Economic Impacts of Labor Supply in Construction of a Gas Processing Plant in Marshall County, West Virginia

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Economic Impacts of Labor Supply in Construction of a Gas Processing Plant in Marshall County, West Virginia

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Summary

This study estimates the economic impact of labor hired to construct a gas processing facility in Marshall County, WV. The objective of the study is to compare the project's employment impact under two scenarios representing hiring of 100 percent local vs. 100 percent non-local workers. This study does not evaluate the impact of a mix of local and non-local workers.

The project is modeled as employing an average of 215 workers over 10 quarters. In reality, employment will be concentrated in the first year of the project with peak employment of about 600 expected in the third quarter. The distribution of employment does not affect total employee compensation paid or the total direct demand for goods and services by construction workers. The primary issue associated with peak employment is supply of housing and services to non-local workers. This study assumes the study area can accommodate the non-local workers, and that revenues from that demand will be paid to businesses in that area.

This study only evaluates the economic impact of labor. It does not include impacts from spending on materials and equipment used to construct the facility, the positive local impacts of which would not change with different employment scenarios. The cost of the entire construction project is $500 million, of which the cost of labor is estimated to be $69 million. Additional local and non-local economic impacts will occur from the project due to non-labor spending.

Two impact scenarios are evaluated:

- 100% Local/ Scenario 1: All project workers reside in West Virginia.
- 100% Non-local/ Scenario 2: All project workers reside outside West Virginia, i.e. direct project employment and income is not local.

Table 1 describes the total impacts estimated for each scenario, including multiplier effects. Multiplier effects occur when the initial spending is re-spent by those who receive it. This process occurs over approximately three rounds of re-spending. Because the project is assumed to last for almost 10 quarters, this is the average annual impact over 2.5 years.

Table 1: Summary Annual Aggregate Impacts by Scenario

Scenario	Local Jobs	Non-Local Jobs	Local Labor Income	Total Value Added	Total Output	Estimated State Taxes
100% Local	428	0	$34.5 million	$12.3 million	$20.7 million	$1.8 million
100% Non-local	125	215	$3.9 million	$6.0 million	$11.2 million	$0.5 million

Table 1 does not show the income associated with the 215 non-local workers that are hired in the 100% non-local scenario because it will not be spent locally. Other economic measurements shown include Value Added, a measure of gross domestic product which excludes the purchase value of intermediate goods, i.e. goods used up by firms to produce output. Output is sales value or, in the case of retail, producer prices and includes the value of intermediate goods. Estimated state taxes are based on per employee taxes received by the State in FY 2009. When using local labor, the project creates an additional $9.5 million in local output, an additional $30.6 million in local income and 303 more jobs when compared to the non-local scenario.

Table 2 shows the total project impacts for each scenario over the life of the project and are not annualized. Figures shown are simply a summation of the estimated annual impacts over the 2.5 year project and are meant for comparison only. Using 100 percent local labor the project will create an additional $23.7 million in local output compared to using non-local labor. Using local workers also creates an additional $76.6 million in local income and an additional 758 local jobs.

Table 2: Total Project Impacts (NOT ANNUALIZED)

	100 % Local	100 Non-Local
Project Man-hours	1.4 million	1.4 million
Direct Local Jobs	538	0
Direct Non-Local Jobs	0	538
Local Multiplier Effect (Jobs)	533	313
Total Local Jobs	**1,071**	**313**
Direct Local Labor Income	$68.7 million	$0
Local Multiplier Effect (Income)	$17.7 million	$9.8 million
Total Income Impact	**$86.4 million**	**$9.8 million**
Direct Per Diem Spending	$0 million	$22 million
Local Multiplier Effect (Output)	$51.7 million	$6 million
Total Output Impact	**$51.7 million**	**$28 million**
Taxes Paid to State of WV	$4.5 million	$1.25 million

Multiplier effects are estimated using the IMPLAN© regional economic model. This model estimates the impact of direct spending by households and industries as money is circulated through the study area. Total impacts are a function of the existence of industries in the study area that are available to supply goods and services demanded by households and business. Indirect impacts are the result of business spending while induced impacts are the result of household spending. IMPLAN© is a linear model, with estimated impacts having a constant correlation to direct inputs.

