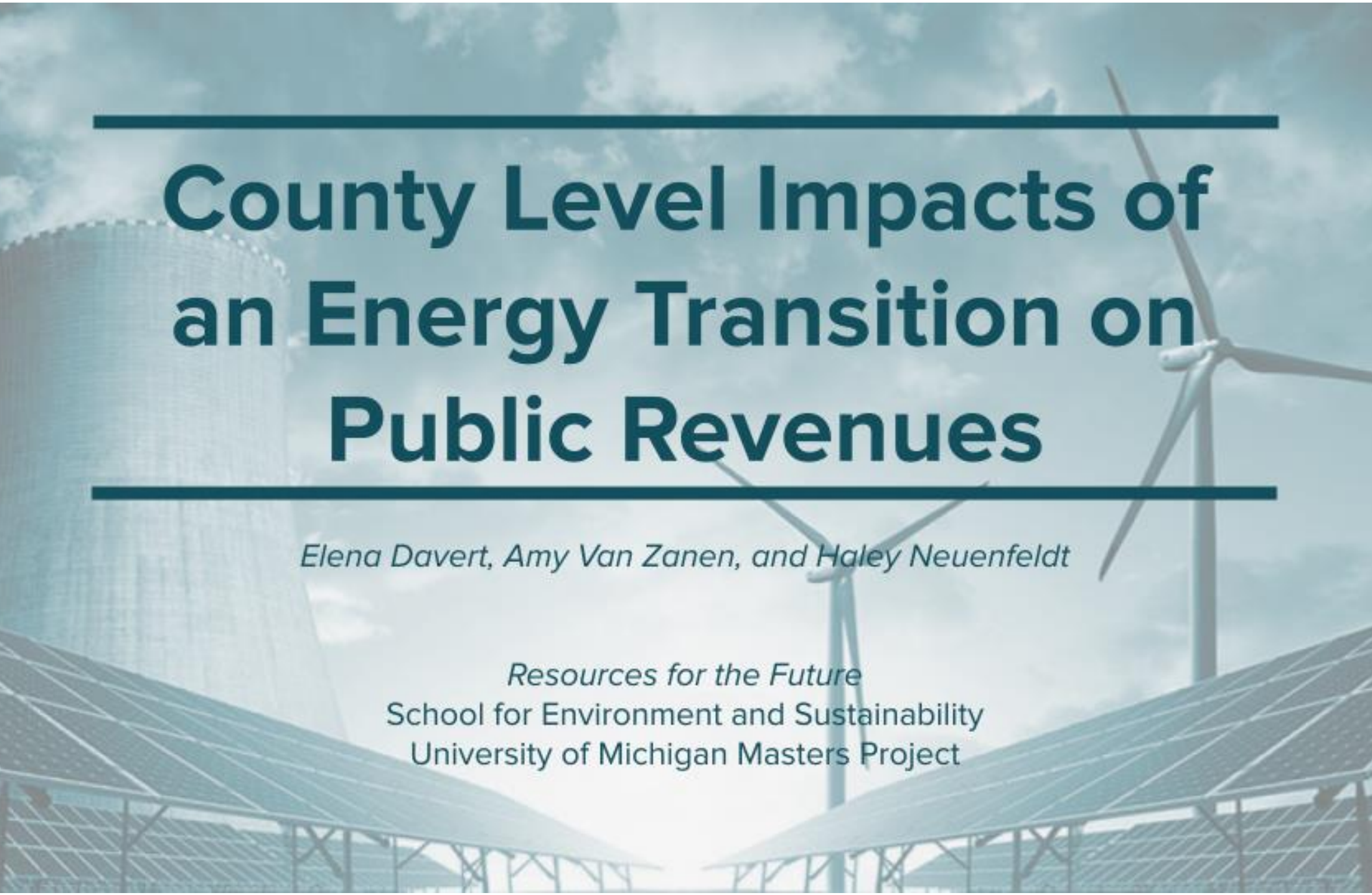


County Level Impacts of an Energy Transition on Public Revenues

Elena Davert, Amy Van Zanen, and Haley Neuenfeldt

Resources for the Future
School for Environment and Sustainability
University of Michigan Masters Project

The County Level Impacts of an Energy Transition on Public Revenues

Abstract

Meeting today's urgent climate goals will require the United States to transition away from using fossil fuels in all sectors, including energy. This energy transition will have far-reaching effects on public revenues for multiple levels of government. Understanding which local government units are most reliant on different kinds of energy-related taxes, fees and royalties can inform decisions on federal financial assistance and support state and local governments in planning for an energy transition. However, to date, studies on local governments' reliance on these revenues have either provided high-level estimates or granular analysis of specific communities. Research has yet to provide both depth and breadth at the local-level, in part because revenues derived from energy generation and fossil fuel extraction, processing, and transport are not always systematically reported by state or local governments. This study compiles a dataset of energy-related public revenues for county and sub-county units in 79 counties across 10 US states. We provide insight into the relative magnitudes of local energy revenues, identify 'hot spots' where changes to policies or economic conditions might have disproportionate impacts, and provide a basis for further studies expanding data collection and analysis at the local level.

I. Introduction

A. Significance

In August 2021, the Intergovernmental Panel on Climate Change's Sixth Assessment report warned that even if governments took immediate action to curb greenhouse gas emissions, total global warming is likely to rise to the 1.5 degrees Celsius threshold (Plumer and Fountain 2021). This report emphasized the urgency of taking action to remain below the 2 degree Celsius threshold laid out in the Paris Climate Agreement, which would require the United States to reduce greenhouse gas emissions by 57% from the 2005 level by 2030 (Volcovici 2021).

Without transitioning to carbon-free electricity, the United States will be unable to meet this goal. As of 2020, the electricity sector accounted for 32% of all CO_2 emissions (EIA 2021a) with only around 20% of utility-scale energy generated from renewable sources (EIA 2021b). To avoid the worst effects of climate change, energy systems in the United States must transition from using fossil fuels to clean energy sources such as wind and solar as quickly as possible.

However, transitioning away from fossil fuels will affect nearly all areas of the US economy, including public revenues derived from taxes, fees, and royalties from fossil fuel industries. Raimi et. al. (2022), estimates that between 2015 and 2020, coal, oil, and natural gas generated an average of $138 billion in annual public revenue for localities, states, tribes, and the federal government. As economies transition to clean energy sources, governments at multiple levels are likely to face steep fiscal losses.

Price shocks to oil and gas in the last decade foreshadow the potential detrimental impacts on county budgets. According to a 2016 report by the National Association of Counties, "In 14 states, plummeting prices for oil and natural gas… over the past two years have erased much of the annual severance tax revenue received by counties" (Griffith, Harris, and Istrate 2016). While oil and natural gas prices have fluctuated in years since the report came out, the impact of these prices on county financial health underscores county dependence on fossil fuels.

These economic impacts will also vary geographically. Raimi (2021) illustrated this variation by comparing county-level fossil fuel production and consumption with various indicators of economic vulnerability such as unemployment rates, per capita market income, and poverty rates. While this gives some indication of relative county vulnerability to an energy transition based on the size of the energy industry in each county, this analysis did not include actual county-level revenues, so it remains unclear just how dependent these counties are on public revenues from the energy industry.

Understanding which communities are most reliant on energy-related revenues is critical because it will inform how the federal government allocates financial assistance as part of an equitable energy transition. The Inflation Reduction Act (IRA) includes specific provisions to help "energy communities" such as bonus tax credits for developing wind and solar projects (White House, August 15, 2022) in areas where "at least 25 percent of local tax revenues are related to extraction, processing, transport, or

storage of coal, oil, or natural gas." [1] However, revenue from fossil fuel extraction, processing, transport, and storage is not systematically aggregated by local or state governments.

At the same time, there may be an opportunity to backfill public revenue losses from fossil fuel industries with revenue from renewables. There are already examples of this occurring in regions previously reliant on coal (Buckley 2022; Otárola 2021). A recent report from The Brookings Institution found also that a quarter of the counties in the US estimated to have the most cost-competitive wind and solar development potential are also currently fossil fuel hubs (Tomer, Kane, and George 2021). Counties with current fossil fuel facilities may already have the transmission infrastructure necessary to attract wind and solar development as well.

This does not necessarily mean, however, that these counties will want to make the transition (Lopez et al. 2021; Rand and Hoen 2017). There is evidence that "individuals living in both mining-dependent counties and counties with natural gas production are somewhat less likely to support renewable energy policies than individuals living outside such places" (Olson-Hazboun, Howe, and Leiserowitz 2018)**.** In some cases, counties with current fossil fuel-based economies have actively discouraged wind and solar development (Partlow 2022). Because much of renewable energy planning – including siting and taxation – falls to state and local decision-makers, local acceptance and county-level policies can play a large role transitioning to clean energy sources (NCSL 2020).

Even if counties are able and willing to replace fossil fuel production and consumption with clean energy generation, there is significant uncertainty regarding the potential of clean energy-derived public revenues to fill the public revenue gap left by fossil fuels (Storrow 2021). County-level decision makers can be constrained by state policy in levying taxes on energy sources including wind and solar developments (Griffith, Harris, and Istrate 2016; M. N. Haggerty and Haggerty 2021). Wind and solar also remain a small proportion of overall energy generation in the US making it difficult to make conjectures about the industries as potential tax bases. Studies that have explored clean-energy derived public revenues have found significant variation by jurisdiction depending on tax incentives and policies (Black et al. 2014; J. H. Haggerty, Haggerty, and Rasker 2014). Therefore, more research is needed about the way current state and county-level renewable development policies could shape county-level transitions and therefore address the coming public revenue gaps.

[1] As currently written, the IRA defines three ways to quality as an "energy community": 1) brownfield sites; 2) census tracts (and adjacent census tracts) where coal-fired power plants have closed since 2010, or where coal mines have closed since 2000; and 3) metropolitan or non-metropolitan statistical areas where "0.17 percent or greater direct employment or at least 25 percent of local tax revenues related to extraction, processing, transport, or storage of coal, oil, or natural gas," and "has an unemployment rate at or above the national average unemployment rate for the previous year as determined by the Secretary."

B. Building on Previous Literature

The work described in this report and its accompanying dataset serve to complement work by Raimi et. al. (2021) regarding fossil fuel tax revenues at the state and federal level. Raimi et. al. (2021) "estimate annual average public revenues between 2015 and 2020 derived from coal, oil and natural gas for the federal government, tribes, and state and local governments in 21 states." This report also builds on work completed by Raimi and Newell (2018). Looking at fiscal year (FY) 2013, they quantify state and local revenue from oil and gas production in the top 16 oil- and gas- producing states and estimate oil- and gas-related revenues from leases on federal and state, taxes on value or volume of production, and local property taxes in each state flow to several categories: 1) local governments, 2) education trust funds, 3) education current expenditures, 4) state trust funds, 5) state current expenditures. Their paper also describes how state policies on oil and gas taxation and allocation decisions impact state and county vulnerability to fluctuations in value or volume of oil and gas production.

Our work expands these analyses in several ways. First, it deepens the understanding of select counties by collecting actual property tax receipts or payments in lieu of taxes (PILTs) directly from specific counties where these are readily available on state or county websites or provided by county-level taxing authorities. In some cases, we also traced revenues collected at the state- or federal- level down, through various funds, to local jurisdictions in greater detail beyond what was described in Raimi and Newell (2018). Second, it broadens the analysis within these counties to include revenues related to coal extraction as well as coal, wind and solar electricity generation production, and disaggregates revenues by energy type. Finally, it updates Raimi and Newell (2018)'s work by using more recent fiscal years, incorporating multiple fiscal years worth of data where possible. Where actual tax receipts were either not available or not provided by county governments, we employed similar techniques to Raimi and Newell (2018). These methods are described extensively in the appendix.

We use similar terminology as both of these papers with regard to "upstream" or extraction, "midstream" for refining and processing, and "downstream" for power plants and wind and solar generation facilities.

II. Revenue Data: Collection and Methods

A. State Selection

Our sample includes 79 counties spread across 10 US states (see Table 1). Our states and counties of interest were selected by our client because these states and counties are large producers of oil, gas, coal, solar, or wind energy. Therefore, they may have significant energy infrastructure that contributes to their tax base such as electric generating facilities, oil refineries, coal or natural gas processing plants, and/or pipelines. There was an additional focus on states and counties that have a large amount of federal land to understand the additional dynamic of the impact of federal mineral royalties on local revenue.

Overall, our sample selection includes a variety of states that reflect these general criteria and the variety of factors including varying energy infrastructure, land types, and fiscal policy that are likely to impact the geographic distribution of local government dependency on energy-related tax revenues.

Table 1 shows the final list of counties for which data was collected.

Table 1. Sample State and County Selection

Sample States	Sample Counties
Alaska	Denali Borough, Kenai Peninsula Borough, North Slope Borough
California	Los Angeles, San Bernardino
Colorado	Alamosa, Garfield, Kit Carson, Lincoln, Logan, Moffat, Montezuma, Pueblo, Rio Blanco, Weld
Montana	Big Horn, Musselshell, Richland, Rosebud, Sheridan, Toole, Wheatland, Yellowstone
New Mexico	Chaves, Curry, Eddy, Lea, Luna, McKinley, Rio Arriba, Roosevelt, San Juan, Sandoval
North Dakota	Dunn, McKenzie, McLean, Mercer, Morton, Mountrail, Stark, Williams
Ohio	Belmont, Clermont, Gallia, Harrison, Jefferson, Lucas, Monroe, Paulding, Van Wert, Washington
Texas	Andrews, Carson, Harris, Limestone, Martin, Midland, Nolan, Pecos, Reeves, Titus
West Virginia	Doddridge, Grant, Greenbrier, Logan, Marion, Marshall, Ohio, Putnam, Raleigh, Tyler
Wyoming	Campbell, Carbon, Converse, Laramie, Lincoln, Sublette, Sweetwater, Uinta

B. Data Collection

First, we mapped the state-level policy landscape which allowed us to understand the statutes where taxes, fees, royalties, etc. were defined as well as how these funds were disbursed to the local level.

Some *federally* collected revenues are distributed to states and, occasionally, directly to some counties. Data on these disbursements came from the Office of Natural

Resources Revenue. Some states then pass this revenue on to local jurisdictions and data on these disbursements was collected from state-level sources like comptrollers or Departments of Revenue or Natural Resources. Those state-level sources also provided disbursement information on state collected revenues that are passed down to the local level. A full list of these sources can be found in the appendix which is organized by state.[2]

For *local* collections, which are largely property taxes and payments in lieu of taxes, we used a combination of state and local data sources. For some states, we used Energy Information Administration (EIA) data to identify energy facilities (fossil fuel power plants, solar and wind facilities, oil and gas processing facilities), and downloaded or requested property and parcel-level data directly from county tax offices or appraisal districts for these facilities. In other circumstances, counties are required to report data up to the state which meant we were able to use state-level datasets.

There were datasets from each level (i.e., federal, state and local) that lacked either the granularity or specificity we were seeking and therefore we had to use oil, gas and coal production or nameplate capacity of electric generation facilities to create ratios for disaggregating and estimating revenues by county, energy type, and jurisdiction. Estimation and disaggregation decisions for each state and tax type can be found in the appendix.

We also recorded where our dataset has discrepancies between states with regard to types of tax data collected or years of data available. For some states we were only able to collect data for a certain revenue stream for one or two years. For example, we were able to collect data on property taxes for natural gas processing facilities in Texas, but not North Dakota. In Colorado we were able to estimate data from 2012-2021 for all relevant revenue and energy types, whereas many other states have more variation in the fiscal years available by revenue and energy types. We provide information on data completeness by revenue and energy types and fiscal year as a cover sheet to our data set so that future researchers using the dataset can ensure comparability across their categories of interest. When comparing across states, we use a combination of 2020 through 2022 as these are the most complete years.

Similarly, some states have greater levels of disaggregation to sub-county units than others. For example, nearly all data in Texas is attributed to a specific school district, municipality, the county general fund or ‘other’ taxing jurisdictions. In other states, we only estimated the combined total revenues for all tax jurisdictions within a county by revenue and energy type. These discrepancies are largely based on data availability and our confidence in the accuracy of potential estimation methods.

[2] Throughout the Individual State Results section, where we reference these sources, we use the Unique IDs assigned to them in the Methods Appendix. For example (NM_10) refers to the 10th source in the New Mexico section of the Methods Appendix.

III. State by State Results

B. Trends in State Policy

Severance and production taxes on fossil fuels in our sample states are administered at the state-level. As shown in the table above, some states pass these taxes on directly to counties and sub-county jurisdictions based on production quantities within those jurisdictions. Other states keep portions of these taxes for state-level use or pass them down indirectly to local jurisdictions through other funds. For example, in Texas production tax revenue is used to fund local school districts regardless of production amounts within the school district. Raimi and Newell (2018) document these flows in greater detail.

Fewer states collect state-level equivalent revenues on use of renewable energy resources (wind and solar). The exceptions to this rule are Wyoming and North Dakota which both have wind generation/production taxes at least in part based on the kilowatt-hours of wind electricity generated in the state. These revenues are then passed down to the local level. New Mexico also receives some renewable-related revenue from its gross receipts tax. With the exception of these three states, counties in the other states in our sample received revenue from renewables *only* through property taxes and payments in lieu of taxes. This makes property taxes rates particularly important in determining revenues from the wind and solar industries.

Where levied, property taxes on oil, gas and, in some cases, coal production property also contribute significantly to local revenues. In this way, fossil-related revenues generally come from both the taxes on the actual resource and its extraction, as well as the property associated with its extraction and use; whereas renewable-related revenues generally come only from the property associated with generation. This poses a significant barrier to replacing public revenues from fossil sources with renewable-related revenues.

Montana, North Dakota, New Mexico, Ohio, Texas, and West Virginia all allow localities to accept PILTs from businesses, including energy facilities. These come in different forms. Ohio for example has specific ranges of amounts localities can accept per megawatt of nameplate capacity whereas Texas does not stipulate amounts. Rather localities can provide the abatement and request payments as it serves their development goals. Whether or not localities in the states that allow PILTs choose to negotiate these abatements and payments varies by the locality.

A. State Policy Summary Table

The table below indicates which states have policies regarding revenue from the following taxes and whether or not these policies involve distribution to local governments.

State	Severance/ Production	Public Lands (Federal)	Public Lands (State)	Local Property Taxes										PILTS	State- specific Taxes
	Oil/ Gas / Coal	Oil/ Gas/ Coal	Oil/ Gas/ Coal	Oil	Gas	Coal	Refineries/ Processing	Pipelines	Power Plants - Oil	Power Plants - Gas	Power Plants - Coal	Solar	Wind		
Alaska	ND	IND	ND	VL	VL	VL	VL	VL	VL	VL	VL	VL	VL	na	Electricity Co-op Tax
California	ND (oil and gas only)	ND (oil and gas only)	ND (oil and gas only)	VL	VL	VL	VL	VL	VL	VL	VL	VL	VL	na	
Colorado	X	ND	IND	X	X	X	X	X	X	X	X	X	X	na	
Montana	X	X	ND	X	X	na	X	X	X	X	X	X	X	VL	Electrical Energy Production Tax
North Dakota	X	IND & X	na	na	na	na	X	X	na	na	na	na	na	VL	Tax on electricity generation in lieu of property tax
New Mexico	X	X	ND	X	X	X	X	X	X	X	X	X	X	VL	Gross Receipts Tax
Ohio	ND	ND	ND	X	X	X	X	X	X	X	X	X	X	VL	
Texas	IND (oil and gas only)	X	ND	X	X	X	X	X	X	X	X	X	X	VL	Gas, Water, Electric Utility Tax Oil and Gas Well Servicing Tax, County Road Oil and Gas Fund
West Virginia	X	ND	ND	VL	VL	VL	VL	VL	VL	VL	VL	X	VL	VL	
Wyoming	IND & X	X	ND	X	X	X	X	X	X	X	X	X	X	na	Wind Production Tax

Note: Dark filled cells indicate at least a portion goes directly to local governments, lighter filled cells indicate some revenue goes to local governments, but the disbursement may be indirect (through some other fund) and therefore estimated through a ratio;

- **X** = contributes to local revenues
- **IND** = indirect payments to local governments (through some other fund);
- **VL** = varies locally;
- **ND** = the state collects the tax, but does not distribute locally;
- **na** = this tax is not collected in this state

C. Individual State Results

Alaska

Alaska's production of crude oil and gas generate significant revenues from production on state lands and severance taxes. However, because these taxes, royalties, and fees can be volatile from year to year, the State of Alaska has developed a framework of constitutionally and statutorily restricted revenue that is held in a variety of state-level reserve and general funds. The Alaska Constitution provides that, with few exceptions, the proceeds of state taxes or licenses "shall not be dedicated to any special purpose." (AK_8). Because of this, the only sources of revenue funneled directly to local governments are local property taxes and a special tax on electric cooperatives.

For property taxes, the State levies a property tax of 20 mills on the full market value of all oil and gas property related to exploration, production, and pipeline transportation. Local municipalities have the authority to assess other real and personal property within their jurisdiction and may also levy their own property taxes on oil and gas properties, the payments of which are credited towards any payment owed to the State. Local municipalities are authorized to levy taxes up to 30 mills, but are also required to apply the same millage rate on oil and gas properties as they do for all other non-oil and gas properties (AK_9, AK_10). According to the State's Chief Economist, this has the effect of keeping local property taxes relatively low in most boroughs – roughly 10 mills – with the exception of the North Slope Borough, which has a millage of 18 mills.

It is also important to note that many smaller municipalities tend to favor sales taxes instead of property taxes because they lack a sufficient tax base. Only fourteen of the eighteen boroughs, and eleven cities levy local property taxes. Of our boroughs of interest, two levy local property taxes: Kenai Peninsula and North Slope.

In contrast, all boroughs receive revenue collected from electric cooperatives within their jurisdiction. The State Department of Revenue's Tax Division collects taxes from all electric cooperatives based on the kilowatt hours generated each year, and distributes revenue to respective municipalities. However, the electric cooperative tax is relatively small, accounting for less than 4% of all shared tax revenue collected by the Department of Revenue, generating only $2 million annually statewide, since 2012 (AK_1).

Given these two main revenue streams, we find that our boroughs of interest rely most heavily on revenue generated from upstream and midstream oil and gas activities. In 2021, Kenai Peninsula and North Slope received $5.5 million and $329 million from property taxes paid on oil and gas exploration, representing 65% and 89% of their total energy revenues respectively. Midstream pipelines and refineries made up 25% of Kenai Peninsula's energy revenue and 11% of North Slope's revenue. None of the top property taxpayers in either borough were associated with electricity generation or other downstream activities.

In contrast, in 2021 the electric cooperative tax generated a total of $212,573 for our three boroughs of interest, with payments to individual boroughs and municipalities

ranging between $23,000 and $160,000. Of these downstream revenues, only $6,164 came from renewables, because only one of our boroughs of interest currently has a renewable development, a 24 MW wind farm in.

California

California's counties receive all their energy-related tax revenue from property taxes. Other taxes imposed on oil and gas related operations go to the State, so the primary financial impact on counties depends on the assessed values of the associated properties, local levy rates, and property-specific exemptions (determined by the county).

Proposition 13, passed in 1978, has had the most significant impact of any fiscal policy on local revenues derived from energy related infrastructure. Proposition 13 caps the property tax rate at 1% and requires properties be assessed at their 1975 value unless there is new construction or a change in ownership. Because the only revenue that counties directly receive is from property taxes, as opposed to production taxes or royalties, the proposition significantly reduced the amount of revenue that counties receive from fossil fuels compared to when properties were able to be assessed at their current market value.

All mines, minerals, and quarries on land are considered real property, in addition to permanent buildings and fixtures. Personal property is considered machinery and equipment and is not subject to the valuations of Proposition 13. Additionally, utilities and properties assessed by the Board of Equalization, such as electric generating facilities and pipelines are also not subject to Proposition 13, which means they are assessed at their current market value.

Oil and gas drilling sites are subject to property taxes and contribute significantly to local revenue. An alternative report estimates that oil and gas production in Kern County, one of our sample counties, generates nearly 25% of the County's property tax revenue, or about $197.1 million allocated to the county, incorporated municipalities, school districts, and special districts (CA_9). While Kern County is also the largest producer of wind energy in the state, the scale of production is vastly different and cannot practically backfill the revenue from the fossil fuel industry under current zoning and tax laws.

California's solar generation facilities are taxed at their acquisition value or their base value. The property is assessed at this value until there is a change in ownership (of at least 50%) or a transfer in the lease. However, if a solar or wind facility is located on public (i.e., state or federal) land, the real property is subject to the possessory interest tax instead of property taxes. Many solar projects in California are being built on land owned by the Bureau of Land Management, and pay the possessory interest tax instead of property tax. However, even on public land, roads, fences and all other property built upon the land of a solar or wind facility are subject to property taxes. There is no exemption available for wind generation facilities, and both real and personal property of these facilities are taxed at their full base-year value.

It is difficult to compare the local revenues across the counties of interest in California because available revenue data varied significantly in each county. However, there are

notable trends in each county that are telling of the local reliance on revenue derived from the fossil fuel industry and the growing revenue from the renewable energy industry. For example, Kern County, as mentioned above, receives $197.1 million from taxes on oil and gas production. Los Angeles County, by contrast, generates $19.42 million in property taxes from solar generation facilities and $9.79 million from natural gas electricity generation facilities. The differences in scale–nearly an order of magnitude– highlight a key issue that even California, one of the leaders in renewable electricity production, faces: oil and gas tax revenue can be derived from upstream, midstream, and downstream sources, but solar and wind only produce downstream electricity generation revenue. However, renewable energy production continues to grow across California and requires significantly more property for generation than fossil fuel electricity generation, and tax exemptions for solar facilities will soon expire entirely. Both of these factors will cause increases in revenues derived from solar and wind generation, even as the reduction in oil and gas production and push towards renewable electricity generation reduces revenues derived from oil and gas.

Colorado

Unlike in Alaska and California, local jurisdictions in Colorado receive energy revenue from a wider range of sources. Local jurisdictions receive direct distribution and discretionary grants from both federal mineral lease revenue and the state's production tax, as well as revenue from local property taxes. However, property tax revenue still tends to dominate the revenue mix among our counties of interest.

For production on federal lands, the State deposits revenue into the Local Government Mineral Impact Fund, which is managed by Colorado's Department of Local Affairs (DOLA). DOLA distributes half of this revenue through discretionary grant awards and half through formulaic direct distribution to counties, local governments, and school districts. For grant awards, DOLA prioritizes communities "most directly and substantially impacted by production of energy resources on federal mineral lands." For the formulaic direct distribution, DOLA allocates funds to counties based on the proportion of total federal revenue derived from energy production in each county, as well as the proportion of energy industry who reside within the county. DOLA allocates funds to municipalities, school districts, and counties' unincorporated areas based on the proportion of employees (all industries) reported as residents; the proportion of the population compared to the state; and the proportion of road miles compared to the state total. (Colorado Revised Statutes, 2§ 34-63-102). These ratios lead to a wide range of revenue received by individual counties. For example, in 2021, counties received between $13,000 and $4.4 million, representing between 0% and 5.7% of counties' total energy revenue.

The State also collects severance taxes on the gross income generated from the production of oil and gas, and the total tonnage of coal extracted within the state. Severance taxes are collected by the Colorado Department of Revenue, 50% of which is deposited into the Department of Local Affairs' Government Severance Tax Fund. Of the funds received by DOLA, 70% is available for discretionary loans and grants to local governments socially or economically impacted by the mineral extraction industry, while

the remaining 30% is distributed directly to local governments based on the geographic location of energy industry employees, mine and well permits, and overall mineral production. (Colorado Revised Statutes, § 39-29-1109). Distribution of severance taxes also varies widely among counties. For example, in the years 2020-2021 our counties of interest received between$74,000 and $17.3 million, representing between 0.5 and 9.7% of their total energy revenue. We are reporting a combination of 2020 and 2021 values because these years represented an anomaly in the state's typical distribution. At the end of 2020, Colorado issued emergency additional payments of severance tax revenue to help local governments compensate for lost revenues during the pandemic, and the 2021 payments were significantly smaller as a result.

