

# Methods Documentation: North Dakota

Appendix of Working Paper 24-01 by **Daniel Raimi, Elena Davert, Haley Neuenfeldt, Amy Van Zanen, and Zach Whitlock**

## 1. 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 – Final values can be found in the ‘FML\_Final’ tab in Estimation\_ND.xlsx

### State Collections

Oil and Gas Production Taxes – Final values can be found in ‘Oil\_Gas\_Prod\_Final’ tab in the Estimation\_ND.xlsx

Coal Conversion and Severance Taxes – Final values can be found in ‘Coal\_Final’ tab in the Estimation\_ND.xlsx. Note that the coal conversion tax is levied in lieu of local property taxes.

Electric Generation Tax (Excluding Wind) – Final values can be found in ‘EGT\_WindGen\_Final’ tab in the Estimation\_ND.xlsx

Electric Generation Tax (Wind only) – See the “Post-UM research” folder for the calculation of this revenue stream alongside wind property taxes

### Local Collections

Property Taxes on Pipelines – Final values for all property taxes can be found in ‘Property\_Tax\_Final’ tab in the Estimation\_ND.xlsx

Property taxes on wind turbines – See the “Post-UM research” folder for the calculation of this revenue stream alongside the wind electric generation tax. Note that all counties in our sample receive the electric generation tax instead of the ad valorem tax or PILTs due to the details of state law. Several counties outside of our sample receive ad valorem taxes and PILTs on wind farms.

## 2. Federal Mineral Royalties

### 2.1. 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.

### 2.2. 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.

### 2.3. 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.

Note: The disbursement amounts can be found in ‘FML\_Raw’ tab.

#### 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 ratios can be found the Methods section related to ONRR.

Note: The ratios and calculations can be found in the ‘FML\_Ratio’ and ‘FML\_Interim’ tabs respectively.

## 2.4. Output

County totals by year for Federal Mineral Royalty distributions.

# 3. State Oil and Gas Production Tax

## 3.1. 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).

## 3.2. 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.

## 3.3. 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.

Note: The disbursement amounts can be found in 'Oil\_Gas\_Prod\_Raw' tab.

### 3) Aggregate Distributions by Year

We aggregated each county's distributions by year.

Note: The final formatted amounts can be found in 'Oil\_Gas\_Prod\_Final' tab.

### 3.4. Output

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

## 4. State Coal Conversion Tax and State Coal Severance Tax

### 4.1. 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.

## 4.2. 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.

## 4.3. 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.

Note: The disbursement amounts can be found in ‘Coal\_Raw’ tab.

### 3) Aggregate Distributions by Year

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

Note: The final formatted amounts can be found in ‘Coal\_Final’ tab.

## 4.4. 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.’

## 5. State Electric Generation Transmission Tax (including Wind Generation)

### 5.1. 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.

Revenues are allocated to local governments based on the presence of the physical infrastructure in their taxing jurisdictions and the appropriate mill levy rate (Section 57-33.2-19). To estimate how revenues are allocated across jurisdictions within counties, we make the simplifying assumption that revenues are allocated in direct proportion with total property taxes collected within each county in that year. For example, if school districts collected 25% of all property tax revenue within a county in a given year, we assume that school districts receive 25% of these energy-related tax revenues in that same year.

### 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).

## 5.2. 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." <i>Agriculture and Applied Economics</i> (805-S).

## 5.3. 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:** This data is found in 'EGT\_WindGen20-21\_Raw' tab.

**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) 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.

Note: The final formatted amounts can be found in 'EGT\_WindGen\_Final' tab.

## 5.4. Output

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

## 6. Property Tax: Pipelines, Electric and Gas Utilities, Oil Refineries, and Wind Parks

### 6.1. 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.



## 6.2. 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.

## 6.3. 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 Data

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

Note: Raw values can be found in ‘Property\_Tax\_Raw’ and final formatted values are in ‘Property\_Tax\_Final!’

