Our Approach

At Xcel Energy, our clean energy strategy is transforming how we produce and deliver energy. For more than a decade, we’ve strived to serve our customers with a cleaner mix of resources and with an energy grid that is more reliable and secure — all while keeping customer energy bills low. We are committed to leading the way and creating a cleaner, more affordable and sustainable energy future for all of us.

We know climate change is a priority for many of our customers and other stakeholders. We understand this concern and the demand for action. It is a priority for us too. That’s why we’ve set an ambitious emissions-reduction target, and we tie our executive compensation to reaching it. Company-wide, our goal is to reduce carbon emissions 60 percent from 2005 levels by 2030, and we continue to challenge ourselves to do more to reduce emissions while enhancing reliability and keeping energy costs affordable.
A comprehensive approach to clean energy

When it comes to reducing carbon emissions and improving our overall environmental footprint, there is no single solution. It takes a combination of efforts to provide our customers with cleaner energy while maintaining reliable, affordable service.

Our all-inclusive clean energy strategy focuses on improving in the following ways.

• **Increasing the use of wind and solar energy.** Renewable sources made up 27 percent of our energy supply in 2017, and we expect that by 2022, about 48 percent of our energy will come from these clean energy sources. Under our Steel for Fuel strategy, we are executing plans for 12 new wind farms across seven states that will increase our wind capacity to more than 10,000 megawatts, with nearly all installed in 2020 to take advantage of full production tax credits.

In addition to serving customers with cleaner energy, we continue to offer new renewable energy options for customers who want more. We launched Renewable*Connect® in Minnesota and will begin offering the program to Colorado customers in 2018. It’s a new, more flexible and convenient option for customers who want up to 100 percent renewable energy.

• **Using energy efficiently.** We’ve been a leader in energy efficiency for decades and offer our customers a comprehensive portfolio of programs to save energy and help manage their bills. Through more than 150 programs in 2017, customers saved over a tera-watt hour of electricity. Cumulatively, we estimate that customers have saved enough electricity through our programs to avoid building 20 average-size power plants.

• **Transforming the energy grid.** By retiring aging coal units, adding flexible natural gas and continuing to operate carbon-free nuclear plants, our conventional plant fleet is cleaner, more efficient and more responsive for operating with increased levels of wind and solar energy. We have shut down or plan to shut down 20 coal units, retiring more than 40 percent of our coal fleet from 2005 to 2026. And we can do more, if our proposal to retire two additional coal units in Colorado is approved.

The way we deliver energy is changing too. In 2017, we continued with our advanced grid project in Colorado, putting in place components to transform our grid into a more intelligent, integrated network that will operate more securely, efficiently and reliably, especially as we integrate more distributed energy sources.

Combined, all of these efforts are helping to significantly reduce our carbon emissions from the electricity that serves our customers. And as our carbon footprint shrinks, we are helping our customers to reduce their emissions from the energy they use.

Our strategy includes retiring aging coal plants and replacing them with a combination of renewable energy and more carbon-friendly natural gas, as well as maintaining our carbon-free nuclear plants.

To empower our customers, we offer a comprehensive range of renewable energy and energy-saving choices that fulfill their goals to save money, promote clean energy and protect the environment.

In addition, we are looking at ways to remove carbon from other sectors — like transportation — by helping our customers adopt electric vehicles charged on our increasingly clean electric system.

Because the regions we serve are each unique, so are the solutions to their energy futures. We work closely with our states to support their interests and develop the policies and programs that will further reduce carbon emissions and continue building a more advanced and resilient energy system for the future, in the most efficient and cost-effective manner.

Our efforts are a model for how energy companies and states can work together to reduce carbon emissions at an affordable cost, and ultimately, address the physical, economic and policy risks of climate change.
Our clean energy strategy is driving reductions in carbon emissions.

Our Pathway to a Low-carbon Future

The most significant way we demonstrate climate leadership is to reduce carbon dioxide emissions from our largest source of emissions — the electricity that serves our customers.

Electricity generation makes up 99 percent of our entire carbon footprint, which includes emissions from our electricity and natural gas operations, as well as our supply chain, facilities, and travel. Nearly all of the carbon emissions from electricity generation are associated with the electricity that serves our customers. This includes the energy we produce at our power plants and that we purchase from others.