In 2021, property taxes generated between $2.46 million and $525.14 million for our counties of interest, representing between 55% and 99% of local energy revenues. We also found that property tax revenue varies greatly by energy phase and type. In 2021, of this revenue, we estimate 62.26% of property tax revenue was derived from upstream extraction activities, 23.24% from midstream pipelines and refineries, and 15.51% from downstream power generation, transmission, and distribution. However, this also varies across our counties of interest, with some receiving 100% of energy-related property tax revenue from upstream activities, and others receiving up to 49% or 85% from midstream or downstream activities, respectively.

Montana

Prior to 1985, the distribution of oil and gas revenue in Montana was based primarily on property tax mill levies. In 1985, the State began to phase out local property taxes on oil and gas properties. In 1995, the oil and natural gas production tax was enacted. The revenue from this tax is distributed to the entities in which the taxed production is located, with a percentage going to the State. Because the tax is based on the gross value of production, the revenue is vulnerable to the volatility of the market.

In addition to production taxes from oil and gas, Montana counties also receive distributions from federal mineral royalties and property taxes. Federal mineral royalties contribute only about 15% of what the production taxes contribute to local governments, around $5 million annually across the counties of interest. However, property taxes, including those attributed to electric generating facilities, oil refineries, and utilities generate almost $140 million annually to our counties of interest.

Fossil fuel powered electric generating facilities are taxed at 6% of their market value and taxed at local rates, solar and wind properties are assessed at 3% of their market value and taxed at local rates. However, solar and wind facilities are exempt from property taxes for five years after operation begins. There is also an Electrical Energy Production Tax charged to all electric generating facilities regardless of energy source, at a rate of $0.0002/KWH, but this tax is not distributed locally.

Of these three main revenue streams, we find that our counties of interest rely most heavily on revenue generated from property taxes, primarily electric generating facilities and oil refineries. In 2020, our counties received $20.40 million from property taxes paid on gas and coal electric generation facilities, and $4.88 million from property taxes paid

by wind electric generation facilities. Additionally, Yellowstone County (the only county of interest with oil refineries), received $29.08 million from property taxes paid by oil refineries. In contrast, in 2020 the coal production tax generated only $13.20 million and the oil and gas production taxes generated $16.55 million for our counties of interest.

New Mexico

New Mexico local governments receive energy-related tax revenue from property taxes, production taxes, and gross receipts taxes. The State Assessed Property Bureau within the New Mexico Taxation and Revenue Department's Property Tax division is responsible for assessing public utilities, electric generating plants, pipelines, and mineral property (NM_10).

Gross Receipts Taxes, in relation to energy tax revenue, is the money received from leasing or licensing property employed in New Mexico and is currently set at 3.125% for oil and gas production. This tax is levied on the gross receipts of oil and gas producers, which includes the total amount of money received from the sale of oil and gas produced in the state. In addition to oil and gas production, the GRT is applied to electric power from fossil fuels and renewables, natural gas processing, oil and coal refining, oil and gas pipelines, gas distribution, and electric transmission (NM_8).

There are four additional taxes on oil and gas production in New Mexico, but only the Ad Valorem Production and Equipment tax revenues are distributed back to the local level. However, the funds from the other taxes that go to the state into the State Permanent Fund, the Land Grant Fund, and the Severance Tax Permanent Fund are indirectly distributed to local governments through other services. For example, education is heavily funded by oil and gas in New Mexico, particularly through state funds. In 2018, the oil and gas industry contributed $2.2 billion to the total state general fund, or 32% of the funds. That year, the fund allocated over $850 million to public education and over $240 million to higher education. Because oil and gas production funds go to state funds which are distributed statewide, a decrease in oil and gas production would not only impact oil and gas producing counties but the entire state. (NM_11)

However, the impact would be especially strong in oil and gas producing counties as the Oil and Gas Ad Valorem Production and Equipment Taxes generated $286.8 million in taxes to our counties of interest, with the bulk of that revenue attributed to Eddy County and Lea County where most oil and gas production takes place.

Wind and solar energy facilities are subject to property taxes like any electrical generation properties. However, while not all the solar and wind generation facilities tax receipts were able to be tracked down to have a comparable aggregate sum of solar or wind tax revenue, based on the taxes of the generating facilities we were able to access, we know that the revenue these properties produce is not comparable to the revenue generated from the oil and gas production taxes. For example, the 10 MW solar facility SPS2 Jal in Lea County generated $44,660 in 2022 while the 27.3 MW wind facility Wildcat Wind also in Lea County generated $58,028 that same year. Compare this to the property taxes associated with the two coal-fired power plants in

San County, with a combined total of 1742 MW, which collectively generate over $11 million per year. Relative to the numbers above for wind and solar facilities, it is unlikely that wind and solar could backfill this revenue under current fiscal policies and production capacity.

New Mexico's various streams of local revenue have helped diversify the energy tax revenue local governments receive. However, production taxes still remain the most significant source of revenue for local governments. Production taxes from oil and gas and coal contributed $286.84 million in local revenue to our counties in 2020. In contrast, gross receipt taxes (from all taxed entities) produced $89.66 million in revenue of local governments in 2020, and property taxes contributed $18.59 million, almost all of which is attributable to fossil fuels.

North Dakota

North Dakota's energy taxation scheme is perhaps the most unique among our sample states. Nearly all energy-related taxes are collected at the state-level. These include the oil, gas and coal severance taxes and taxes on electric generation, transmission and distribution. The only energy-related revenues collected at the local level are property taxes on pipelines, oil refineries, natural gas processing facilities, and some electric and natural gas distribution not covered by the state-level taxes on electric distribution. This gives local governments very little control over energy-related revenues except through attracting new energy development.

As mentioned previously, North Dakota is one of only two states in our sample that has a generation/production tax on renewable electricity generation, specifically wind. The State also levies taxes on electricity generation from other energy types. This suite of taxes includes a coal conversion tax, the aforementioned wind generation tax, as well as a tax on other electric generation, mostly natural gas-fired power plants and solar generation. Each of these three taxes is a different combination of tax rates on both the nameplate capacity of the electric generation facility as well as the kilowatt-hours generated at that facility. For example, wind is taxed at $2.50 per kilowatt of nameplate capacity and one half of one mill per kilowatt-hour of electricity generated.

Different proportions of these electric generation revenues are distributed to the local level. Only 15% of the coal conversion tax is distributed to local jurisdictions whereas 67% of the wind generation tax and 100% of the other electric generation tax goes back to local governments where these electric generation facilities operate. For wind facilities built prior to December 31, 2020, 100% of the revenues are returned to the local level (ND_8).

In 2021, seven of the eight North Dakota counties in our sample received more revenue from oil and gas severance or coal severance as opposed to generation taxes, federal mineral royalties distributions or property taxes. Of the six counties receiving oil and gas severance revenues, distributions ranged from $0.85 million to $88.57 million. Only two of our sample counties receive distributions of coal severance revenues; these distributions are $1.35 million and $3.45 million. Pipelines also provide a significant source of local revenue; collections ranged from $0.28 million to $17.96 million. Three

counties receive revenue from the wind generation tax with distributions ranging from $0.69 million to $3.56 million. Only one county in North Dakota receives more revenue from renewables than from fossil fuels.

Ohio

In Ohio, few energy revenue streams flow directly to local jurisdictions. All federal mineral lease revenue flows directly to the State's General Fund, and in contrast to our other states of interest, roughly 1% of Ohio's land is managed by federal agencies, so federal mineral lease revenue is considered de minimis in the scope of this project. Revenue from production on State lands does not flow to local jurisdictions either. Rather than being collected and distributed by a central agency, revenue from production on state lands is collected directly by whichever state agency owns the land on which extraction activities have taken place, and is used at the discretion of these state agencies (Ohio Revised Code Section 155.34). Finally, although the State of Ohio's severance tax generates substantial revenue, all revenue is allocated entirely to the State's Oil and Gas Well Fund and Geological Mapping Fund, neither of which are distributed to local jurisdictions (Ohio Revised Code Section 5749.02). As such, the entirety of energy revenue received by local jurisdictions is derived from local property tax revenue or payments in lieu of taxes (PILTs or PILOTs) for participating counties.

In 2021, our counties of interest received between $21,000 and $24.8 million from upstream mineral extraction. In 2022[3] our counties of interest received between $21,000 and $3.43 million from property tax revenue from midstream fossil fuel processing and downstream fossil fuel-based generation. While counties also receive revenue from other downstream sources such as transmission and distribution, we were unable to obtain consistent data for this project.

One of our counties - Paulding - also received significant revenue from downstream wind generation in 2022. In 2010, the Ohio General Assembly passed Senate Bill 232, which allows counties to accept PILTs for renewable energy developments. Under the statute, participating counties can charge wind developers between $6,000 – $8,000 per MW annually, and $7,000 per MW for solar projects. County commissioners may also negotiate additional service payments, not to exceed $9,000 per MW in total when combined with the PILT. In 2022 in Paulding County, their PILT program generated $4.53 million in revenue, with the largest portion of 45.2% going towards local schools. So far only 3 of our counties of interest have seen renewable developments, but it may become increasingly appealing given the amount of control afforded to local authorities to establish new streams of energy revenue.

Texas

Very few state-level energy-related collections are passed down to the local level in Texas. According to Texas Code Chapter 43, 24.5% of the state oil and gas production revenue and revenues from a utility tax and oil well servicing fee are allocated to a

[3] We used 2021 state-level data to estimate property taxes generated from upstream fossil fuel activities but were limited to 2022 property tax receipts for utilities and refineries.

program supporting school districts. These taxes represent nearly all of the state's energy revenues passed through to local jurisdictions. For eight of the ten Texas counties in our sample, these distributions represent less than 10% of their energy-related revenues in 2021. The exceptions are Harris County and Titus County. Harris County receives more of these revenues because it has a much larger population and therefore more school-aged children. Titus County does not have significant oil and gas activity and therefore has the fewest energy-related revenues overall, making the need-based state contributions a larger percentage of its energy-related revenue.

Rather than distributions from state-level taxes, locally-collected property taxes and payments in lieu of taxes provide the bulk of county- and sub-county- level energy revenues. These property taxes support counties, school districts and other taxing units and are collected on oil and gas properties, electric generation facilities, natural gas processing facilities, and oil refineries. However, since energy infrastructure is typically located in the unincorporated areas of counties which are outside municipal borders, few municipalities benefit.

Texas Economic Development Act (Texas Code Chapters 312 and 313), passed in 2001, authorizes local governments to provide property tax abatements and negotiate payments in lieu of taxes with businesses including renewable energy facilities. To limit impacts on school districts, the program allowed and provided mechanisms for calculating supplemental payments from facilities directly to school districts. The Chapter 313 program impacts 379 of the 1022 school districts in Texas; 20 of these are in our sample. The majority of the projects covered under the program in our sample are renewable energy facilities, however, oil and gas projects can also qualify. Critically, this program expired on December 31, 2022. While existing facilities are legacied into the program, any new facilities will be subject to full tax programs which may discourage new investments, but be a boon to school district funding as well as tax revenue for other affected districts.

Four of our 10 sample counties in Texas participate in the Chapter 312 program as well as a similar tax abatement program described in Texas Code Chapters 380 and 381. The payments were largely tied to the megawatt capacity at the facility with some payment schemes related to the appraised value of the investment in the property.

The lionshare of local energy-related tax revenue to most local jurisdictions comes from property taxes on oil and gas property. Aggregating revenues to all jurisdictions within a county, these revenues ranged from $0.22 million to $177.49 million in 2021. The next highest category of energy-related revenues was electric transmission and distribution utilities which range $1.36 million and $72.53 million. Renewable energy revenues per county range from $0.19 million to $10.68 million in the six sample counties with wind generation. Solar revenues range from $50,000 to $9.24 million. There are two counties that receive more in renewable-related revenues, than fossil-related revenues: Carson County and Nolan County.

West Virginia

The oil and gas severance tax is collected by the State and distributed back out to the counties. 75% is distributed to oil and gas producing counties. The remaining 25% is distributed to all counties and municipalities of the state, based on population. The coal tax is also shared between the State and the county. While oil and gas production has increased in the state, the rapid decline of the coal industry has had a significant impact on counties, and is geographically dependent, with the southern counties facing the most significant economic impacts. The State enacted a Reallocation Severance Tax in 2012 to offset some of the decreases in county revenue by reallocating some of the revenue from the coal severance tax apportioned to the State to counties instead, but this has not made up for the revenue lost due to decreased coal production.

Also important to the local governments are local property taxes. This applies to both coal mining and electrical generation. Active coal mines are assessed based on a calculation from the past 3 years of production, while property taxes on coal reserves are valued based on several factors including the average coal price. Electric power plants, regardless of the fuel source, are valued on a unit-basis, meaning all utility properties (generating, distribution, and transmission) are valued as a whole.

Given these two main revenue streams of production and property taxes, we find that our counties of interest rely most heavily on revenue generated from upstream fossil fuel activities. In 2021, our counties received $16.60 million from oil, gas, and coal severance taxes with $10.39 million from coal and $6.26 million from oil and gas with revenue being distributed to the counties, municipalities, and school districts.

Wyoming

In Wyoming, local jurisdictions receive energy revenue from several revenue streams: federal mineral lease revenue, state mineral production revenue, local property taxes, and a state wind production tax.

For the federal mineral royalties, around 4% of the first $200 million received by the state is allocated directly to cities and towns. In 2021, our counties of interest received between $110,000 and $900,000, representing between 0.4% and 22% of their total energy revenue.

For the state production tax, 9% of total revenue is distributed directly to cities and towns and 6% is distributed directly to counties. These distributions are based on a combination of population and the number of residents that work in energy-related industries, but we use population as a proxy for the purposes of this study. In addition, another 2.9% is deposited into the State's Road Construction and Maintenance Fund, which is then distributed to counties based on population, miles of roads, and assessed valuation. We used population as a proxy again here. Accounting for these three streams of distribution, municipalities within our counties of interest received between $34,000 and $2.89 million in aggregate, while county governments received between

$148,137 and $1.72 million. Across counties, this severance revenue accounted for between 0.2% and 16% of all energy revenue.

Like many states, property taxes still yielded the largest share of total energy revenue for our counties of interest. In 2021, counties received between $2.01 million and $122.1 million in property taxes, representing between 62% and 99% of total energy revenues. Across all our counties, we estimate that around 90% was derived from upstream extraction activities, 5% from midstream refineries and pipelines, and 5% from downstream power generation, transmission, and distribution. Considering that the State is responsible for assessing upstream oil/gas/coal reserves and downstream utilities (generators, transmission, distribution), while local assessors assess upstream oil/gas/coal personal property and coal/oil midstream processing, it illustrates the power the State has in influencing local property tax revenue given the mix of revenue from each energy phase.

Wyoming counties' final energy revenue stream comes from a wind generation tax. Enabling legislation allows counties to levy a $1/MW wind production tax on all electricity generated by wind power (Wyoming Statutes § 39-22). In 2021, this tax generated between $240,000 and $2.45 million for the four counties of interest that currently have wind developments, representing between 0.5% and 4% of their total energy revenues. Although this appears to be a much smaller source of revenue than federal royalties, severance, or property taxes, this is significant considering that these four counties that account for 95% of all wind development are some of the counties with the smallest upstream fossil fuel revenue. This could be an important avenue for asserting local control for attracting wind development to increase local revenue.

Summary

The vast majority of our sample counties across our states of interest receive far more revenues from fossil fuels than from renewable energy. For many counties the difference is by orders of magnitude. There are also 43 counties that receive no renewable-related revenues at all.

IV. Cross-State Comparison Example: Revenue per Nameplate Capacity

Given the variation in state policy, natural resources and data availability, it is difficult to compare counties in different states. We were not able to disaggregate the data by each of the energy types and phases in every state. However, the dataset compiled by this research can serve as a tool that other researchers might use to compare specific counties, states, energy types or phases in multiple analyses. Below we provide an example of the kind of analysis that can be done to compare certain states within our dataset.

In this example we compare the revenues received from electric generation facilities by all taxing jurisdictions within a county to the nameplate capacity of those facilities by energy type, specifically looking at fossil versus renewable energy generation. While this does not encompass all energy-related revenues that would need to be replaced in

an energy transition, it allows us to compare how generation is taxed between renewable and fossil-fired generation facilities under different tax regimes. This analysis compares Texas, North Dakota, and Ohio as three states for which our dataset provides disaggregated electric generation revenues, and states which also have quite different tax regimes.

Figure 1 on page 22 shows that in North Dakota, there is a strong relationship between the energy type and the dollars per megawatt of nameplate capacity, with minimal variation between counties. This reflects the state-level generation tax policies, leading to high consistency across the state. Further, taxation for wind, coal, and other electrical generation are set in different statutes (North Dakota Code 57-33.2-04 and 57-60-02) and by slightly different methods (see Table 2). Normalizing for capacity makes it clear that wind contributes more revenue per megawatt of nameplate capacity to local governments than coal or “other generation” facilities.

Table 2: North Dakota Electric Generation Tax Rates

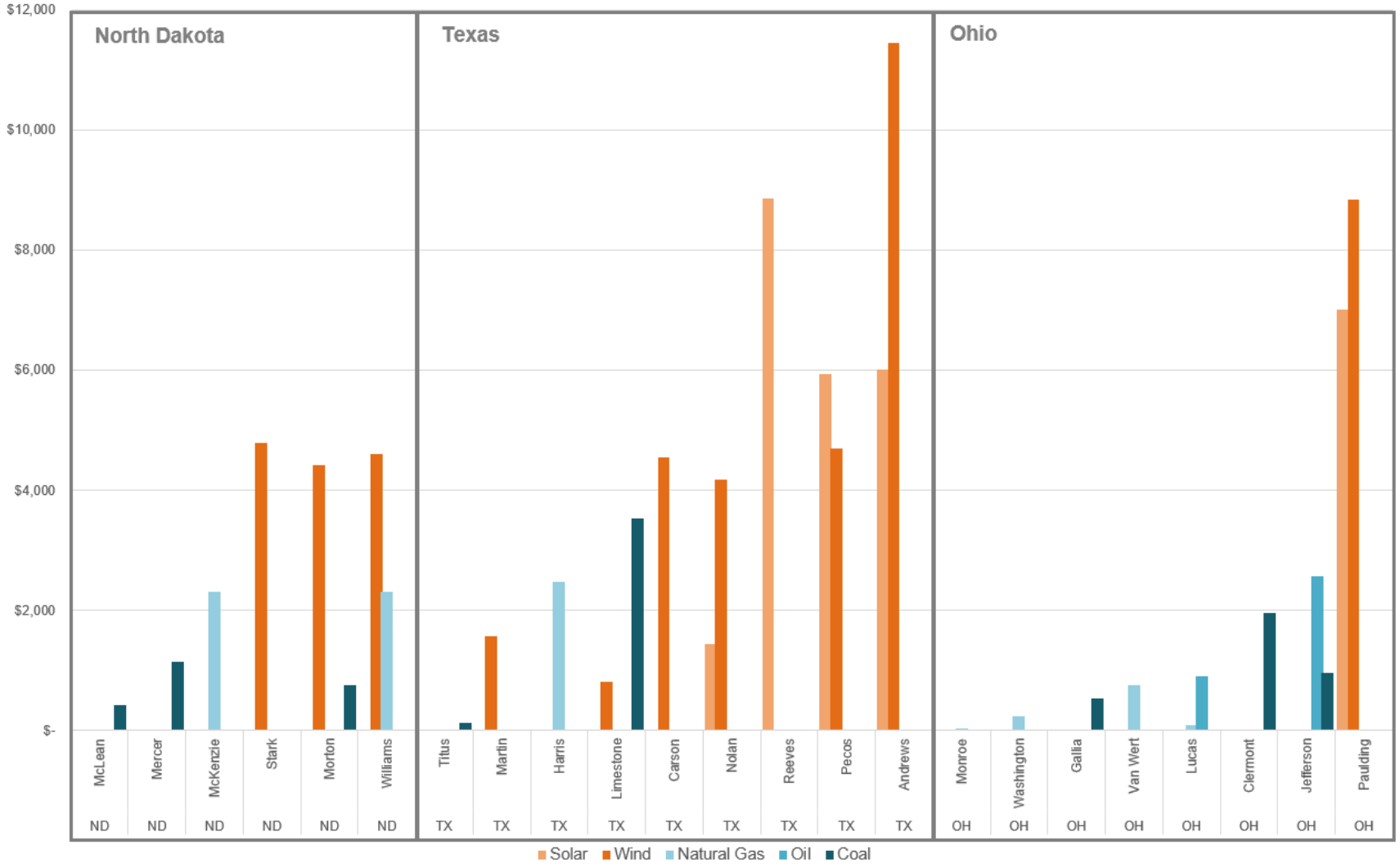
	Per kilowatt capacity	**Per kilowatt-hour generated**	**% distributed to local governments (2021)**
Coal Conversion	$0.00065 times 60% of the capacity times the number of hours in the taxable period	$0.00025	15%
Wind Generation	$2.50	$0.0005	100%
Other Generation	$0.50	$0.001	100%

Texas, on the other hand, has greater variation in the dollars per megawatt metric between its counties and across energy types. This reflects the greater level of control local jurisdictions have over property tax rates and payments in lieu of taxes from electric generation facilities in their jurisdiction. The school districts and county governments in several Texas counties have negotiated multiple payments in lieu of ad valorem property taxes with the renewable facilities within their borders.

Ohio has a similar tax system to Texas where revenues from electricity generation largely come from property taxes or payments in lieu of taxes. Similar to both Texas and North Dakota, renewables tend to provide local governments with more revenue per megawatt of nameplate capacity than other energy types. However, the difference between renewables and fossil fueled electric generation revenues per nameplate capacity is even more pronounced in Ohio than in Texas. This may be due to state-level policy which limits taxable value for non-renewables generation to 35% of market value and also sets a standardized PILT rate for renewables.

Where this brief analysis places nameplate capacity as the denominator, other analyses using our data could compare revenues per capita, or energy revenues as a share of total revenues in a given jurisdiction.

Figure 1: Local Revenues per Megawatt of Nameplate Capacity



Note: North Dakota data is from 2020, whereas Texas is from 2021 and Ohio is from 2022. We summarized revenues from electricity generating facilities on a basis of dollar per nameplate capacity as given by the U.S. Energy Information Administration.

V. Discussion

The completion of this report and its accompanying dataset and appendices have generated several key insights into county-level reliance on energy-related government revenues. First, there is enormous variation in the ways states and counties collect, code and report energy-related revenues. As we discussed in the Individual State Results section, there are a few standard practices applicable across most states with regard to energy-revenue policy especially when it comes to the *delegation of responsibilities* between state and local governments. However, there are fewer standard practices with regard to *reporting* these collections. It is, therefore, challenging to determine the best sources for the kind of data our dataset includes because some states require local governments to report information whereas others do not. In some states, collection of these revenues and payments is split among different bodies, each of which may take responsibility for distinct parts of the appraisal and collection process or for distinct jurisdictions which necessitates communication with multiple entities to gather a complete picture of even a single county. For state-level datasets where revenues are reported out by category, definitions of these categories vary across states and in some cases are not even clear to the staff compiling the reports, making it challenging to identify what kinds of energy revenues are included.

Second, in part because of the variation in collection and reporting, making comparisons across counties in different states requires making assumptions about definitions and distributions in order to disaggregate across energy types. We have documented these decisions for our sample counties in our Methods Appendices organized by state and energy revenue type which may vary across those states.

Finally, while we recognize the limitations of our dataset and this study, we believe this report contributes to the literature on local energy taxation in several ways. We identified ‘hot spots’ where changes to policies or economic conditions during an energy transition might have disproportionate impacts on certain jurisdictions. We also provide relative magnitudes of local energy revenues. This is especially critical when considering the gaps in public revenues likely to occur during an energy transition. Our analysis provides local data on revenues and policies to better understand the geographic distribution of local governments that may face the biggest challenges in replacing fossil revenues given their current revenues portfolio. While there are some counties that do receive more renewable-related revenues than fossil-related revenues, they are by far the minority. In most counties, there is an order of magnitude in the gap between renewables and fossil revenue, and that is when the county even has any renewable revenues at all. This poses a huge challenge for counties seeking to ensure resilient financial futures in the face of an energy transition.

It is not within the scope of this study to make policy recommendations regarding how state and local governments can mitigate vulnerability to an energy transition. Our data does, however, highlight benefits and drawbacks for local governments of certain state-level energy policies. Greater local control over energy-related property taxes or payments in lieu of taxes may allow individual counties to respond with greater agility as opportunities for energy transition arise. However, this does leave counties extremely

vulnerable where their particular mix of natural resources (fossil or renewable) is not amenable to direct replacement. Those counties seeking to replace fossil revenues with renewable revenues would also need to significantly expand renewable facilities and, perhaps, adjust property taxation policies, some of which are controlled at the state-level. Furthermore, this local control makes it exceedingly more difficult for state- and federal-level policymakers to fully know just how reliant–or not–these counties are on energy revenue.

State-level taxes have the benefit of allowing counties across the state to share the profit as well as the pain. In this way energy revenues could serve almost as an insurance pool. Texas, for example, already does through its collection and distribution of oil and gas production taxes. In counties already receiving significant revenues from the oil and gas industry or other high value properties, the state does not disburse oil and gas production revenues to school districts and instead recoups some property tax revenue from those districts to be allocated to others without high property tax revenues. However, few states have this kind of a system for fossil fuel revenues written into legislation presently, which could pose a challenge to its viability in the future with renewable revenues.

One recommendation we can make to states and counties is to begin collecting and tracking this data in a systematic manner, consistent across counties or states for the sake of being able to make data-driven policy decisions as the energy transition progresses.

This analysis alone is also not sufficient to conclude which local governments have the greatest potential for backfilling fossil revenues with new wind or solar development and which governments may lack the natural or political resources to fill their revenue gaps. In order to better understand vulnerability in individual counties and sub-county jurisdictions, future research could focus on several key areas. First, collecting measures of total revenues within these jurisdictions would provide a useful measure of relative dependence on fossil resources compared to non-energy revenue sources. Second, future researchers could scale up our work to additional counties within our sample states or use similar methods to expand to other states and energy types. One of the other limitations of this analysis is that we focus exclusively on wind and solar as alternatives to fossil fuel energy sources. This analysis discounts the role nuclear and hydropower currently play in our electricity mix, nor does it account for emerging technologies that could play significant roles in the future. Finally, more research is needed to align this data with other measures of renewable energy potential and factor in other aspects of an energy transition. While the dataset compiled by this research shows current discrepancies between renewable and fossil revenues, this is not indicative of how these may change during an energy transition depending on both distribution of renewable resources as well as local policy regarding renewable development. Additional research could calculate the possible renewable revenues a county or jurisdiction could receive under the present taxation scheme given different renewable energy development scenarios.

Our research provides a basis for further analysis of this type and others. We hope this dataset assists researchers interested in digging deeper into individual sample counties, scaling up our analysis within our sample states by employing similar methods, or using the data we have collected to make additional comparisons of targeted revenue and energy types.

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Methods Appendix

Office of Natural Resources Revenue (Federal)

Federal Mineral Lease Revenue

The U.S. Department of Interior Office of Natural Resources Revenue collects revenue from extraction of natural resources on federal and Native American lands. This revenue is distributed to various legislated funds, local governments, and federal agencies. This analysis focuses on the distribution of revenue to state and local governments.

Data Inputs

Unique ID	Source	Data Name	Description
Fed_8	Office of Natural Resources Revenue - U.S. Department of the Interior	Revenue	Summarizes federal revenue collected from federal lands across various states and counties from both offshore and onshore sources, and across multiple commodity types. Data available from 2003-2021, summarized by both calendar and fiscal years.
Fed_7	Office of Natural Resources Revenue - U.S. Department of the Interior	Disbursements	Summarizes the distribution of revenue collected from the extraction of natural resources on federal and Native American lands. Tracks disbursements to legislative funds, federal agencies, state govts, and local governments. Data available from 2004-2021 (fiscal years only).

Calculations and Assumptions

1) Compile and Summarize ONRR Revenue Data

We collected ONRR Revenue Data and created a Pivot table that summarizes revenue collection by State, Fiscal Year, and Commodity.

2) Estimate revenue percentages

We then isolated the following commodities, and calculated their percentage relative to all revenue collected from each state in each fiscal year: “Coal”, “Gas”, “NG Liquids”, “Oil,” “Oil & Gas (pre-production),” and “Oil Shale.”

