



**DEPARTMENT OF COMMERCE TESTIMONY REGARDING ECONOMIC IMPACT OF THE
ELECTRICAL GENERATING FACILITIES SALES TAX EXEMPTION, TELECOMMUNICATIONS
INFRASTRUCTURE SALES TAX EXEMPTION, AND MANUFACTURING AUTOMATION TAX CREDIT
SEPTEMBER 13, 2016, 3:15 P.M.
POLITICAL SUBDIVISION TAXATION COMMITTEE
REPRESENTATIVE JASON DOCKTER, CHAIRMAN**

JUSTIN DEVER – CO-DEPUTY COMMISSIONER, ND DEPARTMENT OF COMMERCE

Good afternoon, Mr. Chairman and members of the committee, my name is Justin Dever and I serve as a Co-Deputy Commissioner for the Department of Commerce. I will be providing economic impact information relating to the Electrical Generating Facilities Sales Tax Exemption, Telecommunications Infrastructure Sales Tax Exemption and the Manufacturing Automation Tax Credit.

Electrical Generating Facilities Sales Tax Exemption

Less than five companies utilize the electrical generating facilities sales tax exemption in a given year. Thus information relating to this incentive cannot be released due to taxpayer confidentiality. Instead, we used publicly available information to illustrate examples of the potential return on investment of the sales tax exemption.

Wind-Powered Electrical Generating Facility

Geronimo Energy is currently constructing a 200 megawatt wind farm in Stutsman County. Information about this project can be found at <http://www.geronimoenergy.com/ourprojects/courtenay/>, including an economic impact sheet. This information was used to estimate the total economic impact utilizing a REMI Policy Insight™ model for North Dakota. The following inputs were used in the model:

- \$300 million in capital infrastructure investment
- 200 temporary construction jobs
- 15 full-time jobs
- Landowner payments of \$1,325,000 per year
- \$40,000 community fund per year

In previous fiscal notes, the Office of the State Tax Commissioner has assumed 70% of the cost as being the taxable component. Using this methodology, the estimated sales tax exempted would be about \$10.5 million.

In order to estimate the overall impact, including the indirect and induced, we utilized a customized REMI Policy Insight™ model for North Dakota. The analysis shows the change in

economic activity caused by the industry expansion. In order to show the total implications of the expansion, REMI developed a Policy Insight model with detailed employment, population, personal income, and other data specific to North Dakota. Using this model, REMI generated the regional baseline forecast and then used the information provided to develop an alternative forecast that would occur in the event of the expansion in this sector. The table below shows the difference to the economy that occurred from the projects.

The tables below show the estimated effect of the Courtenay Wind Farm on the economy of North Dakota.

Table 1 Summary Results

Category	Units	2015	2016	2017	2018	2019
Total Employment	Individuals (Jobs)	531	570	210	214	209
Gross Domestic Product	Millions of Current Dollars	\$114.6	\$119.1	\$39.6	\$42.4	\$44.3
Output	Millions of Current Dollars	\$231.7	\$239.4	\$58.6	\$63.1	\$65.6
Personal Income	Millions of Current Dollars	\$48.0	\$54.8	\$19.5	\$20.8	\$21.3

Table 2 Employment Effects

Category	Units	2014	2015	2016	2017	2018
Total Employment	Individuals (Jobs)	531	570	210	209	204
Direct Employment	Individuals (Jobs)	200	200	15	15	15
Indirect & Induced Employment	Individuals (Jobs)	331	370	195	199	194

Estimating Fiscal Impact and Return on Investment

As mentioned at a previous committee meeting, the model we use to estimate economic impact (REMI Policy Insight™) does not provide us the ability to estimate the impact to state tax revenues. Without this ability, it is difficult to produce a reliable estimate for return on investment.

Coal-Fired Electrical Generating Plant

The most recent coal-fired electric generation plant is the 99 megawatt Spiritwood Station in Stutsman County. Great River Energy's fact sheet can be found at <http://greatrivereenergy.com/wp-content/uploads/2016/03/FINAL-spiritwood-fact-sheet-101615.pdf>. The plant was reported to cost \$437 million. This information was used to estimate the total economic impact utilizing a REMI Policy Insight™ model for North Dakota. The following inputs were used in the model:

- \$437 million in construction costs

- 49 full-time jobs

The REMI Policy Insight™ model only allows us to go back to 2014, so we inputted the construction information for that year. The actual construction of Spiritwood Station started in 2007 and was completed in 2011.

