



Economic & Fiscal Impacts of New Mexico Renewable Energy Development

ECONOMIC AND TAX POLICY PERSPECTIVES

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Economic and Tax Policy Perspectives



New Mexico is in a Strong Position to be a Leader in Renewable Energy

Largely fueled by emissions-related climate policy concerns and state mandated renewable portfolio standards (“RPS”), renewable energy resource development is taking a prominent role in U.S. electricity markets. Carbon emissions goals adopted by a number of western states require significant replacement of existing fossil-fuel generation resources. The aggressive timelines to reach policy goals for reduction of electricity generation carbon emissions drives near-term development of the competitive renewable resources.

New Mexico and California are on the forefront of these initiatives and are generally being joined by many of the western states.

RPS demand growth will require roughly a 50% increase in U.S. renewable energy generation by 2030, equating to 73 GW of new renewable energy capacity. Focusing on the western electricity grid, the twelve western states are expected to have an increase in total retail electricity sales of more than 158.7 terawatt-hours (“TWh”) between 2020 and 2050, reflecting a nearly a 0.7% annual compound growth rate over thirty years.

More specifically, the eight western states with RPS compliance requirements (i.e., AZ, CA, CO, MT, NM, NV, OR and WA) can anticipate annual increases in renewable energy demands to meet total retail loads that will increase by 143.8 TWh in the next thirty-years — an approximate 2.6% annual compound rate to meet existing regional RPS compliance requirements.¹

- Renewable Portfolio Standards (RPS)
- Expansive renewable energy market demands
- Competitiveness of New Mexico’s renewable resource potential
- Current NM renewable energy development finance and production tax policies
- Established commercial Purchase Power Agreements (exports)

New Mexico’s Competitive Position in Western States Renewable Energy Markets

- A recent University of Wyoming report ranks New Mexico as the #1 state to develop wind energy generation under current state tax policy and market conditions.²
- Currently, New Mexico ranks #3 in developable wind resources behind Texas and Montana (American Clean Power (“ACP”) f/k/a American Wind Energy Association).
- Financing renewable projects through Industrial Revenue Bonds (IRB) puts New Mexico in a tie for 10th place (with California) for renewable development tax burdens (\$5.29/MWh). Without the favorable financing options and the ability to negotiate tax costs under IRB provisions, New Mexico would be the most expensive western state for the development of renewable energy with respect to tax burdens (\$9.36/MWh).

In sum, New Mexico is currently attracting renewable development activity due to superior solar and wind resources, incentives provided through IBR financing, and low resource development cost. These economic policy and market factors allow New Mexico to attract the development of renewable energy to fulfill its own Renewable Portfolio Standards (RPS) and export renewable energy production.

New Mexico’s Renewable Energy Development Opportunities

Moss Adams has provided several recent investigations of economic and fiscal impacts of current renewable energy development activities in New Mexico. Based on these prior investigations, analyses were performed to estimate what

¹ Data are based on the U.S. Energy Information Administration (EIA)’s Annual Energy Outlook (reference case forecast) to the most-recent available state-level retail sales data. Adoption of RPS compliance statutes for the four remaining western states will increase these market demands.

² Ranking based on factors such as levelized cost of development (cost to build facilities), gross capacity factor (wind speeds), and state-based incentives, (Cook & Godby, 2019)

renewable energy development would provide in economic and fiscal impacts to New Mexico under two different economic policy scenarios.

The first scenario assumes current market and economic policy conditions continue — this defines the Growth Scenario.

The second scenario examines economic and fiscal outcomes if New Mexico enacted economic policies that made renewable resources uncompetitive for interstate export, and would only develop renewable resources required for RPS compliance — the Compliance Scenario.³ This scenario assumes modification of New Mexico’s economic development policy for renewable energy to a position similar to Wyoming.⁴

**Scenarios for Analysis of Economic & Fiscal Impacts of
New Mexico Renewable Resource Development (2020 through 2030)**

Growth Scenario	Compliance Scenario
<ul style="list-style-type: none"> ▲ Develop 10,000 MW of renewable capacity ▲ 1,000 MW of capacity per year ▲ IRB Option 	<ul style="list-style-type: none"> ▲ Develop 825 MW of renewable capacity ▲ 82.5 MW of capacity per year ▲ No IRB Option ▲ \$1/MWh Renewable production tax

The Growth Scenario allows for substantial renewable energy export *and* compliance with New Mexico’s RPS requirements. New Mexico is already exporting renewable energy through Purchase Power Agreements (PPA) — the contracting provisions that wholesale electric marketers use to sell electricity to retail electric providers (i.e. PNM).