**Current Progress**

In 2017, we reduced carbon emissions from the electricity that serves customers by 35 percent compared to 2005 levels. We achieved these results by continuing to reduce fossil generation and growing renewable energy. Specifically, we continued to increase wind generation and doubled our solar production since it was the first full year of operations for several large solar plants installed in 2016.

**Near-term Projections**

Over the next five years, we expect to invest approximately $5.8 billion in clean energy projects. This includes capital spending on renewable energy, such as our multi-state wind plans, and related transmission projects, as well as spending on our advanced grid intelligence and security initiative.

If we are able to achieve our plans and complete these investments, we expect to reduce carbon emissions associated with the electricity that serves customers by 50 percent from 2005 levels in 2022. That’s nearly double the U.S. commitment under the Paris Climate Accord which called for a 26 to 28 percent reduction in carbon emissions by 2025. If the EPA Clean Power Plan were still in place, we would have surpassed that goal as well, to reduce carbon emissions 32 percent from 2005 levels by 2030.

**2030 Goal and Beyond**

Considering the future beyond 2022, our goal is to reduce carbon emissions company-wide 60 percent by 2030. To reach this goal, we have regulatory approval for retiring two large coal units in Minnesota by the end of 2026 and expect additional wind and solar development. We also have proposed retiring two coal units in Colorado and replacing the energy with a mix of wind, solar, and natural gas generation by 2026. The Colorado Public Utilities Commission is expected to make a decision on our plan in early September 2018.
We continue to look for opportunities to do more, while maintaining reliable and affordable energy. As we prepare to file our next resource plan with Minnesota regulators in 2019, we are talking to stakeholder about our vision to reduce carbon emissions 80 percent by 2030 for the region, with an energy mix that is 85 percent carbon free.

Today, our current goal and plans put us on a carbon reduction path that aligns with potential policy outcomes and with customer and community-driven goals for a low-carbon future. Our efforts support the states, cities and businesses we serve that have set targets which are based on or follow international discussions.

Beyond 2030, we anticipate that emissions reductions will likely continue, assuming that we can:

- Continue to increase renewable energy on our system
- Replace carbon-free nuclear generation or relicense the plants
- Extend purchase contracts for renewable resources
- Obtain cost-effective natural gas
- Realize continued advancements in power technology

Our current progress and emissions projections put us on a trajectory that is well below an 80 percent by 2050 pathway.

Carbon Policy and Regulation

We have managed significant federal policy uncertainty around carbon emissions for a number of years. In 2017, President Trump signed an Executive Order directing the U.S. Environmental Protection Agency to review the Clean Power Plan and other greenhouse gas regulations focused on the nation’s electric generating plants. EPA responded by proposing a rule to repeal the Clean Power Plan, and at the end of 2017, issued an Advanced Notice of Proposed Rulemaking requesting public comment on how EPA should replace the rule.

We continue to advocate for sound energy and environmental policy that provides greater regulatory certainty, flexibility for states and paves the way for significant emission reductions. While the Clean Air Act’s existing authorities are not optimal to regulate greenhouse gases, we think that in the short term having a federal climate rule in place under the Clean Air Act is in the best interest of our customers.
In comments to EPA we have advocated for:

- A replacement rule to the Clean Power Plan that builds on the industry’s clean energy progress and results in lower energy prices and a stronger economy
- A rule that gives states full flexibility to design cost-effective plans that achieve or surpass clear requirements for reducing carbon emissions
- Enforcement authority that leaves states in charge of their own energy programs
- Recognition of the early actions of states and utilities — carbon emissions from the electric power sector fell 25 percent nationwide from 2005 to 2016, a remarkable achievement, along with our own progress of 35 percent from 2005 to 2017

Given the importance of these issues to our company and customers, we will continue to participate in this federal rulemaking process, but these regulatory developments do not change our strategy. We plan to continue moving forward with our cost-effective clean energy efforts and will work with our states, communities and customers to achieve their preferred energy and environmental outcomes.

**Energy and Carbon Emissions Reporting**

Xcel Energy joined The Climate Registry as a founding member in 2007 to help establish a consistent and transparent standard for calculating, verifying and reporting greenhouse gases. Today, our reporting is based on The Climate Registry and its Electric Power Sector Protocol, which aligns with the World Resources Institute and ISO 14000 series standards.

Not only are we transforming our system and the way we do business, but our reporting is evolving too. We continue to add more disclosures to ensure transparent, complete reporting in a way that best meets our customers’ needs for their own reporting and business decisions.