3) Compile and Summarize ONRR Disbursement Data

We then collected ONRR Disbursement data and created a Pivot table that summarizes revenue distribution by State, Fiscal Year, and County (when applicable).

4) Estimate Distribution by Commodity

We then multiplied the commodity percentages by the isolated disbursement amounts to estimate what portion of each distribution could be attributed to our fossil fuel types of interest.

Output

An estimate of federal mineral lease revenue distributions, estimated by fossil fuel type.

Alaska

Table of Contents

This document details our methods for collecting and estimating amounts from those taxes, royalties, fees and payments that are distributed to the local level in Alaska.

State Collections

Electric cooperative tax collected by the Alaska Department of Revenue

Local Collections

Property Taxes paid by oil and gas extraction, processing, and pipeline companies.

Electric Cooperative Tax

Policy

Alaska levies an electric cooperative tax on kilowatt hours furnished by qualified electric cooperatives recognized under Alaska Statutes 10.25. Cooperatives pay the electric cooperative tax in lieu of corporate net income and excise taxes. The Department of Revenue collects and distributes revenue. 100% of the revenue is shared to organized boroughs or cities proportionally, where the revenue was earned.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
AK_1	Alaska Department of Revenue	Shared Taxes and Fees Annual Report	Annual Reports summarize shared tax and fee programs administered by the Department of Revenue and reports current and historical amounts shared to the municipalities in Alaska.

Unique ID	Source	Data Name, Shorthand	Description
Fed_4	U.S. Energy Information Administration	Form EIA-860	Form 860m data summarizes utilities, power plants, generators, and fuel type, as well as wind and solar facilities, all by county.

Calculations and Assumptions

1) Collect Revenue Distribution Data from Department of Revenue

Using the Shared Taxes and Fees Annual Reports, we consolidated data for all municipalities and boroughs that have received revenue from the electric cooperative tax since 2012.

2) Estimate Proportions of Electricity generation in each borough

Next, we used federal EIA-860 data to calculate proportions of electricity generation within each borough, based on nameplate capacity.

3) Disaggregate Revenue by Energy Type

Finally, we multiplied the actual revenue received by each municipality by the generation ratios calculated in step 2 in order to estimate how much revenue can be attributed to each type of electricity generation.

Output

Revenue from the Electric Cooperative Tax, disaggregated by municipality, year, and electricity generation type.

Property Tax

Policy

The State of Alaska allows municipalities to levy taxes on oil and gas properties within their jurisdictions. However, only fourteen of the eighteen boroughs, and eleven cities levy property taxes; smaller municipalities tend to favor sales taxes because they lack a sufficient tax base to support the property tax. Of our three boroughs of interest, Kenai Peninsula and North Slope levy a local property tax (AK_7). While Denali does levy a local severance tax, in reviewing the borough's annual financial reports, we determined the revenue to be *de minimis* (AK_6).

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
AK_2	Department of Commerce, Community, and Economic Development - Division of Community and Regional Affairs	Local Oil & Gas Property Tax Revenue	From 2012-2015, the DCRA published "Local Oil & Gas Property Tax Revenue" dataset.
AK_3	Department of Commerce, Community, and Economic Development - Division of Community and Regional Affairs	Supplemental Oil and Gas Property Tax Revenue	Oil and Gas Property Tax Revenue for municipalities in our Boroughs of interest for years 2016-2021.
AK_4	Kenai Peninsula Finance Department	Annual Comprehensive Financial Reports	Property Tax Section of the Comprehensive Financial Reports include a summary of Total Assessed Property Values and Principle Property Taxpayers for each year.

Unique ID	Source	Data Name, Shorthand	Description
AK_5	North Slope Administration and Finance Department	Financial and Budget Reports	Property Tax Section of the Comprehensive Financial Reports include a summary of Total Assessed Property Values and Principle Property Taxpayers for each year.
AK_6	Denali Finance Department	Annual Financial Reports	Annual Reports include local Severance tax, which was determined to be de minimis.

Calculations and Assumptions

1) Compile total Oil and Gas Property Tax Revenue

First, we began by compiling oil and gas property tax revenue from the State's Division of Community and Local Affairs (DCRA). For years 2012-2015, we collected DCRA's Local Oil and Gas Property Tax Revenue reports. This publication was discontinued in 2015, so we contacted DCRA and they provided a summary of revenue for our boroughs of interest.

We ultimately did not use this data for our final property tax estimates because we were unable to obtain a clear definition of what was included in "oil and gas property" and were thus unable to disaggregate it in a meaningful way. However, the data from 2012-2015 was helpful for establishing how little oil and gas property tax revenue is collected by cities within our boroughs of interest. With this information, we determined city-levied oil and gas property tax to be de minimis, and attributed all other revenue data to boroughs alone.

2) Compile Data from Highest Taxpayers

Our alternative method for estimating property tax from oil and gas revenues was to examine the top taxpayers summarized in the comprehensive financial reports from the Kenai Peninsula and North Slope Boroughs. Both sets of financial reports provide summaries of "Top Taxpayers" or "Principle Taxpayers", which include pipelines, refineries, and drilling/exploration companies.

3) Identify energy-related Taxpayers and identify energy types and phases

Next, we used pivot tables to create lists of all the unique top taxpayers in both boroughs between 2012 and 2021. We then reviewed the lists to determine which taxpayers were energy entities, which records could be consolidated (because of company acquisitions or duplicates), and which energy types and phases were most appropriate. Using the information from our crosswalk, we standardized the taxpayer names for both boroughs.

4) Estimate the tax collected from each taxpayer in Kenai Peninsula Borough

While North Slope Borough financial reports reported the total taxes levied on top taxpayers, the Kenai Peninsula financial reports only included their assessed value for the year. We used the total assessed value and total annual tax collections for each year to calculate the percent of assessed value and estimated tax collections for each of the top taxpayers.

5) Assign final energy types and phases

We then used the information from our crosswalk to populate the energy types and phases for each taxpayer.

6) Consolidate tax revenue from individual taxpayers

Finally, we used pivot tables to consolidate records from individual taxpayers into unique records for each year, energy type, and energy phase.

Output

Oil and gas property tax data based on top taxpayers in the Kenai Peninsula and North Slope boroughs.

Sources

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
AK_1	Alaska Department of Revenue	Shared Taxes and Fees Annual Report	Annual Reports summarize shared tax and fee programs and report current and historical amounts shared to the municipalities in Alaska.	Public	Electric Cooperative Tax	2012-2021	https://tax.alaska.gov/programs/sourcebook/index.aspx
AK_2	Division of Community and Regional Affairs	Local Oil & Gas Property Tax Revenue	From 2012 - 2015, DCRA published "Local Oil & Gas Property Tax Revenue" dataset. It was discontinued after 2015.	Public	Property Tax	2012-2015	https://www.commerce.alaska.gov/dcra/admin/Taxable
AK_3	Division of Community and Regional Affairs	Supplemental Oil and Gas Property Tax Revenue	After reaching out to DCRA, they provided us with high-level summary of Oil and Gas Property Tax Revenue for our Boroughs of interest.	Direct Sent	Property Tax	2016-2021	https://www.commerce.alaska.gov/web/
AK_4	Kenai Peninsula Finance Department	Annual Comprehensive Financial Reports	Property Tax Section of the Comprehensive Financial Reports include a summary of Total Assessed Property Values and Principle Property Taxpayers for each year.	Public	Property Tax	2012-2021	https://www.kpb.us/finance-dept/about-finance
AK_5	North Slope Administration and Finance Department	Financial and Budget Reports	Property Tax Section of the Comprehensive Financial Reports include a summary of Total Assessed Property Values and Principle Property Taxpayers for each year.	Public	Property Tax	2015-2021	https://www.north-slope.org/departments/administration-finance/
AK_6	Denali Finance Department	Annual Financial Reports	Annual Reports include local Severance tax, which was determined to be de minimis.	Public	Local Severance - de minimis	2017-2021	https://denaliborough.govoffice.com/finance?&pri=0

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
AK_7	Division of Community and Regional Affairs	Local Government Resource Desk - Taxation & Assessment	Summary of Property tax policy and trends in the State of Alaska.	Public	Policy Information	na	https://www.commerce.alaska.gov/web/dcra/LocalGovernmentResourceDesk/TaxationAssessment/PropertyTax.aspx
AK_8	Alaska Department of Revenue - Tax Division	Revenue Resources Book	Summary of all tax revenue policies in the State of Alaska.	Public	Policy Information	na	https://www.tax.alaska.gov/programs/sourcebook/index.aspx
AK_9	Division of Community and Regional Affairs	Alaska Taxable Reports	Summary of municipal taxation rates and policies, as well as assessment ("Full Value Determination").	Public	Policy Information	na	https://www.commerce.alaska.gov/web/dcra/OfficeoftheStateAssessor/AlaskaTaxable-New.aspx
AK_10	Alaska Department of Revenue - Tax Division	Annual Reports	Summary of tax policies and annual revenue.	Public	Policy Information	na	http://tax.alaska.gov/programs/sourcebook/index.aspx

California

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This document details our methods for collecting and estimating amounts from those taxes, royalties, fees and payments that are distributed to the local level in California.

San Bernardino County Property Taxes

Property taxes on oil and gas production properties, natural gas electric generation facilities, solar electric generation facilities, and electric transmission properties.

Los Angeles County Property Taxes

Property taxes on natural gas electric generation facilities and solar electric generation facilities.

San Bernadino County Property Tax

Policy

All energy-related tax revenue that is received by counties is from property taxes. California counties do not directly receive revenue from severance taxes or royalties. The State Board of Equalization is responsible for assessing publicly held utilities, which is normally inclusive of natural gas electric generating facilities. However, the counties are most often responsible for assessing solar electric generating facilities.

Additionally, under Proposition 13, passed in 1978, California assesses properties based on the value of the property at the time of acquisition The assessed value of a property is updated only when a property changes ownership, when there is new construction, or with inflation. However, the assessed value of a property cannot increase more than two percent each year. Proposition 13 also limited the property tax rate to no more than 1% of a property's total value, thus limiting the ability of counties to significantly raise revenues with increased rates.

Utilities including electric generating plants and pipelines, assessed by the Board of Equalization are not subject to the valuation rules of Proposition 13 and are taxed at their current market value (CA_8).

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
CA_1	San Bernardino County Assessor-County-Clerk	Annual Secured Roll	Includes property tax data including land use type, TRA, land value, and improvement value from 2014-2021.
CA_2	San Bernardino County Assessor-Recorder-County Clerk Parcel Map	County Parcel Map	Parcel data available with geographic information.
CA_3	County of San Bernardino Property Information Management System	County Property Management System	Property details (assessed value, land-use codes, ownership history, etc.) available with parcel number.

Calculations and Assumptions

1) Download and Convert Property Tax Data

We downloaded the .txt file of the Annual Secured Tax Roll from the County Assessor and converted the file to a .csv file using the instructions on the assessor website. We added the relevant property data to a spreadsheet (Roll Year, Land Use Code, TRA, Land Value, and Improvement Value).

2) Download and Convert TRA Rate Data

We downloaded the PDF files of the TRA rates from the County Auditor-Controller/Treasurer/Tax Collector and converted the documents to .csv files.

3) Sort Property Tax for Relevant Land Use Codes

We sorted the property tax data for the following land use codes: 142 (Oil and Gas Production), 160 (Electric Power Transmission), 161 (Electric Power Plant), 162, and 163 (Co-Generation Solar). We could not verify the energy sources from land use code 162 (Electric Co-Generation) and the values were determined to be *de minimus*, so those values were omitted.

4) Match and Apply TRA Rates to TRAs of Relevant Properties

We matched the TRAs from the property tax data to the associate TRA rates and multiplied the rate of each associated TRA by the total value of each property (sum of land value and improvement value).

5) Verify Electric Generation Production Source

We downloaded EIA 860-m data on electric generators and electric generating plants in San Bernardino County to get an energy source and address for each plant. We used the EIA's Energy Infrastructure Map to find the location of the plant to identify the property on the San Bernardino Assessor's parcel map. We verified that the property was the generating plant's property by using the satellite images provided by the parcel map and matching the owner's name with the utility's name provided from the EIA data. The parcel map provided a parcel number which we used to lookup property details on San Bernardino's Assessor's property information management system. This site provided information on land-use code which allowed us to verify that all solar generating facilities are coded as Solar Cogeneration, Hydropower is coded as vacant/other, and wind is not utility-scale, so is coded as light industrial or commercial. Additionally, it allowed us to verify that natural gas electric generating facilities are coded as electric power plants. Based on this information, we assumed that all properties on the tax roll that are identified as electric power plants (land use code 161) are natural gas electric generating facilities.

6) Sum Up Property Tax Types

We summed up all the taxes levied for each land use code to estimate the total property taxes collected at the county level for each property tax type (oil and gas production, natural gas electric generation, solar electric generation, and electric transmission).

Output

Property tax revenue from oil and gas production, natural gas electric generation, solar electric generation, and electric transmission properties.

Los Angeles County Property Tax

Policy

All energy-related tax revenue that is received by counties is from property taxes. California counties do not directly receive revenue from severance taxes or royalties. The State Board of Equalization is responsible for assessing publicly held utilities, which is normally inclusive of natural gas electric generating facilities. However, the counties are most often responsible for assessing solar electric generating facilities.

Additionally, under Proposition 13, passed in 1978, California assesses properties based on the value of the property at the time of acquisition The assessed value of a property is updated only when a property changes ownership, when there is new construction, or with inflation. However, the assessed value of a property cannot increase more than two percent each year. Proposition 13 also limited the property tax rate to no more than 1% of a property's total value, thus limiting the ability of counties to significantly raise revenues with increased rates (CA_8).

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
CA_4	Los Angeles County Assessor	Property Lookup Portal	Includes property tax data including assessed value, TRA, land value, and improvement value for 2022.
CA_5	Los Angeles County Auditor	Tax Rate Area Lookup	Includes TRA rates at county and sub-county level.

Calculations and Assumptions

1) Compile a list of relevant facilities across fiscal years

We used EIA 860-m 2021 Plant to collect names, operators, and addresses of currently operating natural gas, petroleum powerplants, wind and solar facilities in Los Angeles County. We cross-referenced this with EIA 860-m 2021 Generator data to ensure we were addressing facilities where generators used in-scope technologies.

2) Query Property Tax Receipt Databases

We searched the plant addresses in the Los Angeles County Assessor Portal and copied the 2022 assessed value and Tax Rate Area codes (TRA).

3) Copy TRA Rate Data

We copied the TRA rates from the County Auditor for the tax rate areas of the plants.

4) Match and Apply TRA Rates to TRAs of Relevant Properties

We applied the associated TRA rates to each property.

5) Sum Up Property Tax Types

We summed up all the taxes levied for all solar and natural gas electric generating facilities for all associated county and sub-county taxing jurisdictions.

Output

Property tax revenue from solar and natural gas electric generation facilities.

Sources

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
CA_1	San Bernardino County Assessor-County-Clerk	Annual Secured Roll	Property tax data including land use type, TRA, land value, and improvement value from 2014-2021.	Public	Property Tax	2014-2021	https://arc.sbcounty.gov/property-information/
CA_2	San Bernardino County Assessor-Recorder-County Clerk Parcel Map	County Parcel Map	Parcel data available with geographic information.	Public	Property Tax	2021	https://arcpropertyinfo.sbcounty.gov/
CA_3	County of San Bernardino Property Information Management System	County Property Management System	Property details (assessed value, land-use codes, ownership history, etc.) available with parcel number.	Public	Property Tax	varies	http://www.sbcounty.gov/assessor/pims/PIMSINTERFACE.ASPX
CA_4	Los Angeles County Assessor	Property Lookup Portal	Property tax data including assessed value, TRA, land value, and improvement value for 2022.	Public	Property Tax	2022	https://portal.assessor.lacounty.gov/
CA_5	Los Angeles County Auditor	TRA Rate Area Lookup	TRA rates at county and sub-county level	Public	Property Tax	2021-2023	https://auditor.lacounty.gov/tax-rate-area-lookup/
CA_6	San Bernardino County Auditor/Controller/ Treasurer/Tax Collector	Tax Rate Area Tax Rates	Tax Rate Area Rates	Public	Property Tax	2014-2021	https://www.sbcounty.gov/ATC/Services/Documents

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
CA_7	San Bernardino County Assessor-County-Clerk	Parcel Land Use Code Description	Descriptions of land use codes from tax roll	Public	Property Tax	2003	https://dts.edatatrace.com/dts3/content/doc/whelp/mergedProjects/dts2tt/mergedProjects/dts2ttcs/parcel_use_codes_sanbern.htm
CA_8	California Board of Equalization	California Property Tax: An Overview	Description of property tax policies in California including assessment and distribution information	Public	Property Tax	2018	https://www.boe.ca.gov/proptaxes/pdf/pub29.pdf
CA_9	Kern County Planning and Natural Resource Department	Report-Kern County Oil and Gas Property Tax Revenue (2018-2019)	Property Tax Revenue report for Kern County 2018-2019 broken out by county, cities, school, and special districts	Public	Property Tax	2018-2019	https://psbweb.co.kern.ca.us/planning/pdfs/kc_oil_gas_prop_tax_revenue_report.pdf

Colorado

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This document details our methods for collecting and estimating amounts from those taxes, royalties, fees and payments that are distributed to the local level in Colorado.

Federal Collections

Federal Mineral Lease Revenue distributed via formulaic distribution and discretionary grants.

State Collections

Severance Revenue distributed via formulaic distribution and discretionary grants.

Local Collections

Property Taxes levied on mineral reserves, Power Plants, Renewable Facilities, Refineries and Natural Gas Processing and Distribution systems, Electric Companies, and Pipelines

Federal Mineral Lease Revenue

Policy

40% of federal mineral lease revenue and 50% of bonus payments received by the State of Colorado are deposited into the Local Government Mineral Impact Fund, which is managed by Colorado's Department of Local Affairs (DOLA). DOLA distributes 50% of this revenue through discretionary grant awards and 50% through formulaic direct distribution to counties, local governments, and school districts.

For grant awards, DOLA prioritizes communities "most directly and substantially impacted by production of energy resources on federal mineral lands." For the formulaic direct distribution, DOLA allocates funds to counties based on the proportion of total federal revenue derived from energy production in each county, as well as the proportion of employees of mines or facilities related to energy production who reside within the county. DOLA allocates funds to municipalities, school districts, and counties' unincorporated areas based on the proportion of employees (all industries) reported as residents; the proportion of the population compared to the state; and the proportion of road miles compared to the state total. The exact formulas used to calculate the distribution are not included in statute (Colorado Revised Statutes, 2§ 34-63-102).

Data Inputs

Unique ID	Source	Data Name	Description
CO_2	Colorado Department of Local Affairs	Federal Mineral Lease Distribution and Grant Reports	Reports include direct distribution of Federal Mineral Lease revenue to local jurisdictions (county, municipal, school districts), and summary of discretionary grants. Data is not disaggregated by energy type.
CO_6	Colorado Department of Local Affairs	Active Colorado Municipalities	Record of all active Municipalities in Colorado, including “Home Rule Municipalities”, “Statutory Cities,” “Statutory Towns,” and “Territorial Charter Municipalities.”
CO_7	Colorado Department of Education	CDE School District Data	"All Colorado Schools.XLS", provided on the School and District Data page, lists all school districts and principle counties. Note that the spreadsheet does not explicitly list districts that extend into multiple jurisdictions.

Calculations and Assumptions

1) Estimate Federal Mineral Lease Revenue Proportions by Commodity:

Using ONRR Revenue data, we estimated the proportion of federal mineral lease revenue by State, Fiscal Year, and Commodity. See the ONRR Methods Documentation for more details. Note that because ONRR revenue data was not available for 2022, we used an average of the last 5 years.

Formulaic Distribution

2) Compile Distribution Data

Using DOLA's Direct Distribution Reports, we downloaded revenue distribution data for Federal Mineral Lease Revenue. We determined the “umbrella county” for each receiving jurisdiction using Municipalities Data from the Department of Local Affairs and School District Data from the Colorado Department of Education.

3) Calculate funding distribution ratios for municipalities spanning multiple Counties:

According to the DOLA Municipalities data, some municipalities span multiple counties. However, in the Direct Distribution Reports for 2012-2021, DOLA provided only the lump sum of revenue distributed to each of these municipalities. In 2022, they began providing disaggregated data showing the revenue that was distributed to each portion of the municipality in each county. Using this 2022 data, we calculated the percent of revenue distributed to each county, and retroactively applied those percentages to the data from 2012-2021.

4) Calculate funding distribution ratios for school districts spanning multiple Counties:

In the 2022 Direct Distribution Reports, DOLA also began providing school district revenue disaggregated by county. (Note that the CO Department of Education’s downloadable school district data does not identify any school districts as spanning multiple counties, but PDF maps on the website confirm the overlap). We identified 19 school districts that partially overlapped our counties of interest, but determined all but one of the district payments to be *de minimis*. For the St. Vrain Valley RE 1J School District, we found that although 2012-2021 payments were fully attributed to Boulder County, Weld County received 95% of the school district’s federal mineral lease revenue in 2022. We used this percentage to retroactively allocate revenue to Weld County for years 2012-2021.

5) Estimate Distributions by Commodity

We then multiplied the annual distributions for each county, municipality, and school district by the annual commodity proportions estimated using the ONRR Revenue Data.

Discretionary Grants

6) Compile Grant Data

Using DOLA's Direct Distribution Reports, we downloaded grant award data for Federal Mineral Lease Revenue. For the grants, none of the awards were made to jurisdictions that spanned multiple counties.

7) Estimate Distributions by Commodity

We then multiplied the annual distributions for each county, municipality, and school district by the annual commodity proportions estimated using the ONRR Revenue Data.

Output

Estimations of revenue grant and formulaic distributions for all Colorado counties, municipalities, and school districts, disaggregated by fiscal year and commodity type.

State Severance Tax

Policy

Severance taxes are collected by the Colorado Department of Revenue, 50% of which is deposited into the Department of Local Affairs' Government Severance Tax Fund. Of the funds received by DOLA, 70% is available for discretionary loans and grants to local governments socially or economically impacted by the mineral extraction industry, while the remaining 30% is distributed directly to local governments based on the geographic location of energy industry employees, mine and well permits, and overall mineral production. The exact formulas used to calculate the distribution are not included in statute (Colorado Revised Statutes, § 39-29-1109).

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
CO_4	Colorado General Assembly	Severance Tax Data	Summary of State Severance Tax policy includes a data visualization that shows the breakdown of revenue by mineral type (coal, oil and gas, molybdenum and metallics).

Unique ID	Source	Data Name, Shorthand	Description
CO_3	Colorado Department of Local Affairs	State Severance Distribution and Grant Reports	Reports include direct distribution of Severance revenue to local jurisdictions (counties and municipalities), and summary of discretionary grants. Data is not disaggregated by energy type.
CO_6	Colorado Department of Local Affairs	DOLA Municipalities Data	Record of all active Municipalities in Colorado, including "Home Rule Municipalities", "Statutory Cities," "Statutory Towns," and "Territorial Charter Municipalities."

Calculations and Assumptions

1) Estimate severance revenue percentage by mineral type

All severance revenue is deposited into the Severance Tax Fund managed by DOLA. Though the funds are distributed based on the presence of energy industry employees, mine and well permits, and overall mineral production, the funds from each fossil fuel commodity are not accounted for separately. Therefore, we are assuming uniform distribution of all severance tax revenue across all counties. To estimate this, we used summary data provided by the Colorado General Assembly and calculated the total percentage of revenue derived from coal vs. oil and gas. Note that because severance revenue data was not available for 2022, we used an average of the last 5 years.

Formulaic Distribution

2) Compile Distribution Data

Using DOLA's Direct Distribution Reports, we downloaded revenue distribution data for the State's Severance Revenue. We determined the "umbrella county" for each receiving jurisdiction using Municipalities Data from the Department of Local Affairs. Note that in 2020, the Department of Local Affairs issued a second "expedited" round of Severance Revenue distribution. As a result, our raw data includes two distribution points for each municipality in 2020, and it appears that the distributions for 2021 are lower than average.

3) Calculate funding distribution ratios for municipalities spanning multiple Counties:

According to the DOLA Municipalities data, several municipalities in our counties of interest span multiple counties. However, in the Direct Distribution Reports for 2012-2021, DOLA provided only the lump sum of revenue distributed to each of these municipalities. In 2022, they began providing disaggregated data showing the revenue that was distributed to each portion of the municipality in each county. Using this 2022 data, we calculated the percent of revenue distributed to each county, and retroactively applied those percentages to the data from 2012-2021.

4) Estimate Distributions by Commodity

We then multiplied the annual distributions for each county, municipality, and school district by the severance revenue percentage by mineral type estimated using the data from the Colorado General Assembly.

Discretionary Grants

5) Compile Grant Data

Using DOLA's Direct Distribution Reports, we downloaded grant award data.

6) Distribute Grant Awards for municipalities spanning multiple Counties:

We used the “Sev_Dist Proportions” to adjust grant awards for municipalities that spanned multiple counties. For grants awarded to other special districts or Associations of Governments that spanned multiple counties, we split the grant awards evenly across all counties. For example, if an Association of Governments was listed as the grant recipient, and the DOLA report listed 5 counties, we allocated 20% of the grant award to each county.

7) Estimate Distributions by Commodity

We then multiplied the annual distributions for each county, municipality, and school district by the annual commodity proportions estimated using the ONRR Revenue Data.

Output

Estimations of severance tax revenue distributions for all Colorado counties and municipalities disaggregated by fiscal year and commodity type.

Property Tax

Policy

In Colorado, oil, gas, and coal reserves are all subject to property taxes. Oil and natural gas production/real property are assessed at 87.5 % of its value, while associated personal property are assessed at the nonresidential assessment rate of 29%. Coal reserves are also assessed at 29 % of their value. Public Utilities and renewable facilities (wind and solar) with nameplate capacities larger than 2 MW are assessed by the State. Renewable facilities less than 2 MW are assessed locally.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
CO_1	Colorado Department of Local Affairs	DOLA Annual Reports	The Annual Report to the Governor and the General Assembly provides annual statistical and summary property tax information for the state of Colorado. It includes summaries of total property tax revenue received by local governments and special districts each year and detailed assessed values by county.
CO_8	Colorado Energy Office	CO Electric Utilities	Lists Investor-Owned, Rural/Cooperative, and Public/Municipal Utilities.
Fed_4	U.S. Energy Information Administration	Form EIA-860	These spreadsheets identify utilities, power plants, generators, wind facilities, and solar facilities by county.

Unique ID	Source	Data Name, Shorthand	Description
Fed_10	U.S. Energy Information Administration	Natural Gas Processing Facilities	Includes Natural Gas Processing Facilities across the US by county.
Fed_11	U.S. Energy Information Administration	Petroleum Refineries	Record of operating crude oil refineries.

Calculations and Assumptions

1) Compile Total Taxable Values For Relevant Property Classifications

First, we collected total taxable data from the following sections and property class categories of interest.

Section V. Public Utilities Assessed by the State by County includes the categories below. We reached out to DOLA staff for definitions of each category and received the following information (in quotes):

- EG Generation Group Electric: "The EG group covers all renewable energy generation property placed into service on or after January 1, 2001 as well as:
  - All wind energy facilities placed into service on or after January 1, 2006;
  - All solar energy facilities placed into service after January 1, 2009;
  - All biomass, geothermal, and small or low impact hydroelectric facilities placed into service on or after January 1, 2010;
  - Statutorily defined clean energy resources and energy storage facilities."
- Major Electric**:** "These are the traditional monopoly investor-owned utilities. There are some exceptions to this (a few co-ops are included in this category for valuation reasons)."

- EN Generation Group Electric**: "**This group is made up of independent power producers. Most of these are traditional fossil fuel facilities but there are a small number of older renewable energy facilities included in this group as well."
- Rural Electric**:** "These are rural cooperatives (owned by the customers) performing the distribution outside of the IOU territories."
- Gas Pipeline Distribution: "Categorized by business service provided. Pipelines delivering gas to other distribution providers or to end users."
- Fluid Pipelines: "Categorized by business structure. Fluid pipelines are categorized as Master Limited Partnerships (MLP)."
- Gas Transmission Pipelines: "Categorized by business structure. Transmission pipelines are categorized as Non-Master Limited Partnerships (Non-MLP)."

