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# The Economic and Fiscal Impacts of a Wind Turbine Farm in Pecos County Texas

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## Executive Summary

1. The 303 direct jobs in the construction phase resulted in 89 additional jobs for a total of 391 jobs during the construction phase. This increases employee compensation (including taxes, benefits, etc.) $7.9 million annually. Because the construction phase jobs are temporary, the employment and income impacts will disappear at the end of the construction phase (Table 1).

2. 20 permanent jobs cause additional job growth of 17, for a total of 37 jobs and an increase in employee compensation of $1,108,670 (Table 3).

3. The new investment and job growth create additional tax revenues for the county, city and school districts.

4. To be able to compare dollar figures across years in a multi-year project, all dollar amounts must be converted to present value terms.

5. The present value of all property taxes is $31,439,169, of which the county revenue is $8,334,051 (Table 5).

6. The present value of the abatement is $5,794,276. Because the abatement is only on county revenues, the county revenue with the abatement is $2, 539,775 (Table 5).

7. The increase in permanent jobs and income increase the demand for public services. The present value of the increased public expenditures is $1,509,480 over the operations phase of the project (Table 7).

## Introduction

Investment by the Texas Wind Power Project will create employment and increase earnings in Pecos County. The employment and earnings that are a direct result of the project will further increase employment and earnings due to the multiplier effect. The increased investment, employment and income will create new tax revenues for the community, but generally will also increase demands on local public services, particularly if new families move to the community to fill the new jobs. A common question is whether the new tax revenues will cover the increased demands on local services. Of particular interest is the value of the 10 year property tax abatement that the company has requested from the county.

Pecos county has declined in population for many years, with an upturn in population in recent years. (This pattern of population loss is common in rural areas in the United States.) This suggests that there may be excess capacity in both the private and public sector. Because of the excess capacity that is expected to exist, much of the new employment and earnings can be thought of as stabilizing the economy rather than growing, that is the new economic activity does not add new families to the population, but keeps families in the community who would otherwise have left. Thus the project under analysis is not expected to cause large increases in demands for local public services.

The analysis is divided into two phases: a construction phase and an operations phase. The two phases run concurrently. It was necessary to divide them because the employment in the construction phase is temporary while the employment in the operations phase is permanent.

**Construction Phase**

The first 18 months of the project are a construction phase that results in temporary employment--construction of the assembly plant, site preparation and erection of the turbines on the site (250 jobs); construction of a road to the industrial park (13 jobs); and temporary workers in the assembly plant (40 jobs). This is a total of 303 direct jobs (Table 1).

Research shows that temporary employment will have a smaller effect on the local economy than the same amount of permanent income and employment. In addition, construction workers who do not live permanently in the county will not spend as much locally as residents. Therefore, we have not included the induced effects of the construction phase in our analysis, because it would likely overestimate the impact of the construction phase on the county economy.

The 303 direct jobs in the construction phase resulted in 89 additional jobs for a total of 392 jobs during the construction phase. This increases employee compensation (including taxes, benefits, etc.) $7.9 million and proprietor's income, $2.59 million, annually. Over 18 months employee compensation and proprietor's income is $11.9 million and $3.89 million, respectively.

The increased income in the county results in increased taxable retail sales of approximately $947,000 and taxable service sales of $378,000 annually. This increases the sales tax revenue to the county in the first year by $6624, and to the city of Fort Stockton by $25,782 (Table 2). Over the 18 months of the construction phase sales tax revenues for the county have a present value of $9,812, and for the city, $37,268.

Because the construction phase employment is temporary, if there is no replacement employment, at the end of the 18 months these jobs will be lost. In addition, the other businesses will lose the equivalent of the above in business.

During the construction phase the county has direct costs of $1.25 million for the construction of the road to the industrial park.

The $285,000 easement payments to 10 families are treated as lump sum payments of $28,500 to each family. It is difficult to know if families will save or spend some or all of this income. We took the conservative approach that the families would save the income and receive a return of approximately 6% annually. This would result in each family receiving $1,710 a year, or a total increase in income in the community of $17,100 per year. The impact of this on the local economy is negligible, so it is not included here.

**Operations Phase**

Twenty permanent jobs are created in the assembly facility. These jobs exist for 10 years, beginning with the opening of the assembly plant during the construction period. These 20 jobs result in 5 indirect jobs and 12 induced jobs for a total of 37 new jobs in the community (Table 3). These 37 jobs result in $1.1 million dollars in employee income annually and $141,000 in proprietor's income annually.

Royalty payments of $28.4 million will be made. Three families will receive 90% of the royalty payments, or $25.56 million. This is $340,800 per family per year over the 25 year life of the project. These payments are likely to vary with the price of electricity. We do not have a good way of knowing how that money will be used. It may be invested locally or outside the area. If it is invested locally, such as starting a new business, it would have impacts on the local area. Research on lottery winners (a similar situation) show that the majority tend not to change their lifestyles dramatically. In this case, if the families do change their lifestyle dramatically, it is unlikely that the local businesses would be able to supply what they would buy.

Of the 100 other persons who will receive 10% of the royalties, we were told that the majority do not live locally. The majority of this income will leave the county and will not have a local impact. This will result in a payment of approximately $1136 per family per year over the 25 year life of the project.

Taxable retail sales increase $277,000 annually and taxable services, $82,124 annually (Table 4). Tax revenues for the first year are $1,795 for the county and $6,811 for the city. The present value of tax revenues over the 10 year operation of the assembly plant are $13,609 for the county and $51,626 for the city.