The Compliance Scenario develops new renewable resources to the extent specified by New Mexico’s RPS requirements, terminates the use of IRB financing incentives, and imposes a Production Tax on new generation.

Under the Growth Scenario New Mexico state and local governments will gain an estimated \$104 million in additional fiscal (tax) revenues (between 2020 and 2030) than under the Compliance Scenario.

Figures 1 and 2 compare New Mexico’s fiscal revenues under the Growth and Compliance Scenarios — including estimates of payments in lieu of taxes (PILOT).⁵ These fiscal revenues accrue both with the construction and operations & maintenance (O&M) of renewable production facilities.

Figure 2 presents fiscal revenues under the Compliance Scenario — and demonstrates the “Unrealized Fiscal Revenues” relate to state Production Tax and PILOT revenues estimated to be collected under the Growth Scenario (i.e., the difference of fiscal revenues between the Growth Scenario and the Compliance Scenario).

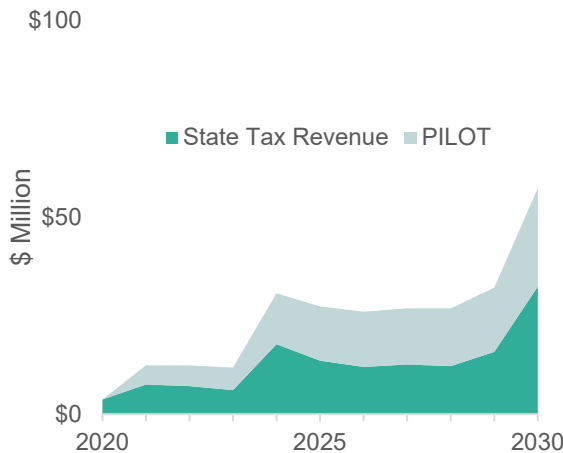


Figure 1: Estimated Tax Liabilities – Growth Scenario

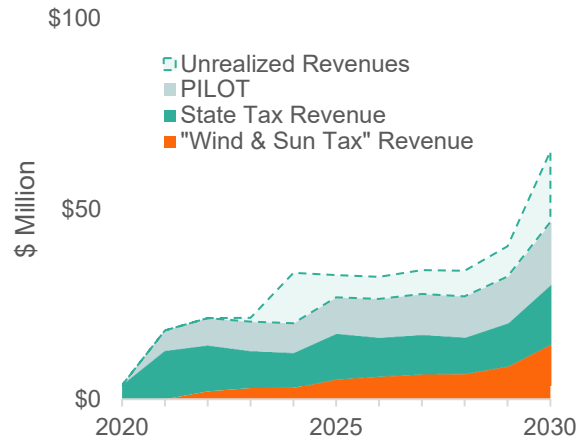


Figure 2: Estimated Tax Liabilities – Compliance Scenario

3 These simplified scenarios definitions are acknowledged to identify logical extremes of renewable development policies, but are useful in quantifying the range of potential outcomes from alternative economic policy positions.

4 Wyoming enacted a production tax of \$1/MWh in 2012 and has no IRB financing opportunities.

5 PILOTs are payments made by energy developments to local school districts and other government entities in agreement under the IRBs in New Mexico.

Examining renewable industry development in New Mexico under the two alternative Scenarios demonstrates that a change in renewable economic policy that disadvantages interstate resource competitiveness could have drastically different fiscal impacts (during the next decade).

