The INGAA Foundation Inc.

Jobs & Economic Benefits of Midstream Infrastructure Development: US Economic Impacts through 2035

Midstream infrastructure – mainline pipelines, laterals, processing plants, gathering lines, compression and storage – is essential to bringing domestic natural gas, natural gas liquids and oil production to households, businesses, industrial customers and electric power generators. The shale revolution that has transformed the North American natural gas and oil resource base in the past five years can be realized only with the construction of midstream infrastructure.

Numerous studies have looked at the economic benefits of developing American oil and natural gas. This study, completed by Black & Veatch for The INGAA Foundation Inc., is the first to highlight the economic benefits – jobs, labor income, value added, economic output and federal, state and local tax generation – of constructing, operating and maintaining the midstream infrastructure needed to transport domestic energy.

The new report is based on data compiled in the INGAA Foundation's *North American Midstream Infrastructure through 2035 – A Secure Energy Future* study, completed by ICF International in 2011.

That study found that, in 2010 dollars, natural gas midstream infrastructure capital investment in the U.S. and Canada for the next 25 years would total over $205 billion with an additional $46 billion in capital investment for NGL and oil pipeline infrastructure.

The investment will fund an average of 2,000 miles of new natural gas transmission lines and laterals to be added each year through 2035 in combination with more than 200,000 horsepower of compression, 24 billion cubic feet of natural gas storage capacity and 1.3 Bcf per day of annual natural gas processing capacity additions. In addition, 1,300 miles of oil and NGL transmission pipeline also would be constructed each year, on average.

Infrastructure growth will be necessary to accommodate escalating domestic production and growing demand, particularly for natural gas in power generation. In the new INGAA Foundation study, Black & Veatch converted the capital investment projections to 2011 dollars, limited the scope of investment to only U.S. Lower 48 states and offshore Gulf and calculated the jobs and economic impact of the investment.

US Midstream Investment Impact Summary

(Cumulative Impacts in Billions of 2011 Dollars, Employment is Average Annual Jobs Supported)

	NATURAL GAS INVESTMENT PLUS O&M IMPACTS	OIL INVESTMENT PLUS O&M IMPACTS	NATURAL GAS LIQUIDS (NGL) INVESTMENT PLUS O&M IMPACTS	TOTAL
Investment	**$190.3**	**$22.7**	**$16.1**	**$229.1**
Avg. Annual Employment	103,029	12,659	9,651	125,339
Income	$140.6	$17.3	$13.2	$171.1
Value Added	$214.3	$26.3	$20.1	$260.7
Output	$420.4	$51.7	$39.4	$511.5
State and Local Taxes	$16.5	$2.0	$1.6	$20.1
Federal Taxes	$30.3	$3.7	$2.8	$36.8

Economic Impacts of Midstream Infrastructure, 2012-2035

These large investments in natural gas, NGL and crude oil midstream infrastructure will result in significant benefits for the U.S. economy in the near term and long run. Total economic impacts through 2035 arising from the $200 billion in midstream infrastructure plus nearly $29 billion spent operating the new midstream facilities during the evaluation period are estimated to include:

- The support of over 125,000 jobs on average each year from 2012 through 2035
- Over $171 billion in labor income
- Approximately $260 billion in value added
- More than $511 billion in total output
- Federal, state and local tax revenue of nearly $57 billion

Many of the jobs supported are construction jobs. These jobs, and the facilities these workers build, are integral for a vibrant economy. Employment is expected to be sustained over the forecast period. Other jobs, including those related to the pipeline's operation and management will be permanent positions. According to the US Bureau of Labor Statistics, the average annual wage in the pipeline transportation industry was $64,820, or more than $20,000 higher than the US average for all jobs ($44,410).

Economic and job benefits are expected to be seen throughout the forecast period. In the near-term, the study projects an average of nearly 160,000 jobs will be supported in both 2012 and 2013 and an average of over 135,000 jobs will be supported from 2012 through 2016.

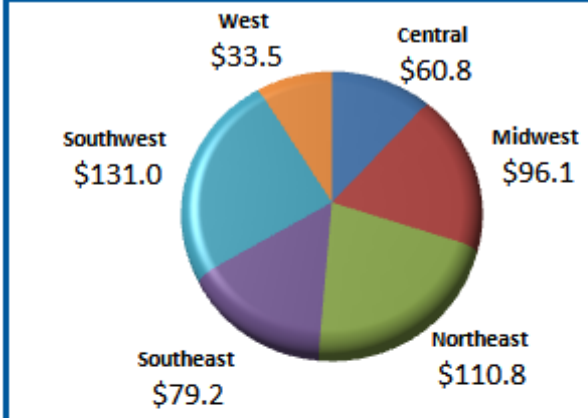
Natural Gas Impacts Dominate

Of the total impacts, a large majority (approximately 83 percent of each category) is attributed to natural gas midstream investments, with oil investments (approximately 10 percent) and NGL investments (approximately 7 percent) accounting for the remainder of the economic impacts. Natural gas investments and O&M expenditures alone will support an average of over 103,000 jobs each year from 2012 through 2035, generate nearly $47 billion in federal, state and local taxes and add more than $420 billion in total economic output.

Other Economic Impacts

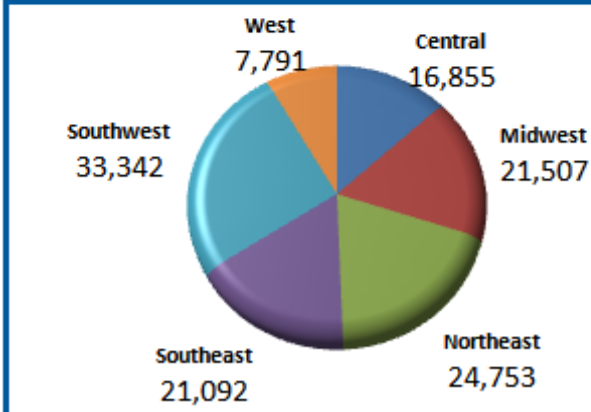
This study analyzes neither the economic impacts from exploration and production activities nor the impacts on households and manufacturers that will benefit from lower natural gas, oil and NGL prices. But these benefits only can be realized through development of the midstream infrastructure. Economic and jobs benefits will be shared across the country in all regions.

Regional Value of Midstream Investment 2012-2035 ($B)



Total U.S. planned midstream investment for 2012-2035 is $424.5 billion with an additional $87 billion of O&M

Regional Jobs Added from Midstream Investments, 2012-2035 (Average Annual)



U.S. annual average jobs supported = 125,339