



The Cost of Renewable Energy Subsidies in Texas

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Key Points

- We estimate the total cost to taxpayers and consumers of subsidies going to renewable energy operators in Texas from 2006 to 2029 to be \$36 billion.
- The biggest single subsidy in Texas is the federal Production Tax Credit (PTC) at just over \$16 billion dollars through 2029.
- Generators doing business in Texas that have received PTC subsidies include NextEra Energy (leading the way with eligibility for \$5.7 billion of tax credits nationally since 2008), EDP Renewables (\$1.6 billion), Invenery (\$1.3 billion), NRG Energy (\$1.1 billion), E.ON (\$1.1 billion), Duke Energy (\$938 million), BP (\$913 million), EDF Renewables (\$622 million), Exelon (\$528 million), and Pattern (\$500 million).
- Texas state and local subsidies expected to be paid out through 2029 combine to reach almost \$18 billion, including the Competitive Renewable Energy Zone transmission lines (\$14 billion), 313 property tax abatements (\$2.5 billion), grid interconnection costs (\$1 billion), and the REC program (\$570 million).

Introduction

Texas was originally powered largely by renewable fuels: water, wind, and biomass. But those inefficient means of energy production were quickly replaced by more efficient coal and kerosene, and later by gasoline, aviation fuel, natural gas, and nuclear power. All this was made possible by markets which allowed consumers and producers to choose the most efficient way to fuel Texas as America's leading economic engine.

However, renewable energy generation has made a comeback of late. Not because it has all of a sudden become efficient, but because generators have successfully lobbied federal, state, and local governments to get profits from taxpayers they can't successfully get from consumers.

Renewable Subsidy Costs in Texas 2006-2029	
Subsidy/Credit	Amount
Production Tax Credit	\$16.3 billion
Investment Tax Credit	?
CREZ Transmission Lines	\$14.0 billion
Federal Stimulus Funds	\$1.6 billion
Renewable Energy Credits	\$570 million
Interconnection Costs	\$1 billion
313 Property Tax Limitations	\$2.5 billion
312 Property Tax Abatements	?
ORDC Costs Caused by Renewables	\$2.5 billion?
Total	\$36.0 billion +
Average Annual Cost	\$1.50 billion +
Current Annual Cost	\$2.47 billion +
% of ERCOT 2018 Total \$ Sales	7.8% +
% of ERCOT Renewable \$ Income	28.8% +

In 1999, the Texas Legislature passed Texas' first major subsidy for renewable energy, the Renewable Energy Credit (REC) program which mandated that Texans must use—and pay for—a certain amount of electricity produced by renewable sources. In 2005, the REC program was expanded. Also in 2005, the Legislature created the largest renewable subsidy in the state, the Competitive Renewable

Energy Zone (CREZ) transmission lines. These lines were authorized and built for the sole purpose of transmitting electricity generated from wind and solar farms in West Texas.

These are just two of the numerous federal, state, and local subsidies given to wind and solar farms operating in Texas today. The Foundation has tracked the cost of many of these subsidies for more than a decade. This paper pulls together our various research to provide an estimate of the total amount of subsidies going to these renewable energy operators. We estimate the total cost to taxpayers and consumers of these subsidies in Texas from 2006 to 2029 to be \$36 billion. These dollars are spread across multiple subsidies and multiple companies.

The biggest single subsidy in Texas is the federal Production Tax Credit (PTC) at just over \$16 billion dollars through 2029. Generators doing business in Texas that have received PTC subsidies include NextEra Energy (leading the way with eligibility for \$5.7 billion of tax credits nationally since 2008), EDP Renewables (\$1.6 billion), Invenergy (\$1.3 billion), NRG Energy (\$1.1 billion), E.ON (\$1.1 billion), Duke Energy (\$938 million), BP (\$913 million), EDF Renewables (\$622 million), Exelon (\$528 million), and Pattern (\$500 million). This \$14.4 billion worth of tax subsidies to date has gone to generators with more than \$355 billion of market capitalization.

Texas subsidies expected to be paid out through 2029 combine to exceed the PTC costs, reaching almost \$18 billion. Texas state and local subsidies include the CREZ transmission lines (\$14 billion), 313 property tax abatements (\$2.5 billion), grid interconnection costs (\$1 billion), and the REC program (\$570 million). In addition to these direct subsidies, the Texas Public Utility Commission (PUC) recently used an administrative pricing mechanism to add as much as \$2.5 billion a year to the cost of electricity in an attempt to fix the problems with grid reliability caused by renewable energy.

