

Colorado Energy Plan

Advancing affordable clean energy

The Colorado Energy Plan (CEP) is Xcel Energy's roadmap to develop a significantly cleaner energy mix and reduce carbon emissions in Colorado—all while keeping customer bills low. The Colorado Public Utilities Commission approved the Plan in August 2018. Here's an update on our progress.

About the plan

The Colorado Energy Plan was proposed in 2017 as part of the 2016 Electric Resource Plan. Its benefits:

- Xcel Energy will retire 660 MW of coal-fired generation early and reduce carbon emissions 60% by late 2025 (from 2005 levels).
- We will add 1,100 MW of wind; up to 700 MW of solar and up to 275 MW of storage; and 383 MW of existing natural gas generation to our Colorado fleet.
- The Plan's all-source bid solicitation in late 2017 attracted 400+ bidders and historic low prices for renewable generation.
- By taking advantage of today's low clean energy prices and tax incentives, Xcel Energy will save its customers more than \$200 million in the coming years.
- A study by the University of Colorado Boulder predicts the Plan will be a net positive for the state, creating nearly 2,000 jobs and an extra \$203.6 million in GDP statewide.

Our 100% carbon-free vision

For more than a decade, Xcel Energy has demonstrated leadership on clean energy and reducing greenhouse gases. Since 2005, we've reduced carbon emissions 41% in Colorado, compared to a 27% reduction in the U.S. power sector as a whole.

We announced ambitious goals in December 2018. We intend by 2030 to reduce carbon emissions 80% from 2005 levels. This can be achieved reliably and affordably with the tools and technologies available today. By 2050, we aspire to serve customers with 100% carbon-free electricity, by increasing renewable energy on our system and taking advantage of technologies that are not yet commercially available.

Our customers and communities, investors and stakeholders have asked us to address the risk of climate change. Xcel Energy has stepped up to do our part.



The Colorado Energy Plan is the latest step in our progress to secure low-cost power for customers, stimulate rural economies, grow the state's renewable and clean energy resources, and reduce carbon emissions.

Cheyenne Ridge Wind Project – Eastern Colorado

The Colorado Public Utilities Commission recently approved construction of the 500 MW **Cheyenne Ridge Wind Project**, a significant element of the CEP. Cheyenne Ridge will rise on 65,000 acres in Kit Carson and Cheyenne counties. We intend to place the wind project in service by the end of 2020 to take full advantage of federal production tax credits.

- 65 miles of 345 kV transmission line
- 229 Vestas turbines, made in Colorado
- \$743 million estimated investment, including transmission and interconnection assets
- Will provide enough energy to power more than 270,000 Colorado homes

Natural gas generation

Two existing gas facilities will become company-owned resources under the CEP at a very favorable price for customers. We are not building any new natural gas generation, reducing the risk of stranded costs. As we continue to make progress on our 100% carbon-free vision, it's important to provide flexible generation on the system to support the integration of more renewables.

- **Manchief**, a 301-MW simple cycle natural gas plant near our Pawnee site in Morgan County
- **Valmont**, an 82-MW simple cycle natural gas plant at our Valmont site in east Boulder County

Purchased wind power agreements

More than half of the total \$2.5 billion CEP investment will be made by independent power producers whose wind, solar and storage projects will sell electricity to Xcel Energy. It's a win-win as we continue Colorado's progress to improve air quality, reduce regional haze and shrink our carbon footprint.

- **Bronco Plains Wind Project (300 MW) – Kit Carson County**
- **Mountain Breeze Wind Project (169 MW) – Weld County**
- **Colorado Green Wind Project (162 MW) – Baca County**

(CGWP, in service since 2003; independent producer plans to repower the project by late 2020.)

Solar energy and solar-plus-storage

Xcel Energy will purchase electricity from two Pueblo area solar-plus-storage projects: **Neptune** (250 MW solar/125 MW storage) and **Thunder Wolf** (200 MW solar/100 MW storage). In Park County, the **Hartsel Solar Project** will supply 72 MW of solar. Other projects are in negotiation.

- Total estimated investment in Pueblo County: more than \$600 million, including the proposed Badger Hills substation and transmission lines.
- All solar projects have a target in-service date of 2022.

Two projects in the solar portfolio were not able to reach completion, and are in a rebidding process.



To learn more, visit [xcelenergy.com/carbon_free_2050](https://www.xcelenergy.com/carbon_free_2050)