We developed the following crosswalks to categorize each utility class by energy type:

DOLA Categories	**Our Energy Type Categories**
EG Generation Group Electric	Use EIA data to disaggregate between energy types based on nameplate capacity and what is present in each county **(see crosswalk in step 6).**
Major Electric	Unable to disaggregate between generation, transmission, and distribution. Categorize as "Downstream_GenTransDist".
EN Generation Group Electric	Use EIA data to disaggregate between energy types based on nameplate capacity and what is present in each county **(see crosswalk in step 6).**
Rural Electric	Unable to disaggregate between generation, transmission, and distribution. Categorize as "Downstream_GenTransDist".
Gas Pipeline Distribution	Downstream_Distribution
Fluid Pipelines	Midstream_Pipeline
Gas Transmission Pipelines	Midstream_Pipeline

Section VI. Taxable Real and Personal Property Assessed by Counties summarizes taxable values for the following categories of interest. We referred to EIA-860 generator data to determine which counties' renewable energy revenue could be attributed to wind, solar, or both. We also confirmed using EIA-757 and -820 data that all "Industrial - Refining/Petroleum" revenue in our counties of interest comes from natural gas processing, as opposed to petroleum liquids.

DOLA Categories	**Our Energy Phase and Type Categories**
Commercial - Renewable Energy Personal	Use EIA data to disaggregate between wind and solar based on nameplate capacity and what is present in each county **(see crosswalk in step 6).**
Industrial - Refining/Petroleum	Midstream Processing NG
Natural Resources - Coal	Upstream Coal
Producing mines - Oil/shale	Upstream Oil
Oil and Gas - Oil Primary	Upstream Oil
Oil and Gas - Oil Secondary	Upstream Oil
Oil and Gas - Gas Primary	Upstream NG
Oil and Gas - Gas Secondary	Upstream NG
Oil and Gas - Shale	Upstream Oil
Oil and Gas - Natural Gas Liquids and Condensate	Upstream NG
Oil and Gas - Pipeline Gathering System	Midstream Oil and Gas
Oil and Gas - Rotary Drill Rigs	Upstream Oil and Gas

2) Estimate Taxable Value Ratios by County

Using the data described above, as well as the Total Taxable values reported by county in Section VIII. "Summary of Assessments for All Properties", we calculated the proportions of total taxable value in each county by each property class and fiscal year.

3) Compile Historic Revenue Data

We then collected historic tax revenue data from Section XII. Revenue and Levy. We created the following crosswalk to translate from the jurisdictions defined in the DOLA Annual Reports and our project:

DOLA Jurisdictions	Our Jurisdiction Categories
County	County
Cities and Towns	Municipal
School Districts	School District
Special and Local College Districts	Other

4) Estimate revenue ratios

Using the revenue data we calculated the proportions of revenue collected by each jurisdiction, in each county per year.

5) Estimate property tax revenue by property class, county, and jurisdiction

We then multiplied the total revenue for each county in each fiscal year by the property class ratios to estimate how much revenue is received by each county from each type of property class.

6) Disaggregate revenue by Energy Type and Phase

We then disaggregated the revenue estimates by energy type. We did this by creating a pivot table of the assessed values for our three property classifications and comparing it to EIA-860 generator data and the Colorado Energy Office's categorization of investor-owned, rural/cooperative, and public/municipal utilities. We also supplemented this by looking up company websites for independent power producers where applicable.

With this information, we were able to classify generators in each county, which we used to either determine the sole energy type associated with the revenue, or to determine which energy types we should use to disaggregate by MW of nameplate capacity. Ultimately, we only needed to disaggregate the Commercial Renewable Energy, EG Generation, and EN Generation categories for Logan, Pueblo, and Weld counties. We used the ratios we created to split the estimated revenue where needed.

Output

Property tax revenue, estimated for each county, jurisdiction, and property class.

Sources

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
CO_1	Colorado Department of Local Affairs	Annual Reports	The Annual Report to the Governor and the General Assembly provides annual statistical and summary property tax information for the state of Colorado. It includes summaries of total property tax revenue received by local governments and special districts each year and detailed assessed values by county.	Public	Property Tax	1912-2021	https://cdola.colorado.gov/publications/annual-reports
CO_2	Colorado Department of Local Affairs	Federal Mineral Lease Distribution and Grant Reports	Reports include direct distribution of Federal Mineral Lease revenue to local jurisdictions (county, municipal, school districts), and summary of discretionary grants. Data is not disaggregated by energy type.	Public	Federal Lands	2012-2022	https://cdola.colorado.gov/funding-programs/direct-distribution-severance-tax-federal-mineral-lease
CO_3	Colorado Department of Local Affairs	State Severance Distribution and Grant Reports	Reports include direct distribution of Severance revenue to local jurisdictions (counties and municipalities), and summary of discretionary grants. Data is not disaggregated by energy type.	Public	Severance	2012-2022	https://cdola.colorado.gov/funding-programs/direct-distribution-severance-tax-federal-mineral-lease
CO_4	Colorado General Assembly	Severance Tax	Summary of State Severance Tax policy includes a data visualization that shows the breakdown of revenue by mineral type (coal, oil and gas, molybdenum and metallics)	Public	Severance	1990-2021	https://leg.colorado.gov/agencies/legislative-council-staff/severance-tax

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
CO_5	Colorado Department of Public Health and Environment Open Data Portal	Jurisdiction Boundaries	Shapefiles of County, Municipal, and School District Boundaries	Public	ALL	Current as of 2023	https://data-cdphe.opendata.arcgis.com/search?tags=Boundaries
CO_6	Colorado Department of Local Affairs	Active Colorado Municipalities	Record of all active Municipalities in Colorado, including “Home Rule Municipalities”, “Statutory Cities,” “Statutory Towns,” and “Territorial Charter Municipalities.”	Public	ALL	Current as of 2023	https://dola.colorado.gov/lgis/municipalities.jsf
CO_7	Colorado Department of Education	School District Data	"All Colorado Schools.XLS", provided on the School and District Data page, lists all school districts and principle counties. Note that the spreadsheet does not explicitly list districts that extend into multiple jurisdictions.	Public	ALL	Current as of 2023	https://cde.state.co.us/schoolview
CO_8	Colorado Energy Office	Colorado Electric Utilities Service Territories	Lists Investor-Owned, Rural/Cooperative, and Public/Municipal Utilities.	Public	ALL	Current as of 2023	https://energyoffice.colorado.gov/climate-energy/energy-in-colorado/electricity/electric-utilities
Fed_4	U.S. Energy Information Administration	Form EIA-860	These spreadsheets identify utilities, power plants, generators, wind facilities, and solar facilities by county.	Public	Renewable Production, Foil and Power Plants		https://www.eia.gov/electricity/data/eia860/

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
Fed_10	U.S. Energy Information Administration	Natural Gas Processing Facilities	Includes Natural Gas Processing Facilities across the US by county.	Public	Natural Gas Processing	2012, 2014, 2017	https://www.eia.gov/naturalgas/ngqs/#?report=RP9&year1=2012&year2=2017&company=Name
Fed_11	U.S. Energy Information Administration	Petroleum Refineries	Record of operating crude oil refineries.	Public	Petroleum Processing	Current as of 2019	https://www.eia.gov/petroleum/refinerycapacity/ https://atlas.eia.gov/datasets/eia::petroleum-refineries/explore?location=75.117622%2C-126.882310%2C11.54

Montana

Table of Contents

This document details our methods for collecting and estimating amounts from those taxes, royalties, fees and payments that are distributed to the local level in Montana for our sample counties.

Federal Collections

Federal Mineral Royalties

State Collections

Oil and Gas Production Tax, Oil and Gas Revenue Distribution Account, and Coal Gross Proceeds

Local Collections

Property Taxes

Federal Mineral Lease Revenue

Policy

The federal government generates royalties from leasing mineral rights on federal lands in the state. They share 49% of royalty revenue with the state. Counties where mineral production occurs receive 25% of the money received from federal royalties in the state, and the remaining 75% goes to the state general fund. The county disbursements are distributed by the Montana Department of Revenue (MT_5).

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
MT_1	Montana Department of Revenue	Biennial Reports: Shared Revenue	The Biennial Reports are around 500-page documents. Each report includes disaggregated data on Natural Resource Taxes (Coal Gross Proceeds, Coal Severance Tax, Oil and Natural Gas Tax, and Federal and State Royalties). There is also data on property tax, including centrally assessed tax data by county and locally assessed tax data with detailed information on property class by county. There is a shared revenue section that gives the amount of tax that the county collected. The Biennial Reports can be accessed from 1990-2020.

Calculations and Assumptions

1) Download Shared Revenues from Biennial Reports and Extract Oil and Gas Tax Revenue Data

We downloaded the "Shared Revenue" portion of the Biennial Reports for FY 2012-2014, 2014-2016, 2016-2018, and 2018-2020. We extracted the data from "Federal Mineral Royalties" from 2012-2020 for all counties of interest.

2) Apply ONRR Ratios

In order to attribute energy types to these revenues, we used data from the US Department of Interior's Office of Natural Resources Revenue (ONRR) to create production ratios on federal land for oil, gas, and coal, and applied those ratios to the federal mineral royalty allocations for each county. A more detailed description of the process for creating these rations can be found the Methods section related to ONRR.

Output

Federal royalty allocations for coal, gas, and oil production to counties from 2012-2020 for all counties of interest.

Oil and Gas Production Tax, Oil and Gas Revenue Distribution Account, and Coal Gross Proceeds

Policy

The following passages are copied verbatim from the 2019-2020 Biennial Report (emphasis added):

> "Each county receives a fixed percentage of tax revenue from **oil and natural gas production** in that county. The percentage is based on the allocation under the pre-2003 system which distributed revenue based on mill levies. In Fiscal Year 2020, counties received 48 percent of total oil and natural gas tax revenue. Within each county, revenue is allocated to school districts, county-wide school funds, and the county in proportions based on pre-2003 distributions."

Some recent legislative changes have adjusted these distribution systems. More information can be found in the Oil and Gas Tax section of the Natural Resources chapter of the 2019-2020 Biennial Report.

> "In addition to production tax revenue from oil and gas production, cities and towns receive revenue from the **Oil and Gas Natural Resource Distribution Account.** This tax rate is the difference between 0.3 percent of total oil and gas revenue and the rate set by the Board of Oil and Gas Conservation to fund its operations, up to 0.08 percent. The account distributes money to the counties where production occurred and the counties are responsible for distributing money to their incorporated cities based on relative population size."

> "[C]oal gross proceeds are collected by the counties. The Department of Revenue certifies the gross proceeds of the mine, and the county collects the tax and remits part of this revenue back to the state. Revenue from **coal gross proceeds** is distributed to taxing authorities in the same proportion as it was in Fiscal Year 1990 (15-23-703, MCA)."

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
MT_1	Montana Department of Revenue	Biennial Reports: Shared Revenue	The Biennial Reports are around 500-page documents. Each report includes disaggregated data on Natural Resource Taxes (Coal Gross Proceeds, Coal Severance Tax, Oil and Natural Gas Tax, and Federal and State Royalties). There is also data on property tax, including centrally assessed tax data by county and locally assessed tax data with detailed information on property class by county. There is a shared revenue section that gives the amount of tax that the county collected. The Biennial Reports can be accessed from 1990-2020.

Calculations and Assumptions

1) Download Shared Revenues from Biennial Reports and Extract Fossil Fuel Revenue Data
We downloaded the “Shared Revenue” (2019-2020) or “Transfers to Local Government” (2011-2018) portion of the Biennial Reports for FY 2012-2014, 2014-2016, 2016-2018, and 2018-2020. We extracted the data from “Oil and Gas Revenue,” "Oil and Gas Revenue Distribution Account,” and “Coal Gross Proceeds Tax” from Biennial Reports for the years 2012-2020 for all counties of interest.

Output

Fossil-fuel related state-collected tax allocations to counties from 2012-2020 for all counties of interest.

Property Tax

Policy

Montana counties receive significant energy-related revenue from property taxes. Property taxes are applied to midstream and downstream energy processes including oil refineries, natural gas processing plants, coal processing plants, oil and gas pipelines, electric generating stations (including natural gas, coal, and wind), gas distribution property, and electric transmission property. The coal production tax and the oil and gas production taxes (reported in the previous section) have replaced all upstream-related property taxes for oil, gas, and coal (15-23-101, MCA).

The Montana Department of Revenue Property Tax Bureau is responsible for the assessment of centrally assessed properties which include: pipelines, public utilities, and electricity generating plants. These properties are assessed by the state and levied by the counties based on local mill rates, and distributed appropriately by county treasurers.

Other properties, including oil refineries, natural gas processing plants, and coal processing plants, are assessed locally by county assessors and local levy rates are applied, and the taxes are collected and distributed accordingly by county treasurers.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
MT_1	Montana Department of Revenue	Biennial Reports	The Biennial Reports are around 500-page documents. Each report includes disaggregated data on Natural Resource Taxes (Coal Gross Proceeds, Coal Severance Tax, Oil and Natural Gas Tax, and Federal and State Royalties). There is also data on property tax, including centrally assessed tax data by county and locally assessed tax data with detailed information on property class by county. There is a shared revenue section that gives the amount of tax that the county collected. The Biennial Reports can be accessed from 1990-2020.
Fed_4	U.S. Energy Information Administration	Form EIA-860	These spreadsheets identify utilities, power plants, generators, wind facilities, and solar facilities by county.

Unique ID	Source	Data Name, Shorthand	Description
Fed_6	U.S. Energy Information Administration	Preliminary Monthly Electric Generator Inventory September 2022	Excel/csv data of generation and locations of powerplants, renewable energy facilities by county by month. The September 2022 file contains a tab with information on all facilities retired since 2002.
MT_2	Yellowstone County	Oil Refinery Property Taxes	Parcel map that then links to Property Tax receipts from 2000-2022.

Calculations and Assumptions

1) Download Property Tax Reports for Each Fiscal Year

We downloaded the "Property Tax" portion of the Biennial Reports for FY 2012-2014, 2014-2016, 2016-2018, and 2018-2020.

2) Extract Property Tax Data for Relevant Counties and Categories

Property tax data can typically be found around page 248 of the Biennial Reports though the page number varies by year. We identified and extracted the individual county property tax revenues for Property Tax Classes 9- utilities, 13- electric generating property, and 14- wind generation in the column "Taxes" for both Fiscal Years listed in each Biennial Report. Property Tax Class 9 is labeled as "utilities" and includes all "Non-Electric Generating Property Of Electrical Utilities (i.e. pipelines, oil and gas flow lines, oil and gas field equipment, and electric and gas utilities). Property Tax Class 13 includes "Telecommunication Utilities and Electric Generating Property of Electric Utilities" (MT_6). Property Tax Class 14 includes "Renewable Energy Production and Transmission Property" which encompasses "commercial wind generation, biodiesel production, biomass gasification, coal gasification ethanol production, and geothermal energy property." In the reports through 2019-2020, these classes are subdivided such that it is possible to isolate Electrical Generation Property from Telecommunication Property and Wind Generation from other renewables. The 2021-2022 Biennial Report no longer breaks out the data by county by class.

3) Collect Electric Generating Station Data from EIA and Energy Source Data

Using the EIA 860 Generator data, we collected the data on all of the electric generating stations in each relevant county and searched for the energy source for each plant. To catch plants that may have retired between 2013 and 2020, we looked at data for all retired plants until September 2022 and sorted for plants that retired between 2013 and 2019. With this data, we were able to attribute an energy type to each of the electric generating property tax revenues in the counties of interest that were collected through the Biennial Reports.

4) Collect information on Oil Refineries from County Property Tax Database

There are three oil refineries within our sample; all are located in Yellowstone County. We used EIA data on refinery facilities as of 2021 to find names, operators, and addresses of refineries to cross-check with the EIA Energy Infrastructure Map. We then used the Yellowstone County parcel map to locate the relevant parcels and used the option to “Click for more Property Tax Detail.” which provides levies back to 2000. We downloaded these amounts and formatted them.

Output

Local property tax revenue for nonelectric generating property of electric utilities, electric generating property of electric utilities, wind generation, and oil refineries.

Sources

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
MT_1	Montana Department of Revenue	MT Department of Revenue Biennial Reports	The Biennial Reports are around 500-page documents. Each report includes disaggregated data on Natural Resource Taxes (Coal Gross Proceeds, Coal Severance Tax, Oil and Natural Gas Tax, and Federal and State Royalties). There is also data on property tax, including centrally assessed tax data by county and locally assessed tax data with detailed information on property class by county. There is a shared revenue section that gives the amount of tax that the county collected. The Biennial Reports can be accessed from 1990-2020.	Public	Property Tax, Federal Royalties, Production Taxes	1990-2020	https://mtrevenue.gov/dor-publications/biennial-reports/
MT_2	Yellowstone County	Oil Refinery Property Taxes	Parcel map that then links to Property Tax receipts from 2000-2022.	Public	Property Tax Receipts	2013-2020	https://maps.yellowstonecountymt.gov/mapping/
MT_3	Yellowstone County Department of Finance	Mill Levy Rates	Includes: - mill levy rates 2002 - 2021	Public	Local Property Tax	2002 - 2021	https://www.yellowstonecountymt.gov/finance/milllevyinfo.asp
MT_4	Montana State Legislature	Distribution of Taxes to Taxing Units-Appropriation	Oil and natural gas production tax distribution allocation amounts	Public	Production Tax	2021	https://leg.mt.gov/bills/mca/title_0150/chapter_0360/part_0030/section_0320/0150-0360-0030-0320.html

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
MT_5	Montana Department of Natural Resources	Natural Resources Biennial Report	Information on Federal Mineral Royalty Taxation and Distribution Policy	Public	Federal Mineral Royalties	2018	https://mtrevenue.gov/wp-content/uploads/2019/01/2018-Biennial-Report-Natural-Resources.pdf
MT_6	Montana State Legislature	Property Tax Payments by Class: Overview	Information on different classes of property	Public	Property Tax	2020	https://leg.mt.gov/content/Committees/Interim/2019-2020/Revenue/Meetings/January-2020/property-taxes-by-class-overview.pdf

North Dakota

Table of Contents

This document details our methods for collecting and estimating amounts from those taxes, royalties, fees and payments that are distributed to the local level in North Dakota for our sample counties.

Federal Collections
Federal Mineral Royalties

State Collections
Oil and Gas Production Taxes
Coal Conversion and Severance Taxes
Electric Generation Tax (Including Wind

Local Collections

Property Taxes on Pipelines

Federal Mineral Lease Revenue

Policy

North Dakota Code Section 15.1-27-25 describes how federal mineral royalties are to be distributed to state and local governments. 50% of federal mineral royalties received by the state are passed on to county governments. The remaining 50% are eventually distributed to school districts through the state's program for funding school districts. The section stipulates that "The state treasurer shall allocate the percentage of the total moneys received as required by this section among the counties in which the minerals were produced based on the proportion each county's mineral royalty revenue bears to the total mineral royalty revenue received by the state for that calendar quarter. The state treasurer shall pay the amount calculated to each county." The distributions reported by the State Treasurer appears to only be those distributions passed on to counties.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
ND_1	North Dakota Office of State Treasurer	Historical Revenue Distributions of Federal Mineral Royalties	Mineral royalties distributed to counties and subcounty entities from 01/01/2011 through 12/31/2021.

Calculations and Assumptions

1) Download the Tax Distribution Data

We downloaded the data from the ND Office of the Treasurer “Historical Revenue Distribution” for “Mineral Royalty”.

2) Aggregate All County Data

We aggregated the data from each county into one file.

3) Aggregate Distributions by Year

By creating a table we aggregated each county’s distributions by year and copied the results to a final spreadsheet.

4) Apply ONRR Ratios

In order to attribute energy types to these revenues, we used data from the US Department of Interior’s Office of Natural Resources Revenue (ONRR) to create production ratios on federal land for oil, gas, and coal, and applied those ratios to the federal mineral royalty allocations for each county. A more detailed description of the process for creating these rations can be found the Methods section related to ONRR.

Output

County totals by year for Federal Mineral Royalty distributions.

State Oil and Gas Production Tax

Policy

Both the Oil Production Tax and Gas Production Tax are considered taxes in lieu of property taxes on oil and gas producing properties. Revenue from these taxes is distributed monthly. One-fifth of the revenues are reserved by the state for various conservation and remediation funds as well as a 'legacy fund.' Four-fifths of the tax is reserved for allocation to producing counties with 100% of the first $5 million allocated to producing counties and 30% of annual revenue above the first $5 million. Counties do not have discretion over how these funds are distributed to sub-county units and must follow defined allocations among cities and townships, school districts, 'hub cities', 'hub city' school districts (these are cities and school districts in high-producing areas) and the county's own general fund. The remaining 70% of revenue beyond the first $5 million is allocated to 'hub cities' and 'hub city' school districts (ND_2). This allocation scheme was passed in 2019. Prior to this, greater amounts were allocated to counties. The State Treasures keeps flow charts of these allocation schemes on its website (ND_3).

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
ND_3	North Dakota Office of State Treasurer	Historic Distributions of the Oil and Gas Production Tax	State Oil and Gas Production Taxes distributed to counties and subcounty entities from 01/01/2011 through 12/31/2021.

Calculations and Assumptions

1) Download Tax Distribution Data

We downloaded the data from the North Dakota Office of the Treasurer "Historical Revenue Distribution" for the "Oil and Gas Production" tax for each county.

2) Aggregate All County Data

We aggregated the data from each county into one file.

3) Aggregate Distributions by Year
We aggregated each county's distributions by year.

Output

Oil and Gas Production Taxes distributions to counties by fiscal year.

State Coal Conversion Tax and State Coal Severance Tax

Policy

The following passage is drawn directly from the North Dakota Office of the Tax Commissioner's Website (emphasis added) (ND_4):

> "There are two types of coal tax in North Dakota – coal conversion facilities privilege tax and coal severance tax. The **coal conversion facilities privilege tax** is imposed on electrical generating plants:
> - with at least one generating unit with a capacity of 10,000 kilowatts or more,
> - other coal conversion facilities that consume 500,000 tons or more of coal per year, and
> - coal beneficiation plants.
>
> The coal conversion facilities privilege tax is in lieu of property taxes on the plant. The land on which the plant is located remains subject to property tax."

The coal conversion tax is allocated in part to counties in which the plants are located and associated cities, school districts and the county general fund per required legislation. Similarly to the oil and gas production taxes, counties do not have discretion over how these funds are distributed to sub-county units. Another portion of the conversion fund is reserved by the state. There are some exemptions from the tax for new facilities and facilities demonstrating certain levels of carbon dioxide emissions capture (ND_5).

> "The **coal severance tax** is imposed on coal and commercial leonardite that is used for sale or industrial purposes. The coal severance tax is not imposed on:
> - coal used for heating buildings in the state,
> - coal used by the State or any political subdivision in North Dakota, and
> - coal used in agricultural processing and sugar beet refining plants in North Dakota or adjacent states.
>
> The coal severance tax is in lieu of sales and use taxes on the coal and commercial leonardite and property tax on minerals in the earth." (ND_4)

The Tax Commissioner tracks disbursements to local governments for both taxes which are then reported on the State Treasurer's website.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
ND_6	North Dakota Office of State Treasurer	Historical Revenue Distributions of Coal Conversion Tax and Coal Severance	State Coal Conversion Taxes and Severance Taxes distributed to counties and subcounty entities from 01/01/2011 through 12/31/2021.

Calculations and Assumptions

1) Download Tax Distribution Data

We downloaded the data from the North Dakota Office of the Treasurer “Historical Revenue Distribution” for the “Coal Conversion” tax and “Coal Severance” tax for each county.

2) Aggregate All County Data

We aggregated the data from each county into one file.

3) Aggregate Distributions by Year

We aggregated each county’s and subcounty jurisdictions’ distributions by year.

Output

Coal Conversion Tax and Coal Severance Tax distributions to county and subcounty units by year. Because we are unable to disaggregate taxes received from coal-fired generating plants as opposed to coal beneficiation plants, we consider Coal Conversion Taxes as part of the ‘Downstream Phase.’

State Electric Generation Transmission Tax (including Wind Generation)

Policy

In lieu of most electricity-related local property taxes, the Property Tax Division in the Office of State Tax Commissioner calculates and collects taxes on electric generation, distribution, and transmission (North Dakota Code Section 57-33.2). There are a few exceptions to this rule. Some electric transmission and distribution is still taxed under North Dakota Code Section 57-06 which authorizes centrally-assessed, locally-collected property tax on public utilities. This is discussed in the next section.

Section 57-33.2 taxes are distributed to local governments based on the presence of electric generation, transmission and distribution property within the local government jurisdiction (ND_7). The set of taxes collected under Section 57-33.2-04 (Wind Generation, Electric Generation, Electric Transmission, Electric Distribution) are deposited in the electric generation, distribution, and transmission tax fund. The electric generation tax does not apply to wind and coal-powered generation facilities because they are taxed by the Wind Generation Tax and Coal Conversion Tax respectively.

Additional information on the Wind Generation Tax

A memo from the North Dakota State Tax Commissioner states that “[r]evenue from the [wind] generation tax is allocated to the county and taxing districts in which the wind farm is located. The kilowatt-hour tax is allocated according to the proportionate share of wind generation capacity within each county or other taxing district.” However, this policy was changed in 2019 such that “Thirty-three percent of wind project revenue collected under subsection 1 of N.D.C.C. § 57-33.2- 04 for new projects that begin construction after December 31, 2020, and those that have been in operation for 20 years or more from the date of first assessment, will be deposited to the state general fund. The remaining revenue will be allocated to the local jurisdictions.” (ND_8)

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
ND_9	North Dakota State Board of Equalization	2020 Meeting Minutes	Annual meeting minutes that contain the amounts for Wind Ad Valorem taxes, Electric Generation Tax, Electric Distribution Tax, Electric Transmission Tax and Wind Generation Tax received from specific facilities.
ND_10	North Dakota State Board of Equalization	2021 Meeting Minutes	Annual meeting minutes that contain the amounts for Wind Ad Valorem taxes, Electric Generation Tax, Electric Distribution Tax, Electric Transmission Tax and Wind Generation Tax received from specific facilities.
Fed_4	U.S. Energy Information Administration	Form EIA-860	These spreadsheets identify utilities, power plants, generators, wind facilities, and solar facilities by county.
ND_11	North Dakota State University	Wind Ad Valorem and Generation Tax	Hodur, Nancy M., and Dean A. Bangsund. 2020. “Wind Energy Industry’s Contribution to the North Dakota Economy in 2019.” *Agriculture and Applied Economics* (805-S).

Calculations and Assumptions

1) Download State Board of Equalization Meeting Minutes

The North Dakota State Board of Equalization certifies amounts for each tax type (Wind Generation, Electric Generation, Electric Transmission, Electric Distribution) each year. Distributions to counties are reported by the North Dakota Office of State Treasurer in the Historic Revenue Distributions dashboard. However, the values reported in the dashboard do not appear to disaggregate among the generation, transmission and distribution taxes instead reporting them together. We were not able to find reasonable data with which to disaggregate these taxes by type for our counties of interest for 2011-

2019. Therefore, our dataset only includes Electric Generation and Wind Generation for 2020 and 2021 which is pulled directly from State Board of Equalization (SBOE) meeting minutes which attribute taxes directly to certain facilities.

Note: Wind Ad Valorem Property taxes that are levied by the state are also certified by the SBOE and appear in these minutes. However, there were no *ad valorem* taxes paid by wind facilities in our counties of interest.

2) Search for facilities among 860-m data

We then searched the 860-m data for generators for the facility names listed in the SBOE Meeting Minutes to attribute a county to each facility.

3) Where necessary, divide taxes paid by utility/company among counties

In the case of the Electric Generation Tax, the company paying taxes has two natural gas power plants in two different counties. Since the value of the tax is reported as a lump sum, we used nameplate capacity for these plants in EIA 860-m data for generators to divide the lump sum proportionally between the two facilities and therefore two counties.

