FACT SHEET:

RENEWABLE ENERGY AND YOU: DECLINING COSTS

The renewable energy landscape is changing. Wind turbine and solar panel technology has improved dramatically over the past several decades and is now producing a significant proportion of our energy across the Midwest. Renewables are quickly becoming the future of energy. What led to this shift and how will it affect you?

Renewable energy got cheaper

- At the dawn of renewable technology, wind turbines and solar panels were expensive and inefficient. The systems used to build and operate these structures, however, have advanced by leaps and bounds. Parts and hardware for construction are more readily available, and maintenance and conversion processes run more efficiently. As a result, energy from wind and solar is produced at reduced costs.

In Nebraska and across the U.S., building and operating new clean energy projects is less expensive than operating and maintaining existing coal plants. Given that wind and the sun's rays are essentially free, it's easy to see how these renewables are winning the price war against traditional fossil fuels.[1]

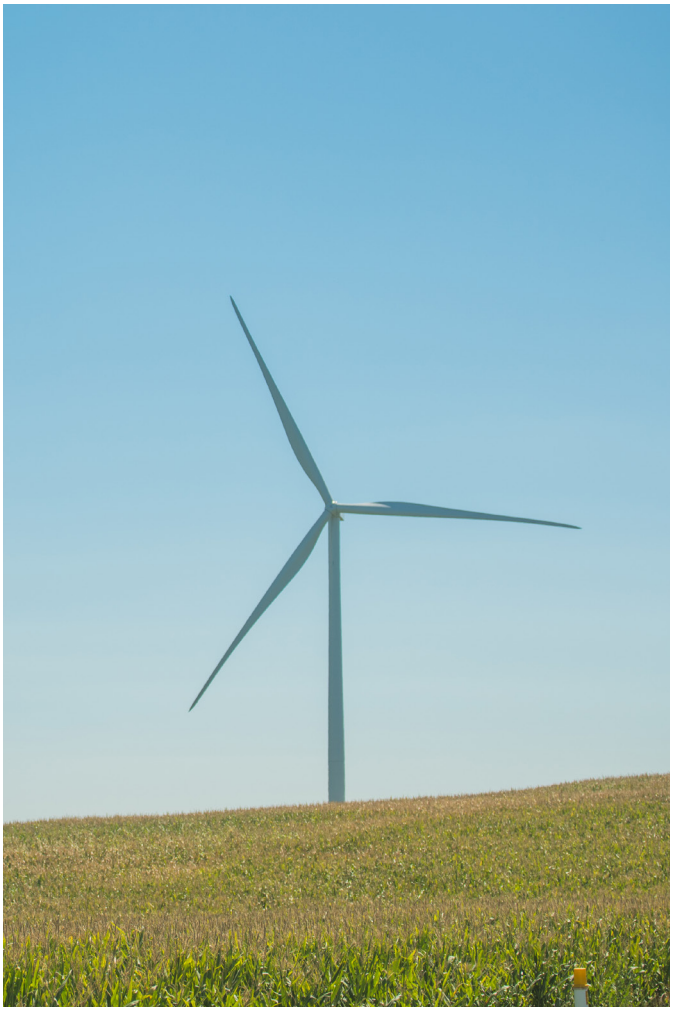
A second reason these renewable sources have become less expensive is supply and demand. As demand increases for clean energy, more is produced, which drives down the cost of electricity from these sources.

The price of electricity per megawatt (mw) from new power plants:[2]

Solar
$359/mw in 2009 to
$40/mw in 2019

Onshore wind
$135/mw in 2009 to
$41/mw in 2019

Coal
$111/mw in 2009
to $119/mw in 2019



Thirdly, power markets in much of the U.S. have increased in geographic diversity. The power grid has developed a network of interconnections, creating regional markets and increased stability, which allow utilities to purchase renewable energy generated elsewhere at low costs. This increased geographic diversity of renewable energy generation means utilities can continue to provide renewable energy even when the sun is not shining and the wind is not blowing in their state; therefore, decreasing the reliance on expensive coal or natural gas plants.

Cheaper energy production can translate to lower rates for customers

- Multiple factors influence the price of electricity each month. However, one thing is clear: As more power utilities shift to renewable portfolios, more opportunities will exist for savings to be passed along to the areas they serve.[3,4]

Sources

1 "Advantages and Challenges of Wind Energy." Office of Energy Efficiency & Renewable Energy, U.S. Department of Energy, energy.gov/eere/wind/advantages-and-challenges-wind-energy. Accessed July 2021.
2 Roser, Max. "Why did renewables become so cheap so fast? And what can we do to use this global opportunity for green growth?" Our World in Data, Dec. 1, 2020, ourworldindata.org/cheap-renewables-growth. Accessed July 2021.
3 "Low CO2 Study, Presentation for Nebraska Public Power Board Retreat." Ascend Analytics, March 10, 2021, cfra.org/sites/default/files/PDFResources/nppd-case-study-1.pdf. Accessed July 2021.
4 "Impacts of Possible Future CO2 Restrictions, Nebraska Public Power District March Board Retreat." Siemens Industry, Inc., March 10, 2021, cfra.org/sites/default/files/PDFResources/nppd-case-study-2.pdf. Accessed July 2021.