons | Emissions<br>Included in Our<br>Goals |
|---|------------------------|---------------------------------------|
| Scope 1   |                        |                                       |
| Xcel Energy owned electric generation serving customers   | 32.60                  | 32.60                                 |
| Xcel Energy owned electric generation biomass emissions serving customers                       | 0.60                   | 0.60                                  |
| Xcel Energy owned market electricity sales not serving customers                                | 4.23                   | _                                     |
| Natural gas system operations   | 0.33                   | 0.33                                  |
| Fleet vehicles  | 0.09                   | 0.09                                  |
| Sulfur hexafluoride from electric equipment   | 0.10                   | _                                     |
| Other   | 0.01                   | _                                     |
| Total Scope 1   | 37.96                  | 33.62                                 |
| Scope 2   | Million Metric<br>Tons | Included in<br>Goals                  |
| Building energy use   | 0.02                   |                                       |
| Line loss from purchased electricity  | 0.72                   | _                                     |
| Total Scope 2   | 0.74                   | _                                     |
| Scope 3   | Million Metric<br>Tons | Included in<br>Goals                  |
| Purchased electricity serving customers   | 4.22                   | 4.22                                  |
| Purchased electricity biomass emissions serving customers                                       | 0.26                   | 0.26                                  |
| Purchased electricity not serving customers   | 0.60                   | _                                     |
| Transportation of fuel for producing electricity  | 0.31                   | _                                     |
| Customer emissions from natural gas use (estimated)   | 16.25                  | 16.25                                 |
| Supplier emissions from natural gas supply for electric generation and distribution (estimated) | 2.62                   | 2.62                                  |
| Business travel   | <0.01                  | _                                     |
| Employee commuting  | <0.01                  | _                                     |
| Total Scope 3   | 24.26                  | 23.35                                 |
| Total Emissions   | 62.96                  | 56.97                                 |

To convert metric tons to short tons, multiply by 1.1023.

90% of Xcel Energy's Carbon Footprint Included in Goals

