

# The Economic Impact of Moundsville Power on the West Virginia Economy

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Prepared by

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## Executive Summary

- The new natural gas combined-cycle electric power plant will be located in Marshall County, West Virginia. The plant's construction will be initiated in late-2015 and when placed in operation in mid-2018 will have a faceplate capacity of 549 megawatts. Resulting power will be sold into the PJM regional electric power grid.
- Total project construction costs (including financing charges and fees) over the construction phase are estimated at \$615 million (2013 dollars) with 45 percent of construction costs provided by West Virginia workers and firms.
- Construction labor will be managed under an approved agreement with local building trades (union) and will involve 1,243 job-years (full- and part-time), averaging over 400 annually over the construction phase.
- Moundsville Power plans to purchase its natural gas fuel supply needs of approximately 67,500 MMBtu per day from an interconnection with the Texas Eastern pipeline. The Texas Eastern pipeline transports significant volumes of West Virginia natural gas. By 2018 Texas Eastern pipeline will have approximately 2,700,000 MMBtu per day of supply interconnection capacity located in West Virginia (current supply interconnect capacity in West Virginia is 1,600,000 MMBtu per day, and there is currently an additional 1,100,000 MMBtu per day of interconnection supply capacity additions planned within the state).
- Moundsville Power plans to purchase its ethane fuel supply needs of approximately 22,500 MMBtu per day from a connection with an ethane pipeline that runs along the path of the Texas Eastern pipeline. This ethane will be blended with the natural gas purchased off the Texas Eastern pipeline. When ethane is not available Moundsville Power will increase its purchases of natural gas off the Texas Eastern pipeline and burn all natural gas. The ethane pipeline runs from Blue Racer Midstream's Natrium Gas Processing and Fractionation Plant in Marshall County to William's Oak Grove Processing Plant in Marshall County.
- The plant will use \$105 million (2013 dollars) annually of natural gas and ethane fuel supplies sourced through long-term fuel agreements. A third party will construct gas interconnections at an additional cost of \$15 million (2013 dollars).
- Economic impacts are estimated with the 2012 West Virginia IMPLAN<sup>®</sup> model using construction and operation costs associated with the project.

- The economic impacts associated with project construction over the three years are estimated to result in over 3,000 job years, \$191 million in employee compensation, \$227 million in value added, and \$400 million in output (2013 dollars).
- The economic impacts associated with the first full-year of operation are estimated to result in 420 full- and part-time jobs (including 35 at the plant), \$26 million in employee compensation, \$51 million in value added, and \$208 million in output (2013 dollars).
- The construction and operation of Moundsville Power will have a significant economic impact on the West Virginia economy. The plant will generate additional value added from the natural gas being produced in West Virginia. The resulting electric power generation will partially replace coal-fired generation plants being retired within the state and help assure the reliability of the transmission grid.
- Moundsville Power's agreement with the Marshall County Commission and the Marshall County Board of Education will result in a payment in lieu of taxes (PILOT) of \$4.2 million and lease payments of \$39.3 million over a 30-year period, along with an upfront payment of \$970,000. These payments are dramatically higher than current taxes levied on the property.

## **Introduction and Overview**

Moundsville Power LLC has proposed construction, installation and operation of a new combined-cycle electric power plant (Moundsville Power) at a site approximately three miles south of Moundsville, Marshall County, West Virginia. This plant will have a faceplate capacity of 549 megawatts (MW) and will tie into the American Electric Power (AEP) transmission system for sale of output into the Pennsylvania-New Jersey-Maryland (PJM) regional electric power grid. The plant will use natural gas and otherwise underutilized ethane provided from West Virginia natural gas producers.

In conjunction with this project, Moundsville Power LLC has commissioned Witt Economics LLC to estimate the economic impacts of the plant's construction and subsequent placement in service on the West Virginia economy. Among the impacts examined in this report are employment, employee compensation, value added, output, and assorted taxes associated with the construction and first year of full operation. This report presents the results of this study.