Using an estimate of 50% of the cost as being the taxable component the estimated sales tax exempted would be about \$10.925 million. This lower percentage is based upon labor costs being a higher percentage of the total cost of construction.

The tables below show the estimated effect of the Spiritwood Station on the economy of North Dakota.

Table 1 Summary Results

Category	Units	2014	2015	2016	2017	2018
Total Employment	Individuals (Jobs)	1,457	311	309	299	289
Gross Domestic Product	Millions of Current Dollars	\$281.5	\$57.1	\$60.4	\$62.9	\$65.5
Output	Millions of Current Dollars	\$561.0	\$81.4	\$86.5	\$89.5	\$92.5
Personal Income	Millions of Current Dollars	\$91.9	\$27.4	\$28.8	\$29.2	\$29.6

Table 2 Employment Effects

Category	Units	2014	2015	2016	2017	2018
Total Employment	Individuals (Jobs)	1457	311	309	299	289
Direct Employment	Individuals (Jobs)	0	49	49	49	49
Indirect & Induced Employment	Individuals (Jobs)	1457	262	260	250	240

Estimating Fiscal Impact and Return on Investment

As mentioned previously, the model we use to estimate economic impact (REMI Policy Insight™) does not provide us the ability to estimate the impact to state tax revenues. Without this ability, it is difficult to produce a reliable estimate for return on investment.

Telecommunications Infrastructure Sales Tax Exemption

For most years, less than 5 companies have used the Telecommunications Infrastructure sales tax exemption. The latest reportable data from the Office of the State Tax Commissioner is from 2014, in which 7 companies benefited from a sales tax exemption totaling \$1,772,462.

Information such as employment or other data specific to North Dakota is not available to perform an estimate of the overall impact utilizing a customized REMI Policy Insight™ model for North Dakota so we looked to information from outside sources.

The Council of State Governments (CSG) Policy and Research had an article in the June/July publication by Carolyn Orr entitled 'A look at how and why North Dakota became a leader in deployment of fiber optic internet.', According to this article, over the last two years the state's telecommunication providers have invested \$115 million in infrastructure. The article, using information from Broadband Now, compares the percentage of population with fiber-optic Internet access in the Midwest. North Dakota has the highest percentage of states in the Midwest, where 60.1 percent of North Dakota's population have fiber-optic Internet access compared to 40.6 percent in South Dakota and 16.5 percent in Minnesota.

The Information Telecommunications Union (ITU) commissioned a study conducted by Dr. Raul Katz of Columbia University titled 'Impact of Broadband on the Economy: Research to Date and Policy Issues.' According to this study:

- For every one percent increase in broadband penetration in a U.S. state, employment increases by 0.2 to 0.4 percent.
- Broadband adoption increases the productivity of manufacturing firms by approximately 5 percent, of services firms by approximately 10 percent, and of firms in the information industry by approximately 20 percent.

The GSM Association (GSMA) commissioned a study conducted by Deloitte LLP to assess the impact of mobile services on GDP growth and productivity. This study, titled 'What is the impact of mobile telephony on economic growth?', found:

- A 10 percent increase in broadband penetration add between 0.25 and 1.38 percentage points to a country's GDP growth.
- A 10 percent substitution from 2G to 3G mobile broadband penetration increases GDP per capita growth by 0.15 percentage points per year, and a doubling of mobile data use increase GDP per capita growth by 0.5 percentage points.
- A 10 percent increase in mobile device penetration increases production by 4.2 percentage points.

In summary, it is apparent from studies that an increase in the availability of wired and wireless telecommunications services increases economic performance. We do not, however, have the information necessary to determine to what extent the telecommunications sales tax exemption has had on North Dakota's economy.

Manufacturing Automation Tax Credit

The Automation Tax Credit was initiated in the 2013 calendar year. In both 2013 and 2014, the \$2 million cap was reached. In 2015, there were \$978,957 in credits awarded. This is a total of \$4,978,957 of tax credits awarded over three years to 23 companies. The companies purchased \$26,252,031 in eligible equipment.

We do not have sufficient information to estimate the economic impacts and return on investment of the Automation Tax Credit. However, others have studied the use of robots in manufacturing and found that robots increased labor productivity and overall economic growth. For example, Georg Graetz and Guy Michaels studied the impacts of industrial robots and reported their finding in the paper "Robots at Work." Based on data from 17 countries from 1993-2007, they found that the use of robots raised the annual growth rate of GDP by 0.37 percentage points and increased labor productivity by 0.36 percentage points.