Figure 3 presents the difference between the Growth and Compliance Scenarios during the O&M period of wind general facilities in the analyses. The O&M analysis time frame is from 2022-2030 to account for lead time to build and then electrify production facilities. The estimated impacts include:

- Wages & Salaries
- GRT and other tax liabilities
- PILOT payments
- Landowner payments (rents and royalties)
- Fiscal revenues from a Production Tax of \$1/MWh on renewable generation

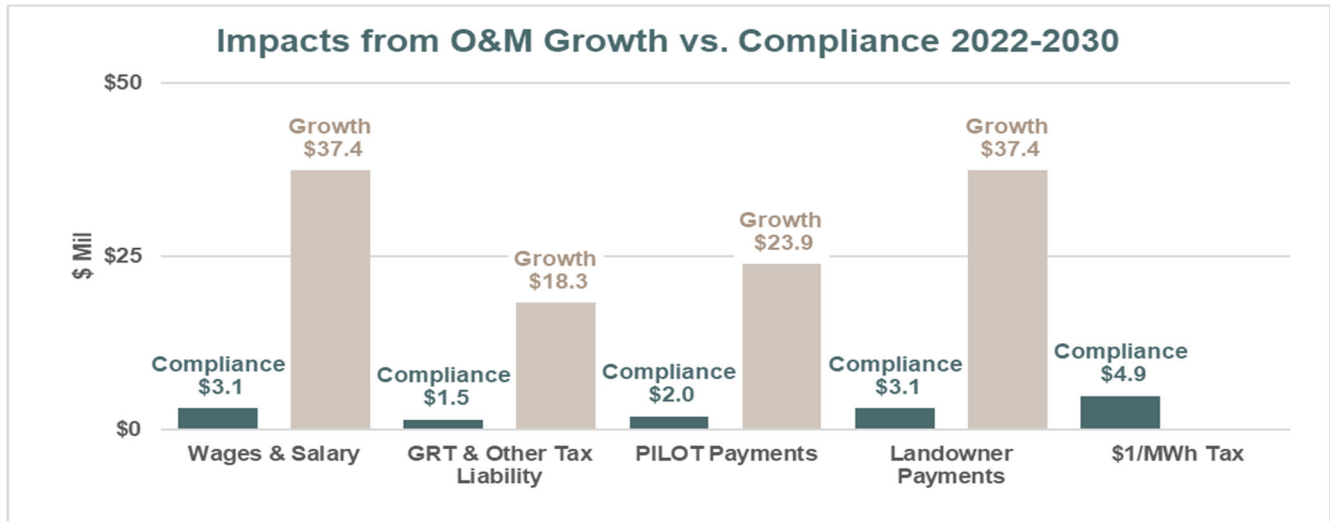


Figure 3: Growth vs. Compliant Scenario - Impacts

Under the Growth Scenario New Mexico’s state and local governments and private landowners realize substantially greater revenues, with fiscal revenues estimated to be a net \$33.8 million greater and the economic impacts to the private sector estimated to be a net \$68.6 million greater during the eight-year period.⁶

Effects of Tax Policy on Renewable Energy Development

Of the western states analyzed in the University of Wyoming paper, Wyoming falls just behind New Mexico in developable wind resources. The state was experiencing exponential growth in wind development and installed capacity until about 2009 when economic policy changes were starting to be considered.⁷

In 2012 Wyoming enacted a \$1/MWh tax on wind energy production. During that same time period New Mexico’s development of wind generation continued on a path of steady growth. The authors conclude with respect to taxing renewable energy production that:

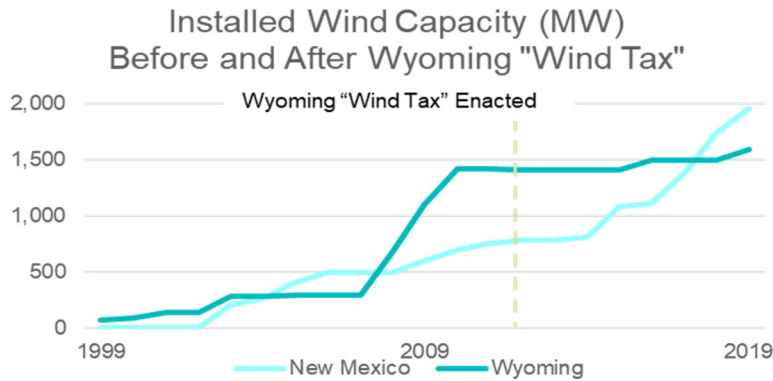
Implementing such taxes, however, could hinder regional competitiveness to attract wind investment and undermine the ability of a region to realize the economic benefits of wind development.

They summarily observe that most policy is enacted without consideration of the impact on resource development. Wyoming has not returned to the pace of development seen prior to the tax, and in fact little development of wind resource has occurred since 2009.

