

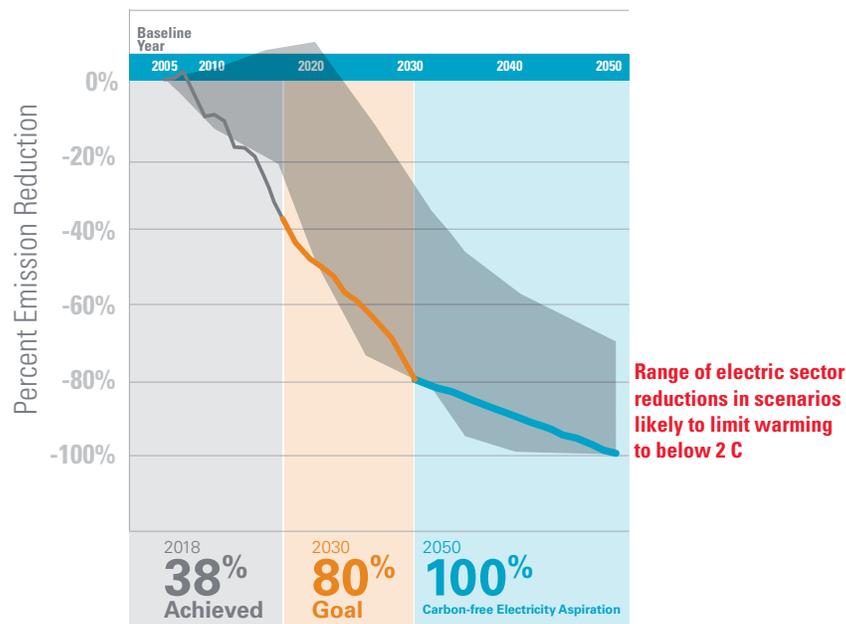
# Grounding Xcel Energy's Carbon Goals in Climate Science

Our vision is to serve customers with 100 percent carbon-free electricity by 2050 and reduce carbon dioxide emissions 80 percent from 2005 levels by 2030. The most recent climate science informs these goals, which are designed to minimize the long-term risks associated with climate change.

## Recent Scientific Analysis

The December 2015 Paris climate agreement set a goal of limiting global temperature increase to 2 degrees Celsius above preindustrial levels and attempting to limit that increase to 1.5 degrees Celsius. Consistent with this goal, in October 2018, the Intergovernmental Panel on Climate Change (IPCC) published a report on limiting warming to 1.5 C, finding that this would require reducing greenhouse gas emissions globally about 45 percent by 2030 and achieving net zero emissions by 2050. In November 2018, the U.S. government released its Fourth National Climate Assessment, examining potentially serious impacts of climate change by region of the United States. Also in 2018, the U.N. Environment Programme's annual Emissions Gap Report found that global emissions are still rising and existing commitments are not on track to achieve the Paris temperature goals. All three reports validate our early action strategy and ambitious carbon reduction goals.

**Xcel Energy's carbon goals align with emission reduction scenarios likely to limit warming to 2 C.**



## An Evaluation of Xcel Energy's Emission Reduction Targets

We hired climate modeling experts<sup>1</sup> to understand how our vision relates to the global temperature goals. They consulted the newest IPCC emission scenarios database and analyzed carbon emissions for the electric sector in industrialized countries, within the scenarios that have a high (66 percent or greater) probability of achieving the 2 C goal. The dark gray shaded area in the chart above represents the range from the highest to the lowest of these emission scenarios. They then superimposed Xcel Energy's carbon emission reduction trajectory, including carbon reductions to date and the 2030 and 2050 goals. Based on this expert analysis, our reduction targets are clearly consistent with — even on the low end of — the electric sector reductions in scenarios that achieve the international 2 C goal. Even more encouraging, this analysis shows that our emission trajectory is also consistent with the more aggressive 1.5 C goal. Learn more about our vision for reducing carbon dioxide at [xcelenergy.com/carbon](https://www.xcelenergy.com/carbon).

<sup>1</sup> Brian O'Neill, professor at the University of Denver's Frederick S. Pardee Center for International Futures at the Josef Korbel School of International Studies.