The only path forward for a reliable and affordable electricity grid in Texas—and the United States—is to eliminate renewable energy subsidies.

Production Tax Credit

The PTC, first adopted in 1992, is widely touted as the primary incentive behind wind energy development in the United States. By 2016, the PTC reached 2.4¢ per kWh which, pretax, equates to 3.5¢. At this value, the PTC equals or exceeds the wholesale price of electricity in many parts of the country. Under the 21 percent corporate tax rate, the PTC still carries a high pretax value of 3.0¢/kWh. Tax

Eligibility for the PTC			
Parent Company	2016	2007-2016	# of Turbines
NextEra Energy, Inc.*	\$778	\$5,702	9,287
Iberdrola/Avangrid Renewables (Spain)*	\$301	\$2,651	3,497
EDP-Energias de Portugal*	\$217	\$1,671	2,487
Invenergy, LLC*	\$227	\$1,290	2,181
NRG Energy, Inc.	\$178	\$1,143	1,553
E.ON (Germany)*	\$171	\$1,134	1,987
Duke Energy*	\$158	\$938	1,636
BP plc (England)	\$148	\$913	1,179
Brookfield Asset Management Inc. (Canada)	\$189	\$770	1,525
Dominion Energy, Inc.	\$107	\$727	762
EDF-Electricite de France*	\$174	\$622	1,783
Exelon Corp.	\$95	\$528	839
Pattern Energy*	\$131	\$500	870
Enel (Italy)*	\$144	\$462	1,320
AES Corporation	\$36	\$330	1,191
Subtotal	\$3,054	\$19,380	32,097
Share of PTC Market	71%	76%	59%
TOTAL	\$4,298	\$25,474	54,528

Source: [Erickson](#)

equity including the PTC and depreciation now account for over 50 percent of the capital needed to construct a typical wind facility. In 2015, Congress began a phase-down of the wind PTC. Facilities that began construction before January 1, 2017, are eligible to receive 100 percent of the PTC. Projects that start construction in 2017, 2018, and 2019 could receive 80 percent, 60 percent, and 40 percent of the wind PTC, respectively, after which no more projects may become eligible. However, the PTC lasts for 10 years, and IRS regulations allow eligibility to be earned about two years before generation begins. So the PTC will be in effect at least through 2031. Already, tax credits for generators through the PTC have totaled more than \$22 billion. We estimate the total cost through 2031 to be at least \$65 billion ([Erickson, 5](#)); roughly \$16 billion of that total will go to windfarms operating in Texas (calculations of the author). Hogan calculated that on August 1, 2016, wind pushed the clearing price from \$30.02 per MWh to \$22.82, a drop of 23.9 percent. And even though wind is intermittent, it is “clearly decreasing the probability of scarcity ... during peak hours.” He suggests that the effects of the PTC are most harmful at times of high load. The adjacent tables show the dollar amount of PTC credits earned by the top 15 companies, in millions of dollars and cost of all subsidies in Texas.

Investment Tax Credit

The Investment Tax Credit (ITC) is currently a 30 percent federal tax credit claimed against the tax liability of residential (Section 25D) and commercial and utility (Section 48) investors in solar energy property. The Section 25D residential ITC allows the homeowner to apply the credit to his/her personal income taxes. This credit is used when homeowners purchase solar systems outright and have them installed on their homes. In the case of the Section 48 credit, the

business that installs, develops, and/or finances the project claims the credit. In 2015, the Omnibus Appropriations Act included a multi-year extension of the residential and commercial ITC described above and changed the previous “placed-in-service” standard for qualification for the credit to a “commence construction” standard for projects completed by the end of 2023.