Scenario Details and Assumptions:

- Craft workers receive prevailing wage and benefits as published by the West Virginia Division of Labor for Marshall County. These rates are shown in Table 3.
- Craft hours are distributed evenly across the 10 quarter construction time period.
- A 14-county impact area is assumed for spending by local workers, representing an approximate maximum commute to the work site of one hour and the impact zone of household spending by those workers.
- A 4-county impact area is assumed for spending by non-local workers, representing the area from which the workers would demand food, lodging and other services while on the job.
- Each worker is on the job 50 hours per week and receives 1.5 times their craft wage rate for 10 of the 50 hours.
- Non-local workers spend $105 per diem; this is assumed to be spent by each non-local worker six days out of seven. This figure can be considered near the upper bound of such expenditures due to the incentives that exist for workers to share accommodations.
- Aside from medical expenses, non-local workers do not spend any of their wages locally.
- Non-local workers make local expenditures on medical services at a rate equal to the national average for an individual (39% of a household). This figure can be considered an upper bound for this impact due to the likely tendency for many out-of-area workers to defer non-emergency medical treatment until they return home.

Table 3: Craft Wages, Fringes and Hours Utilized

Craft	Wages $/hour	Fringe Rate $/hour	Total Employee Compensation $/hour	Total Hours Per Craft
Boilermakers	$ 37.10	$ 17.65	$ 54.75	1,400
Carpenters	$ 27.53	$ 13.70	$ 41.23	203,000
Cement Masons	$ 26.49	$ 11.20	$ 37.69	11,200
Electricians	$ 27.91	$ 19.79	$ 47.70	246,400
Ironworkers	$ 30.01	$ 16.57	$ 46.58	99,400
Laborers	$ 20.87	$ 12.24	$ 33.11	124,600
Millwrights	$ 28.31	$ 12.62	$ 40.93	1,400
Operators	$ 28.75	$ 17.43	$ 46.18	149,800
Painters	$ 21.92	$ 12.78	$ 34.70	7,000
Fitters	$ 25.51	$ 25.66	$ 51.17	550,200
Sheet metal	$ 27.67	$ 17.48	$ 45.15	5,600
			Total Project Hours	1,400,000

Figure 1: 14-County Study Area (Local Spending)

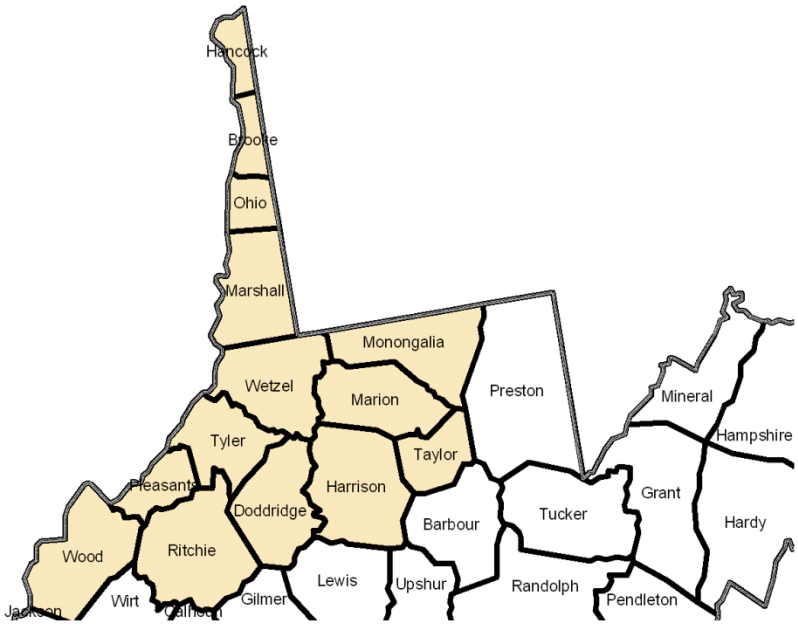

Figure 2: 4-County Study Area (Non-Local Spending)

100% Local Scenario

Total employee compensation paid over the 2.5 years of the project is $68.7 million. Annual compensation/income is $27.5 million. Average employment is 215. Employee compensation is assigned to three household groups based on a full-time salary rate. These groupings allow use of more accurate spending patterns associated with households with different levels of disposable income. Annual direct employee compensation by household group:

- Households $25K to $35K – $5.61 million
- Households $35K to $50K - $21.84 million
- Households $50K to $75K - $33,000

Table 4 summarizes the impact of the 100% Local scenario using the IMPLAN model to estimate total impacts. There are no indirect impacts from this scenario because all spending originates via household income, which is an induced source of economic activity. All multiplier effects are thus induced. These impacts are annual averages over the life of the project.

Table 4: Annual Local Scenario Impacts, by Type

Impact Type	Employment	Labor Income	Total Value Added	Output
Direct Effect	215	$ 27,483,000	0	0
Indirect Effect	0	0	0	0
Induced Effect	213	$ 7,063,552	$ 12,299,159	$ 20,679,204
Total Effect	**428**	**$ 34,546,552**	**$ 12,299,159**	**$ 20,679,204**

Table 5 describes the top ten affected industries due to spending in Scenario 1. These are industries supported by day-to-day spending by individuals and households and are dispersed throughout the economy. These impacts are annual averages over the life of the project.

