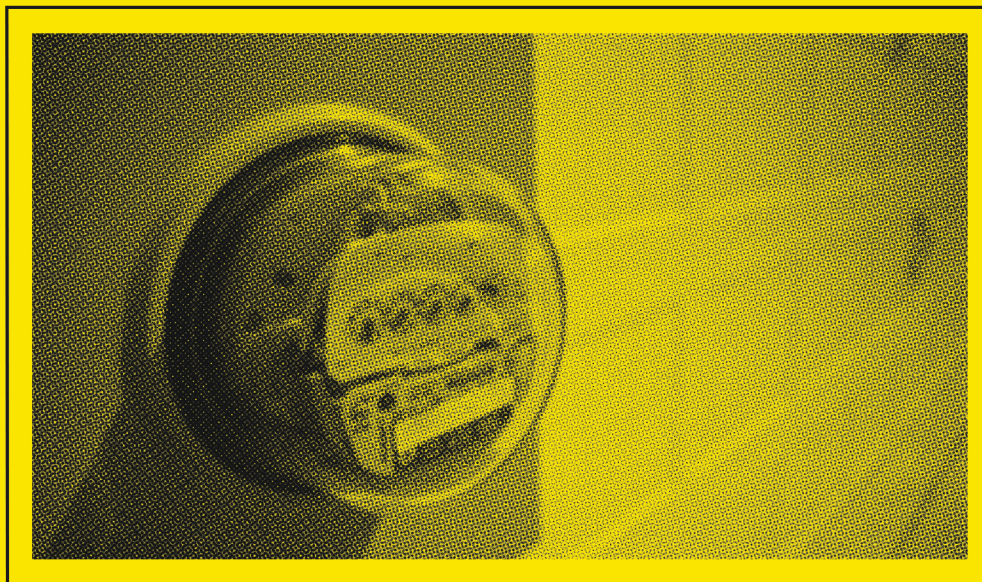


WIND AND SOLAR SUBSIDIES INCREASE TEXAS ELECTRICITY COST

The second in a four-part series
examining the harm caused by
renewable energy subsidies in Texas.

Prepared by Bill Peacock



July 2020

Wind and Solar Subsidies Increase Texas Electricity Costs

*The second in a four-part series examining the harm
caused by renewable energy subsidies in Texas.*

By Bill Peacock

July 2020

ENERGYALLIANCE

Wind and Solar Subsidies Increase Texas Electricity Costs

By Bill Peacock

Executive Summary

Lower natural gas prices in 2019 led to declines in wholesale electricity prices in most areas of the country. This was not the case in Texas, where day-ahead, around-the-clock wholesale electricity prices averaged \$38 per megawatt-hour (MWh), up 13% from their 2018 average.

The root cause of this cost increase were the massive distortions in Texas' wholesale electricity market caused by renewable energy subsidies. Since 2006, wind- and solar-power generators in Texas have received about \$19.4 billion in subsidies from federal, state, and local governments. In 2019, renewable subsidies totaled almost \$2.4 billion.

Not only did Texans have to pay \$3.1 billion for the electricity generated from renewable sources last year, they had to cover most of the cost of \$2.4 billion in renewable energy subsidies that generators received. That equals about \$67.9 per MWh for the 81.1 million MWhs generated by wind and solar generators last year. These costs show up on tax bills as well as electricity bills.

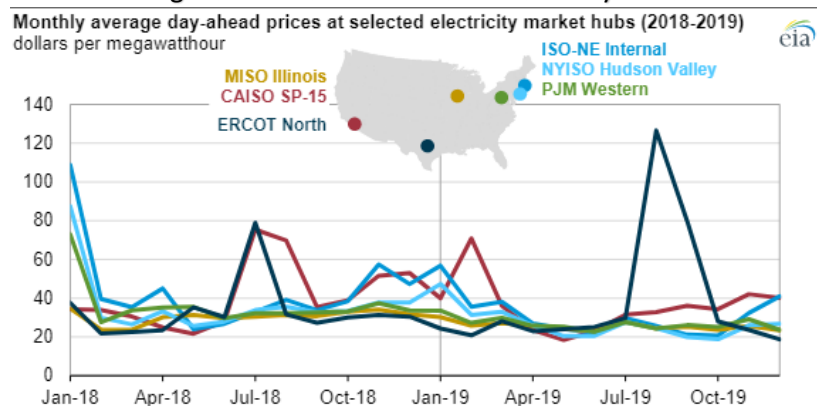
A Review of 2019 Energy Prices

Wholesale electricity prices in 2019 fell in most markets across the country. Except in Texas.

According to the [U.S. Energy Information Administration](#) (EIA), in several major markets, such as the Independent System Operator of New England (ISO-NE), New York Independent System Operator (NYISO), and PJM Interconnection, prices dropped in 2019, generally about 15% to 30% below 2018.