## **Project Description**

Current plans call for construction to initiate late-2015 and for initial power production beginning in June 2018. Land will be acquired from Honeywell International Inc. and construction undertaken through a turnkey construction agreement with General Electric Company and an engineering, procurement and construction contractor. Fuel supply will be finalized through long-term fuel supply agreements. Moundsville Power plans to purchase its natural gas fuel supply needs of approximately 67,500 MMBtu per day from an interconnection with the Texas Eastern pipeline. The Texas Eastern pipeline transports significant volumes of West Virginia natural gas. By 2018 Texas Eastern pipeline will have approximately 2,700,000 MMBtu per day of supply interconnection capacity located in West Virginia (current supply interconnect capacity in West Virginia is 1,600,000 MMBtu per day, and there is currently an additional 1,100,000 MMBtu per day of interconnection supply capacity additions planned within the state)<sup>1</sup>.

Moundsville Power plans to purchase its ethane fuel supply needs of approximately 22,500 MMBtu per day from a connection with an ethane pipeline that runs along the path of the Texas Eastern pipeline. This ethane will be blended with the natural gas purchased off the Texas Eastern pipeline. When ethane is not available Moundsville Power will increase its purchases of natural gas off the Texas Eastern pipeline and burn all natural gas. The ethane pipeline runs from Blue Racer Midstream's Natrium Gas Processing and Fractionation Plant in Marshall County to William's Oak Grove Processing Plant in Marshall County.

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<sup>1</sup> Source: E-mail from Kurt Knight-Turcan, Director of Business Development, Spectra Energy, to Andrew Dorn, Moundsville Power LLC, June 4, 2014.

The total project construction cost including financing charges and fees is estimated in 2013 dollars at \$615 million for the plant.<sup>2</sup>

In addition, a third party will construct gas interconnections between the plant and West Virginia processors at a cost of \$15 million. These facilities are included in the economic impact calculations. West Virginia workers and firms will provide about 45 percent of all construction costs on this project. Vendors and manufacturers outside of West Virginia will provide a significant amount of the plant's equipment. During construction shipments to the site will occur by truck, barge and rail at a cost of \$10 million. Construction labor will be managed under an agreement with local building trades (union) and are estimated at 1,243 job-years (full- and part-time)<sup>3</sup>.

The bulk of annual operating costs will be for the fuel expenses, currently estimated at \$105 million in 2013 dollars. In full operation the plant will employ up to 35 full- and part-time employees on a full-time equivalent basis at an annual payroll of \$3.2million. To the extent they are available, all plant employees will be required to live in West Virginia.<sup>4</sup>

A project of this magnitude can result in significant increases in county public finance revenues. Moundsville Power LLC has entered into an agreement with the Marshall County Commission (MCC) and the Marshall County Board of Education (MCBOE) that will provide lease payments totaling \$44,462,865 over 30 years to these entities. The lease payments can be reduced by \$10,000 annually per employed West Virginian. There will also be companion PILOT payments totaling \$4,200,000 over the same 30-year period. Finally, an up front payment of \$970,000 to MCC will be made upon completion of project financing.

## **Economic Impact Methodology**

The economic impact methodology used in this report is provided by the IMPLAN<sup>®</sup> input-output modeling system.<sup>5</sup> This is an internationally recognized modeling software and data system, which has been used in numerous economic impact studies. Witt Economics LLC acquired the 2012 IMPLAN<sup>®</sup> data for West Virginia and used this data, along with the IMPLAN<sup>®</sup> software, to estimate the indirect, induced and total economic impacts reported below<sup>6</sup>.

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<sup>2</sup> Throughout this report all costs are presented in terms of inflation-adjusted dollars with 2013 as the reference period.

<sup>3</sup> Since construction will take place over multiple years, a job-year represents the amount of time one employee would work during the course of one year.