While automation is believed to increase economic performance, including labor productivity, we do not have the information or expertise necessary to determine to what extent the automation tax credit has had on North Dakota's economy.

Conclusion

Mr. Chairman and members of the Political Subdivision Taxation Committee, thank you for allowing me to visit with you today. That concludes my testimony and I am happy to entertain any questions.

Estimated Impact of 200 MW Wind Farm

Category	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Employment	Individuals (Jobs)	531.3	570.2	155.6	133.4	117.4	107.8	102.1	99.1	97.7	97.3
Private Non-Farm Employment	Individuals (Jobs)	492.7	510.4	101.8	89.5	79.3	73.1	69.5	67.9	67.5	67.8
Residence Adjusted Employment		481.0	517.0	150.8	133.4	117.7	108.2	102.4	99.1	97.4	96.7
Population		118.6	222.3	225.8	233.2	234.8	233.5	230.3	226.2	221.9	217.6
Labor Force		92.6	159.0	145.3	140.0	132.4	125.5	118.1	110.8	104.7	100.2
Gross Domestic Product	Current Dollars	\$ 114,555,091	\$ 119,063,498	\$ 24,409,070	\$ 23,657,104	\$ 23,319,896	\$ 23,539,996	\$ 24,166,493	\$ 25,070,157	\$ 26,247,324	\$ 27,642,651
Output	Current Dollars	\$ 231,726,945	\$ 239,402,880	\$ 36,104,990	\$ 34,149,164	\$ 32,917,636	\$ 32,654,671	\$ 33,107,294	\$ 34,066,723	\$ 35,477,472	\$ 37,271,658
Value Added	Current Dollars	\$ 143,966,298	\$ 149,308,127	\$ 25,962,562	\$ 25,042,330	\$ 24,577,192	\$ 24,725,378	\$ 25,331,729	\$ 26,258,008	\$ 27,465,836	\$ 28,918,758
Personal Income	Current Dollars	\$ 48,034,564	\$ 54,774,179	\$ 15,111,354	\$ 14,181,137	\$ 13,302,247	\$ 12,772,017	\$ 12,513,586	\$ 12,528,837	\$ 12,682,194	\$ 12,972,729
Disposable Personal Income	Current Dollars	\$ 40,781,824	\$ 46,296,138	\$ 14,188,067	\$ 13,437,672	\$ 12,727,787	\$ 12,299,001	\$ 12,094,939	\$ 12,122,543	\$ 12,254,771	\$ 12,495,680
Real Disposable Personal Income	Current Dollars	\$ 40,269,358	\$ 44,504,231	\$ 12,340,305	\$ 12,304,692	\$ 11,708,119	\$ 11,389,102	\$ 11,270,341	\$ 11,358,916	\$ 11,533,584	\$ 11,799,375
Total Employment	Individuals (Jobs)	531.3	570.2	155.6	133.4	117.4	107.8	102.1	99.1	97.7	97.3
Direct Employment	Individuals (Jobs)	200.0	200.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Indirect & Induced Employment	Individuals (Jobs)	331.3	370.2	140.6	118.4	102.4	92.8	87.1	84.1	82.7	82.3
Incentive Cost	\$	10,500,000									
Est. Sales Tax (Dis. Personal Income * Avg. Rate)	\$	1,509,627	\$ 1,713,751	\$ 525,202	\$ 497,424	\$ 471,146	\$ 455,274	\$ 447,720	\$ 448,742	\$ 453,637	\$ 462,554
Est. Corporate Inc. Tax (Output * Avg. Rate)	\$	506,263	\$ 523,033	\$ 78,880	\$ 74,607	\$ 71,917	\$ 71,342	\$ 72,331	\$ 74,427	\$ 77,509	\$ 81,429
Est. Personal Inc. Tax (Personal Income * Avg. Rate)	\$	632,705	\$ 721,478	\$ 199,045	\$ 186,792	\$ 175,215	\$ 168,231	\$ 164,827	\$ 165,028	\$ 167,048	\$ 170,875
Combined	\$	2,648,595	\$ 2,958,262	\$ 803,126	\$ 758,823	\$ 718,278	\$ 694,847	\$ 684,878	\$ 688,197	\$ 698,194	\$ 714,858
Annual Rate of Return		25.2%	28.2%	7.6%	7.2%	6.8%	6.6%	6.5%	6.6%	6.6%	6.8%