4) Supplement with data from researchers at North Dakota State University

Researchers at North Dakota State University completed an analysis of the wind industry's contribution to the North Dakota economy. As part of the analysis, they requested and received data on Wind Ad Valorem Property Taxes and Wind Generation by facility for 2015-2019 from the State Tax Commission which they published in their report "Wind Energy Industry's Contribution to the North Dakota Economy in 2019." We incorporated this data into our dataset as well which means that our data on Wind Generation/Wind Ad Valorem taxes is complete from 2015-2021 while our data on electric generation from non-coal, non-wind facilities is only complete for 2020-2021.

4) Aggregate for our counties of interest

We aggregated taxes paid by facilities in our counties of interest. We were only able to complete this reliably for the Electric Generation Tax in years 2020 and 2021. While some facilities listed under Electric Transmission were located in the 860-m rolls, many were not which may be attributed to a difference of how the legal entities paying taxes are organized compared to how that data is collected by the EIA.

Output

County totals by year for Electric Generation Tax and Wind Generation Tax.

Property Tax: Pipelines, Electric and Gas Utilities, and Oil Refineries

Policy

Some taxes on electric transmission, gas distribution and all taxes on oil and gas pipelines are centrally assessed, but collections are completed by counties and subsequently distributed to taxing jurisdictions within each county. This data is then reported to the State Tax Commission which publishes the Property Tax Statistical Reports annually. While we do include the property tax values for electric and gas from these reports, we did not locate other data that would allow us to reasonably disaggregate them. Because we also did not include the centrally-assessed and centrally-collected transmission and distribution taxes under Section 57-33.2, the property tax on electric utilities included here do not account for revenues from all electric transmission and distribution.

We determined that the locally-assessed, locally-collected property taxes on the one oil refinery in our sample counties were *de minimus* as they amounted to less than $1,000,000 and it is the only value for that energy type in that county (ND_13). We did not include locally-assessed, locally-collected property taxes on natural gas processing plants in this dataset.

The Property Tax Statistical Reports also report out how much each county collects from payments in lieu of taxes under North Dakota Code Section 40-57.1. Tax abatement, exemptions and PILTs are negotiated with counties under this program. Two counties in our sample, Stark and Williams, receive PILTs between 2016 and 2021. However, phone calls with County Auditors and Assessors confirmed that these PILTs were received from low income housing developments. Since energy industry properties largely do not fall under the regular local property tax regime, any PILTs negotiated with counties in North Dakota are unlikely to come from the energy industry.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
ND_12	North Dakota Office of State Tax Commissioner	Property Tax Statistical Reports	Allocation of state-assessed property taxes to counties including pipelines and electric and gas utilities 2011 - 2021.

Calculations and Assumptions

1) Download the Tax Distribution Data

We downloaded the data from the North Dakota Office of the Tax Commissioner “Property Tax Statistical Reports” from 2011 – 2021.

2) Copy Pipeline and Electric and Gas Data

We copied the pipeline data and electric and gas associated with each county in our sample for each fiscal year.

Output

County totals by year for State-Assessed Pipeline Property Tax distributions.

Sources

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
Fed_4	U.S. Energy Information Administration	Form EIA-860	These spreadsheets identify utilities, power plants, generators, wind facilities, and solar facilities by county.	Public	Renewable Production, Power Plants	2021	https://www.eia.gov/electricity/data/eia860/
ND_1	North Dakota Office of the State Treasurer	Historic Revenue Distributions	Mineral royalties distributed to counties and subcounty entities from 01/01/2011 through 12/31/2021.	Public	Federal disbursements	2011 - 2021	https://www.treasurer.nd.gov/historical-revenue-distributions
ND_2	North Dakota Office of the State Treasurer	2022 Red Book	Provided information on oil and gas production and distribution.	Public	Policy Information	na	https://www.tax.nd.gov/sites/www/files/documents/news-center/publications/red-book-2022-online-version.pdf
ND_3	North Dakota Office of the State Treasurer	Historic Revenue Distributions	State Oil and Gas Production Taxes distributed to counties and subcounty entities from 01/01/2011 through 12/31/2021	Public	Production Tax	2011-2021	https://www.treasurer.nd.gov/historical-revenue-distributions
ND_4	North Dakota Office of the State Tax Commissioner	Coal Tax Descriptions	Provides information on what types of facilities are taxes under the coal conversion tax and what types of coal and coal use are taxed under the coal severance tax.	Public	Policy Information	na	https://www.tax.nd.gov/business/coal-tax
ND_5	North Dakota Office of the State Tax Commissioner	Memo on distributions centrally assessed properties	Provides information on the allocation of state-assessed taxes in lieu of property taxes such as electric generation (wind and other) and coal conversion taxes.	Public	Policy Information	na	https://www.tax.nd.gov/sites/www/files/documents/guidelines/property-tax/propertynotasse

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
							ssedbylocalassessors-1.pdf
ND_6	North Dakota Office of the State Treasurer	Historic Revenue Distributions	State Coal Conversion Taxes and Severance Taxes distributed to counties and subcounty entities from 01/01/2011 through 12/31/2021.	Public	Generation Tax; Severance Tax	2011-2021	https://www.treasurer.nd.gov/historical-revenue-distributions
ND_7	North Dakota Office of the State Tax Commissioner	54th Biennial Report	Provides summaries of taxes in North Dakota including aggregate amounts collected for Electric Generation, Transmission and Distribution Taxes. We were not able to disaggregate these values by county.	Public	Policy information	2015-2018	https://www.tax.nd.gov/sites/www/files/documents/news-center/publications/54th-biennial-report.pdf
ND_8	North Dakota Office of the State Tax Commissioner	55th Biennial Report	Provides summaries of taxes in North Dakota including aggregate amounts collected for Electric Generation, Transmission and Distribution Taxes. We were not able to disaggregate these values by county.	Public	Policy information	2017-2020	https://www.tax.nd.gov/sites/www/files/documents/news-center/publications/55th-biennial-report.pdf
ND_9	North Dakota State Board of Equalization	2020 Meeting Minutes	Annual meeting minutes that contain the amounts for Wind Ad Valorem taxes, Electric Generation Tax, Electric Distribution Tax, Electric Transmission Tax and Wind Generation Tax received from specific facilities.	Public	Generation Tax	2020	https://www.tax.nd.gov/sites/www/files/documents/guidelines/property-tax/sboe-2020-meeting-minutes.pdf
ND_10	North Dakota State Board of Equalization	2021 Meeting Minutes	Annual meeting minutes that contain the amounts for Wind Ad Valorem taxes, Electric Generation Tax, Electric Distribution Tax, Electric Transmission Tax and Wind Generation Tax received from specific facilities.	Public	Generation Tax	2021	https://www.tax.nd.gov/sites/www/files/documents/property-tax/sboe-2021-meeting-minutes.pdf

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
ND_11	North Dakota State University	Wind Ad Valorem and Generation Tax	Hodur, Nancy M., and Dean A. Bangsund. 2020. "Wind Energy Industry's Contribution to the North Dakota Economy in 2019." Agriculture and Applied Economics (805-S).	Public	Generation Tax	2015-2019	https://ageconsearch.umn.edu/record/310042
ND_12	North Dakota Office of the State Tax Commissioner	Property Tax Statistical Report	Allocation of state-assessed property taxes to counties. Some of the data was not disaggregated at the level we required. We used these reports to pull property taxes associated with pipelines.	Public	Pipeline Property Taxes	2014-2021	https://www.tax.nd.gov/search?query=property+tax+statistical+reports
ND_13	Morton County Property Search	Oil Refinery Property Taxes	Tax receipts for the Tesoro oil refinery in Morton County.	Public	Property Tax	2018-2021	https://www.co.morton.nd.us/propertyinformation

New Mexico

Table of Contents

This document details our methods for collecting and estimating amounts from those taxes, royalties, fees and payments that are distributed to the local level in New Mexico.

State Collections

Gross Production Tax
Oil & Gas Ad Valorem Production and Equipment Tax

Local Collections

Property Tax

Gross Receipts Tax

Policy

Gross Receipts Taxes, in relation to energy tax revenue, is the money received from leasing or licensing property or from conducting services in New Mexico, and is currently set at 3.125% for oil and gas production. This tax is levied on the gross receipts of oil and gas producers, which includes the total amount of money received from the sale of oil and gas produced in the state.

The Gross Receipts Tax is collected by the New Mexico Taxation and Revenue Department and distributed to the counties and municipalities. The distribution of GRT revenue to counties is governed by state law, specifically the Local Economic Development Act (LEDA) and the County Economic Development Act (CEDA). Under these laws, a portion of the GRT collected by the state is allocated to a variety of funds, including the Local Government Division Fund, the Public School Capital Outlay Fund, and the County Fire Fund.

From these funds, a portion of the revenue is distributed to counties based on a formula that takes into account the population of the county, the amount of taxable gross receipts generated within the county, and the amount of GRT collected by the state (NM_8).

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
NM_1	New Mexico State Department of Taxation and Revenue	Fiscal Year RP-80 Reports: Gross Receipts by Geographic Area and NAICS Code	Taxes due to each county by year, disaggregated by NAICS code (up to 6 digits) from 2015 to 2020.

Calculations and Assumptions

1) Download the Gross Receipts by Year

We downloaded the gross receipts for each fiscal year.

2) Add a year column and filter the data

We copied all of the data from each fiscal year to a single spreadsheet, adding a year column. Then, we used a filter to garner the data relevant to the counties and industries of interest. We filtered for the following NAICS codes which correspond to industries of interest: 21 (Mining, Quarrying, and Oil and Gas Extraction (USA/CAN/MEX)), 211 (Oil and Gas Extraction (USA/CAN/MEX)), 21111 (Oil and Gas Extraction (USA/CAN/MEX)), 211111 (211111 - Crude Petroleum and Natural Gas Extraction), 21211 (Coal Mining (USA/CAN/MEX)), 2211 (Electric Power Generation, Transmission and Distribution), 221112 (Fossil Fuel Electric Power Generation), 221114 (Solar Electric Power Generation), 221115 (Wind Electric Power Generation), 221122 (Electric Power Distribution), 221210 (Natural Gas Distribution), 324110 (Petroleum Refineries), 486110 (Pipeline Transportation of Crude Oil), 486910 (Pipeline Transportation of Refined Petroleum Products). We determined that the value of the more detailed NAICS codes (e.g. 211111) were not included in the values of the more simplified NAICS codes (e.g. 21) because the total for the simplified NAICS codes (e.g. only 21) was significantly lower than the sum of the associated more detailed NAICS codes (e.g. sum of all values for 211, 21111, 211111, 213111).

3) Aggregate NAICS Codes

We designated the data into 8 categories based on the NAICS code descriptions: Coal Production (21211), Electric Power Generation, Transmission, and Distribution (2211), Natural Gas Distribution (221210), O&G Production (211, 21111, 211111, 213111), Oil Pipelines (486110, 486910), Petroleum Refineries (324110), Fossil Fuel Electric Power Generation (221112), Solar Electric Power Generation (221114), Wind Electric Power Generation (221115), Electric Generation (221119), Transmission (221122), Natural Gas Distribution (221210). The categories used refer to the corresponding NAICS codes in parentheses. For categories with more than one NAICS Code, we summed the tax amounts associated with all NAICS codes in parentheses. When the data was disaggregated, we maintained the disaggregation, but some NAICS code classifications did not allow us to disaggregate the data further (e.g. Electric Power, Generation, Transmission, and Distribution).

Output

Gross Receipts Tax collected by each county for fiscal years 2015 to 2020 disaggregated by point in production and tax type.

Oil and Gas Ad Valorem Production and Equipment taxes

Policy

The Oil and Gas Ad Valorem Production and Equipment Taxes are taxes based on the assessed value of products severed and sold from each production unit and the assessed value of equipment, respectively.

The rate is the property tax rate for the taxing district in which oil and gas are produced, and is collected by the county assessor's office in each county where oil and gas production occurs.

The county assessor's office is responsible for determining the assessed value of oil and gas resources within their county, based on the production and market value of these resources. The assessed value is then used to calculate the amount of ad valorem taxes owed by oil and gas producers.

Once the ad valorem taxes are collected by the county assessor's office, they are distributed to various local government entities, including the county government, school districts, and other special districts. The distribution of ad valorem tax revenue is governed by state law and varies depending on the location and type of oil and gas production (NM_9).

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
NM_2	New Mexico State Department of Finance and Administration	Property Tax Facts Reports	Publications from 2012 to 2021 which include a series of charts and tables depicting 1) distribution of New Mexico tax obligations or revenues; 2) various statewide aggregates by county; 3) various types of rate data; 4) property tax information pertaining to municipalities.

Calculations and Assumptions

1) Download Property Tax PDFs

We downloaded the Property Tax Fact publications for each fiscal year.

2) Copy the data to an aggregated spreadsheet

We copied the ad valorem production and equipment tax amount obligated to each county for each fiscal year to a new spreadsheet.

3) Sum the Ad Valorem Production and Equipment Tax

We summed the ad valorem production and equipment tax for each county for each year to get an amount that represents the total “property” tax each county receives.

Output

Distribution of Oil and Gas Production tax to counties from 2012 to 2021.

Property Taxes: Electric Generation, Distribution, Processing

Policy

In New Mexico public utilities such as power plants, transmission lines, oil and gas pipelines, and mines and mineral rights are centrally assessed by the New Mexico State Taxation and Revenue Department. The department determines the value of these properties and calculates the property taxes owed based on that value. The revenue generated from centrally assessed property taxes is distributed to various local government entities, including counties, school districts, and other special districts (7-36-2, NMAC).

Counties in New Mexico are responsible for assessing oil and gas wells, refineries, renewable energy facilities, distribution pipelines, and storage facilities. The assessment of these properties by counties is overseen by the county assessor's office. The assessor determines the value of these properties and calculates the property taxes owed based on that value. The revenue generated from property taxes on energy-related properties is distributed to various local government entities, including counties, school districts, and other special districts (7-36-2, NMAC).

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
NM_3	San Juan County Treasurer	Tax Account Receipts	Query to look up tax receipts.
NM_4	Sandoval County Assessor	Tax Account Receipts	Query to look up tax receipts.
NM_5	McKinley County Assessor	Tax Account Receipts	Query to look up tax receipts.
NM_6	Lea County Assessor	Tax Account Receipts	Query to look up tax receipts.
NM_7	Eddy County Assessor	Tax Account Receipts	Query to look up tax receipts.

Unique ID	Source	Data Name, Shorthand	Description
Fed_4	U.S. Energy Information Agency	860-m	Excel downloads for generation and locations of powerplants, renewable energy facilities by county reported annually. The 2021 data will be used to search for facility names.

Calculations and Assumptions

1) Collect Electric Generating Station Information

We collected a list of electric generating stations using EIA 860 data and matched each generating station with the correct energy type and retained information on ownership.

2) Search for Property Tax Records

We used the county assessor or county treasurer property tax search queries using the owner name of each electric generating station. The county databases tags these properties as residential, commercial, industrial, and utility properties. We were only interested in utility properties for the purpose of this project. We determined the correct properties by matching the owner name, property tax type (utility) when it was available, and/or property address (when available). Where there were multiple properties with the same owner and no corresponding address, we used data from the properties with the largest property taxes. We did this because our assumption was that those properties are the most likely to be generating stations whereas smaller amounts are likely to be other kinds of property. Some generators at the same power plant were taxed separately. We pulled tax receipts for all generators at a given power plant.

3) Download and Copy Property Tax Receipts

For the properties that we determined corresponded to the electric generating stations, we copied the tax data for as many years as possible for those properties. In some counties data is available as far back as 2011. In others we only have data for 2021.

Output

Property tax collections from electric generating stations for each county by year and energy type.

Sources

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
NM_2	New Mexico State Department of Finance and Administration	Property Tax Facts Reports	Publications from 2011 to 2021 which include series of charts and tables depicting 1) distribution of New Mexico tax obligations or revenues; 2) various statewide aggregates by county; 3) various types of rate data; 4) property tax information pertaining to municipalities.	Public	Oil and Gas Conservation Tax	2011-2021	https://www.nmdfa.state.nm.us/local-government/budget-finance-bureau/property-taxes/property-tax-facts/
NM_3	San Juan County Treasurer	Tax Account Receipts	Query to look up tax receipts.	Public	Property Tax	varies	https://parcel.sanjuanco.com/PropertyAccess/PropertySearch.aspx?cid=0
NM_4	Sandoval County Assessor	Tax Account Receipts	Query to look up tax receipts.	Public	Property Tax	varies	https://eaweb.sandovalcountynm.gov/Assessor/taxweb/search.jsp
NM_5	McKinley County Assessor	Tax Account Receipts	Query to look up tax receipts.	Public	Property Tax	varies	http://eagleweb.co.mckinley.nm.us/assessor/taxweb/search.jsp
NM_6	Lea County Assessor	Tax Account Receipts	Query to look up tax receipts.	Public	Property Tax	varies	http://liveweb.leacounty-nm.org/assessor.aspx?source=assessor&page=optUPC
NM_7	Eddy County Assessor	Tax Account Receipts	Query to look up tax receipts.	Public	Property Tax	varies	http://liveassessor.co.eddy.nm.us/assessor/taxweb/search.jsp

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
NM_8	New Mexico State Department of Taxation and Revenue	Gross Receipts Tax Overview	Information on the Gross Receipts Tax	Public	Gross Receipts Tax	na	Gross Receipts Tax Overview : Businesses (newmexico.gov)
NM_9	New Mexico State Department of Taxation and Revenue	Overview of New Mexico Taxes on Oil and Gas Production	Overview of oil and gas taxes	Public	Production Tax	na	RSTP 072111 Item 0 rstpjul21.11.oilandgas.pdf (nmlegis.gov)
NM_10	New Mexico State Department of Taxation and Revenue: State Assessed Property Bureau	State Assed Property: Property Taxes	Overview of state assessed property taxes	Public	Property Tax	na	https://www.tax.newmexico.gov/businesses/state-assessed-property-bureau-overview/
NM_11	New Mexico Oil and Gas Association	New Mexico Research Institute State and Local Revenue Impacts of the Oil and Gas Industry	Report on the local revenue impacts of the oil and gas industry	Public	Production Tax	2018	https://www.nmoga.org/new_mexico_tax_research_institute_state_and_local_revenue_impacts_of_the_oil_and_gas_industry

Ohio

Table of Contents

This document details our methods for collecting and estimating amounts from those taxes, royalties, fees and payments that are distributed to the local level in Ohio.

Local Collections

Property Taxes levied on mineral reserves, Power Plants, Renewable Facilities, Refineries and Natural Gas Processing systems.

PILOT (Payment in Lieu of Taxes) Revenue from wind and solar facilities.

Property Tax

Policy

Ohio's real property tax is an ad valorem tax based on 35% of the true market value. The real property tax applies to Public Utility, Commercial, Industrial, & Mineral property, including oil and gas reserves (OH_18 and OH_19). Public utilities including electric, rural electric, energy, natural gas, pipeline, and heating companies are also subject to taxation on their tangible personal property. Personal property includes all plant and equipment either owned or leased by the utility. Tax rates for utilities' personal property are defined by the state in the Ohio Revised Codes 5727.111.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
OH_1	Ohio Department of Taxation	Real Estate & Public Utility Property Taxes-Gross Taxes Levied, Taxes Charged and Value of Property by Class of Property and County (PD23 Data Series), “Counties”	Data summarize Taxable Property Values, Gross Taxes Levied, and Net Taxes Levied by County and Property Class. Data is disaggregated to high-level categories of Real and Personal Property.
OH_2	Ohio Department of Taxation	Real Estate & Public Utility Property Taxes-Gross Taxes Levied, Taxes Charged and Value of Property by Class of Property and City (PD27 Data Series), “Cities”	Data summarize Taxable Property Values, Gross Taxes Levied, and Net Taxes Levied by City and Property Class. Data is disaggregated to high-level categories of Real and Personal Property. Staff from the Ohio Department of Taxation confirmed that this data product was discontinued after 2018.
OH_3	Ohio Department of Taxation	Taxable Property Values by School District (SD1 Data Series), “School Districts”	Data summarizes Taxable Property Values, Taxes Levied, and Millage rates by School District. Data is disaggregated to subcategories of Real Property including “Public Utility, Commercial, Industrial, and Mineral.”

Unique ID	Source	Data Name, Shorthand	Description
OH_4	Ohio DNR, Division of Geological Survey	Ohio Industrial Minerals, "Reports on Ohio Mineral Industries"	Data summarizes the state's annual total production and dollar value of all commodity minerals by year (includes production of coal, oil, and gas).
OH_16	Ohio DNR, Division of Geological Survey	Historical Commodity Data	Data summarizes all mineral production and dollar value (in most cases) by county, year, and well/mine for Coal, Clay/shale, Limestone/dolomite, Salt, Sand/gravel, and Sandstone/conglomerate.
OH_17	Ohio DNR, Division of Oil and Gas Resources	Oil and Gas Production, Annual Production Reports	Data summarizes annual total oil and gas production by well and county.
OH_5	Clermont County Auditor	Property Tax Receipts	Property tax receipts and assessment information for 2022.
OH_6	Gallia County Auditor	Property Tax Receipts	Property tax receipts and assessment information for 2022.
OH_7	Harrison County Auditor	Property Tax Receipts	Property tax receipts and assessment information for 2022.
OH_8	Jefferson County Auditor	Property Tax Receipts	Property tax receipts and assessment information for 2022.
OH_9	Lucas County Auditor	Property Tax Receipts	Property tax receipts and assessment information for 2022.

Unique ID	Source	Data Name, Shorthand	Description
OH_10	Monroe County Auditor	Property Tax Receipts	Property tax receipts and assessment information for 2022.
OH_12	Van Wert County Auditor	Property Tax Receipts	Property tax receipts and assessment information for 2022.
OH_15	Washington County Auditor	Property Tax Receipts	Property tax receipts and assessment information for 2022.
Fed_4	U.S. Energy Information Administration	Form EIA-860	These spreadsheets identify utilities, power plants, generators, wind facilities, and solar facilities by county.
Fed_10	U.S. Energy Information Administration	Natural Gas Processing Facilities	Includes Natural Gas Processing Facilities across the US by county. Method of locating natural gas processing facilities for the sake of cross checking with tax receipts.
Fed_11	U.S. Energy Information Administration	Petroleum Refineries	Record of operating crude oil refineries.

Calculations and Assumptions

Mineral Data

In order to estimate property tax data from mineral resources – oil, coal, and gas – we downloaded summary reports from the Ohio Department of Taxation and disaggregated data using Industrial Mineral Reports and Oil and Gas Production data from the Department of Natural Resources' Division of Geological Survey and Division of Oil and Gas Resources.

1) Compile Data

We downloaded the "Counties" and "School Districts" property tax data series for years 2012-2021. The "Cities" data series was discontinued after 2018, so we downloaded available data from 2012-2018.

We included some additional interim steps of converting data out of "thousands" where needed and standardizing the names of school districts across multiple years.

2) Estimate City-Level Taxes Levied for 2019-2021

Using 2018 data for "Public Utility, Commercial, Industrial, & Mineral Real Property Net Taxes Charged" and "Public Utility Tangible Personal Property Taxes Levied & Charged," we calculated ratios to demonstrate the relative volume of taxes levied by Counties versus the Cities within their jurisdiction.

We then used these ratios, combined with actual taxes levied by Counties, to estimate taxes levied at the City level for the years 2019, 2020, and 2021.

3) Estimating Net Taxes Charged on Mineral Real Property

In the School District Data, the Department of Taxation provides a breakdown of Mineral vs. Industrial, Commercial, and Utility Real Property, defined as "Class II Real Property Taxable Values." However, for the County and Cities data, they only provide a lump sum of "Public Utility, Commercial, Industrial, and Mineral Real Property." We used the School District data to calculate the ratio of Mineral taxable values to the total Class II Taxable values, and then applied these ratios for each County and Year to estimate the Mineral Taxable value for the County and City datasets.

4) Estimating Value of by Mineral Type by County

The Department of Taxation does not provide a breakdown of mineral types for the "Mineral" taxable values. In order to estimate this on a county by county basis, we used three main sources from the Ohio Department of Natural Resources:

- Historical commodity data, to calculate the total dollar value of coal, clay/shale, limestone, and sand in each of our counties (our counties of interest contained no salt or sandstone mines).
- Oil and gas production reports, to calculate the total oil and gas production in our counties of interest.
- Industrial Mineral Reports, to find the total statewide value of oil and gas for each year.

For Clay/shale, Coal values for 2016-2021, Limestone, and Sand/gravel, we used PIVOT tables to calculate the total dollar value provided in the historical commodity data.

For Coal values for 2012-2015 and for Oil and Gas, we used historical commodity data and oil and gas production reports to estimate the percent of statewide mineral production attributed to each of our counties of interest, and then multiplied that by the total annual value of each mineral provided by the Industrial Mineral Reports.

5) Estimating Net Taxes Charged for Each Mineral Type

We then combined all the mineral values together to estimate the proportion attributed to minerals for each county and each year.

We multiplied those ratios by the estimated total taxes levied on all minerals to estimate the property taxes derived from our minerals of interest: coal, oil and gas.

Generators, Natural Gas Processing, and Oil Refineries

For discrete generation, natural gas processing, and refinery facilities, we pulled individual property tax receipts on a county by county basis and assigned the appropriate energy type using EIA generator data.

6) Collection of Tax Receipts

First, we used data from the U.S. Energy Information Administration to identify the facilities in our counties of interest. Then we used county-level parcel databases and GIS map viewers to identify the parcels associated with each facility.

Note that we omitted the following generators: generators outside the scope of our energy types of interest (landfill gas and battery sites); and generators with nameplate capacities less than 10 MW (the exception being some of the facilities that we received PILOT data for, as well as some of the small generators that were included in the same plant as larger generators for which we had already collected parcel data. We also created records for one wind facility and 2 small solar facilities for Paulding County, based on PILOT data that we received.

7) Disaggregating data by MW Capacity

For one property tax receipt – for Walleye Power in Lucas County – we used nameplate capacity to disaggregate the revenue between petroleum coke and petroleum liquids. For all other facilities we were able to identify a single energy type using EIA data.

A Note about Transmission and Power Companies

We did not include property tax receipts for transmission, power, and pipeline companies in this project because of our inconsistent results using parcel search tools for each county. However, we found Jefferson County's parcel database to be the most complete, where searching by the “utility” land use yielded the following owner profiles:

- AEP Ohio Transmission
- American Transmission System
- Columbia Gas Transmission
- Eastern Gas Transmission
- Texas Eastern Transmission Co
- Carroll Electric Coop
- Columbia Gas of Ohio Inc
- Ohio Edison Company
- Ohio Power Co
- Rover Pipeline
- Southern Central Power Co

Output

Property tax mineral data disaggregated by County, jurisdiction type, and mineral type, for years 2012-2021. Property tax data for generators, natural gas processing, and oil refineries disaggregated by county, jurisdiction type, and energy type for 2022.

PILOT – Wind and Solar

Policy

In 2010, the Ohio General Assembly passed Senate Bill 232, permissive legislation that allows counties to accept payments in lieu of taxation (PILOT) for renewable energy developments. Under the statute, wind developers pay $6,000 – $8,000 per MW annually, depending on the percentage of Ohioans employed during construction—which must be at least 50%. (The higher the ratio of Ohio-domiciled employees, the lower a project's tax liability). For solar projects, developers pay $7,000 per MW and must employ at least 80% Ohio residents during construction. County commissioners may negotiate additional service payments, not to exceed $9,000 per MW in total when combined with the PILOT.

According the EIA-860m data, three of our counties of interest have renewable energy generation: Lucas, Paulding, and Van Wert. We collected PILOT revenue data from Paulding County but were unable to confirm PILOT revenue for Lucas or Van Wert counties. Based on the installed nameplate capacities in these counties, it appears that the Lucas renewable payments would be *de minimis*, but it is our understanding Van Wert receives significant revenue from the Blue Creek Wind Farm.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
OH_11	Paulding County Auditor	Paulding PILOT Data	Data includes payments by wind development and distribution to local jurisdictions.
OH_13	BusinessWire	Van Wert PILOT Data Reporting	PILOT Information for Van Wert County
OH_14	Cleveland.com	Van Wert PILOT Data Reporting	PILOT Information for Van Wert County

Unique ID	Source	Data Name, Shorthand	Description
Fed_4	U.S. Energy Information Administration	Form EIA-860	These spreadsheets identify utilities, power plants, generators, wind facilities, and solar facilities by county.