### 3) Estimate wind property taxes

All wind property taxes are collected outside of our sample counties. However, we did collect information for all counties (although we do not include the data from outside our sample counties in the final dataset or analysis). For wind property taxes, we use data on ad valorem property taxes and PILTs provided by the Property Tax Division of the Office of the ND State Tax Commissioner. We estimate allocation of revenues within each county based on property tax collections in 2021 for counties, school districts, municipalities, and other local governments. We include municipalities because they include townships, which would generally be expected to collect property taxes on rural wind farms.

Note: this analysis can be found in the “Post-UM folder” under “ND” and the name “ND wind tax calculation,” which also includes revenue allocation for the wind generation tax. Note that all counties in our sample receive the electric generation tax instead of the ad valorem tax or PILTs due to the details of state law. Several counties outside of our sample receive ad valorem taxes and PILTs on wind farms.

## 6.4. Output

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

## Sources

Unique ID	Source	Data Name	Description	Access	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	<a href="https://www.eia.gov/electricity/data/eia860/">https://www.eia.gov/electricity/data/eia860/</a>
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	<a href="https://www.treasurer.nd.gov/historical-revenue-distributions">https://www.treasurer.nd.gov/historical-revenue-distributions</a>
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	<a href="https://www.tax.nd.gov/sites/www/files/documents/news-center/publications/red-book-2022-online-version.pdf">https://www.tax.nd.gov/sites/www/files/documents/news-center/publications/red-book-2022-online-version.pdf</a>
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	<a href="https://www.treasurer.nd.gov/historical-revenue-distributions">https://www.treasurer.nd.gov/historical-revenue-distributions</a>
ND_4	North Dakota Office of the State Tax Commissioner	Coal Tax Descriptions	Provides information on what types of facilities are taxed under the coal conversion tax and what types of coal and coal use are taxed under the coal severance tax.	Public	Policy Information	na	<a href="https://www.tax.nd.gov/business/coal-tax">https://www.tax.nd.gov/business/coal-tax</a>
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	<a href="https://www.tax.nd.gov/sites/www/files/documents/guidelines/property-tax/propertynotassessedbylocalassessors-1.pdf">https://www.tax.nd.gov/sites/www/files/documents/guidelines/property-tax/propertynotassessedbylocalassessors-1.pdf</a>

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	<a href="https://www.treasurer.nd.gov/historical-revenue-distributions">https://www.treasurer.nd.gov/historical-revenue-distributions</a>
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	<a href="https://www.tax.nd.gov/sites/www/files/documents/news-center/publications/54th-biennial-report.pdf">https://www.tax.nd.gov/sites/www/files/documents/news-center/publications/54th-biennial-report.pdf</a>
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	<a href="https://www.tax.nd.gov/sites/www/files/documents/news-center/publications/55th-biennial-report.pdf">https://www.tax.nd.gov/sites/www/files/documents/news-center/publications/55th-biennial-report.pdf</a>
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	<a href="https://www.tax.nd.gov/sites/www/files/documents/guidelines/property-tax/sboe-2020-meeting-minutes.pdf">https://www.tax.nd.gov/sites/www/files/documents/guidelines/property-tax/sboe-2020-meeting-minutes.pdf</a>

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	<a href="https://www.tax.nd.gov/sites/www/files/documents/property-tax/sboe-2021-meeting-minutes.pdf">https://www.tax.nd.gov/sites/www/files/documents/property-tax/sboe-2021-meeting-minutes.pdf</a>
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	<a href="https://ageconsearch.umn.edu/record/310042">https://ageconsearch.umn.edu/record/310042</a>
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	<a href="https://www.tax.nd.gov/search?query=property+tax+statistical+reports">https://www.tax.nd.gov/search?query=property+tax+statistical+reports</a>
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	<a href="https://www.co.morton.nd.us/propertyinformation">https://www.co.morton.nd.us/propertyinformation</a>