Estimated Impact of 99 MW Coal-Fired Electrical Generating Plant

Category	Units	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Employment	Individuals (Jobs)	1457.3	311.4	308.8	298.9	289.1	280.9	274.5	269.6	265.9	263.1
Private Non-Farm Employment	Individuals (Jobs)	1356.4	236.9	245.7	241.3	234.7	228.1	222.6	218.2	214.9	212.4
Residence Adjusted Employment		1389.6	298.9	304.4	295.0	285.5	277.4	271.1	266.0	262.1	259.1
Population		360.6	367.0	392.1	410.2	423.0	431.5	437.0	439.9	440.8	440.3
Labor Force		304.4	244.0	243.7	243.9	241.9	237.8	233.8	228.6	223.4	218.7
Gross Domestic Product	Current Dollars	\$ 281,480,983	\$ 57,127,180	\$ 60,394,454	\$ 62,863,587	\$ 65,473,372	\$ 68,283,472	\$ 71,351,570	\$ 74,704,958	\$ 78,220,259	\$ 82,140,533
Output	Current Dollars	\$ 561,016,100	\$ 81,431,750	\$ 86,482,705	\$ 89,536,592	\$ 92,509,002	\$ 95,650,097	\$ 99,116,797	\$ 102,973,802	\$ 107,088,358	\$ 111,761,411
Value Added	Current Dollars	\$ 353,956,522	\$ 60,432,767	\$ 64,126,128	\$ 66,740,731	\$ 69,436,702	\$ 72,319,784	\$ 75,469,575	\$ 78,935,048	\$ 82,596,796	\$ 86,617,897
Personal Income	Current Dollars	\$ 91,949,520	\$ 27,395,964	\$ 28,758,180	\$ 29,235,321	\$ 29,583,360	\$ 30,028,581	\$ 30,606,903	\$ 31,310,813	\$ 32,224,705	\$ 33,190,714
Disposable Personal Income	Current Dollars	\$ 78,516,681	\$ 23,473,293	\$ 24,552,883	\$ 24,907,313	\$ 25,236,204	\$ 25,648,869	\$ 26,156,751	\$ 26,763,150	\$ 27,550,042	\$ 28,358,781
Real Disposable Personal Income	Current Dollars	\$ 77,121,643	\$ 20,421,744	\$ 22,653,021	\$ 23,058,508	\$ 23,465,811	\$ 23,937,479	\$ 24,488,825	\$ 25,119,688	\$ 25,911,801	\$ 26,716,670
Total Employment	Individuals (Jobs)	1457.3	311.4	308.8	298.9	289.1	280.9	274.5	269.6	265.9	263.1
Direct Employment	Individuals (Jobs)	0.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0
Indirect & Induced Employment	Individuals (Jobs)	1457.3	262.4	259.8	249.9	240.1	231.9	225.5	220.6	216.9	214.1
Incentive Cost		\$ 10,925,000									
Est. Sales Tax (Dis. Personal Income * Avg. Rate)		\$ 2,906,464	\$ 868,914	\$ 908,878	\$ 921,998	\$ 934,172	\$ 949,448	\$ 968,248	\$ 990,696	\$ 1,019,824	\$ 1,049,761
Est. Corporate Inc. Tax (Output * Avg. Rate)		\$ 1,225,675	\$ 177,907	\$ 188,942	\$ 195,614	\$ 202,108	\$ 208,971	\$ 216,545	\$ 224,971	\$ 233,960	\$ 244,170
Est. Personal Inc. Tax (Personal Income * Avg. Rate)		\$ 1,211,146	\$ 360,856	\$ 378,799	\$ 385,084	\$ 389,668	\$ 395,532	\$ 403,150	\$ 412,422	\$ 424,459	\$ 437,183
Combined		\$ 5,343,285	\$ 1,407,677	\$ 1,476,619	\$ 1,502,696	\$ 1,525,948	\$ 1,553,951	\$ 1,587,943	\$ 1,628,088	\$ 1,678,244	\$ 1,731,114
Annual Rate of Return		48.9%	12.9%	13.5%	13.8%	14.0%	14.2%	14.5%	14.9%	15.4%	15.8%