Calculations and Assumptions

1) Compile PILOT Revenue Data

We collected PILOT payment data directly from the Paulding County Auditor for 4 wind developments and 2 solar developments. We also cross-referenced PILOT with EIA-860m data of wind and solar facilities located in the county to confirm project names.

2) Consolidate Wind PILOT Revenue

We then consolidated the Wind PILOT revenue across all developments, years, and local revenue recipients.

A Note about Van Wert County

We were unable to obtain PILOT data from Van Wert County, but it is our understanding that the County receives approximately $2 million annually from the Blue Creek Wind Farm, which began operation in 2012 (OH_14). As of 2016, a majority was distributed to local school districts, per local reporting (OH_13):

- Crestview School District: $852,108
- Lincolnview School District: $401,809
- Vantage Joint Vocational School: $144,916
- Hoaglin Township: $32,752
- Union Township: $124,169
- Tully township: $6,320
- Tully-Convoy Park District: $430
- Van Wert County-General Fund: $73,999
- Other: $433,497

Output

PILOT data disaggregated by County, renewable energy generation type, and year.

Sources

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
OH_01	Ohio Department of Taxation	Real Estate & Public Utility Property Taxes-Gross Taxes Levied, Taxes Charged and Value of Property by Class of Property and County (PD23 Data Series), “Counties”	Data summarize Taxable Property Values, Gross Taxes Levied, and Net Taxes Levied by County and Property Class.	Public	Property	1983-2021	https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/property+tax+-+all+property+taxes
OH_02	Ohio Department of Taxation	Real Estate & Public Utility Property Taxes-Gross Taxes Levied, Taxes Charged and Value of Property by Class of Property and City (PD27 Data Series), “Cities”	Data summarize Taxable Property Values, Gross Taxes Levied, and Net Taxes Levied by City and Property Class. Data is disaggregated to high-level categories of Real and Personal Property: Staff from the Ohio Department of Taxation confirmed that this data product was discontinued after 2018.	Public	Property	1983-2018	https://tax.ohio.gov/researcher/tax-data-series/other-tax-statistics-archive/TDS-Archives-Property
OH_03	Ohio Department of Taxation	Taxable Property Values by School District (SD1 Data Series), “School Districts”	Data summarizes Taxable Property Values, Taxes Levied, and Millage rates by School District. Data is disaggregated to subcategories of Real Property including “Public Utility,	Public	Property	1986-2021	https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/property+tax+-

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
			Commercial, Industrial, and Mineral.”				+all+property+taxes
OH_04	Ohio Department of Natural Resources, Division of Geological Survey	Ohio Industrial Minerals, "Reports on Ohio Mineral Industries"	Data summarizes annual total production and value of all commodity minerals by mine and county including coal, oil, and gas.	Public	Mineral Production	1996-2021	https://ohiodnr.gov/discover-and-learn/safety-conservation/about-odnr/geologic-survey/industrial-minerals/industrial-minerals
OH_05	Clermont County Auditor	Property Tax Receipts	Property Tax Receipts for FY 2022.	Public	Property	2022	https://www.clermontauditorrealestate.org/_web/search/commonsearch.aspx?mode=owner
OH_06	Gallia County Auditor	Property Tax Receipts	Property Tax Receipts for FY 2022.	Public	Property	2022	"https://galliaoh-auditor.ddti.net/ https://gallia-oh.bhamaps.com/"
OH_07	Harrison County Auditor	Property Tax Receipts	Property Tax Receipts for FY 2022.	Public	Property	2022	http://74.219.43.74/reaweb/research.php

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
OH_08	Jefferson County Auditor	Property Tax Receipts	Property Tax Receipts for FY 2022.	Public	Property	2022	https://jeffersoncountyoh.com/auditor/real-estate
OH_09	Lucas County Auditor	Property Tax Receipts	Property Tax Receipts for FY 2022.	Public	Property	2022	https://icare.co.lucas.oh.us/LucasCare/search/commonsearch.aspx?mode=parid
OH_10	Monroe County Auditor	Property Tax Receipts	Property Tax Receipts for FY 2022.	Public	Property	2022	https://monroecountyrealestatesearch.monroecountyohio.com/
OH_11	Paulding County Auditor	PILOT Data	PILOT data for Wind and Solar developments.	Direct Sent	PILOT	2013-2022	https://www.pauldingcountyauditor.com/Search
OH_12	Van Wert County Auditor	Property Tax Receipts	Property Tax Receipts for FY 2022.	Public	Property	2022	http://www.co.vanwert.oh.us/re/re-search.php
OH_13	BusinessWire	PILOT Data Reporting	PILOT Information for Van Wert County	Public	Property	2016	https://www.cleveland.com/metro/2016/09/ohios_largest_wind_farm_sprout.html

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
OH_14	Cleveland.com	PILOT Data Reporting	PILOT Information for Van Wert County	Public	Property	2014	https://www.businesswire.com/news/home/20140206006000/en/Blue-Creek-Wind-Farm-Presents-Checks-Worth
OH_15	Washington County Auditor	Property Tax Receipts	Property Tax Receipts for FY 2022.	Public	Property	2022	https://auditorwashingtoncountyohio.gov/Search
OH_16	Ohio Department of Natural Resources, Division of Geological Survey	Historical Commodity Data	Data summarizes all mineral production by county, year, and well/mine for Coal, Clay/shale, Limestone/dolomite, Salt, Sand/gravel, and Sandstone/conglomerate.	Public	Mineral Production	1996-2021	https://ohiodnr.gov/discover-and-learn/safety-conservation/about-odnr/geologic-survey/industrial-minerals/industrial-minerals
OH_17	Ohio Department of Natural Resources, Division of Oil and Gas Resources	Oil and Gas Production, Quarterly and Annual Production Reports	Data summarizes annual total oil and gas production and value by well and county.	Public	Mineral Production	1996-2021	https://ohiodnr.gov/discover-and-learn/safety-conservation/about-ODNR/oil-gas/oil-gas-resources/production
OH_18	Ohio Department of Taxation	Oil and Gas Real Property Taxation	Description of oil and gas taxation policies, and links to additional regulation and reporting resources.	Public	Policy Information	na	https://tax.ohio.gov/government/real-state/oilgas

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
OH_19	Ohio Department of Taxation	Annual Reports	Annual Reports include descriptions and statutory background for all Ohio Taxes, plus summaries of revenue trends and policy changes.	Public	Policy Information	na	https://tax.ohio.gov/help-center/communications/publications/annual-reports/2021annualreport
Fed_4	U.S. Energy Information Administration	Form EIA-860	These spreadsheets identify utilities, power plants, generators, wind facilities, and solar facilities by county.	Public	Renewable Production, Power Plants		https://www.eia.gov/electricity/data/eia860/
Fed_10	U.S. Energy Information Administration	Natural Gas Processing Facilities	Includes Natural Gas Processing Facilities across the US by county. Method of locating natural gas processing facilities for the sake of cross checking with tax receipts.	Public	Natural Gas Processing	2012, 2014, 2017	https://www.eia.gov/naturalgas/ngqs/#?report=RP9&year1=2012&year2=2017&company=Name
Fed_11	U.S. Energy Information Administration	Petroleum Refineries	Record of operating crude oil refineries.	Public	Petroleum Processing	Current as of 2019	https://www.eia.gov/petroleum/refinerycapacity/ https://atlas.eia.gov/datasets/eia::petroleum-refineries/explore?location=75.117622%2C-126.882310%2C11.54

Texas

Table of Contents

This document details our methods for collecting and estimating amounts from those taxes, royalties, fees and payments that are distributed to the local level in Texas.

Federal Collections

GOMESA

State Collections

County Road Oil and Gas Trust Fund
Oil Production Tax; Gas Production Tax; Oil Well Service Tax; Gas, Water, Electric Utility Tax

Local Collections

Property Taxes and PILTS paid by Power Plants, Renewable Facilities, Refineries and Natural Gas Processing facilities
Ad Valorem Property Taxes on Oil and Gas properties, Gas Distribution Systems, Electric Companies, and Pipelines

GOMESA Federal Lands Distributions

Policy

Texas has relatively few federal lands. However, the state does receive funds from oil and gas leases in the Outer Continental Shelf of the Gulf of Mexico through the Gulf of Mexico Energy Security Act (GOMESA). Some of these funds are distributed directly to coastline counties. From our sample counties in Texas, only Harris County receives GOMESA distributions.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_1	US Department of Interior, Office of Natural Resources Revenue	GOMESA Distributions	Revenue from certain leases in the Gulf of Mexico that is shared with coastline counties like Harris County.

Calculations and Assumptions

These revenues are reported directly by the US Department of Interior's Office of Natural Resources Revenue. Some values may be negative because companies using gulf leases can adjust their payments for up to seven years and may recoup overpayments in subsequent years (Fed_8).

County Road Oil and Gas Trust Fund

Policy

In 2017, Texas amended Texas Code Chapter 32 to include Sec. 32.2015 which establishes the County Road Oil and Gas Fund. The Fund "[c]onsists of money received from the leasing of oil and gas under lands owned by the state that were or may be acquired by a county to construct a county road. Money is to be disbursed twice a year to the appropriate county for road maintenance purposes" (TX_2). Four counties in our sample received disbursements from this fund between 2018 and 2022: Harris, Martin, Midland and Reeves.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_3	Texas	County Road Oil and Gas	Amounts provided to counties from the County Road Oil and

Unique ID	Source	Data Name, Shorthand	Description
	Comptroller	Fund Disbursements	Gas Fund 2018-2022.

Calculations and Assumptions

These revenues are reported directly by the Texas State Comptroller.

Oil and Natural Gas Production Taxes; Gas, Water, Electric Utility Tax; Oil Well Service Tax

Policy

There are several state-levied taxes on oil and gas and related industries that contribute, indirectly to local revenues by way of the Foundation School Account, which is Texas Comptroller Object 0193. The relevant Comptroller Objects for accounts and taxes are henceforth in parentheses. The Foundation School Account (FSA) funds the Foundation School Program which serves as the primary source of state funding for Texas school districts (TX_4). The FSA distributes funding to local school districts based on formulas that incorporate enrollment information and revenues from local property taxes such that schools with greater 'need' receive more funding from the FSA. By way of the General Fund, the FSA receives 25% of revenues derived from several types of energy-related taxes including:

- Oil Production Tax (3290) - Texas Code Sec. 202.352-353
- Gas Production Tax (3291) - Texas Code Sec. 201.403-404
- Gas, Water, Electric Utility Tax (3233) - Texas Code Sec. 182.122
- Oil Well Service Tax (3296) - Texas Code Sec. 191.122

In addition to funds from the FSA, the Foundation School Program also receives funds from the Available School Fund (0002) (ASF). The ASF serves as a passthrough for funding from the Permanent School Fund (0044) (PSF) which in turn receives 25% of state-collected revenue from oil and gas royalties, bonuses and leases on state lands and lands owned by educational institutions as well as 2/3rds of Outer Continental Shelf Settlement Monies, which are comprised of revenue from offshore oil and gas leases (Texas Code Sec. 202.43.001, U.S. Public Law 99-272).

Therefore, there are two options for attributing Foundation School Program payments to state-collected energy-related revenues. The first is to only follow funds directly distributed to school districts from the Foundation School Account. The second way is to trace distributions back through the ASF to the PSF and its revenue sources. We decided to use the first method and only trace funds received by the FSA and distributed by the FSA because, according to the data we received from the Comptroller as part of our open records request, funds disbursed to school districts never passed through the ASF (0002). However, because the ASF also funds the Foundation School Program, the amount the ASF provides the FSP may influence the amounts of FSP payments. Below we describe both options. The data sources with two asterisks are sources that are only needed for the second option.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_5	Texas Comptroller	State Revenues from Energy Sources	Summarizes state revenue collected from for relevant state-collected energy taxes. Data available from 2013-2022. Exact taxes and associated Comptroller Objects listed below: Oil Production Tax (3290), Gas Production Tax (3291), Gas, Water, Electric Utility Tax (3233), Oil Well Service Tax (3296)
TX_6	Texas Comptroller	Gas, Water, Electric Utility tax disaggregation	Data from the Texas Comptroller's Open Records division that reports how much of each tax came from each kind of utility.
TX_7	Texas Comptroller	Revenue distributed to the Foundation School Account	Summarizes amounts coming into the Foundation School Account Comptroller Object (0193) from all sources.
TX_8	Texas Comptroller	FSA Distributions	Texas Comptroller manages the distributions from the Foundation School Account to the individual School

Unique ID	Source	Data Name, Shorthand	Description
			Districts. We determined that these records are more accurate than those provided by the Texas Education Agency because they reflect actual amounts distributed rather than calculations. Note that some of these 'disbursements' are negative. Where school districts are well funded by property taxes according to FSP algorithms, FSP does 'recapture' some revenue from those school districts (TX_4).
TX_9	Texas Education Agency	County-School District Files and Shape Files	The Texas Education Agency keeps a list of school districts in Texas and the counties in which they are located, a list of counties and with school districts contained, and shapefiles for counties and school districts were also provided.
TX_10	Texas Comptroller	Revenue to the Permanent School Fund from all sources**	Summarizes revenue to the Permanent School Fund (0044) from all sources including energy-related taxes, royalties, fees, leases and bonuses. Data available 2013-2022.
TX_11	Texas Comptroller	Revenue distributed to the Available School Fund **	Summarizes amounts coming into the Available School Fund (0002) from all sources. Data available 2013-2022.
TX_12	Legislative Budget Board**	Foundation School Program Funding Sources**	Biennial Fiscal Size-up reports published by the Legislative Budget Board contain a section call Foundation School

Unique ID	Source	Data Name, Shorthand	Description
			Program Funding Sources which provides funding sources of the FSP by percentages.**

Calculations and Assumptions

1) Summarizing State-level Revenues

We downloaded state-level energy-related revenue data from the Texas Comptroller, then summarized the data by fiscal year and Comptroller Object: Oil Production Tax (3290), Gas Production Tax (3291), Gas, Water, Electric Utility Tax (3233), and Oil Well Service Tax (3296). A portion of these taxes are distributed to the Foundation School Account (called the Foundation School Fund in some sources) (0193) which then distributes funds to school districts.

2) Disaggregation and Account Pass-through

We then calculated how much of the revenue from the Oil Production Tax (3290), Gas Production Tax (3291), Gas, Water, Electric Utility Tax (3233), and Oil Well Service Tax (3296) is directed to the FSA. Texas code indicates that one half of one percent of each of the revenues from these taxes goes directly to funding tax collection and the oil and gas regulatory program, and 25% of the remaining revenue is directed to the FSA. The data indicates it may first pass through the General Fund before being directed to the FSA. We therefore multiplied the base tax revenue for Oil Production Tax (3290), Gas Production Tax (3291), and Oil Well Service Tax (3296) for each year by 0.995 * 0.25 or 0.24875.

For the Gas, Water, Electric Utility Tax (3233), we received data from the Comptroller's Open Records Division which disaggregated this tax so that we could include only taxes from gas utilities. For fiscal year 2022, data was only reported for the first two quarters so instead we used an average of the gas utility revenue from years 2013-2021. We multiplied the revenue from gas utilities for each year by 0.24875.

3) Generating Percentages/Ratios

We then generated a percent of funds in the FSA that can be attributed to each of these taxes by dividing the amount generated in Step 2 by the total amount of revenue to the FSA by year.

5) Calculating Percentage of School Districts in Each County

We then used Texas Education Agency GIS data to calculate the percentage of each school district's geographical area in each county and multiplied the FSA disbursements by that percentage to get a sum associated with school district–county. This assumes that the taxable value is proportional to the area in each county which may overcount for some school districts and undercount for others. To ensure we included all relevant school districts for each county, we cross checked the list of school district-county units with other Open Data Requests to the Comptroller that contained school district-county unit lists (TX_34). We then aggregated up by county.

**A note on the Permanent School Fund

Below we document how one could include revenues from oil and gas royalties, bonuses and leases on state lands and lands owned by educational institutions, and Outer Continental Shelf Monies in the analysis with the data we acquired.

Permanent School Fund to Available School Fund Revenues

In order to include revenues from the ASF, researchers could summarize state-level data from the Oil and Gas Lease Bonuses (3315), Oil and Gas Lease Rental (3316), Oil Royalties from lands owned by Educational Institutions (3320), Oil Royalties from Other State Lands (3321), Gas royalties from Lands owned by Educational institutions (3325), and Outer Continental Shelf Settlement Monies (3327) which come from oil and gas leases in the Gulf of Mexico. Royalties – Coal and Lignite (3334) and Wind/Other Surface Lease Income From School Land (3331) are *de minimus* according to our definition and we were not able to procure data from the Comptroller to disaggregate revenue from Wind leases as compared to other leases. Revenues from Wind/Other Surface Lease Income From School Land (3331) are less than $1,000,000 in any given year except 2022 where they were $4,690,584.

Permanent School Fund to Available School Fund Revenues

With this data, researchers could generate a percent of the funds in the Permanent School Fund that can be attributed to fossil fuel revenues by dividing the amounts summarized in Step 1 and generated in Step 2 by the total amount of revenue to the Permanent School Fund in each fiscal year.

They could then use state-level data from the Texas Comptroller enumerating how much of the Permanent School Fund is passed on to the Available School Fund to calculate the amounts in the Available School Fund that can be attributed to

fossil fuel revenues and divide that by the total revenue to the Available School Fund to generate a percent of the funds in the Available School Fund that can be attributed to fossil fuel revenues in each year.

Calculating amounts of FSP attributable to ASF and FSA

Because the biennial fiscal size-up reports contain pie charts enumerating the percent of the Foundation School Program Budget that comes from each revenue source, it would be possible to multiply the FSP distributions provided by the Texas Comptroller by these ratios to get a dollar amount going to each school district that can be attributable to each fund and then multiply this dollar amount by the percent of those funds that can be attributed to each fossil fuel revenue type (tax, lease, fee, royalty, etc.). Biennial fiscal-size ups are only published every two years. Therefore, we suggest using the report published in 2012 for 2013 and the report published in 2014 for both 2014 and 2015, etc.. Because Texas fiscal years overlap with school years (September to September), they can be used interchangeably to match up Texas Comptroller data and FSP distributions. For example, Texas fiscal year 2021 lines up with the school year 2020-2021.

Output

Dollars distributed to school districts from the Foundation School Program that can be attributed to fossil fuel taxes.

General Methodology Property Taxes and Payments in lieu of taxes: Powerplants, Refineries, Natural Gas Processing, Solar Facilities and Wind Facilities

Policy

The Texas Constitution and statutory law authorizes local governments to collect property taxes and set tax rates. The state only requires (TX_13):

- All taxation must be equal and uniform. No single property or type of property should be charged more than another.
- Generally, all property must be taxed in proportion to its current market value, with exceptions such as “productivity values for agricultural and timberland”.
- Each property must have a single appraised value. County appraisal districts ensure that individual local taxing units can’t assign different values to a property.

In addition, there are several relevant statutes that allow for tax abatement and payments in lieu of taxes. Texas Code Chapter 312 and Chapter 380/381 provide guidelines and criteria localities can use to abate property taxes for local businesses and allow those localities to collect payments in lieu of taxes as part of the agreement. The Chapter 312 program was renewed for another 10 years in 2019.

Texas Code Chapter 313 outlines a program by which school districts can enter similar tax abatement agreements with business. The program also supports school districts in calculating supplemental payments entities are to provide in lieu of taxes. The Chapter 313 program expired on December 31, 2022.

The methodology represents a general approach across counties. Details for each county can be found in subsequent sections. Data inputs in future sections only list county-specific sources.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
(*Listed by County)*	County Tax Assessor Collector Website	Tax Receipts Property Search Database	Eight of the ten Texas counties in our dataset also have a database with tax receipts searchable by owner name, account number, or address. Tax receipts contain actual taxes collected and corresponding school districts.
(*Listed by County)*	County Appraisal District	Tax Receipts Property Search Database	Some counties separate collection for certain districts such that the tax assessor collector collects for some jurisdictions and the county appraisal district collect for other jurisdictions. In these circumstances there is a separate searchable tax receipt database housed by the County Appraisal District.
Fed_12	U.S. Energy Information Administration	Energy Infrastructure Map	Contains locations of powerplants, renewable energy facilities, pipelines, refineries.
Fed_10	U.S. Energy Information Administration	Natural Gas Processing Facilities	EIA data for Natural Gas Processing facilities by county for 2012, 2014 and 2017.
Fed_6	U.S. Energy Information Administration	Preliminary Monthly Electric Generator Inventory September 2022	Excel/csv data of generation and locations of powerplants, renewable energy facilities by county by month. The September 2022 file contains a tab with information on all facilities retired since 2002.

Unique ID	Source	Data Name, Shorthand	Description
Fed_4	U.S. Energy Information Administration	860-m	Excel downloads for generation and locations of powerplants, renewable energy facilities by county reported annually. The 2021 data will be used to search for facility names.
Fed_11	U.S. Energy Information Administration	EIA Petroleum Refineries	A downloaded table of refineries from EIA's GIS Mapping system.
(*Listed by County)*	County Auditor	Annual Financial Reports	Some contain information about Payments in Lieu of Taxes under Chapter 312 or 380/381. Only those statements that contained relevant information are listed.
TX_14	Texas Comptroller	List of 380/381 Agreements for PILOTs to Local Governments	Provides copies of agreements between local governments and entities.
TX_15	Texas Comptroller	List of 313 Agreements for PILOTs to School Districts	Contains information by School District for facilities that provide Payments in Lieu of Taxes including payment amounts.
TX_9	Texas Education Agency	County-School District Files and Shape Files	The Texas Education Agency keeps a list of school districts in Texas and the counties in which they are located, a list of counties and with school districts contained, and shapefiles for counties and school districts were also provided.

Calculations and Assumptions

1) Compile a list of relevant facilities across fiscal years

- We used EIA 860-m 2021 Plant to collect names, operators, and addresses of currently operating coal, natural gas, petroleum powerplants, wind and solar facilities in each sample county. We cross-referenced this with EIA 860-m 2021 Generator data to ensure we were addressing facilities where generators used in-scope technologies.
- We used the 'Retired' tab in EIA Preliminary Monthly Electric Generator Inventory's September 2022 file to collect the names and operators of facilities retired since 2014. However, many of our sample counties do not publish tax receipts as far back as 2014.
- We used data from the EIA Energy Infrastructure Map to locate natural gas processing facilities and refineries in each county.
- We used EIA data on retired Natural Gas processing facilities for 2014 and 2017 to find names and operators of retired facilities to cross-check with the EIA Energy Infrastructure Map.
- We used EIA data on refinery facilities as of 2021 to find names, operators, and addresses of refineries to cross-check with the EIA Energy Infrastructure Map.

Where other information is not specified, this is the method used to compile a list of facilities.

2) Query Property Tax Receipt Databases

We searched operator names in Property Tax Receipt Databases. Details on these databases and their formats in each county can be found in the county-specific methodology.

3) Search for Payments in Lieu of Taxes

Chapter 312 are typically reported out in County Audited Financial Statements. We therefore reviewed county financial statements for abatements or payments in lieu of taxes and contacted County Auditor's, Treasurer's, Judge's and Clerk's offices as needed to receive more information.

The state collects and publishes 380/381 agreements on the Comptroller's website. These were largely used to verify which counties has agreements as the agreements did not stipulate exact amounts for payments in lieu of taxes, rather they provided formulas.

In the case of Chapter 313 agreement, the state collects data on the implementation of these agreements, including names of energy facilities and school districts as well as corresponding supplementary payments from those facilities to the school district. To acquire this data, we cross referenced County-School District Matchup and List of Agreements for PILOTs to School Districts to identify school districts in our sample counties that have entered into agreements and receive PILOTs. We then cross-referenced with our list of facilities compiled in Step 1. We then downloaded the '2022 School District Cost Data Report' for each facility in our sample with an agreement and extracted the payment amounts. There were seven agreements for which the webpages had been removed because the agreements had expired. We received data on corresponding payments for these agreements via an Open Data Request to the Comptroller.

In the following county-specific methods sections we detail how many school districts have entered into agreements.

Output

Actual tax receipt data disaggregated by sub-county jurisdiction from coal and natural gas powerplants, oil refineries, natural gas processing facilities, and wind and solar generation facilities. Exact outputs are detailed in the county-specific methodology. Counties have different tax receipt formats. This means that some counties may aggregate a powerplant's relevant real or personal property whereas other counties break this out by category (i.e. vehicles, computer equipment, storage tanks, etc.).

The output for each county will be the same therefore this section is removed from the following methods sections.

Andrews County Methodology Local Real and Personal Property: Powerplants and Natural Gas Processing, Solar and Wind Facilities

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_16	Andrews County Tax Assessor Collector Website	Tax Receipts Property Search Database	The Andrews County Tax Assessor Collector collects taxes for Andrews County and Andrews County Road and Bridge.
TX_17	Andrews County Appraisal District	Tax Receipts Property Search Database	The Andrews County Central Appraisal District collects taxes for Andrews ISD, Andrews County Hospital District and the City of Andrews.

County-Specific Information

Query Property Tax Receipt Database

Both the County Appraisal District and the County Tax Assessor Collectors' Property Search databases were searchable by Names, Addresses, Property ID and Geographic ID. We then searched by facilities and owner names. Facility and owner names matched up well with the databases and we cross checked the legal descriptions on the county site to ensure the receipts matched the facilities and energy-related property. We then downloaded the tax history page for each facility.

Payments in Lieu of Taxes

All five renewable energy facilities in Andrews County have active Chapter 313 agreements with the county. All five renewable energy facilities also have Chapter 380 agreements. Three provide payments in lieu of taxes as part of the agreement: JumboHill Wind, Prospero Solar and Permian Solar. These amounts were provided over the phone by the County Auditor.

Carson County Methodology Local Real and Personal Property: Powerplants and Natural Gas Processing, Solar and Wind Facilities

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_18	County Appraisal District	Tax Receipts Received	The Carson County Appraisal District collects taxes for school districts, hospitals, cities and other special districts.
TX_19	County Auditor	Annual Financial Reports	Contains Payment in Lieu of Taxes and tax abatement information.
TX_20	County Tax Assessor Collector Website	Truth in Taxation Tax Rates	Contains tax rate information for the county for Fiscal Years 2018-2022

County-Specific Information

Outreach to Carson County CAD and Tax Office
We provided this list of facilities to Carson County Tax Office. They were able to provide only three related records. These were not used to estimate revenue.

Carson County Central Appraisal District has provided tax receipts for most wind facilities. No data was provided for natural gas processing facilities. Because the Central Appraisal District levies tax for most of the jurisdictions in the county, these tax receipts provide the majority of the tax receipts from these facilities to jurisdictions in the county, however, the Tax Office collects taxes for the county itself which includes taxes collected for the Road and Bridge taxing unit.

Payments in Lieu of Taxes

Three wind facilities in Carson County have active agreements with school districts.

Carson County Audited Financial Statements for 2018-2021 provide the amounts of several PILOTs paid by wind facilities as well as information on the tax abatement amounts for wind facilities. Most facilities paying PILOTs received 100% tax abatement from the county. Two received 87% abatement. The Audited Financial Statements include a PILOT for a wind facility called Grandview 3, however, Grandview 3 appears to have been cancelled per EIA-860 data. Because the value of the PILT for both Grandview facilities (1 and 3) in 2020 and 2021 to the value of the PILT for Grandview 1 in 2018 and 2019, we assumed that the actual PILOT received is the same even though Grandview 3 was never built.

Calculations for Taxes levied by County Taxing Unit

We used the abatement information provided by the Audited Financial Statements as well as the tax rate for the county tax unit for the years 2018-2019 and the taxable values stated on the tax receipts we received from the Central Appraisal District to estimate the amount of tax the County Taxing Unit would have received from the wind facilities within the county. In this circumstance we were not able to separate out the Road and Bridge taxing unit as in other counties. We did this by multiplying the tax rate by the taxable value for those facilities that received no abatement. For those facilities that received 87% abatement, we multiplied their taxable value by 0.13 and then by the tax rate reported in the Truth in Taxation Summary. Because we were missing data for some years for some facilities, we then averaged these calculations by facility over the years for which we had data for each facility, we then summed these averaged amounts and applied them to all four fiscal years.

