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at Wilkes University

*A partnership among Keystone College, King's College, Luzerne County Community College,
Marywood University, Misericordia University, Penn State Wilkes-Barre, The Commonwealth Medical College,
University of Scranton & Wilkes University*

ENERGY TASK FORCE - CASE STUDY IN ECONOMIC DEVELOPMENT

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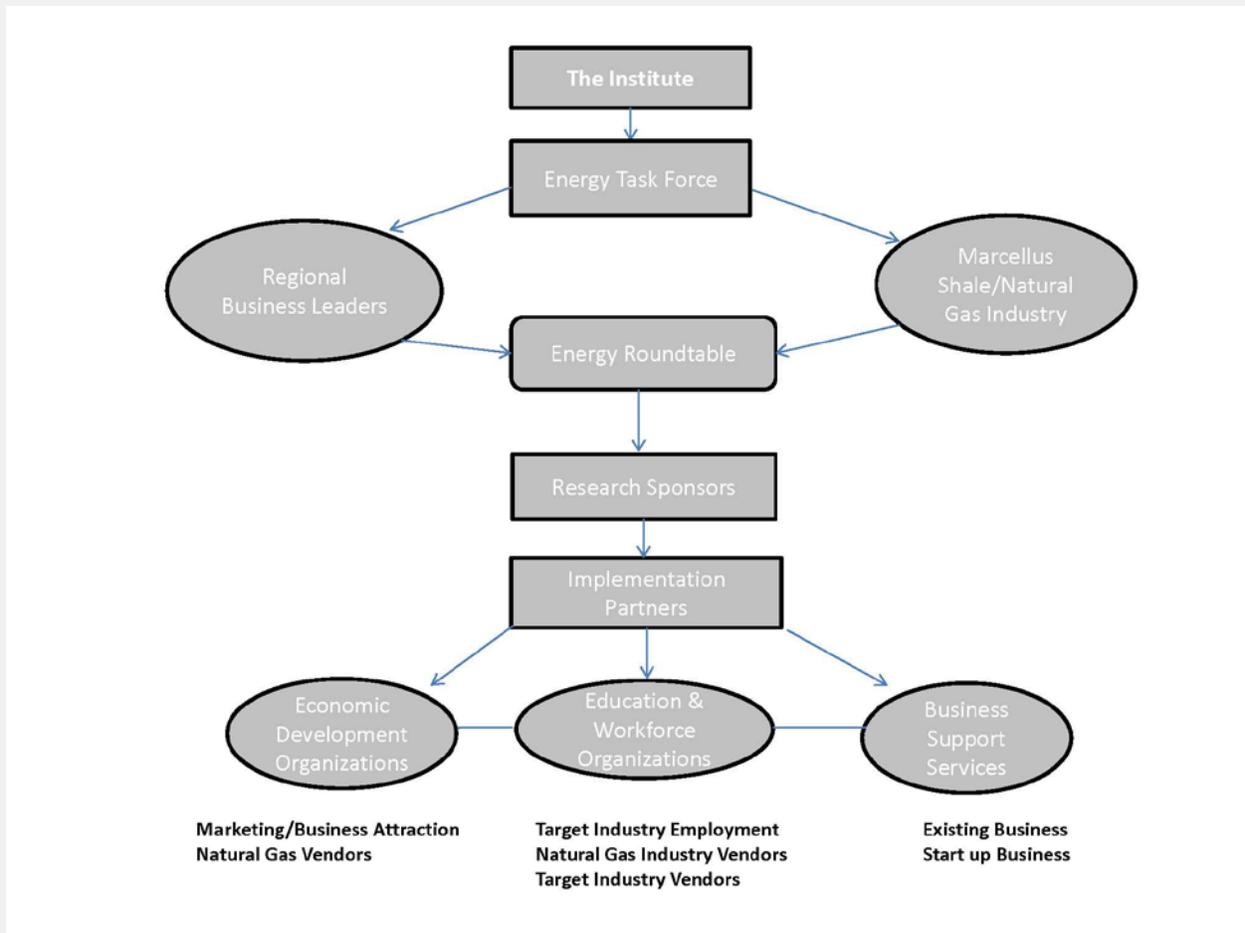
Introduction

The Institute's Energy Task Force combines perspectives from various energy, political, educational, business, and social standpoints to study important energy-related issues in Northeastern Pennsylvania. These individuals convened with members of the natural gas industry (NG), Marcellus Shale Coalition, and local industry leaders to develop a sustainable economic plan that utilizes the region's natural gas resources in order to facilitate job creation, business growth, and viable energy plans.