<sup>4</sup> The Economic Opportunity Tax Credit (EOTC) requires West Virginia residency by Moundsville Power employees to reduce the plant's Business and Occupation tax liabilities.

<sup>5</sup> For more information see [www.implan.com](http://www.implan.com).

The economic impacts reported below are based upon the estimated construction and operational expenses associated with the plant. The *direct* impacts result from Moundsville Power LLC's expenditures within the West Virginia economy. These expenditures support various suppliers who in turn employ individuals and purchase goods and services from their suppliers. For example, Moundsville Power LLC's purchases electricity from a utility during the construction period. This utility has employees involved in the generation of the power and purchases goods and services from other suppliers. The utility may generate electricity from coal, which is purchased from a broker or coal company for delivery to the generation plant. The coal company will also purchase electricity and employ persons to mine the coal. The *indirect* impact traces and quantifies all of the backward economic links resulting from Moundsville Power LLC's expenditures during the construction phase in the county and state economies.

The *induced* impact result from the expenditures in West Virginia by Moundsville Power LLC's employees or contract employees along with those of the employees at businesses supplying the project and, in turn, their suppliers' employees, etc. Examples of these purchases include groceries, utilities, housing, gasoline, etc. The total economic impact is the sum of the direct, indirect and induced economic impacts estimated using the IMPLAN<sup>®</sup> input-output modeling system.

**Economic Impacts: Construction and Operation**

Table 1 presents the economic impacts associated with the construction phase of the project (years 2016, 2017 and 2018)<sup>7</sup>. During this phase 3,026 job-years are associated with the project at various locations around West Virginia.

Table 1 Moundsville Power Construction Phase Economic Impacts on the West Virginia Economy (millions of 2013\$)

	Direct	Indirect	Induced	Total
Employee Compensation (2013\$)	\$92.1	\$69.1	\$29.8	\$191.0
Value Added (2013\$)	\$95.2	\$75.4	\$56.5	\$227.0
Output (2013\$)	\$274.7	\$35.5	\$90.0	\$400.2
Employment (job years)	1,243	970	813	3,026
Notes: Rows may not sum due to rounding.				

Table 2 presents the economic impacts associated with the first full year of operation of the plant.<sup>8</sup> The operation of the plant is associated with 362 full- and

<sup>7</sup> Included in the construction impacts are the one-time payment of \$970,00 to the MCC and MCBOE.  
<sup>8</sup> Included in the operating impacts are the first year payments of a lease payment of \$690,000 (assuming all employees are West Virginia residents) and a PILOT payment of \$100,000.

part-time jobs each year, with the bulk of the jobs in the natural gas industry (exploration, development, processing and transport).

Table 2 Moundsville Power Full-Year Operating Economic Impacts on the West Virginia Economy (millions of 2013\$)

	Direct	Indirect	Induced	Total
Employee Compensation (2013\$)	\$3.2	\$18.8	\$4.1	\$26.1
Value Added (2013\$)	\$35.1	\$8.1	\$7.7	\$50.9
Output (2013\$)	\$178.0	\$17.8	\$12.3	\$208.1
Employment (jobs)	35	274	111	420

Notes: Rows may not sum due to rounding.

## Summary

The construction and operation of the Moundsville Power LLC combined-cycle electric power plant south of Moundsville, West Virginia, is projected to have a significant economic impact on the West Virginia economy. In 2013 dollars the total construction impacts over the three-year construction cycle (2016, 2017 and 2018) include 3,026 job years of employment, \$191 million in employee compensation, \$227 million in value added and output of \$400 million.

Once the plant is operational it is projected to have a significant long-term annual economic impact on the West Virginia economy. In 2013 dollars the total full-year operation impact is projected to generate 420 full- and part-time jobs, \$26.1 million in employee compensation, \$50.9 million in value added, and \$208.1 million in output.