⁶ Fiscal revenue increases are the difference between Growth and Compliance Scenario outcomes for GRT, Production Tax, Other Tax Liability, and PILOT Payments. Economic impacts are the difference between the two scenarios for Wages and Salary and Landowner Payments. Note that some Landowner Payments are likely related to State Trust Lands, and would be fiscal revenues — but cannot be specifically identified for this analysis.

⁷ In 2010 Wyoming gained national attention over its proposed wind tax, including a New York Times article in early 2010 on the tax. <https://www.nytimes.com/2010/02/21/science/earth/21wind.html> accessed 02/04/2021.

Figure 4 shows displays the effect of the tax policy on wind development and capacity in Wyoming and New Mexico.



To date, the ACP estimate of capital investment in New Mexico wind projects through 2019 totaled \$3.4 billion, with this trend reflected in Figure 4. This private capital investment will grow substantially if development continues under current policy conditions.

Figure 4: Developed Wind Capacity in Wyoming and New Mexico

New Mexico’s Regional Competitiveness in Wind Development

When considering change in economic policy — and thus the cost of development for renewable energy resources — the direct effect on net producer revenues is key. In short, it is prudent to consider how these policy changes could potentially be consequential in rendering the state less competitive and stall industry development. Table 1 presents states with the lowest cost of development under current policy conditions and assessment of the commercial potential of each state’s wind resources. Montana, Wyoming and Colorado have comparable wind resources.

Table 1: Competitive Markets for Wind Development

Wind Competition in the Western US		
	Cost of Development with Current Tax Policies	Wind Resources
1	New Mexico	Montana
2	Montana	New Mexico
3	Colorado	Wyoming
4	Wyoming	Colorado
5	Idaho	Arizona

In this assessment, the University of Wyoming authors concluded that without IRB financing incentives, New Mexico would fall to #5 for cost of development and even lower if a production tax on renewable production were also imposed. Montana, Colorado or Wyoming could easily be more attractive to energy developers if New Mexico changed its current renewable energy economic policies.

Energy Production and its Fiscal Contribution to New Mexico’s Economy

Fossil fuels and their extraction have been a major contributor to New Mexico’s economy as one of the top ten producers of energy in the nation.⁸ Fossil fuels will continue to be an important contributor to energy markets even with near-term transition to energy production from sources with lower carbon footprints.

New Mexico governments’ have relied upon these abundant fossil fuel resources for significant revenues. Indeed, it is commonly believed that one-third or more of the state’s General Fund revenues are directly related to oil and gas production activities.

Taxable gross receipts are a small part of how oil and gas contribute to New Mexico but are useful for comparison to fiscal impacts of other industries. Renewable energy is an expanding component of energy resource development activities but remains a small part of the fiscal revenue contributions from New Mexico economic activities.

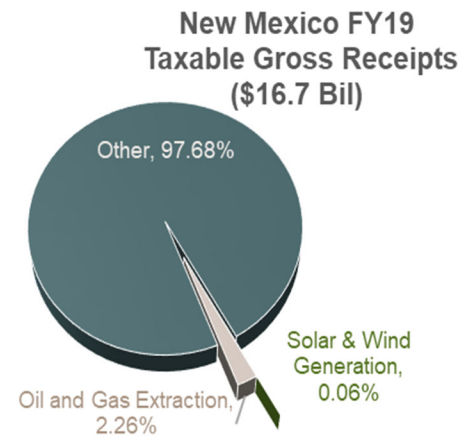
⁸ <https://www.eia.gov/state/analysis.php?sid=NM#:~:text=Crude%20oil%2C%20natural%20gas%2C%20and,energy%20producers%20in%20the%20nation.> Accessed 02/04/2021

Renewable energy resources contribute relatively the same rates of taxable gross receipts as oil and gas. Oil and gas production paid taxes at a rate of approximately 5.85% of taxable gross receipts and solar and wind paid at a rate of 5.63%.

In FY 2019 taxable gross receipts totaled:

- \$1.2 billion for the state of New Mexico
- \$22.5 million for oil and gas extraction
- \$0.5 million for solar and wind generations

The taxable gross receipts for oil and gas extraction are over 40 times greater than reported for renewable energy. Wind & solar energy production composed 0.06% of all taxable gross receipts in FY 2019 while oil and gas composed 2.26% of New Mexico's taxable gross receipts.