Three wind facilities have active Chapter 313 agreements with five school districts in Carson County. The Comptroller query for 380 agreements did not return any agreements associated with our sample facilities for the county.

Harris County Methodology Local Real and Personal Property: Powerplants and Natural Gas Processing, Solar and Wind Facilities

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_21	County Tax Assessor Collector Website	Tax Receipts Property Search Database	Harris County Tax Assessor / Collector collects counties for the county, hospital and school jurisdictions.

County-Specific Information

Property Tax Receipt Database

Harris County's Tax Assessor / Collector Property Tax Search Function could be queried with addresses, 'names', or account numbers. Unlike other county's databases, the address associated with the account was the address of the property. We tried searching for addresses and operator names. However, it was incredibly difficult to associate the receipts with specific energy facilities based on addresses, operator names and legal descriptions. Almost all facilities in Harris are natural gas power plants. No data was found for the single solar facility in Harris County nor for the natural gas processing facilities.

EIA data places eight refineries in Harris County. We found data that could be reasonably associated with the refinery and was reasonably complete for four of these facilities though it was not possible with this data to distinguish between the taxes gathered for natural gas generators associated with the refineries and actual refinery property. We used receipts downloaded to generate a ratio of tax receipts by jurisdiction to AD Mbpd (Atmospheric Distillation Capacity) data from EIA. AD Mbpd is the volume of crude oil, measured in thousands of barrels per day (Mb/d), processed by the atmospheric distillation chamber of a refinery and can be used as a proxy for general facility capacity. We then multiplied the dollar per AD Mbpd amount by the total AD Mpbd in Harris County according to EIA data. This may also shift some tax dollars from the category of natural gas power plants to oil refining.

For natural gas power plants, we used 2021 EIA data for Generators since this reported nameplate capacity. Because there are multiple generators per plant, we aggregated the nameplate capacity at plants in Harris County and then chose the five plants with the largest nameplate capacity. These ranged from 1189.9 MW at TH Wharton (NRG Texas Power) to 815 MW at Pasadena Cogeneration. We searched for the Utility name in the Harris County Tax Office's Property Tax Receipt Search and where necessary cross-referenced the street address listed in the EIA data to identify receipts. We downloaded receipts associated with these facilities and then attempted to determine a tax revenue ratio of dollars per nameplate capacity. Note that TH Wharton is one of the largest natural gas power plants in the county per its megawatt capacity and it also paid much less in tax revenue per MW than the other large natural gas power plants. We suspect that this might be due to the plant's age as it began operating in the 1970's.

We then multiplied this dollar per nameplate capacity by the nameplate capacity for all natural gas generators in Harris County that are not associated with a refinery and are above 1.2 MW since most facilities below this threshold are individual stores and businesses that have their own generators. This does not provide granularity in taxing jurisdictions.

Payments in Lieu of Taxes

While there are facilities that are covered by the 313 program in Harris, only one appears on the list of EIA facilities and we were not able to find tax receipts to corroborate. The facility appears to be a petrochemical plant that may or may not include refining activities. County Tax Office staff were not aware of any other payments in lieu of taxes. County Audited Financial Statements do not indicate that energy facilities receive tax abatement or provide payments in lieu of taxes to the county. The Comptroller query for 380 agreements did not return any agreements associated with our sample facilities for the county.

Limestone County Methodology Local Real and Personal Property: Powerplants and Natural Gas Processing, Solar and Wind Facilities

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_22	County Tax Assessor Collector Website	Tax Receipts Property Search Database	Limestone County Tax Assessor Collector collects taxes for all taxing jurisdiction in Limestone County. Tax receipts contain actual taxes collected for each sub-county taxing jurisdiction.

County-Specific Information

Property Tax Receipt Database

The Limestone County Tax Assessor-Collector Property search database has an advanced search feature which enables entering more narrow search criteria. We used the Owner Information section of this Advanced Search to search the names of the facilities in the 'Business Name' search bar. Where names of facilities did not return associated results, we searched the name of the operator/owner. We then used a dropdown feature to include the legal description of properties and exported this list to Excel. From there we sorted by the Assessed Value column which allowed us to narrow in on properties most likely associated with facilities of interest and referenced legal descriptions to pull tax receipts for properties associated with the facility. Limestone County has several legacy and current natural gas processing facilities for which we pulled tax receipts for natural gas processing 'plants'. We did not pull receipts of pipelines, vehicles, office buildings or other supplies associated with the facilities. We also did not pull receipts for standalone compressor stations (Sadler, Morton and Chandler). This is aligned with the methodology for other counties. Where the legal descriptions were ambiguous regarding the property taxed, we did not pull receipts where the associated tax revenue was less than $10,000 or the assessed value in 2022 was less than $100,000.

We found evidence that at least one piece of 'property' associated with the Limestone Generating Plant, a coal-fired power plant, was entirely exempt from taxes in 2021. However, there are tax receipts for other 'properties' associated with

the plant. While the legal descriptions are fairly informative, on occasion the same legal description would be entered for different property IDs so it is not clear what is being taxed and what is exempt.

Payments in Lieu of Taxes

One wind facility in Limestone County has an active agreement with a school district in Limestone County. Limestone County does not publish their audited financial statements on their website. County Appraisal District and County Tax Office staff were not aware of any other payments in lieu of taxes. The Comptroller query for 380 agreements did not return any agreements associated with our sample facilities for the county.

Martin County Methodology Local Real and Personal Property: Powerplants and Natural Gas Processing, Solar and Wind Facilities

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_23	County Tax Assessor Collector Website	Tax Receipts Property Search Database	Martin County Tax Assessor Collector collects taxes for Martin County, Martin County Road and Bridge, Permian Basin Underground Water District.
TX_24	County Appraisal District	Tax Receipts Property Search Database	Martin County Appraisal District collects taxes for the City of Stanton, Grady ISD, Stanton ISK, Sands CISD, Martin County Fresh Water District and Martin County Hospital District.

County-Specific Information

Property Tax Receipt Databases

Both tax receipt databases can be queried with owner name, owner number, property address, account number or parcel ID; we used owner names from the compiled list of relevant facilities to search for receipts. Facilities names were often included with the owner name in the results. Frequently, more than one account number would be associated with a facility name. We opened all receipts associated with the owner/facility name and compared legal descriptions to download energy-related ‘properties.’ Vehicles and other office equipment were excluded.

Payments in Lieu of Taxes

There is one energy company in Martin County with a current Chapter 313 agreement with a Martin County school district. The County Appraisal District reported over the phone that they are unaware of any other payments in lieu of taxes nor did audited statements indicate any payments or abatement. The Comptroller query for 380 agreements did not return any agreements associated with our sample facilities for the county.

Midland County Methodology Local Real and Personal Property: Powerplants and Natural Gas Processing, Solar and Wind Facilities

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_25	County Appraisal District	Tax Receipts Property Search Database	Midland County Appraisal District collects taxes for all taxing jurisdictions in Midland.

County-Specific Information

Property Tax Receipt Database

The Midland CAD database can be queried using owner name, property address, legal description, geographic ID and property ID. Similarly to other counties, we searched for owner name and facility name from the compiled list from Step 1. We downloaded receipts for plants. These were identified through referencing the legal description. This may not include all compressors associated with each plant, however, there was not a clear way of associating compressors with plants. Two natural gas processing facilities were not included: Bradford Ranch and Midkiff. In the case of Bradford Ranch, which appears to have been retired in 2019, the data that we pulled was not clearly associated with the plant itself. In the case of Midkiff, the plant's name did not appear in legal descriptions associated with the operator company, Atlas Pipeline. The word 'Midkiff' appeared in other legal descriptions for other gas companies. It appeared to be the name of a compressor station as opposed to a plant. This approach may undercount the reliance of taxing jurisdictions on natural gas infrastructure in this county. Based on observation during the data collection process for this county, however, each compressor station appeared to contribute less than $30,000 in tax revenue per year between all taxing jurisdictions. Two other plants were found in the data collection process that did not appear in the EIA list of natural gas processing facilities, Midland County Gas Plant and Newberry Gas Plant, both appear to be operated by Navitas Midstream, LLC similarly to the Sprayberry Plant. We downloaded receipts for the Sprayberry plant for FY 2016-2021. There is some evidence from receipts associated with the Roberts Ranch and Pegasus plants (#2957969) that the Sprayberry Plant was operated by DCP Midstream and paid taxes prior to 2016 as far back as 2013, however, searching for the affiliated Property IDs and Geo IDs did not turn up receipts between 2013 and 2016 so the 2013 data was left out of our accounting.

Payments in Lieu of Taxes

At present no facilities in Midland have active agreements under Texas Code 313 with school districts in Midland. Audited Financial Statements for 2018-2021 do not indicate tax abatement taken under Texas Code 312. The Comptroller query for 380 agreements did not return any agreements associated with our sample facilities for the county.

Nolan County Methodology Local Real and Personal Property: Powerplants and Natural Gas Processing, Solar and Wind Facilities

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_26	County Appraisal District	Tax Receipts Property Search Database	Nolan County's taxes are assessed and collected by Nolan County Central Appraisal District. All receipts are in the online database.

County-Specific Information

Property Tax Receipt Database

Some receipts are stored with the EIA 860-m 'Utility Name' and others are stored under the EIA 860-m 'Plant Name'. We tried searching under both names as the 'Owner Name' in the Nolan County Central Appraisal District Property Search Database. Tax receipt downloads do not include taxes on operation and maintenance 'improvements' to facilities. These generally were less than $10,000 per year per facility. In many cases there was more than one account associated with a facility. For the most part, these accounts were divided by type of property taxes (i.e. turbines, vehicles, electrical equipment). Occasionally, there were two or more accounts for similar property for the same facility. Where it was clear that this property was energy-related, such as turbines, we downloaded receipts even if they were fairly low in value (approximately $15,000). There were several facilities that had additional accounts that appeared to be associated, but for which the receipts were not currently available. Taxes on renewable energy property such as solar panels and wind turbines were classified as 'Mineral' rather than Real Estate or Personal property.

Payments in Lieu of Taxes

There are three energy companies in Nolan County who have agreements with school districts in Nolan County. Audited Financial Statements for 2018-2021 do not indicate tax abatement taken under Texas Code 312. Nolan County Central Appraisal District was not aware of any other payments in lieu of taxes for energy facilities. The Comptroller query for 380 agreements did not return any agreements associated with our sample facilities for the county.

Pecos County Methodology Local Real and Personal Property: Powerplants and Natural Gas Processing, Solar and Wind Facilities

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_27	County Tax Assessor Collector Website	Tax Receipts Property Search Database	In Pecos County, the County Tax Assessor / Collector collects taxes for all jurisdictions. These tax receipts are stored online in the Pecos County Tax Assessor / Collector's Property Search Database.
TX_28	County Auditor	Chapter 312 Payments	Receipts of payments in lieu of taxes.

County-Specific Information

Property Tax Receipt Database

Some receipts are stored with the EIA 860-m 'Utility Name' and others are stored under the EIA 860-m 'Plant Name'. We tried searching under both names as the 'Owner Name' in the Pecos Tax Assessor / Collector Property Search Database. In the case of several solar facilities, there were several accounts described as Taxable or Abated Groundwater tax receipts of less than $25,000. These were not included.

Tax receipts for Natural Gas Processing facilities were not found in the database. While there were some accounts that appeared associated, these values were either below $10,000 or the receipts for those accounts were 'Unavailable'.

Payments in Lieu of Taxes

Ten facilities have active Chapter 313 agreements with school districts in Pecos. Several of our sample facilities also have Chapter 312 agreements with Pecos County. Five of these facilities provide payments in lieu of taxes: Sherbino 1 Wind, Sherbino 2 Wind, Desert Sky Wind, Taygette Solar, Concho Bluff Wind. We received information on the amounts and entities providing these payments from the County Auditor. The Comptroller query for 380 agreements did not return any agreements associated with our sample facilities for the county.

Reeves County Methodology Local Real and Personal Property: Powerplants and Natural Gas Processing, Solar and Wind Facilities

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_29	County Tax Assessor Collector	Property Tax Receipts	In Reeves County, the County Tax Assessor / Collector collects taxes for all jurisdictions. Tax collection was centralized in 2019. Prior to 2019 the Central Appraisal District collected taxes for some jurisdictions. All records were transferred to the Tax Assessor / Collector in 2019. The online tax database only contains payment information and amounts due for the current season.
TX_30	County Judge	West of Pecos Chapter 312 Agreement	Contains information used to calculate payments in lieu of taxes

County-Specific Information

Outreach to Reeves County for Tax Receipts

Because the database only has the current fiscal year, we provided the list of facilities to Reeves County Tax Office. We received several tax receipts in return, but they do not appear to be comprehensive for the list of facilities from the EIA nor across fiscal years. For example, there is a gap for a plant in FY 2016 and receipts for several plants in from EIA data were not provided.

Payments in Lieu of Taxes

There are is one agreement between a facility in our sample and a school district in Reeves under Chapter 313. The County Auditor's Office also provided one Chapter 312 agreement between West of the Pecos Solar, LLC (WPS) and the county. The agreement details that "WPS agrees to make annual an payment for ten years of One Thousand and 00/100 Dollars per megawatt ($1,000.00/MW)." We used the Megawatt Capacity for WPS from EIA-860 data on Generators to calculate the amount of the payment and applied this to the fiscal years in which WPS was operating and the agreement was in effect. The Comptroller query for 380 agreements did not return any agreements associated with our sample facilities for the county.

Titus County Methodology Local Real and Personal Property: Powerplants and Natural Gas Processing, Solar and Wind Facilities

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_31	County Tax Assessor Collector Website	Tax Receipts Property Search Database	Titus County Tax Assessor / Collector collects counties for the county, hospital and school jurisdictions. Amounts are documented in an online searchable database. These amounts are not stored as downloadable receipts, but rather on a webpage.

Unique ID	Source	Data Name, Shorthand	Description
TX_32	County Appraisal District	Tax Receipts Property Search Database	Titus County Appraisal District collects for all jurisdictions for which the Tax Assessor / Collector does not. These amounts are also document in a separate CAD online database and are stored not as downloadable receipts, but rather directly on a webpage.

County-Specific Information

Property Tax Receipt Database

County Central Appraisal District
The County Appraisal District Database contains maps of each parcel. We began by searching the 'utility' name for both the Welsh Coal Power Plant (Southwestern Electric Power Co) and the Monticello Coal Power Plant (Luminant Generation Co) which turned up multiple accounts and properties. From there, we determined which properties were associated with the facility based on the map of the area and the assessed value of the property. This may not capture all energy-related properties associated with a facility.

The Welsh Coal Power Plant does not appear to pay taxes to jurisdictions for which the CAD collects.

The maps revealed that Monticello Coal Power Plant was associated with a property ID not associated with Luminant Generation Co, but rather Golden Eagle Development under what appears to be a deed warrantee in place since 2019. These tax receipts were downloaded.

County Tax Assessor / Collector
We then used the Property IDs from the tax receipts we collected from the County Appraisal District Property Search to pull receipts for those same properties from the Titus County Tax Assessor Collector Database.

It should be noted that the 'utility' name might appear in both long hand and shorthand. For example, there is a Luminant Generation Company LLC and a Luminant Generation CO LLC.

Payments in Lieu of Taxes

At present no facilities in Titus have active agreements under Texas Code 313 with school districts in Titus. Audited Financial Statements for 2018-2021 do not indicate tax abatement taken under Texas Code 312. The Comptroller query for 380 agreements did not return any agreements associated with our sample facilities for the county.

Local Property Tax Data Oil and Gas (G1), Gas Utility (J2), and Electric Utility (J3) properties, and Pipelines (J6)

Policy

County Appraisal Districts report the value of property by property category within each taxing jurisdiction to the Texas Comptroller. The property categories of interest to our study include oil and gas (G1), gas utility (J2), and electric utility properties (J3), and pipelines (J6). In Texas, electric generation facilities are owned separately from electric transmission and distribution companies. The J3 category includes only the transmission and distribution, not the generation which is generally categorized under F2. The one exception to this rule are wind facilities locate outside of the Electric Reliability Council of Texas (ERCOT) operating area. These wind facilities are classified as J3 (TX_33, TX_36). However, none of our sample counties fall outside the operating area therefore estimating J3 taxes as described below will not double count the tax receipts we collected for the wind facilities directly from counties. While there is not explicit guidance on solar facilities in the Tax Assistance Property Classification Guide, we will assume they are treated similarly. A quick check of several solar facilities in our sample confirms they are categorized as F2 and, therefore, will not be double counted. (TX_33).

The same dataset also contains values for the tax rates in each jurisdiction. The value of oil and the value of gas are not disaggregated. All values are the market value of the taxable properties and do not include any exemptions that may have applied to any property. Except under special circumstances, property is assessed and appraised at the market value in Texas.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
TX_34	Texas Comptroller	Oil and gas (G1) property values	This data includes market value of oil and gas properties (G1) within each taxing jurisdiction as well as tax rates for those jurisdictions. We included values for 2013-2022.
TX_35	Texas Comptroller	Electric utility (J3), gas utility (J2) and pipeline (J6) property values	This data includes market value of J category properties within each taxing jurisdiction as well as tax rates for those jurisdictions. We only use values for electric utility (J3), gas utility (J2) and pipeline (J6). The data for utilities and pipelines is only disaggregated at the level of detail we require back to 2019.

Calculations and Assumptions

1) Estimate tax based on value and tax rate

The total tax levy is calculated based on taxable value and does include exemptions. These exemptions are not broken out by category of property. We multiplied the value in each tax unit by the tax rate to compute the total tax levy. This may slightly overcount the tax levy as there are some entities that have Chapter 380 agreements with localities that abate *ad valorem* property taxes. In our sample counties, there were only a few entities with these agreements so we do not believe these calculations are significantly different than actual levies.

Output

Estimated tax levies for electric utility, gas utility, oil and gas property, and pipelines by taxing jurisdiction by year.

Sources

Unique ID	Source	Data Name	Description	Access	Type	Years	Original Source link
TX_1	US Department of Interior Natural Resources Revenue Data	Outer Continental Shelf GOMESA Distributions	Includes distributions authorized under Gulf of Mexico Energy Security Act (GOMESA) to Texas and Counties in Texas for oil and gas leases in the Outer Continental Shelf	Public	Federal Resource Receipt	2003-2021	https://revenuedata.doi.gov/how-revenue-works/gomesa/ https://revenuedata.doi.gov/downloads/disbursements/
TX_2	Texas Comptroller Manual of Accounts	County Road Oil and Gas Trust Fund Code	Information on collection distribution of County Road Oil and Gas Trust Fund monies	Public	Policy Information	na	https://fmcpa.cpa.state.tx.us/fiscalmoa/fund.jsp?num=0808&fy=2018
TX_3	Texas Comptroller	County Road Oil and Gas Trust Fund Distributions	Received from an open records request submitted to fyiopenrecords.com; Contains distributions to counties from the County Road Oil and Gas Trust Fund	Open Records Request	State distributions	2018-2022	fyiopenrecords.com
TX_4	Texas Education Agency	Foundation School Program Webpage and Description information	Webpage that provides background information on the Foundation School Program.	Public	Policy Information	na	https://tea.texas.gov/finance-and-grants/state-funding/foundation-school-program/foundation-school-program
TX_5	Texas Comptroller	State Revenue from Energy Sources	Summarizes state revenue collected from for relevant state-collected energy taxes. We selected "All Revenue" and "All fiscal years." From there we selected the following Comptroller Objects: Oil Production Tax (3290), Gas Production Tax (3291), Gas, Water, Electric Utility Tax (3233), Oil Well Service Tax (3296)	Public	State revenues	2013-2022	https://bivisual.cpa.texas.gov/CPA/opendocnotoolbar.htm?document=documents%5CTR_Master_UI.qvw

Unique ID	Source	Data Name	Description	Access	Type	Years	Original Source link
TX_6	Texas Comptroller	Gas, Water, Electric Utility Tax Breakdown	Received from an open records request submitted to fyiopenrecords.com; Contains Revenue from the Gas, Water, Electric and Utility Tax broken into receipts from the various categories.	Open Records Request	Disaggregation Input	1993-2021	fyiopenrecords.com
TX_7	Texas Comptroller	Revenues distributed to the Foundation School Account	Summarizes amounts coming into the Foundation School Account Comptroller Object (0193) from all sources. We selected "All Revenue" and "All fiscal years." From there we selected comptroller object 0193.	Public	Disaggregation Input	2013-2022	https://bivisual.cpa.texas.gov/CPA/opendocnotoolbar.htm?document=documents%5CTR_Master_UI.qvw
TX_8	Texas Comptroller	FSA Distributions	Texas Comptroller manages the distributions from the Foundation School Account to the individual School Districts. We determined that these records are more accurate than those provided by the Texas Education Agency because they reflect actual amounts distributed rather than calculations.	Open Records Request	State distributions	2014-2022	fyiopenrecords.com
TX_9	Texas Education Agency	County-School District Files and Shapefiles	The Texas Education Agency keeps a list of school districts in Texas and the counties in which they are located, a list of counties and with school districts contained, and shapefiles for counties and school districts were also provided.	Public	School Districts GIS Data	na	https://schoolsdata2-tea-texas.opendata.arcgis.com/
TX_10	Texas Comptroller	Revenue to the Permanent School Fund from all sources	Summarizes revenue to the Permanent School Fund (0044) from all sources including energy-related taxes, royalties, fees, leases and bonuses. We selected "All Revenue" and "All Fiscal Years." From there we selected comptroller object 0044.	Public	State revenues	2013-2022	https://bivisual.cpa.texas.gov/CPA/opendocnotoolbar.htm?document=documents%5CTR_Master_UI.qvw

Unique ID	Source	Data Name	Description	Access	Type	Years	Original Source link
TX_11	Texas Comptroller	Permanent School Fund distributions to the Available School Fund by type	Summarizes amounts coming into the Available School Fund from all sources. We selected "All Revenue" and "All fiscal years." From there we selected comptroller object 0002.	Public	Disaggregation Input	2013-2022	https://bivisual.cpa.texas.gov/CPA/opendocnotoolbar.htm?document=documents%5CTR_Master_UI.qvw
TX_12	Legislative Budget Board	Foundation School Program Funding Sources	Biennial Fiscal Size-up reports published by the Legislative Budget Board. Contains a section call Foundation School Program Funding Sources which provides funding soruces of the FSP by percentages.	Public	Disaggregation Input	2012-2021	https://www.lbb.texas.gov/Archives.aspx
TX_13	Texas Comptroller	Property Tax System Basics	Webpage that provides background information on how property taxes are collected and administered in Texas.	Public	Policy Information	na	https://comptroller.texas.gov/taxes/property-tax/basics.php
TX_14	Texas Comptroller	List of Chapter 380 Agreements	Documents agreements between local government and entities that qualify for the state's property tax abatement program.	Public	PILT	2013-2022	https://comptroller.texas.gov/economy/local/ch380-381/reporting-search.php
TX_15	Texas Comptroller	List of Chapter 313 School District PILT Agreements	Documents agreements between School Districts and certain categories of business such as renewable energy generation facilities that quality for the state's Appraisal Value Limitation Agreement Program. Agreements that are no longer active are removed from the website, but can be acquired through an Open Records Request.	Public	PILT	2003-2021	https://comptroller.texas.gov/economy/local/ch313/agreement-docs.php
TX_16	Andrews County Tax Assessor	Tax Receipts Property Search Database	The Andrews County Tax Assessor Collector collects taxes for Andrews County and Andrews County Road and Bridge.	Public	Property Tax Receipts	2018-2022	https://www.andrewscountytax.com/taxes.html#/WildfireSearch

Unique ID	Source	Data Name	Description	Access	Type	Years	Original Source link
	Collector Website						
TX_17	Andrews County Appraisal District	Tax Receipts Property Search Database	The Andrews County Central Appraisal District collects taxes for Andrews ISD, Andrews County Hospital District and the City of Andrews.	Public	Property Tax Receipts	2018-2022	https://propaccess.trueautomation.com/clientdb/?cid=53
TX_18	County Appraisal District	Tax Receipts Received	The Carson County Appraisal District collects taxes for school districts, hospitals, cities and other special districts.	Direct Sent	Property Tax Receipts	2014-2021	
TX_19	County Auditor	Annual Financial Reports	Contains Payment in Lieu of Taxes and tax abatement information.	Public	PILT	2018-2021	https://www.co.carson.tx.us/page/carson.Budgets
TX_20	County Tax Assessor Collector Website	Truth in Taxation Tax Rates	Contains tax rate information for the county for Fiscal Years 2018-2022	Public	Tax Rates	2018-2022	https://www.co.carson.tx.us/page/carson.Tax.Rate
TX_21	County Tax Assessor Collector Website	Tax Receipts Property Search Database	Harris County Tax Assessor / Collector collects counties for the county, hospital and school jurisdictions. Tax receipts were stored online in downloadable PDFs.	Public	Property Tax Receipts	2018-2021	https://www.hctax.net/Property/PropertyTax
TX_22	County Tax Assessor Collector Website	Tax Receipts Property Search Database	Limestone County Tax Assessor Collector collects taxes for all taxing jurisdiction in Limestone County. Tax receipts contain actual taxes collected for each sub-county taxing jurisdiction.	Public	Property Tax Receipts	2010-2022	http://www.limestonetexas-tax.com/
TX_23	County Tax Assessor Collector Website	Tax Receipts Property Search Database	Martin County Tax Assessor Collector collects taxes for Martin County, Martin County Road and Bridge, Permian Basin Underground Water District. Tax receipts were stored online in downloadable PDFs.	Public	Property Tax Receipts	2018-2021	http://taxsearch.co.martin.tx.us/(S(j14gumbuvt2pufktdknazant))/search.aspx?clientid=martinco

Unique ID	Source	Data Name	Description	Access	Type	Years	Original Source link
TX_24	County Appraisal District	Tax Receipts Property Search Database	Martin County Appraisal District collects taxes for the City of Stanton, Grady ISD, Stanton ISK, Sands CISD, Martin County Fresh Water District and Martin County Hospital District. Tax receipts were stored online in downloadable PDFs.	Public	Property Tax Receipts	2018-2021	http://www.martincad.org/(S(32u1hero1pyk0gj5d3mq0xhv))/search.aspx?clientid=martincad
TX_25	County Appraisal District	Tax Receipts Property Search Database	Midland County Appraisal District collects taxes for all taxing jurisdictions in Midland.	Public	Property Tax Receipts	2018-2021	https://iswdataclient.azurewebsites.net/webindex.aspx?dbkey=MIDLANDCAD&time=202303221520042
TX_26	County Appraisal District	Tax Receipts Property Search Database	Nolan County's taxes are assessed and collected by Nolan County Central Appraisal District. All receipts are in the online database.	Public	Property Tax Receipts	2018-2021	http://nolan-cad.org/(S(auyxuwnelnoray01gy1mevsd))/search.aspx?clientid=nolancad
TX_27	County Tax Assessor Collector Website	Tax Receipts Property Search Database	In Pecos County, the County Tax Assessor / Collector collects taxes for all jurisdictions. These tax receipts are stored online in the Pecos County Tax Assessor / Collector's Property Search Database.	Public	Property Tax Receipts	2018-2021	http://www.pecostax.org/(S(f2w4vz21lipf4ygiflneauza))/search.aspx?clientid=pecoscounty
TX_28	County Auditor	Chapter 312 Payments	Receipts of payments in lieu of taxes.	Direct Sent	PILT	2018-2021	
TX_29	County Tax Assessor Collector	Property Tax Receipts	In Reeves County, the County Tax Assessor / Collector collects taxes for all jurisdictions. Tax collection was centralized in 2019. Prior to 2019 the Central Appraisal District collected taxes for some jurisdictions. All records were transferred to the Tax Assessor / Collector in 2019. The online tax	Direct Sent	Property Tax Receipts	2018-2021	

Unique ID	Source	Data Name	Description	Access	Type	Years	Original Source link
			database only contains payment information and amounts due for the current season.				
TX_30	County Judge Office	West of Pecos Chapter 312 Agreement	Contains information used to calculate payments in lieu of taxes	Direct Sent	PILT	2022	
TX_31	County Tax Assessor Collector Website	Tax Receipts Property Search Database	Titus County Tax Assessor / Collector collects counties for the county, hospital and school jurisdictions. Amounts are documented in an online searchable database. These amounts are not stored as downloadable receipts, but rather on a webpage.	Public	Property Tax Receipts	2012-2021	http://propaccess.trueautomation.com/clientdb/?cid=82
TX_32	County Appraisal District	Tax Receipts Property Search Database	Titus County Appraisal District collects for all jurisdictions for which the Tax Assessor / Collector does not. These amounts are also document in a separate CAD online database and are stored not as downloadable receipts, but rather directly on a webpage.	Public	Property Tax Receipts	2012-2021	http://propaccess.trueautomation.com/clientdb/?cid=82
TX_33	Texas Comptroller	Tax Assistance Property Classification Guide	Provides information on how Property Taxes are classified including what kinds of properties are included in which Property Category.	Public	Policy Information	na	https://comptroller.texas.gov/taxes/property-tax/docs/96-313.pdf
TX_34	Texas Comptroller	Oil and Gas (G1) Property Values	This data includes market value of oil and gas properties within each taxing jurisdiction as well as tax rates for those jurisdictions. The data are complete and reliable back to 2012 and available back	Open Records Request	Local Property Values	1998-2021	fyiopenrecords.com

Unique ID	Source	Data Name	Description	Access	Type	Years	Original Source link
			to 1998. We included values for 2013 forward.				
TX_35	Texas Comptroller	Electric utility (J3), gas utility (J2) and pipeline (J6) property values	This data includes market value of J category properties within each taxing jurisdiction as well as tax rates for those jurisdictions. We only use values for electric utility (J3), gas utility (J2) and pipeline (J6). The data for utilities and pipelines is only disaggregated at the level of detail we require back to 2019.	Direct Sent	Local Property Values	2019-2021	
TX_36	ERCOT	ERCOT Map	Shows ERCOT boundary demonstrating that none of the sample counties for this study are within ERCOT.	Public	Policy Information	na	https://www.ercot.com/news/mediakit/maps
Fed_4	U.S. Energy Information Administration	Form EIA-860	These spreadsheets identify utilities, power plants, generators, wind facilities, and solar facilities by county.	Public	Renewable Production, Power Plants		https://www.eia.gov/electricity/data/eia860/
Fed_6	U.S. Energy Information Administration	Preliminary Monthly Electric Generator Inventory	Includes Monthly generation data for powerplants and renewable facilities. Starting with March 2017 data, Preliminary Monthly Electric Generator Inventory includes a comprehensive list of generators which retired since 2002. The list can be found on the 'Retired' tab of the datafile. This information is not available in the annual EIA-860 data.	Public	Renewable Production, Power Plants	2022	https://www.eia.gov/electricity/data/eia860m/
Fed_8	Office of Natural Resources Revenue - U.S.	Revenue	Full reporting of bonuses, rents, and royalties received from production on federal lands.	Public	Federal Lands	2003-2021	https://revenuedata.doi.gov/downloads/revenue/

Unique ID	Source	Data Name	Description	Access	Type	Years	Original Source link
	Department of the Interior		Includes distribution to federal and local governments, and Native Americans.				
Fed_10	U.S. Energy Information Administration	Natural Gas Processing Facilities	Includes Natural Gas Processing Facilities across the US by county. Method of locating natural gas processing facilities for the sake of cross checking with tax receipts.	Public	Natural Gas Processing	2012, 2014, 2017	https://www.eia.gov/naturalgas/ngqs/#?report=RP9&year1=2012&year2=2017&company=Name
Fed_11	U.S. Energy Information Administration	Petroleum Refineries	Record of operating crude oil refineries.	Public	Petroleum Processing	Current as of 2019	https://www.eia.gov/petroleum/refinerycapacity/ https://atlas.eia.gov/datasets/eia::petroleum-refineries/explore?location=75.117622%2C-126.882310%2C11.54
Fed_12	U.S. Energy Information Administration	Energy Infrastructure Map	GIS rendering of Energy Infrastructure across the US	Public	Energy Infrastructure	na	https://atlas.eia.gov/apps/5039a1a01ec34b6bbf0ab4fd57da5eb4/explore

West Virginia

Table of Contents

This document details our methods for collecting and estimating amounts from those taxes, royalties, fees and payments that are distributed to the local level in West Virginia.

