

JUST THE FACTS

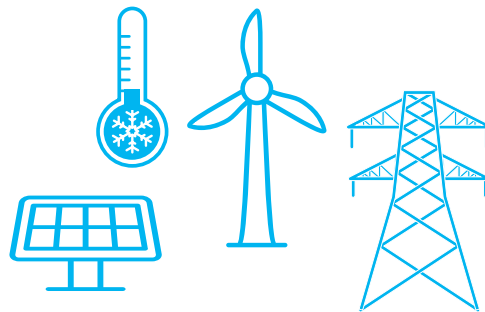
Renewable Energy and Grid Reliability

FACT: Renewable energy helps power the grid every day with no adverse impact on grid reliability.

In many parts of the country, renewables routinely provide the majority of electricity without any reliability issues. The Southwest Power Pool, which operates the power grid for many Great Plains states, has obtained more than 80% of its electricity from wind energy¹ and on average generates more than a third of its electricity from wind.² Xcel Energy, which serves customers in eight mid-western and western states, sources over 30% of its electricity from clean energy, led by wind and solar.³ Last year, both Iowa and South Dakota produced over 50% of their electricity from wind, while Colorado, Kansas, Maine, New Mexico, North Dakota, and Oklahoma produced more than 25% of their electricity from wind and solar.⁴ This widespread integration of renewables has both lowered consumers' energy costs⁵ and helped maintain robust grid reliability.

FACT: Renewable energy did not cause the February 2021 Texas power outages.

Wind and solar performed within the Texas grid operator's projections^{6,7}. In fact, according to the Electric Reliability Council of Texas (ERCOT), most of the power that went offline during Winter Storm Uri that ERCOT expected to be operating was powered by gas or coal; thermal generation was responsible for the overwhelming amount of power generation shortfalls.⁸ The devastating human and economic toll of the February 2021 power outages in Texas was caused by an extreme weather problem, not a clean power problem.



FACT: Renewable energy is growing every day, and there is plenty of room to reliably add more.

In 2018, the National Renewable Energy Laboratory (NREL) concluded the Eastern U.S. could reliably obtain 70% of its electricity from wind and solar.⁹ A year later, the Western Flexibility Assessment concluded that 80% of the West's electricity needs could be met by non-emitting sources by 2035 with coordinated transmission planning and improved markets in place.¹⁰ System operators across the country are similarly confident in their ability to integrate higher levels of pollution-free renewable power. MISO, the Midwest grid operator, recently concluded that renewables could supply at least 50% of its demand with better coordination and a more proactive and innovative transmission planning process.¹¹ And PJM – the largest grid operator in the U.S. – reported in December 2021 that 50% or more of its power could come from renewables with targeted market design and planning changes.¹²

Modern grid operators have a variety of tools available to ensure supply and demand are matched at all times. Thanks to the digital revolution, wind, solar, and battery storage resources can provide many of the essential grid services operators require, often as well or better than conventional resources.¹³ With thoughtful planning and expanded transmission, the grid can operate mostly on renewables, and do so reliably.

For more information, please visit cleanpower.org/resources/gridreliability.

¹ <https://www.spglobal.com/platts/en/market-insights/latest-news/electric-power/033021-spp-breaks-four-renewable-wind-records-causing-power-prices-to-dip-negative>

² <https://www.spp.org/about-us/fast-facts/>

³ <https://co.my.xcelenergy.com/s/energy-portfolio/power-generation>

⁴ EIA

⁵ All states producing over 25% of their electricity from wind and solar have experienced a decline in residential retail rates. Various factors affect retail rates, including generation technology.

⁶ <https://www.ercot.com/files/docs/2020/11/05/SARA-FinalWinter2020-2021.pdf>

⁷ <https://go.icf.com/rs/072-WJX-782/images/ICF%20-%20Winter%20Storms%20Wreak%20Havoc%20on%20ERCOT%20Grid.pdf>

⁸ <https://www.ferc.gov/media/february-2021-cold-weather-outages-texas-and-south-central-united-states-ferc-nerc-and>

⁹ <https://www.nrel.gov/docs/fy18osti/71465.pdf>

¹⁰ <https://westernenergyboard.org/wp-content/uploads/2019/12/12-10-19-ES-WIEB-Western-Flexibility-Assessment-Final-Report.pdf>

¹¹ <https://cdn.misoenergy.org/RIIA%20One%20Pager521869.pdf>

¹² <https://www.pjm.com/-/media/library/reports-notices/special-reports/2021/20211215-energy-transition-in-pjm-frameworks-for-analysis.ashx>

¹³ <https://www.sciencedirect.com/science/article/pii/S104061901830215X>