Economic Impact of a Proposed Metals Manufacturing Plant

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Introduction

In this briefing paper, we estimate the potential economic impact of a new metals manufacturing plant in West Virginia. Data for this study were provided by the West Virginia Development Office. We consider the economic impact of the plant construction and operational spending in terms of output, employment, employee compensation, and select state and local tax revenue.[1]

To estimate the economic impact of the manufacturing plant, we apply a detailed model of the West Virginia economy that outlines how trade-flows among industries interact with key economic indicators such as employment, income, output, and tax revenue.[2] The expenditures associated with construction and operational spending at the plant are referred to as the direct economic impact. However, the total economic impact of these activities is not limited to the direct impact, but also includes the secondary economic impacts accrued as those initial direct expenditures are re-spent across the state, generating a multiplier effect throughout the rest of the state's economy.

Construction Impact

The WVDO anticipates that construction of the plant will cost approximately $2.7 billion over two years. Since the actual distribution of spending is unavailable, we assume a 40-60 split on construction, with the larger portion of the expenditure happening during the second year. We have assumed that the plant begins construction in 2023 and adjusted spending amounts for inflation to 2022 dollars, which makes the total approximately $2.6 billion.

According to WVDO data, the company is expected to employ 2,000 workers during the two-year construction phase. However, this total may be understated as national average employment for a construction project of this size would be approximately 21 thousand workers.[3] In order to provide a conservative estimate of employment, we have not included this direct employment number in our

[1] For a more detailed explanation of the BBER's economic impact analysis methodology, see Bowen, Eric. 2021. *The Economic Impact of Natural Gas Unitization in West Virginia*. Morgantown, WV: WVU Bureau of Business and Economic Research, Winter.

[2] This study was conducted using the IMPLAN modeling software, an industry-standard input-output model of the economy. More information about IMPLAN can be found at http://www.implan.com.

[3] Full-time equivalent employment is likely to be smaller since construction jobs tend to be based on short-term contracts.

calculations below. We also assume that workers at the plant will live in West Virginia and spend their income similarly to other state residents.

Total construction impacts are shown in Table 1. We estimate the total economic impact of the plant's construction to be more than $4.2 billion over two years. This total includes the $2.6 billion in initial spending plus another $1.6 billion in indirect and induced impacts. We do not estimate direct employment; however, indirect and induced employment is estimated to be 9.7 thousand workers. We estimate the construction spending will generate approximately $1.9 billion in employee compensation, with about $1.4 billion in direct spending[4] and another $500 million coming in secondary industries. We estimate that total potential tax revenue for the state could be as high as $170 million during the construction phase. However, this total does not include tax incentives for manufacturing construction that will likely lower tax revenue to the state.

Table 1: Two-Year Economic Impact of Construction Spending

	Direct Impact	Indirect & Induced Impact	Total Economic Impact
Output ($, billions)	2.6	1.6	4.2
Employment (job-years)	*	9,734	*
Employee Compensation ($, billions)	1.4	0.5	1.9
Total Taxes ($, millions)	118.5	51.6	170.1

* Construction employment provided by the WVDO may be understated so we do not include it here.
Notes: Output, Employee Compensation, and Tax Revenue are inflation-adjusted to 2022 dollars. Tax Revenue impact includes sales, personal income, property, and corporation net income taxes.

Operational Impact

In this section we estimate the annual economic impact of the operational spending of the manufacturing plant. The WVDO estimates that total annual spending by the manufacturing plant will be nearly $1.8 billion annually. This includes more than $1.7 billion in operational spending and $60 million in annual payroll expenditures. The plant is expected to employ 800 workers when fully operational. We have assumed the plant will begin operation in 2025 and that plant spending will rise at the rate of inflation, which allows us to avoid accounting for price levels in different years.

Using these direct impacts, we estimate the annual economic impact of the manufacturing plant to be $2.5 billion, as shown in Table 2. This total includes the $1.8 billion in direct spending and another $815 million in secondary industries. The plant supports 800 jobs directly, with another 3,900 workers in supplier industries. Total income for these workers is expected to be nearly $300 million, including $60 million in direct impacts and $234 million in secondary industries. The company and its workers are expected to generate about $9.5 million annually in state and local tax revenue. However, as above, this does not consider potential tax incentives for the company, which are likely to lower the direct tax revenue. Secondary industries are expected to generate approximately $24 million in tax revenue for a total impact of $33.6 million in an annual basis.

[4] Compensation figures are based on national average compensation per dollar of construction cost. Labor costs account for approximately 53 percent of total construction expenditures.

Table 2: Annual Economic Impact of Operational Spending

	Direct Impact	Indirect & Induced Impact	Total Economic Impact
Output ($, billions)	1.8	0.8	2.6
Employment (jobs)	800	3,922	4,722
Employee Compensation ($, millions)	60.0	234.1	294.1
Total Taxes ($, millions)	9.5	24.1	33.6

Notes: Output, Employee Compensation, and Tax Revenue are measured in 2021 dollars. Tax Revenue impact includes sales, personal income, property, and corporation net income taxes.

Total 10-Year Economic Impact

In this section, we estimate the total economic impact of the manufacturing plant over its first 10 years; this impact includes the two-year construction phase and the first eight years of annual operating impact. For simplicity, we have assumed that operational dollars will rise at the rate of inflation during this period, which allows us to ignore the effects of inflation.

We estimate the total 10-year economic impact of the manufacturing plant will be nearly $25 billion (Table 3). This amount includes a total of nearly $17 billion in direct expenditures from the plant and another $8.1 billion in secondary impacts. Total employment for this plant is expected to be just under about 47 thousand job years.[5] Employment includes about six thousand job-years at the plant directly,[6] with another 41 thousand job-years in secondary industries.

We estimate total employee compensation to be $4.2 billion over 10 years, with $1.9 billion in direct impacts and another $2.4 billion in secondary industries. The company and its suppliers are expected to generate about $439 million in state and local tax revenue over this 10-year period. However, as noted above, this does not consider potential tax incentives for the company, which are likely to lower the direct tax revenue.

[5] One job-year is calculated as one worker employed for one year.

[6] Direct employment does not include construction jobs.

Table 3: Total 10-Year Economic Impact

	Direct Impact	Indirect & Induced Impact	Total Economic Impact
Output ($, billions)	16.8	8.1	24.9
Employment (job-years)	6,400*	41,110	47,510*
Employee Compensation ($, billions)	1.9	2.4	4.2
Total Taxes ($, millions)	194.8	244.0	438.8

* Direct construction employment is not included in this figure.

Notes: Output, Employee Compensation, and Tax Revenue are measured in 2021 dollars. Tax Revenue impact includes sales, personal income, property, and corporation net income taxes.

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