State Collections

Oil and Gas Severance Tax
Coal Severance Tax

Local Collections

Property Tax

Oil and Gas Severance Tax

Policy

In West Virginia, severance taxes are collected by the West Virginia State Tax Department. The severance tax is a tax on the extraction of natural resources such as coal, oil, and gas. The tax is levied on the value of the resources extracted at a rate of 5%, and the revenue generated from the tax is used to fund various state programs and services, including education, infrastructure, and environmental protection.

The distribution of severance tax revenue to counties is managed by the State Auditor's Office. The auditor's office is responsible for calculating the amount of severance tax revenue that each county is entitled to receive based on a formula established by state law (11-13A-3a, WVC). The formula used to distribute severance tax revenue to counties takes into account several factors, including the value of the natural resources extracted within each county, the number of miles of public roads in each county, and the population of each county. The formula is designed to ensure that counties that are most impacted by natural resource extraction receive a larger share of the revenue.

Not all severance tax revenue is distributed to counties. A portion of the revenue is used to fund various state programs and services, including education, infrastructure, and environmental protection. The exact amount of revenue that is distributed to counties can vary from year to year based on a variety of factors, including the overall value of natural resource extraction in the state and changes in the severance tax rate.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
WV_1	West Virginia Office of the State Treasurer	State Oil and Gas Severance Tax Distributions	Allocation of the state oil and gas severance tax to all counties from 2007-2021. We only use data from 2011-2021 in this dataset.
WV_9	United States Census Bureau	County-Sub-jurisdiction Match-up	List that indicates which sub jurisdictions are locate within which county.

Calculations and Assumptions

1) Download Distribution Reports

We downloaded the West Virginia's State Treasurer's Office distribution reports that include the allocation of the state's oil and gas severance tax to each county.

2) Match Municipalities with Counties

We used a list of municipalities and counties in West Virginia to match each Municipality with the county it resides in.

3) Sum Distribution Amounts by Year and County

We used a pivot table to aggregate the distribution amounts by year and county.

Output

Allocation of state oil and gas severance tax to counties by year from 2011 to 2021.

Coal Severance Tax

Policy

In West Virginia, severance taxes are collected by the West Virginia State Tax Department. The severance tax is a tax on the extraction of natural resources such as coal, oil, and gas. The tax is levied on the value of the resources extracted, and the revenue generated from the tax is used to fund various state programs and services, including education, infrastructure, and environmental protection.

The distribution of severance tax revenue to counties is managed by the State Auditor's Office. The auditor's office is responsible for calculating the amount of severance tax revenue that each county is entitled to receive based on a formula established by state law (11-13A-3, WVC). The formula used to distribute severance tax revenue to counties considers several factors, including the value of the natural resources extracted within each county, the number of miles of public roads in each county, and the population of each county. The formula is designed to ensure that counties that are most impacted by natural resource extraction receive a larger share of the revenue.

Not all severance tax revenue is distributed to counties. A portion of the revenue is used to fund various state programs and services, including education, infrastructure, and environmental protection. The exact amount of revenue that is distributed to counties can vary from year to year based on a variety of factors, including the overall value of natural resource extraction in the state and changes in the severance tax rate.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
WV_3	West Virginia Office of the State Treasurer	State Coal Severance Tax Distributions	Allocation of the state coal severance tax to all counties from 2007-2021. We only use data from 2011-2021 in this dataset.
WV_9	United States Census Bureau	County-Sub-jurisdiction Match-up	List that indicates which sub jurisdictions are locate within which county.

Calculations and Assumptions

1) Download Distribution Reports

We downloaded the West Virginia's State Treasurer's Office distribution reports that include the allocation of the state's coal severance tax to each county.

2) Match Municipalities with Counties

We used a list of municipalities and counties in West Virginia to match each Municipality with the county it resides in.

3) Sum Distribution Amounts by Year and County

We used a pivot table to aggregate the distribution amounts by year and county.

Output

Allocation of state coal severance tax to counties by year from 2011 to 2021.

Property Tax

Policy

In West Virginia, centrally assessed property includes property that is used in the production, transmission, or distribution of electricity, and natural gas. This includes property such as power plants, transmission lines, and pipelines. The value of this property is assessed by the West Virginia State Tax Department, rather than by local assessors. The assessment is based on the property's fair market value and is used to determine the property's share of state and county taxes.

There are both state and local taxes levied on these centrally assessed property. The state taxes on centrally assessed property are collected by the West Virginia State Tax Department and are used to fund state government operations and services. The county taxes on centrally assessed property are collected by the county sheriff's office and are used to fund local government operations and services, such as schools, roads, and public safety.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
WV_10	West Virginia State Auditor's Office	Appraisal Reports	Parcel-level property search map with links to appraisal reports. Ability to search by E-911 Address, parcel attributes, and coordinates.
WV_11	Putnam County Sheriff's Tax Department	Property Tax Receipts	Property tax receipts search with the ability to search by taxpayer name, taxpayer account number, ticket number, and parcel ID.
WV_12	Marion County Sheriff's Tax Department	Property Tax Receipts	Property tax receipts search with the ability to search by taxpayer name, taxpayer account number, ticket number, and parcel ID.
WV_13	Greenbrier County Sheriff's Tax Department	Property Tax Receipts	Property tax receipts search with the ability to search by taxpayer name, taxpayer account number, ticket number, and parcel ID.
WV_14	Marshall County Sheriff's Tax Department	Property Tax Receipts	Property tax receipts search with the ability to search by taxpayer name, taxpayer account number, ticket number, and parcel ID.
WV_15	Grant County Sheriff's Tax Department	Property Tax Receipts	Property tax receipts search with the ability to search by taxpayer name, taxpayer account number, ticket number, and parcel ID.

Calculations and Assumptions

1) Compile a list of relevant facilities across fiscal years

We used EIA 860-m 2021 Plant to collect names, operators, and addresses of currently operating coal, natural gas, petroleum powerplants, wind and solar facilities in each sample county. We cross-referenced this with EIA 860-m 2021 Generator data to ensure we were addressing facilities where generators used in-scope technologies.

2) Collect Appraised Value and Parcel Data from West Virginia State Auditor's Parcel Search

We used the West Virginia State Office of the Auditor's parcel search map using the EIA identifying data such as the address, the owner, and the plant name. Some facilities were able to be identified using only one of the identifying features, others required cross-referencing the facility on Google Maps with the auditor's map and then verifying the information on the appraisal report. We downloaded all of the appraisal reports for each facility which included appraised land and building values, property descriptions, owner information, and a parcel number.

3) Search Parcel Numbers on County Sheriff Websites

We went to each county's Sheriff's Tax Office and used the parcel number associated with each facility collected from the appraisal report to find the tax receipt for each facility. Some properties had one property tax receipt associated with the facility, others had multiple. These were verified by matching the property details, owner, and address.

4) Sum Multiple Receipts

After collecting the tax receipts, we summed the taxed amount for facilities with more than one receipt associated with the property to collect the total taxes paid for each facility.

Output

Electric Generation Facility Tax Payments to the County.

Sources

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
WV_1	West Virginia State Treasurer	State Oil and Gas Severance Tax Distributions	State oil and gas severance tax distributions to counties broken down by political subdivision (subcounty) with some county breakdown	Public	Oil and Gas Severance Tax	2007 -2017	https://wvtreasury.com/BankingServices/RevenueDistributions/OilandGasSeverance/OilandGasSeverance-Archive.aspx
WV_10	West Virginia Property Tax Division	Property Tax	Property Tax Rates and Assessment and Distribution Policy	Public	Property Tax	na	Property Tax Rates (wv.gov)
WV_11	Putnam County Sheriff's Tax Department	Property Tax Receipts	Property tax receipts search with the ability to search by taxpayer name, taxpayer account number, ticket number, and parcel ID.	Public	Property Tax	2022	http://putnam.softwaresystems.com/index.html
WV_12	Marion County Sheriff's Tax Department	Property Tax Receipts	Property tax receipts search with the ability to search by taxpayer name, taxpayer account number, ticket number, and parcel ID.	Public	Property Tax	2022	http://marion.softwaresystems.com/index.html
WV_13	Greenbrier County Sheriff's Tax Department	Property Tax Receipts	Property tax receipts search with the ability to search by taxpayer name, taxpayer account number, ticket number, and parcel ID.	Public	Property Tax	2022	http://greenbrier.softwaresystems.com/index.html

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
WV_14	Marshall County Sheriff's Tax Department	Property Tax Receipts	Property tax receipts search with the ability to search by taxpayer name, taxpayer account number, ticket number, and parcel ID.	Public	Property Tax	2022	http://marshall.softwaresystems.com/index.html
WV_15	Grant County Sheriff's Tax Department	Property Tax Receipts	Property tax receipts search with the ability to search by taxpayer name, taxpayer account number, ticket number, and parcel ID.	Public	Property Tax	2022	http://grant.softwaresystems.com/index.html
WV_16	West Virginia State Auditors Office	Appraisal Reports	Parcel-level property search map with links to appraisal reports. Ability to search by E-911 Address, parcel attributes, and coordinates.	Public	Property Tax	na	https://www.mapwv.gov/parcel/
WV_2	West Virginia State Auditor's Office	County-Sub-Jurisdiction Match-Up	Includes taxes levied on subcounty jurisdictions for each county, to allow us to match the levy rates to each subcounty jurisdiction	Public	Property Tax	na	https://www.wvsao.gov/LocalGovernment/Default#RatesOfLevy
WV_3	West Virginia State Treasurer	State Coal Severance Tax Distributions	State coal severance tax distributions to counties broken down by political subdivision (subcounty) with some county breakdown	Public	Coal Severance Tax	2005 - 2021	https://wvtreasury.com/Banking-Services/Revenue-Distributions/Coal-Severance-Tax/Coal-

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
							Severance-Tax-Archive
WV_4	West Virginia State Auditor's Office	Allocation of Assessed Values of All Counties	Allocation of the state assessed public utilities to counties by year and specific utility as a query-enabled database. We retrieved data for 2011-2021.	Public	Property Tax	2011-2021	https://www.wvsao.gov/CountyCollections/PublicUtilities/AssessedValues
WV_5	West Virginia Property Tax Division	WV Assessment	Database that can be queried to search for property tax records for any county for any type of land use (i.e. pipelines or coal processing)	Public	Building and Land Assessed Values	na	https://www.mapwv.gov/assessment/Assessment
WV_6	West Virginia State Auditor's Office	Levy Reports	Assessment and Levy Reports for all counties 2012-2022, County budget reports for all counties 2012 - 2022, Municipal Budget Reports 2012 -2022, Rates of levy for all counties 2013-2022	Public	Property Tax	2012 - 2022	https://www.wvsao.gov/localgovernment/
WV_9	United States Census Bureau	County-Sub-Jurisdiction Match-Up	Municipalities in each county	Public	Property Tax	na	https://www2.census.gov/library/publications/decennial/2010/cph-2/cph-2-50.pdf

Wyoming

Table of Contents

This document details our methods for collecting and estimating amounts from those taxes, royalties, fees and payments that are distributed to the local level in Wyoming.

State Collections

Federal Mineral Lease Revenue distributed via formulaic distribution.

Severance Revenue distributed via formulaic distribution.

Wind Generation Revenue distributed via formulaic distribution to counties.

Local Collections

Property Taxes levied on mineral reserves, Power Plants, Renewable Facilities, Refineries and Natural Gas Processing and Distribution systems, Electric Companies, and Pipelines.

Federal Mineral Lease Revenue

Policy

The Wyoming State Treasurer collects revenue generated from federal lands. Per Wyoming Statutes § 9-4-601 Federal Mineral Royalties received the equal less than $200 million are distributed to the following funds: Cities and Towns, University of Wyoming, School Foundation, Highway Department, State Lands and Investments Capital Construction and School District Capital Construction. Federal Mineral Royalties over $200 million get distributed to the funds above but also go to the School Foundation and Budget Reserve (WY_5).

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
WY_1	Wyoming State Treasurer	Annual Reports	Data summarizes the distribution of Federal Mineral Lease Revenue and Coal Bonuses through direct and indirect formulaic distribution.

Calculations and Assumptions

Federal Mineral Royalties

1) Collecting Distribution Data

Using Annual Reports from the Wyoming State Treasurer, we compiled direct distributions of Federal Mineral Lease revenue for cities and towns, as well as aggregate deposits into the remaining funds. The statute does not include provisions for how the funds other than “Cities and Towns” are distributed locally, so we did not include those values in our analysis.

2) Disaggregate by Energy Type

We then selected our counties of interest using Municipality data from the Wyoming Department of Administration and Information, then multiplied by the ONRR Ratios. Using ONRR Revenue data, we estimated the proportion of federal mineral lease revenue by State, Fiscal Year, and Commodity. See the ONRR Methods Documentation for more details.

Output

Federal Mineral Lease tax data disaggregated by municipal jurisdiction and mineral type for years 2012-2021.

Severance Tax

Policy

The Wyoming Department of Treasury collects severance revenue for all minerals produced in the state, including oil, natural gas, coal, trona, uranium, and other "valuable products." Two thirds of all revenue is deposited into the Permanent Wyoming Mineral Trust Fund and Permanent Mineral Trust Fund Reserve Account, and the remaining third is deposited into the Severance Tax Distribution Account.

Per Wyoming Statutes § 39-14-801, DoR makes the following distributions from the Severance Tax Distribution Account, not to exceed one hundred fifty-five million dollars ($155,000,000.00) in any fiscal year (any excess is deposited into the state's General Fund and Budget Reserve Account). Items in bold indicate funds with direct distributions to county and sub-county governments:

- 62.26% - State General Fund
- 12.45% - Water Development Account I
- **9.25% - Cities and Towns**
- 4.33% - Highway Fund
- **3.1% - Counties**
- **2.9% - Road Construction and Maintenance (Distributed to Counties)**
- 2.33% - Capital Construction Account
- 2.1% - Water Development Account II
- **0.78% - Counties**
- 0.5% - Water Development Account III

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
WY_2	Wyoming Department of Revenue	Mineral Tax Distribution Data	Data summarizes quarterly distribution of all mineral revenue by source (coal, oil, gas, and other) and by fund. Funds include the State's General Fund, Permanent Wyoming Mineral Trust Fund, capital investment funds, and direct distribution to cities, towns, and counties. However, data is not disaggregated by county.
WY_3	Wyoming Department of Administration and Information	Wyoming Population Estimates and Forecasts	We used population datasets to identify the appropriate umbrella counties for cities and towns.
Fed_13, Fed_14	United States Census	County Population Estimates	Population Data from 2012-2022.
Fed_15, Fed_16	United States Census	City and Town Population Estimates	Population Data from 2012-2021.

Calculations and Assumptions

1) Collecting Distribution Data

First, we downloaded the mineral tax reports from the Wyoming Department of Revenue. We were able to obtain all quarterly distribution reports from 2012-2021, except for April 2018. We removed all mineral tax records associated with "Trona," "Uranium," and "Other Valuable Products" and left only payments associated with fossil fuels of interest: coal (surface and underground), natural gas and oil. We also removed all payments associated with "Interest" and "Penalty," which are always attributed to the State General fund, not our funds of interest.

2) Consolidating and coding mineral distributions by Energy Type

We then further consolidated the distribution data by removing all records and entire funds with zero payments from 2012-2022 (Including “DEQ FIN. RESP.”, “DEQ. CORR. ACTION,” and “Capital Facilities.” We also removed records labeled “LUST from WYDOT to DEQ,”, which represent financial transfers from the Department of Transportation to the Department of Environmental Quality. After this, we coded the “Mineral Description” column into our relevant energy categories of interest.

“Cities, Towns, and Counties” Fund

3) Summarize Distribution Data by Year

We consolidated the quarterly data into single annual records for each energy type.

4) Disaggregating Direct Distribution for Cities, Towns, and Counties

Because most of the direct distributions of severance revenue are determined by population, we used population as the main mechanism for estimating the distribution of severance revenue across counties, cities, and towns.

	Percent of Severance Distribution	Percent of "Cities, Towns, Counties" Fund
Counties	0.78	5.94%
Counties	3.1	23.61%
Cities and Towns	9.25	70.45%
Total	13.13%	100%

Using the consolidated annual records by energy type, we allocated 29.55% of the distribution to Counties and 70.45% for Cities and towns. Then, using Census population data, we allocated the funds to our counties and municipalities of interest, based on their proportion of population in relation to the state.

“Road Construction and Maintenance” Fund

5) Summarize Distribution Data By Year

We consolidated the quarterly data into single annual records for each energy type.

6) Disaggregating Indirect Distribution: Road Construction Funds for Counties

We also used population as a means of allocating Road Construction revenue across counties. Although this fund is allocated by population, mileage of roads, and assessed valuation, we used population as a proxy.

7) Combine all Mineral Distribution data

We then combined all county and municipal/township records into one spreadsheet before finalizing.

Output

Severance tax data disaggregated by County, fund, and mineral type for years 2012-2022.

Wind Generation Tax

Policy

Per Wyoming Statutes § 39-22, the State of Wyoming imposes a $1.00 tax on each megawatt hour produced by wind energy developments. The tax goes into effect three years after the wind turbine first produces electricity. The Wyoming Department of Revenue collects this tax and then distributes sixty percent (60%) to the counties where the facilities are located, and distributes the remaining forty percent (40%) into the state's general fund.

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
WY_4	Wyoming Department of Revenue	DOR Annual Reports	DOR's Annual Reports include a summary of historic wind generation revenue, including distributions by county.

Calculations and Assumptions

1) Direct allocation solely to Counties

Because the statue (2020 Wyoming Statutes, Section 39-22-111) does not offer any requirements or guidance for how funds are distributed to sub-county jurisdictions, we did not further disaggregate beyond county-level revenues.
Our counties of interest:

Output

Wind generation revenue, disaggregated by county, for years 2015-2021.

Property Tax

Policy

In the State of Wyoming, Mineral and Oil & Gas Companies are valued by the Wyoming Department of Revenue Mineral Tax Division. Commercial, Residential, and Industrial Property is valued by the local County Assessor. The county gross products tax is an ad valorem property tax based on the taxable value of minerals produced in the previous calendar year, which is also assessed by the State (WY_6).

Data Inputs

Unique ID	Source	Data Name, Shorthand	Description
WY_4	Wyoming Department of Revenue	Annual Reports	Reports include detailed Locally-assessed and State-assessed valuations, by county, plus County, Municipal, and Special District Taxes Levied.
Fed_11	U.S. Energy Information Administration	Petroleum Refineries	Record of operating crude oil refineries.
Fed_10	U.S. Energy Information Administration	Natural Gas Processing Facilities	Includes Natural Gas Processing Facilities across the US by county.

Calculations and Assumptions

1) Compile Total Taxable Values For Relevant Property Classifications

First, we collected total taxable data from the following sections and property class categories of interest. We collected this data in three locations in the Annual Reports:

- Property Tax Division: Locally Assessed Valuations
- Property Tax Division: State Assessed Valuations
- Mineral Tax Division: State Assessed Valuations

2) Estimate Taxable Value Ratios by County

We then collected the Total Assessed Values – Local and State - reported by county and calculated the proportions of total assessed value of each property class by each county and fiscal year.

3) Compile Revenue Data

Next, we collected data about total taxes levied by different jurisdictions. We collected this data in two locations of the Property Tax Division section of the Annual Reports:

- Grand Total County Levies (which includes a sum of all taxes levied for special districts and school districts)
- City and Town Assessed Valuation and Taxes Levied for the Year

We chose to use the more granular City and Town Taxes Levied for the Year, rather than the "Municipal" total included in the Grand Total County Levies tables.

4) Estimate property tax revenue by property class, county, and jurisdiction

Using an Excel Power Query, we first created a table of all possible combinations of jurisdiction, assessment category, and year.

Then, separating Counties/School Districts/Special Districts from Municipalities, we multiplied the raw taxes levied by each jurisdiction by the appropriate assessed value ratio to estimate the total tax levied.

5) Define revenue by Energy Type and Phase

Finally, we used the crosswalk below to identify the appropriate simplified energy type and phase for each individual record.

Assessed	Property Class/Detailed Energy Type	Energy Type Simplified	Phase
Locally	Coal Mining	Coal	Upstream
Locally	Oil and Gas Extraction	Oil and gas	Upstream
Locally	Petroleum and Coal Product Manufacturing	Fossil	Midstream_Refining
Locally	Pipeline Transportation	Oil and gas	Midstream_Pipeline
State	Gas Distribution	NG	Downstream_Distribution
State	Gas Pipelines	NG	Midstream_Pipeline
State	Liquid Pipelines	Oil	Midstream_Pipeline
State	Major Electrics	Electric	Downstream_GenTranDist
State	Municipal Electrics	Electric	Downstream_GenTranDist
State	Natural Gas	NG	Upstream
State	Oil	Oil	Upstream
State	REA Electrics	Electric	Downstream_GenTranDist
State	Surface Coal	Coal	Upstream
State	Underground Coal	Coal	Upstream

Output

Property tax revenue, estimated for each county, jurisdiction, and property class.

Sources

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
WY_1	Wyoming State Treasurer	Annual Reports	Data summarizes the distribution of Federal Mineral Lease Revenue and Coal Bonuses through direct and indirect formulaic distribution.	Public	Federal Lands	2012-2021	https://statetreasurer.wyo.gov/reports/
WY_2	Wyoming Department of Revenue	Mineral Tax Distributions	Summarizes quarterly contributions from each mineral tax into various state funds by year. (April 2018 reported as "unavailable" online).	Public	Severance	2012-2022	https://revenue.wyo.gov/tax-distribution-reports/mineral-tax-distribution-reports
WY_3	Wyoming Department of Administration and Information	Wyoming Population Estimates and Forecasts	We used population datasets to identify the appropriate umbrella counties for cities and towns.	Public	Policy Information	2021	http://eadiv.state.wy.us/pop/
WY_4	Wyoming Department of Revenue	Annual Reports	Annual Reports includes Annual summaries of Mineral Tax Distribution, Local/State assessed values, and taxes levied.	Public	Severance, Property	2012-2022	https://revenue.wyo.gov/about-us/dor-annual-reports
WY_5	Wyoming State Treasurer	Distributions	Includes a description of distribution policies, statutes, and reports.	Public	Policy Information	na	https://statetreasurer.wyo.gov/financial/distributions/

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
WY_6	Wyoming Department of Revenue	Public Utility Taxation	Provides a summary of public utility taxation and links to relevant forms, publications, and reporting materials.	Public	Policy Information	na	https://wyo-prop-div.wyo.gov/public-utilities
Fed_10	U.S. Energy Information Administration	Natural Gas Processing Facilities	Includes Natural Gas Processing Facilities across the US by county.	Public	Natural Gas Processing	2012, 2014, 2017	https://www.eia.gov/naturalgas/ngqs/#?report=RP9&year1=2012&year2=2017&company=Name
Fed_11	U.S. Energy Information Administration	Petroleum Refineries	Record of operating crude oil refineries.	Public	Petroleum Processing	Current as of 2019	https://www.eia.gov/petroleum/refinerycapacity/ https://atlas.eia.gov/datasets/eia::petroleum-refineries/explore?location=75.117622%2C-126.882310%2C11.54
Fed_13	U.S. Census Bureau	County Population Totals (2010-2019)	County population totals, by state.	Public	Per Capita Estimates	2010-2019	https://www.census.gov/data/tables/time-series/demo/popest/2010s-counties-detail.html
Fed_14	U.S. Census Bureau	County Population Totals (2020-2022)	County population totals, by state.	Public	Per Capita Estimates	2020-2022	https://www.census.gov/data/tables/time-series/demo/popest/2020s-counties-total.html
Fed_15	U.S. Census Bureau	City and Town Population Totals	City and town population totals, by state.	Public	Per Capita Estimates	2010-2019	https://www.census.gov/data/tables/time-series/demo/popest/2010s-total-cities-and-towns.html

Unique ID	Source	Data Name	Description	Accessibility	Type	Years	Original Source link
		(2010-2019)					
Fed_16	U.S. Census Bureau	City and Town Population Totals (2020-2021)	City and town population totals, by state.	Public	Per Capita Estimates	2020-2021	https://www.census.gov/data/tables/time-series/demo/popest/2020s-total-cities-and-towns.html