We did not know the physical location of retail and lodging businesses. We assumed that city lodging tax was collected on all lodging and we assumed that both city and county local option sales taxes were collected on all taxable sales.

The hotel occupancy tax is not applied to occupants who stay for at least 30 consecutive days. If the migratory construction workers, who stay in hotels, rent for 30 consecutive days, this will lower lodging tax receipts.

During the operations phase the assembly plant, inventory, and turbines are subject to property tax. We valued the turbines at the construction cost of $180,000,000, the assembly plant at $2,500,000, and the inventory at $1,000,000 annually. We put the assembly plant and turbines on the tax rolls at 33% the first year and at 100% the second year. Inventory for the plant enters the tax rolls in the second year.

Property taxes from the turbines provide the Buena Vista and Iraan School Districts taxes with a present value of $22,772,843 over a 25 year period. Because of Texas law concerning taxable property per student, not all of the increased school revenues will remain in the local school districts. We did not calculate how much would leave the local districts.

The turbines provide the county taxes with a present value of $8,217,960 if there is no abatement. County tax revenues fall to $2,423,684 with the abatement. Therefore the 10 year tax abatement requested by the company has a present value of $5,794, 276.

How the status of the foreign trade zone affects the taxing of the inventory in the assembly facility is not known at this time. We assumed that the inventory is taxable. But the information is presented so that it can be readily subtracted if need be (Table 5).

Property taxes from the assembly plant and inventory provide the Fort Stockton School District taxes with a present value of $332,274 over a 10 year period (Table 5).

Property taxes from the assembly plant and inventory provide the county taxes with a present value of $116,091 over a 10 year period. How the land will be valued once the turbines are erected is unknown. We assumed it would continue in agricultural use, so its taxable value would not change.

In addition to changes in tax revenues, the economic changes in the community will also result in changes in the demands for public services. We estimate an increase in expenditures of $18,480 per year by the county, city and school districts (Table 6).

Over 25 years the present value of the increased expenditures is $1,509,480, and includes the $1.25 million road construction in the first year of the construction phase. Over the life of the project the increased revenues exceed the increased expenditures by a net present value of $30,042,002 (Table 7). With a ten-year tax abatement the net present value is $24,247726.

**Appendix 1: Technical Appendix**

This report is based on estimations using the TEX$AFE Model, a combination of an input-output model (IMPLAN), econometric equations, and a spreadsheet developed by Judith I. Stallmann, Garen Evans, and Lonnie Jones of the Department of Agricultural Economics, Texas A&M University. An input-output model shows the linkages between the sectors in the local economy, that is it shows what percentage of inputs and outputs are bought from and sold to other sectors.

<u>Community multipliers</u>: An increase in employment and income in one part or sector of the local economy, means that sector will demand more inputs from other sectors, increasing employment and income in those sectors. Finally the new employees in those sectors spend their income creating additional employment in the sectors where they spend their income. The original increase in employment is the direct effect on the economy. The resulting increase in employment and income in other sectors is the indirect effect. The final effect caused by employees spending their income is the induced effect. Together these are referred to as the multiplier effect for the community. Each sector has a different multiplier because it has different linkages with the rest of the local economy.

<u>Net present value:</u> The net present value of all tax revenues has to be calculated in order to be able to compare tax revenues across years. This is used because $10 today is worth more than $10 five years from now. Most people assume that this is because of inflation, but it is really because $10 today can be invested and 5 years from now will be worth more than $10. So net present value tells us what $10 dollars some years in the future is equivalent to in today's dollars. For example, the promise to receive $10 three years from today is worth about $7.50 today, at a 10% rate of interest. To compare the proposed 10 year tax abatement to the 15 years that the county would collect taxes all dollar values must be put in current terms. The discount rate for the net present value is the same as the interest on the most recent bond issue by the county–8% the first 7 years and 5.5% thereafter.

**Appendix 2: Construction Phase**

Most of the activities of the first 18 months of the project are construction–construction of the assembly plant, site preparation, erection of the turbines on the site, and construction of a road to the industrial park. 250 are employed at the turbine site and in construction of the assembly facility in the industrial park. We used 260 days per year (includes 2 weeks of vacation) to estimate annual wages and $10 per hour.

The county will construct a road to the industrial park at a cost of $1.25 million. We used IMPLAN to estimate the number of workers and wages for this construction. Thirteen workers will be employed for $16,487 annually and will work for 18 months.

Also during the first 18 months 40 temporary workers will be employed in the production of turbines. The 20 permanent workers in the assembly plant are considered part of the operations phase.

**Appendix 3: Operations Phase**

The turbines were valued at the construction cost of $180,000,000. The turbines will depreciate in value every year. The value of electricity will change the value of the turbines over time. If the price of electricity increases, the turbines will not depreciate as rapidly. If the price of electricity falls, the turbines will depreciate more rapidly. We chose a 25 year straight line depreciation (4% a year). We used the same depreciation schedule for the assembly plant; therefore, at the end of 10 years it will still have a salvage value. Because the construction phase lasts 18 months, we entered the turbines and the assembly facility on the tax rolls the first year at 33% and at 100% the following year.

The 3500 acres of land currently has an agricultural productivity evaluation of $12 per acre. We were told that the market value of land in the county is approximately $75 per acre. With little history available concerning the value of the land once the turbines are erected, the conservative approach is to assume that the land can be used for grazing and maintain its agricultural assessment. If the land were valued at its current market value its total assessed value would be $262,500.