These conclusions are based on the projected construction and operation costs associated with the plant as provided to Witt Economics LLC. The total economic impact is the sum of the direct, indirect and induced economic impacts estimated using the IMPLAN<sup>®</sup> input-output modeling system. Changes in the project cost and vendor location may change the estimated economic impacts from those reported herein. The estimates also include the economic impacts associated with the agreement among Moundsville Power, MCC and MCBOE establishing an upfront payment of \$970,000 upon completion of financing and the first year payments under the lease and PILOT agreements.

These impacts, however, can be viewed as conservative as they exclude other economic developments that may benefit from the plant. For example, enhanced natural gas interconnections to the plant may lead other firms to locate in the region to take advantage of the resulting electricity and natural gas. Enhanced rail and river access to delivered plant equipment may also benefit other firms who need access to these facilities.

Finally, the plant's generation of electric power from West Virginia's natural gas and ethane pipelines builds value added accruing to the state's citizens, versus the alternative of exporting natural gas and ethane to other states. This is particularly critical now that existing coal fired generation within West Virginia is being retired. The addition of this capacity will also enhance the reliability and performance of the transmission grid.



## Appendix A: Economic Impact Definitions

Employment:	The number of jobs in a business, industry, or region. Also, the number of jobs attributable to an impact (see below). This is a measure of the number of full-time and part-time positions, not necessarily the number of employed persons. Jobs are annual average by place of work. A job year is equivalent to one job for one year.
Employee Compensation:	Wages and salaries plus employers' contribution for social insurance (social security, unemployment insurance, workers compensation, etc.) and other labor income (pension contributions, health benefits, etc.). By place of work unless otherwise stated.
Impacts:	The results of the recirculation of funds throughout a regional economy due to the activity of a business, industry, or institution. Estimated by tracing back the flow of money through the initial businesses' employees and suppliers, the businesses selling to the employees and suppliers, and so on. Thus, they are a way to examine the distribution of industries and resources covered in the costs of the initial activity.
Output:	For most sectors, measured as sales plus net inventories and the value of intra-corporate shipments. For retail and wholesale trade, measured as gross margins (i.e. sales minus cost of goods sold, also equal to the mark-up on goods sold).
Value Added:	A measure of the value created by a business or industry or attributable to an impact (see above). Equal to the value of production minus the cost of purchased goods and services. Also equal to employee compensation plus capital income (profits, interest paid, depreciation charges), and indirect business taxes (e.g. severance, excise). Corresponds to the aggregate concepts of gross domestic product (GDP).

## **Appendix B: Author Biography**

The author of this report, Tom S. Witt, Ph.D. is the managing director and chief economist, Witt Economics LLC. Prior to this position, Dr. Witt was professor of economics and director, Bureau of Business and Economic Research, West Virginia University, from which he retired in 2012, completing 42 years of service to West Virginia University. The author of numerous research articles and monographs, he also was the principal or co-investigator on over \$6 million in sponsored research at WVU. He has served as a consultant to West Virginia state agencies including the Legislature, Governor's Office, Department of Education, Division of Highways, and Department of Revenue, among others. He has also served as a consultant to Charleston Area Medical Center, Columbia Gas, Advantage Valley, West Virginia Wesleyan College, West Virginia School of Osteopathic Medicine, Charles Town Horsemen's Benevolent and Protective Association, and others.

He has also participated in the following proceedings before the West Virginia Public Service Commission: West Virginia-American Water company and Thames Water Aqua Holdings GMBH (case 01-1691-W-PC); Trans-Allegheny Interstate Line Company (case 07-0508-E-CN); PATH West Virginia Transmission Company, LLC, et.al. (case 09-0770-E-CN); and Hope Gas, Inc., dba Dominion Hope (case 11-1263-G-PC).

Dr. Witt received his B.A. degree in economics from Oklahoma State University and his MA and Ph.D. in economics from Washington University (St. Louis). He is a member of the American Economics Association and the National Association for Business Economics.