Table 5: Scenario 1 Top Ten Impacted Industries, by Employment

Description	Annual Employment	Labor Income	Value Added	Output
Food services and drinking places	27	$453,906	$642,113	$1,369,380
Private hospitals	14	$924,162	$986,481	$2,019,212
Offices of physicians, dentists, and other health practitioners	14	$988,495	$1,054,868	$1,773,838
Nursing and residential care facilities	12	$386,505	$417,166	$721,575
Real estate establishments	12	$84,558	$630,509	$859,559
Retail Stores - General merchandise	7	$189,789	$308,858	$355,189
Private household operations	7	$38,713	$38,713	$39,661
Retail Stores - Food and beverage	7	$185,925	$301,701	$348,860
Individual and family services	7	$141,398	$141,801	$218,211
Civic, social, professional, and similar organizations	5	$102,761	$103,676	$243,199

100% Non-Local Scenario

The total direct impact of non-local worker spending is $21.98 million. Average annual employment is 215. Annual direct spending by non-local workers, spread throughout the 4-county impact zone, is estimated to be $8.80 million per year and is distributed as follows:

- Hotels - $2.36 million
- Other Accommodations - $2.36 million
- Restaurants - $1.01 million
- Food & Beverage Stores - $1.01 million (gross retail sales)
- General Merchandise Retail - $170,000 (gross retail sales)
- Gasoline Stations - $170,000 (gross retail sales)
- Offices of Physicians - $640,000
- Medical Labs and Other Ambulatory Care - $180,000
- Hospitals - $890,000

Table 6 summarizes the impacts associated with the 100 percent non-local employment scenario. These impacts are the result of direct spending by temporary construction workers. Direct labor income, value added, output and employment are the result of per diem spending at local businesses which creates both indirect effects and induced effects. Direct output does not equal total direct spending of $8.8 million due to gross margins in the retail sector which reduce output below gross sales value. Indirect effects occur as businesses frequented by the visiting construction workers demand goods and services from other local businesses. Induced effects occur as employees of businesses in the direct and indirect categories spend their income. Income associated with the employment of 215 non-local workers is not included because it is not spent locally. These impacts are annual averages over the life of the project.

Table 6: Annual Non-Local Scenario Impacts, by Type

Impact Type	Local Employment	Non-Local Employment	Labor Income	Total Value Added	Output
Direct Effect	92	215	$2,736,560	$4,012,965	$7,811,230
Indirect Effect	16		$653,917	$1,046,840	$1,791,286
Induced Effect	16		$539,025	$957,811	$1,600,248
Total Effect	**125**	**215**	**$3,929,503**	**$6,017,616**	**$11,202,764**

Table 7 describes the top ten affected industries due to spending in Scenario 2. Affected industries are concentrated in accommodation and related services demanded by non-local workers. These impacts are annual averages over the life of the project.

Table 7: Non-Local Scenario Top Ten Impacted Industries, by Employment

Description	Annual Employment	Labor Income	Value Added	Output
Other accommodations	33	$645,215	$1,004,255	$2,360,110
Food services and drinking places	24	$414,486	$585,999	$1,247,695
Hotels and motels, including casino hotels	18	$757,148	$1,347,026	$2,367,901
Private hospitals	8	$464,078	$495,357	$1,054,564
Retail Stores - Food and beverage	7	$177,371	$287,448	$332,379
Offices of physicians, dentists, and other health practitioners	6	$417,396	$445,075	$765,735
Medical and diagnostic labs and outpatient and other ambulatory care services	2	$87,272	$112,131	$249,523
Retail Stores - General merchandise	2	$42,361	$68,937	$79,278
Services to buildings and dwellings	1	$34,917	$47,768	$89,366
Accounting, tax preparation, bookkeeping, and payroll services	1	$60,525	$77,837	$115,578

Conclusions

The economic impact of using local workers to construct a gas processing facility, like the one proposed by Dominion, exceeds the impact of using non-local workers. This result is expected due to lower levels of local spending estimated from non-local workers while they are on the job relative to the spending of income received by local workers. By all measures, the economic impact of the project is larger when using local labor compared to non-local labor. Using all local labor creates 85 percent more local output, two times as much value-added/ gross state product (GSP), nine times more local income and nearly three and a half times as many local jobs. More specifically, on an annualized basis, when using local labor the project creates an additional $6.3 million in GSP, an additional $9.5 million in local output, an additional $30.6 million in local income and 303 more jobs when compared to the non-local scenario.