IHS Markit Report Highlights Benefits of Petrochemical Manufacturing in Shale Crescent USA Region

The report finds that a new facility in the Shale Crescent USA region would generate $3.6 billion more in pre-tax profits than a comparable investment on the U.S. Gulf Coast

Ohio Valley offers world-class advantage for energy-intensive industries

Houston, TX, March 20: Investing in a new ethylene or polyethylene project in the Shale Crescent USA region will deliver significant financial advantages compared to a similar facility on the U.S. Gulf Coast, according to a new independent report by IHS Markit.

Commissioned by Shale Crescent USA, the report, '*Benefits, Risks, and Estimated Project Cash Flows: Ethylene Project Located in the Shale Crescent USA Versus the US Gulf Coast,'* concludes that an ethylene project in the Shale Crescent USA region is expected to produce a net present value (NPV) on EBITDA of $930 million over the life of the project, compared to a NPV of $217 million for a similar project on the U.S. Gulf Coast. This represents an NPV cash flow advantage of $713 million for an investment in the Shale Crescent USA – over four times higher than in the U.S. Gulf Coast project, using a 15-percent discount factor. Over a 20-year period, that divergence is expected to equate to a pre-tax profit advantage of some $3.6 billion. This compares to an initial plant investment of approximately $3 billion.

To conduct the research, IHS Markit modeled theoretical, identical plants in both the Shale Crescent USA and the Gulf Coast, calculating the returns from an investment into an ethylene or polyethylene plant in both high- and low-price environments. Accounting for a variety of risk factors such as differences in capital costs, operating rates, proximity to customers, and access to international markets, the report found that the financial returns for a facility in the Ohio Valley are greater under all scenarios analyzed.

Commenting, **Jerry James, spokesperson for Shale Crescent USA,** said, "The study confirms that the Shale Crescent USA is the most lucrative place to build a petrochemical manufacturing facility. The region boasts a number of major advantages, including access to some of the lowest natural gas prices in the developed world from the abundant Marcellus and Utica Shale formations. When taken with the close proximity to more than two-thirds of the domestic market for polyethylene consumption, it means we are the most profitable location for a petrochemical project."

Ron Whitfield, Vice President of Applied Economics at IHS Markit and the report's lead author, said, "The study validates the significant competitive edge for an ethylene project in the Shale Crescent USA. The region has an abundance of natural resources at costs below their Gulf Coast equivalents, it is in close proximity to a very large installed base of plastics manufacturing customers, and the region benefits from reasonable costs of doing business. The financial advantages for a Shale Crescent USA project are robust under different feedstock price scenarios, even when considering a range of capital costs and operating rate conditions. This ultimately leads to lower delivered costs of polyethylene, which is used to manufacture a multitude of consumer goods – everything from food packaging to household containers."

Shale Crescent USA spokesperson Jerry James concluded, "This report challenges conventional wisdom and corroborates the decision by several international energy companies that have already selected our region as the location for major, multi-billion-dollar projects. Our message to any other companies that are considering similar investments either here in the United States or internationally, is that the Shale Crescent USA region offers unparalleled advantages for petrochemical manufacturing and is open for business. The reason is simple – there are few other places in the world, if any, where the supply, the manufacturing facilities and the end users are all in very close proximity."

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Notes to Editors

For a copy of the *Benefits, Risks, and Estimated Project Cash Flows: Ethylene Project Located in the Shale Crescent USA Versus the US Gulf Coast* report executive summary, please contact FTI Consulting.

Supporting Statistics

- EIA: Natural gas from the Marcellus and Utica plays accounted for approximately 30% of total U.S. production in December 2017, and is expected to account for over 40% by 2040
- Deloitte: Globally, Shale Crescent USA would rank third in terms of natural gas production, behind the entire U.S. combined and Russia
- IHS Markit: Natural gas liquid production is expected to increase from 0.53 million (B/D) in 2017 to 1.37 million (B/D) in 2040
- IHS Markit: Ethane costs are 32% less in the Shale Crescent USA than the Gulf Coast
- IHS Markit: Polyethylene delivered costs are 23% lower in the Shale Crescent USA than on the Gulf Coast
- IHS Markit: The pre-tax cash flow of a Shale Crescent USA project from 2020 to 2040 amounts to $11.5 billion, compared to $7.9 billion for a similar Gulf Coast project. This represents an additional profit of $3.6 billion.

About Shale Crescent USA
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The Shale Crescent USA economic development initiative aims to encourage business growth in the Ohio Valley. The multi-stakeholder initiative provides information and resources for companies looking to launch or expand business, highlighting competitive advantages and opportunities to leverage lowcost, abundant natural gas, unmatched access to key markets and infrastructure and other business advantages. For more information please visit the Shale Crescent USA website.

About IHS Markit:

IHS Markit is the leading source of information, insight and analytics in critical areas that shape today's business landscape. Businesses and governments in more than 165 countries around the globe rely on the comprehensive content, expert independent analysis and flexible delivery methods of IHS Markit to make high-impact decisions and develop strategies with speed and confidence. For more information, please visit the IHS Markit website.

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