Texas Renewable Portfolio Standard

Unlike the PTC, Texas’ Renewable Portfolio Standard (RPS) is not energy-based. Rather, the Legislature adopted a capacity-based program that requires retail electric providers (REP) to purchase a certain number of megawatts from qualified resources operating in the state, based on their share of the overall retail market in ERCOT. The policy was first adopted in 1999 and later expanded to require 5,000 new megawatts of renewables be installed by January 1, 2015, with a final target of 10,000 megawatts operating by 2025. To ensure compliance, Texas also established a renewable energy credit (REC) program as a means of tracking renewable production and ownership through RECs. Each year, the Electric Reliability Council of Texas (ERCOT), as administrator of the program, calculates the annual state-wide mandate in megawatt-hours and allocates compliance quantities across all REPs. The REPs can be in compliance with the law by purchasing either energy from renewable sources or a like number of credits. We estimate that the RPS and RECs will cost Texas consumers about \$500 million from 2006-2029 ([Peacock and Neeley, 2](#)).

CREZ Transmission Lines

Competitive energy market rules generally discourage building power plants long distances from load centers, thus limiting the deployment of costly transmission. However, in 2005 the Texas Legislature required the PUC to oversee the designation of CREZ “in areas in which renewable energy resources and suitable land areas are sufficient to develop generating capacity from renewable energy technologies.” A final PUC order in October 2008 required the state to build 2,376 miles of new transmission rights-of-way at an estimated cost of \$4.93 billion and allow for an incremental 11,553 MW of new wind generation, bringing the total to 18,456 MW. The cost would be borne by ratepayers. The sole reason for building these lines was to benefit construction of wind generation. However, the price tag was much higher than forecasted, at \$6.79 billion. We estimate that the total cost of the CREZ lines, including profit, operations, depreciation, interest, and maintenance over the life of the project, to be at least \$14.0 billion ([Peacock 2008](#)).

Grid Interconnection of Renewable Generation

In order to supply power to the grid, renewable energy sources have to enter into interconnection agreements with existing Transmission Service Providers (TSPs). Interconnection agreements oblige TSPs “to plan, license, engineer, design, procure equipment and materials, and construct” the interconnection. Wind and solar farms, like other generators, initially guarantee payment of these costs to the TSPs, but once the project is connected and generation is started, the costs are forced onto Texas consumers. The cost of interconnection agreements for renewable projects to Texas consumers are over \$1 billion ([PUC](#)).

Chapter 312 and 313 Property Tax Abatements

The Texas Legislature authorizes local governments to administer property tax abatements under sections 312 and 313 of the Tax Code. Tax abatements are only able to be offered in a “reinvestment zone,” which may encompass a number of properties. However, these boundaries are often drawn to only include the property of a single private entity for which abatement is being sought. A Chapter 312 abatement, offered by counties, cities, and special purpose districts, may last up to 10 years in duration and must be conditioned upon improvements being made to the property. Tax abatements are only valid for increases in the value of the property, and cannot include existing value of the property prior to improvement. As of March 2018, there were 1,223 Chapter 312 agreements listed in a report from the Texas Comptroller. A total of 337 of the Chapter 312 agreements have an expiration date in the past, meaning that, barring other circumstances, there are approximately 886 active agreements. While many 312 agreements specify a required number of FTEs in the agreement, the figure that jumps out is that 61.9 percent do not appear to ([Texas Comptroller 2018](#)). The rules for Chapter 313 abatements, offered through school districts, are similar. The Comptroller’s 2019 report lists 389 current and executed 313 agreements. Of these, 221—or 57 percent—are for renewable energy projects, which account for only 9.7 percent of the 313 jobs created, an average of 5.4 per project. The total tax abatements given over the life of these Chapter 313 renewable-energy projects is \$2.53 billion. An all-time high 90 new 313 applications were made in 2018; 74 applications are currently being processed, 41 of them for wind or solar projects ([Texas Comptroller 2018](#)).

Other Benefits for Renewables

Renewable generators also receive benefits other than direct subsidies and tax credits. These usually entail operating rules and procedures that benefit renewable generators more than other generators. For instance, renewable generators do not have to pay the loss of energy due to resistance

as it is transmitted over long distances. While this applies to all generators, renewable generators benefit the most since they are typically located much farther away from the load being served. Also, renewable generators—unlike all other generators that serve load—are not required to dispatch. When the wind stops blowing and the sun stops shining, renewable generators are not forced to cover the costs

imposed on the system for their failure to deliver energy the system was expecting. ★

The descriptions of the various subsidies in this paper are compiled from the Foundation's recent research on renewable energy and Chapters 312 and 313 tax abatements and limitations. See below for details.

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