- Texas wholesale electricity prices jumped 13% in 2019, compared to drops from 15% to 30% in other markets
- Retail electric prices in Texas increased by 6.8% last year, more than the 1.3% increase in U.S. retail prices
- Renewable energy subsidies in Texas last year cost \$2.4 billion, and have totaled \$19.4 billion since 2006
- Wind and solar generation have increased this year by 5,432,001 MWh. Natural gas, which has increased only 2,352,049, and coal has decreased by 7,351,523 MWh
- The all-in cost of wind and solar generation in Texas was \$67.9 per MWh

Figure 1: 2018-19 Wholesale Electricity Prices



Source: U.S. Energy Information Administration

Much of the decline in wholesale electricity prices was the result of lower natural gas prices in 2019. "In 2019, natural gas spot prices at the national benchmark Henry

Hub in Louisiana averaged \$2.57 per million British thermal units (MMBtu), about 60 cents per MMBtu lower than in 2018 and the lowest annual average price since 2016” (EIA). Natural gas is used to generate a substantial portion of electricity in the United States; in Texas, natural gas accounts for more than 47% of the electricity generated (ERCOT).

In Texas, the decrease in fuel prices did not lead to the declines seen in other markets. Day-ahead, around-the-clock wholesale electricity prices averaged \$38 per megawatt-hour (MWh), up 13% from their 2018 average, in the largest electricity market in Texas, the Electric Reliability Council of Texas (ERCOT).

U.S. retail consumers did not benefit as much as might be expected from the declines in wholesale prices and natural gas. Retail electric prices increased 1.3% last year. But they fared better than consumers in Texas, which saw prices rise by 6.8%.

Renewable Energy Subsidies Distort and Disrupt the Texas Electricity Market

Why did Texans pay more for electricity in 2019 despite reduced natural gas prices and lower wholesale prices in other parts of the country?

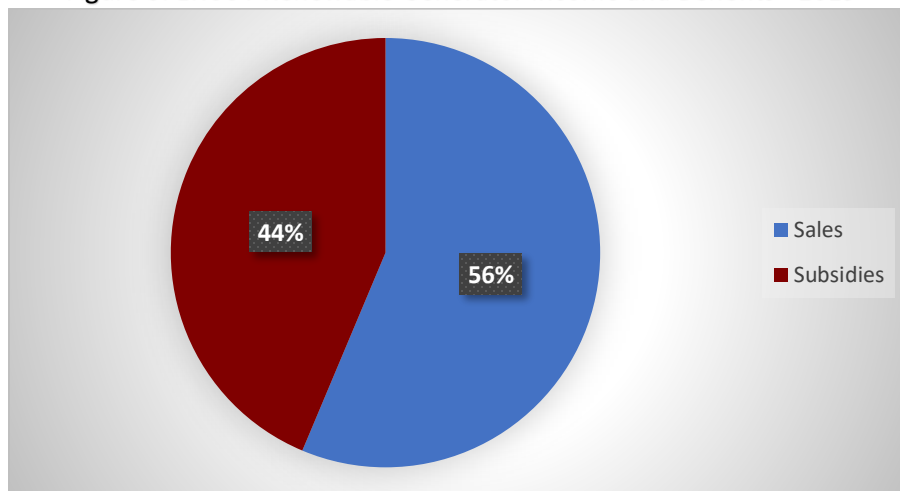
Figure 2: Renewable Energy Subsidies in Texas 2006-2029

	Federal	State	Local	Total
2006-2019 (actual)	9,538,187,887	8,758,060,766	1,116,756,895	19,413,005,548
2020-2029 (projected)	7,559,455,598	6,473,488,428	1,919,638,372	15,952,582,397
Total	17,097,643,485	15,231,549,194	3,036,395,267	35,365,587,945

Source: Peacock, [The High Cost of Renewable Energy Subsidies](#)

The answer starts with renewable energy. Since 2006, wind- and solar-power generators in Texas have received about \$19.4 billion in subsidies from federal, state, and local governments. In 2019, renewable subsidies totaled almost \$2.4 billion. The subsidies have caused massive distortions in Texas’ wholesale electricity market.

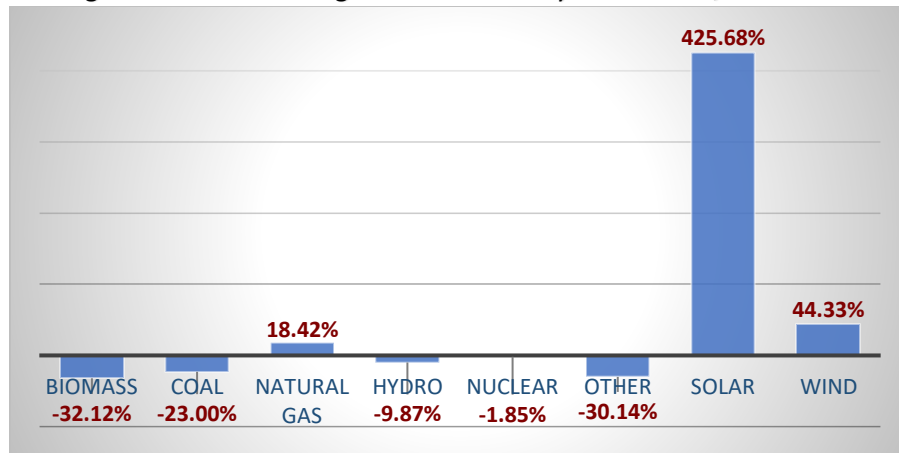
Figure 3: ERCOT Renewable Generator Income and Benefits - 2019