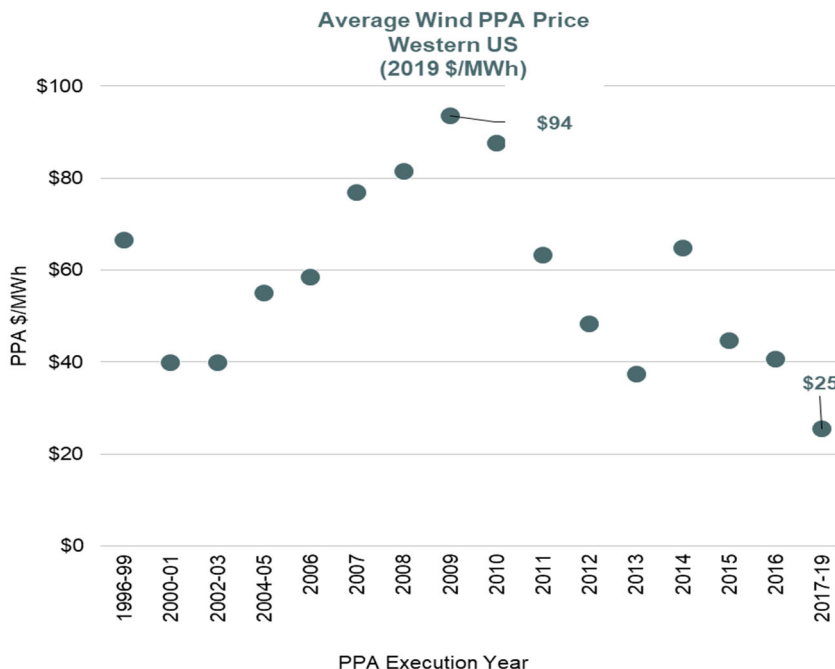


Trends in Interstate Wind Generation Markets: Competitive Prices

Imposition of additional development and production costs may be appropriate where market pricing trends are on the rise. That is, a condition of significant supply scarcity, with increasing demands chasing limited resource supplies. That is certainly not the conditions found in the western interstate renewable energy market at this time.

Indeed, the RPS portfolio development timeline establishes a specific demand requirement, and abundant renewable resources are being developed where they are most cost competitive.

It is extremely important to understand the economic transactions related to renewable energy development. Renewable energy supplies are predominantly traded as long-term commitments of dedicated generation resources due to scarce supplies and abundant demand. The capital risk to private developers can only be mitigated if there is substantial certainty of both demand and price. The primary vehicle for these transactions is long-term (ten- to twenty-year) purchase commitments to specific power generation capacity rights under a specified pricing obligation. In the electric utility business these are referred to as power purchase agreements ("PPAs").⁹



(Lawrence Berkeley National Laboratory)

The average wholesale price that retail electric companies have paid in the western US has seen volatility over the industry's relatively short life. Like most technologies over time, wind development has become more efficient and cheaper.

The average price of a MWh has dropped from its peak of \$94 in 2009 to \$25 in 2019 PPAs.¹⁰

Within the energy production industry it is common knowledge that profit margins are extremely tight and range from 4% to 8%. Applying a \$1/MWh tax would be a 4% increase to the cost of production and could potentially reduce profits to zero.

⁹ Pricing of commitments are usually agreed upon in term of \$/unit of energy such as \$/MWh.

¹⁰ <https://emp.lbl.gov/wind-technologies-market-report/> Accessed 02/03/2021. Averages calculated using the 2020_wind_energy_technology_data_update data file.

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Professional Experience

John has more than 30 years of experience providing applied economic analyses of business transactions, market structure and performance, regulatory policy and issues, efficiency, capital investment planning, economic forecasting, and development of indexes of relative economic values.

His experience analyzing business issues and economic markets related to energy and natural resource development, business transactions, regulation and dispute analyses, and all aspects of the economic value chain provides a significant additional resource to clients. He has also served as an expert witness in more than 60 judicial and administrative cases before more than a dozen federal and state courts and administrative jurisdictions.

He provides consulting services with a deep, interdisciplinary understanding of the physical, public policy, legal, and financing processes in which natural resources and energy commodities are developed, transacted, and valued. A significant component of his experience and professional qualifications relates to large-scale database management and analytics, including wide-ranging skills in econometrics, data mining, and forensic analysis of transactional systems.

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