

Energy and Carbon Emissions Reporting **2016 Summary**

At Xcel Energy, we are transforming how we produce, deliver and encourage the efficient use of energy, while continuing to provide customers with reliable, affordable service. Our successful clean energy strategy focuses on three key areas:

- · Increasing the use of wind and solar power through cost-effective new projects
- Offering customers additional renewable and energy-saving options, while advancing technology that will make new options possible
- Transitioning our conventional power plant fleet as we retire aging coal units, add flexible natural gas and continue operating carbon-free nuclear plants

An important driver of our strategy is the need to reduce carbon emissions. We are on a path to significantly cut emissions as we build a more efficient, advanced system for the future, at a reasonable cost to customers.



Xcel Energy's Clean Energy Strategy is Driving Reductions in Carbon Emissions

Xcel Energy had extraordinary emission reductions in 2016 due to a number of factors, including an increase in wind and solar production with the addition of 1,900 megawatts of wind and 650 megawatts of solar capacity since late 2014. Our performance also reflects the shutdown of three coal units in 2015 and records we achieved in nuclear and hydro production in the Upper Midwest.

Learn more about Xcel Energy's environmental, social and economic impacts in our corporate responsibility report, revised annually in June at

xcelenergy.com/CorporateResponsibility.

Xcel Energy's Carbon Dioxide Emissions From Electricity Generation



Xcel Energy

Upper Midwest

(Michigan, Minnesota, North Dakota, South Dakota, Wisconsin)



Colorado



Southwest

(New Mexico, Texas)



About Xcel Energy's emissions reporting

In this summary, the emissions charts provide carbon dioxide emissions in short tons for Xcel Energy and each of its three operating systems. We provide emissions from the electricity that we produce and that we purchase from third-party suppliers. A system emission rate is included for each year that provides the pounds of carbon emissions produced for each megawatt hour of electricity supplied. Emissions for 2016 are preliminary, and may slightly change during third-party verification, which should be completed by the end of 2017. Our 2021 projections for emissions and energy mix are based on current energy forecasts and the approval of proposed renewable energy plans.

What's included in this emissions summary

We have only reported carbon dioxide here, not methane (CH4) and nitrous oxide (N2O) because these two emissions make up less than 0.5 percent of our total CO_2 equivalent greenhouse gas emissions from electricity generation. To provide transparent and complete emissions information for customers, we report biogenic carbon dioxide from biomass generation, as well as emissions from fossil fuel generation. We consider biogenic carbon emissions effectively neutral, since compared to fossil fuels, these emissions from biomass combustion are part of a relatively short-term cycling of carbon dioxide between ecosystems and the atmosphere.

Other emissions reporting

Xcel Energy publicly reports annual carbon dioxide emissions, as well as other greenhouse gases, through a number of different reporting programs, including The Climate Registry, CDP and the U.S. Environmental Protection Agency's mandatory greenhouse gas reporting rule. These programs each use a unique reporting protocol and may represent emissions differently. While reporting protocols and formats vary, the information we provide comes from the same foundation data.

To find more extensive emissions reporting for Xcel Energy, please visit xcelenergy.com/CorporateResponsibility.

Third-party assurance and verification

We recognize the value of having a formal emissions protocol and completing third-party verification for emissions reporting. In 2007, we became a founding member of The Climate Registry, a nonprofit organization established to provide consistent and transparent standards for calculating, verifying and reporting greenhouse gas emissions into a single registry for North America. All of our greenhouse gas emissions from 2005 to 2015 have been third-party verified and registered with The Climate Registry.

To learn more about The Climate Registry and to find our reporting information online, visit theclimateregistry.org.

How to calculate emissions associated with your annual energy use

Customers interested in calculating emissions from all generation types (including biomass) can use the following method:

Electricity:

Start with Xcel Energy's 2016 lbs/MWh for your location (Colorado, Southwest or Upper Midwest)

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\label{eq:lbs} \begin{array}{l} lbs/MWh \ \div \ 1,000 \ = \ lbs/kWh \ x \ your \ annual \\ kWh \ use \ = \ lbs \ of \ CO_2 \end{array}
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Natural Gas:

Start with the CO_2 coefficient for natural gas from the U.S. Environmental Protection Agency (11.7 lbs/therm)

11.7 lbs/therm x your annual therm use = lbs of CO_2

Customers reporting emissions under The Climate Registry (TCR) or World Resources Institute (WRI) protocols can use the following preliminary 2016 emission factors for their Scope 2 market-based reporting:

Region	CO ₂ Intensity (MT/MWh)	CO ₂ Intensity (Lbs/MWh)
Upper Midwest (Michigan, Minnesota, North Dakota, South Dakota, Wisconsin)	0.365	805
Colorado	0.599	1,320
Southwest (New Mexico, Texas)	0.580	1,278

Per TCR's electric power sector protocol, emission intensities provided here exclude CO_2 from biomass and distributed solar generation.

Preliminary emissions information for 2016 is not yet third-party verified. For customers participating in Xcel Energy's renewable energy programs, these emission rates do not apply.

Xcel Energy's Changing Energy Mix

The charts here provide a snapshot of all the electricity by fuel type on our systems in 2005, 2016 and projected for 2021. We have included energy that Xcel Energy plants generated, energy that we purchased and energy that we supplied or made possible for customers under Xcel Energy renewable energy programs, Windsource[®], Solar*Rewards[®] and Solar*Rewards[®] Community[®]. We count nuclear and renewable energy sources as carbon free.



For every megawatt hour of electricity that renewable sources produce, we receive a renewable energy certificate or credit (REC). Each year we retire RECs to comply with our state renewable energy standards or save RECs for future compliance. Based on market opportunities, we also sell some of our extra RECs and share any profits with customers. To find more information about our RECs, please visit xcelenergy.com/CorporateResponsibility.



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