Sources: [U.S. Energy Information Administration](#); [ERCOT](#)

Revenue and benefits to renewable generators in ERCOT in 2019 totaled almost \$5.5 billion. Of that, wholesale sales into the market came to about \$3.1 billion. The benefits to renewable generators from subsidies, totaling about \$2.4 billion, come in two forms. The lesser amount is in direct income, such as the income generated by the sales of renewable energy credits (RECs). The greater amount is in avoided costs. These include reduced federal income and local property taxes and reduced transmission costs. The \$2.4 billion in subsidies equaled about 43.7% of renewable generators' income and benefits. This gives renewable generators a tremendous advantage over their competitors. On top of this, the federal Production Tax Credit (PTC)—a payment of between 1 to 2.4 cents per kWh of electricity generated—puts in place a perverse incentive to generate electricity from renewable sources regardless of price and market conditions.

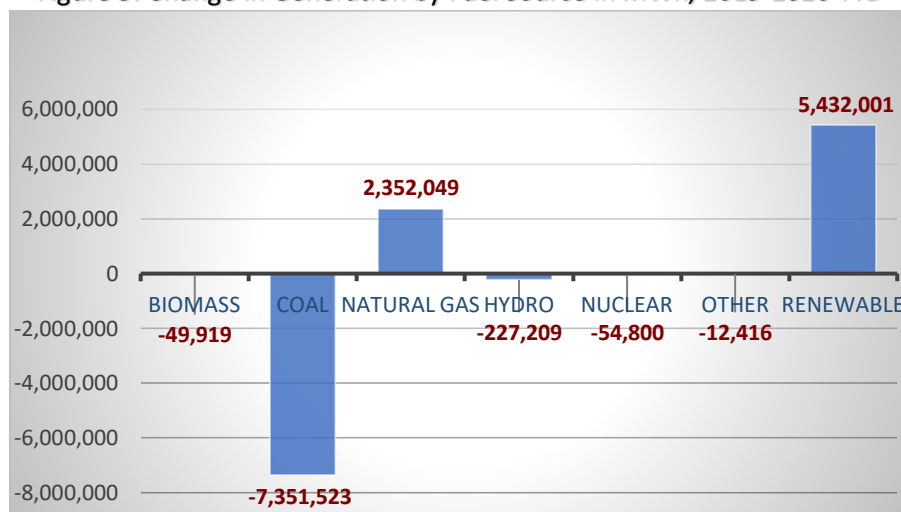
Figure 4: Percent Change in Generation by Fuel Source, 2016-2019



Source: ERCOT

Without the subsidies, very few wind and solar farms would be operating in Texas. Yet, wind and solar generation today makes up almost all of the new generation coming online in ERCOT. Since 2016, wind generation has increased by 44.3% and solar generation has increased by 425.7%. All other sources of generation, except natural gas, have decreased. And natural gas has increased by only 18.2 percent. In terms of MWh, total generation since 2016 has increased by 31,059,835 MWh. Of that total, renewables make up 27,123,039 MWh, or 87.3% of the increase.

Figure 5: Change in Generation by Fuel Source in MWh, 2019-2020 YTD



Source: ERCOT

The disparity between renewable energy and traditional fuels is getting worse every year. Wind and solar generation have combined to increase their output in the first five months of this year by 5,432,001 MWh. Their increase is coming at the expense of natural gas, which has increased by only 2,352,049, and coal, which has decreased by 7,351,523 MWh.

“Without the subsidies, very few wind and solar farms would be operating in Texas. Yet, wind and solar generation today makes up almost all of the new generation coming online in ERCOT.”

Conclusion

Renewable energy subsidies significantly increase the cost of electricity. For instance, not only did consumers have to pay \$3.1 billion for the electricity generated from renewable sources last year, as taxpayers they had to cover the cost of \$2.4 billion in renewable energy subsidies. That is about a 77% cost increase for the 81.1 million MWhs generated by wind and solar generators last year. Rather than the \$38 per MWh average wholesale cost of electricity in Texas last year, the all-in cost of wind and solar generation in Texas was \$67.9 per MWh.

These costs only show up not only on electricity bills on tax bills as well. And there are other ways that renewable energy subsidies distort markets and add to electricity costs that do show up on electricity bills. In the next study of this four-part series, we will examine how renewable energy subsidies are leading to further costs through a type of predatory pricing by renewable generators in the Texas electricity market.



Bill Peacock is the policy director of The Energy Alliance. He conducts research for the Alliance on issues related to energy policy. These include federal and state regulation of electricity markets, the Texas electricity market, renewable energy, federal, state, and local energy subsidies, and the relationship between free markets, regulatory policy, and economic prosperity.

The Energy Alliance is a project of the Texas Business Coalition to raise awareness of issues about the energy market that matter most to consumers: Reliability, Affordability, and Efficiency.



© 2020 The Energy Alliance. All Rights Reserved.