We publicly report greenhouse gases, primarily carbon dioxide, through a number of different programs that require a specific look at our emissions. While the reporting programs vary, the information we provide starts with the same foundational data that is third-party verified and registered with The Climate Registry. This includes verified emissions from 2005 through 2016, with work underway to verify our 2017 emissions by the end of 2018.

Beginning in 2018, we have fine-tuned our carbon goal and the progress we report to focus on the electricity that serves our customers and the associated carbon emissions. It’s an area where we can make the biggest difference.
### Our Changing Energy Mix and Carbon Emissions Progress

#### Xcel Energy

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#### Southwest (New Mexico, Texas)

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Our energy mix includes electricity generated at Xcel Energy plants, purchased from third-parties, and supplied under Xcel Energy renewable choice programs, such as Windsource or Renewable*Connect. For every megawatt hour of electricity that renewable sources produce, we receive a renewable energy certificate or credit (REC). In addition to using RECs to comply with state renewable energy standards, we also sell some extra RECs and share any profits with customers. To find more information about RECs, please see the Renewable Energy brief.
**Methane Emissions**

Our efforts to reduce greenhouse gas emissions also include methane emissions from our natural gas distribution system. Xcel Energy serves about two million customers with natural gas for heating and other energy uses critical to the colder parts of our territory, Colorado and Minnesota, and does so with very minimal methane emissions.

Methane emissions made up less than one percent of our total greenhouse gas emissions (507.3 million cubic feet or 269,236 short tons CO<sub>2</sub>e) in 2017. While this is a very small portion of our total company-wide emissions, we work to minimize our methane emissions through cost-effective improvements to our natural gas system.

Some of Xcel Energy’s methane emission reduction efforts include:

- Replacing the cast iron pipe and unprotected steel pipe on our system, originally installed 50 to 100 years ago. So far, we have completely replaced all 880 miles of cast iron pipe in Colorado and Minnesota and have nearly eliminated bare-steel pipe.

- Using pressure reductions and other methods to reduce methane emissions during pipeline maintenance and repairs.

- Replacing high-bleed controllers on our distribution and high-pressure pipelines. We are currently working to replace the high-bleed controllers in our processing plants and are considering new programs to modernize the high-bleed controllers at our storage fields and compressor stations to reducing emissions at these facilities.

To support these efforts, we are voluntary members of several industry groups devoted to improving the natural gas system and reducing methane emissions. We have been a member of the EPA Natural Gas STAR program since 2008, with a continued commitment to replace aging pipeline. As a participant in the Natural Gas STAR program, we have reported a reduction in our natural gas emissions through 2016 of 326 million cubic feet or 156,642 MTCO<sub>2</sub>e.

Xcel Energy also joined the EPA’s Natural Gas STAR Methane Challenge Program in March of 2016 as a founding member to further our commitment to reduce methane emissions from our natural gas distribution system. Under the program, we expect to achieve emissions reductions in excess of 50 percent, as we work to minimize methane emissions from venting pipelines during scheduled construction. While we did not report these values to EPA for 2017, we did reduce our emissions from blowdowns on systems operating at excess of 60 psig by 89 percent accounting for 24 million cubic feet of gas not being released into the atmosphere.

In addition to these programs, we are collaborating within the natural gas industry on initiatives that support our own proactive approach to operating and maintaining a natural gas system that benefits customers and their interests.

Through the Natural Gas Supply Collaborative facilitated by MJ Bradley & Associates, we are voluntarily working with other natural gas providers to promote safe and responsible practices for the supply of natural gas. In fall of 2017, the group released a report that describes 14 non-financial performance indicators for natural gas producers that respond to stakeholder questions about natural gas production. The effort is not intended as a new reporting program but to encourage producers to provide an accessible, clear and thorough discussion of important environmental and social issues through existing reporting and websites. The practices we are recommending are similar to those we use in our own reporting.

Xcel Energy is also a member the Natural Gas Downstream Initiative, a collaborative effort with other major gas utilities, facilitated by MJ Bradley & Associates. The initiative is focused on addressing the regulatory and technical challenges related to the role of natural gas in a low-carbon future. Specific areas of interest include opportunities for substantially reducing methane emissions while supporting safe, reliable and cost-effective service, as well as renewable natural gas and potential pathways for decarbonizing.