

MODERNIZING THE GRID

THE VALUE OF TRANSMISSION



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TRANSMISSION IS A VALUABLE, ENABLING ASSET

Since 1941, Southwest Power Pool has been committed to ensuring the reliability of the North American bulk power grid. As it always has, SPP's success today depends on a robust transmission infrastructure that is capable of transporting electricity from where it's generated to where it's most needed. Transmission is the enabling infrastructure that paves the way for myriad benefits to SPP's stakeholders and their end-use customers.

PROVIDES ECONOMIC BENEFITS

Investments in transmission — while seemingly costly in the short-term — pay big dividends to the region over time. Between 2004 and 2016, SPP committed to more than \$9.7 billion in upgrades to the transmission network in its region. It's estimated these new and upgraded facilities will more than pay for themselves over their lifespans, and have already begun to benefit SPP's stakeholders and their customers.

Xcel Energy — an SPP member company — announced in September 2015 that it would refund \$18.6M to Texas retail customers. The driver of this decision? Lower fuel and purchased-power costs, all made possible by investments in SPP's transmission system.

In September 2015, SPP member company OG&E announced that its Oklahoma customers would see lower bills — a reduction of \$5 for the typical residential customer — as the result of the benefits of SPP's Integrated Marketplace. "We are fortunate from an electricity perspective to be in an extended period of lower natural gas prices," said an OG&E spokesperson. "These lower prices were compounded by the fuel-saving benefits provided by the SPP Integrated Marketplace, which makes it possible to pass along these savings on monthly electric bills." SPP's own analysis showed its market provided participants with net savings of \$380M in its first year, none of which would be possible without adequate transmission facilities.

These are just two examples that validate the findings of a 2016 report published by Southwest Power Pool — called a "path-breaking effort" by the Brattle Group — which concluded transmission investments in the SPP region from 2012-2014 had, on average, a benefit-to-cost ratio of 3.5 to 1. In other words, every dollar spent on transmission returns \$3.50 in value to the region over the transmission facilities' considerable lifespan.

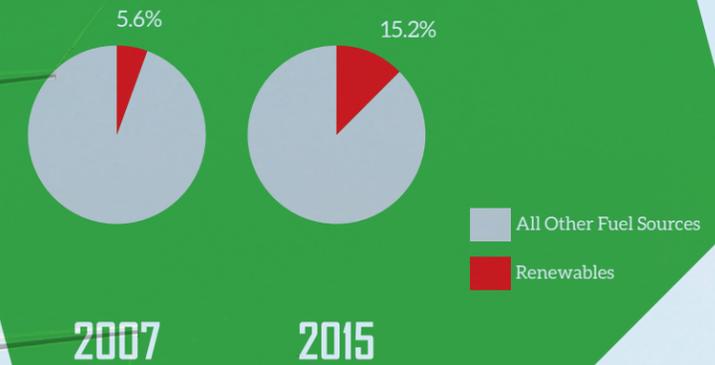
TRANSMISSION INVESTMENTS IN THE SPP REGION FROM 2012-14 RESULTED IN AN AVERAGE BENEFIT-TO-COST RATIO OF 3.5 TO 1

ENABLES ACCESS TO RENEWABLES

Transmission enables access to more environmentally friendly generation like wind, solar and hydroelectric power. As recently as 2007, wind comprised less than 1 percent of SPP's generation mix. At the end of 2015, after several years of heavy investment in transmission, wind represented more than 13 percent of SPP's generation mix and energy consumption.

TRANSMISSION ENABLES ACCESS TO RENEWABLES.

Owing largely to transmission expansion in its region, SPP's generation mix is comprised of more than 15 percent renewables today, whereas just a few years ago, renewables represented less than half that amount of generation sources.



ADDRESSES GROWING DEMAND FOR RELIABILITY

The stakes are higher today than ever. The need continues to grow for affordable, reliable electricity to serve new population centers. Diversified fuel types are needed to meet environmental and public-policy standards.

SPP member Southwestern Public Service Company (SPS) saw firsthand the benefits of a robust transmission system in December 2015 when a widespread outage was avoided thanks to the flexibility afforded by recent upgrades in their region. "We had a double fault at the Tolk coal plant where both units tripped off," said David Hudson, president of SPS at an SPP board meeting. "Before we had this transmission, we would have had a widespread outage. But we went right through it ... It's undeniable there's significant savings going on with this transmission."

The entire utility industry is tied intrinsically to economic and national security, necessitating that we secure the grid against both physical and cyber threats. The "internet of things" — the global network of electronics, sensors and other objects that exchange data and power much of modern life — is likewise dependent on the availability of

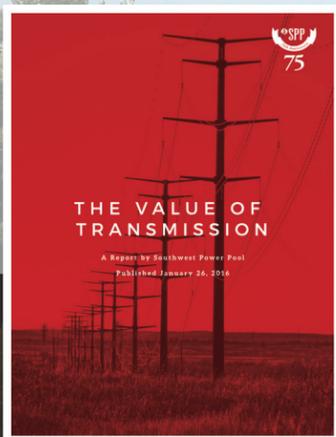
electricity, everywhere and all of the time. As SPP continues to modernize the electric grid in its region, seeking to meet each of these needs, we see more than ever a need for continued investment in transmission.

"IT'S UNDENIABLE THERE'S SIGNIFICANT SAVINGS GOING ON WITH THIS TRANSMISSION."

- DAVID HUDSON, PRESIDENT OF SOUTHWESTERN PUBLIC SERVICE COMPANY

THE BOTTOM LINE

The good news is this: Money spent on the transmission system in the SPP footprint is an investment. Studies — validated by actual, real-world examples — continue to prove the valuable benefits of new and upgraded transmission facilities, including adjusted production cost savings; access to diverse fuel types; improved market effectiveness; integration of renewable resources like wind and solar energy; reduced marginal losses; improved protection against storm-related outages and more. Conservatively estimated, most transmission projects pay for themselves in a matter of years and provide net benefits of up to hundreds of millions of dollars over their considerable lifespan.



READ THE VALUE OF TRANSMISSION STUDY AT www.SPP.org/value-of-transmission

HOW TRANSMISSION BENEFITS THE SPP REGION

SPP approved the construction of more than \$9.7 billion in transmission upgrades since 2004. The extra-high-voltage lines highlighted in yellow on this map are just a few of the projects bringing value to the region for years to come. These investments benefit everyone in the SPP region, from our member companies to end-use consumers.

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