They came together when leadership realized that the natural gas found in the Marcellus Shale could greatly benefit our areas economy. Together, they sought out natural gas industry representatives and formed a committee now known as the "Roundtable". These meetings birthed the Energy Task Force who became the prime investors in the energy study conducted by The Institute. The Institute produced a report analyzing case studies of shale plays in other states, workforce training, analysis of several affected industries, vendor networking, and economic development strategies that would nurture the relationship between these sectors.

The Energy Task Force found several important future economic drivers for strategic business development in the area through direct and indirect effects of the natural gas industry. Findings of the task force include: business savings of up to 50 percent in natural gas commodity prices over neighboring states, an increase in demand for skilled workers of an engineering/construction-based education, over 200,000 jobs created as a direct or indirect result from the natural gas industry by 2020, and that Northeastern Pennsylvania will be the second highest new employment area in Pennsylvania after Southwestern Pennsylvania in the industry.

Implementation of these economic development strategies was then tasked to other organizations that are specifically tailored to these specialized objectives. Business attraction, synergy with higher education institutions, and growing existing businesses or startup businesses are the three main implementation steps. The following graphic depicts the process and relationships.



This roundtable discussion opened the door for the task force to unify the industry and energy sectors of Luzerne and Lackawanna County, in order to form a cohesive and feasible energy model.

The Institute & Marcellus Shale

The Institute began studying the Marcellus Shale phenomenon in 2008. First, the Institute produced *A Primer on Marcellus Shale* (May 2008), followed by *The Impact of Marcellus Shale in Northeastern Pennsylvania with Emphasis on Philanthropy, Crime and Poverty* (June 2008). In the fourth quarter of 2008, The Institute held the first conference on Marcellus Shale convening the industry with academic, legal and media from Texas with stakeholders from all over northeastern and central Pennsylvania. The event had over 170 attendees.

By 2009, The Institute was asked by the Appalachian Regional Commission (ARC) to collaborate with Pennsylvania State University on a research study examining the attitudes, knowledge, and perception of Pennsylvanians as it relates to Marcellus Shale. This study combined a 21 county combined household survey with community leaders in Pennsylvania, Texas, and Arkansas. The

combined data regarding perceptions of current and future economic, social, and environmental impacts associated with this large scale natural gas development with experiential knowledge, lessons learned, and outcomes from other shale plays. This study laid the foundation for future recommendations and studies by The Institute. The study was published in 2010 along with a separate study on economic and workforce implications. Additional studies included issue briefs on real estate and social service implications. An issue brief on housing caught the attention of ARC. Based upon the outcomes of the original perception study and this housing brief, The Institute was once again enlisted to conduct major research on housing in 12 counties in Pennsylvania.

This yearlong study led to recommendations that included funding of the state's housing trust fund and land banking. The Pennsylvania Housing Alliance used the data from this study to advocate for funding and authorization of both of these recommendations. Their efforts were successful.

Subsequent research provided updates and information on play. It was this later research that led to action while recognizing that Lackawanna and Luzerne County would not truly benefit from the shale play without finding strategies to capitalize on the adjacent play as Lackawanna and Luzerne would not have drilling within their borders.

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Institute's Energy Task Force

The Institute worked with some local business leaders to form the Energy Task Force of The Institute. Representatives from Baker Tilly (under Parente Beard ownership), Borton Lawson, Mohegan Sun Pocono, SCE Environmental, Sordoni Construction, The Times Shamrock Company, UGI, Wilkes University. The mission was to convene community resources to strategically plan and promote the sustainable economic development of regional natural gas resources across business, education, political and community stakeholders.

The task force adopted two strategic priorities. The first was to convene and facilitate, specifically to conduct meetings with stakeholders from the natural gas industry as needed for information sharing, issue identification, policy implications, consensus, and research outcomes.

- Roundtable – Industry leaders, MSC representatives, and The Institute's Energy Task Force. Discuss opportunities, issues, and expectations

- Business Expo, Supply Chain, and Education events - Coordinate or find regional partners to conduct events as needed based on feedback from the roundtable.

The second strategic priority was to research. Specifically, prepare a regional strategic economic development plan to harness the economic opportunity generated by the natural gas industry for the benefit of businesses in Lackawanna and Luzerne Counties.

In January 2012, The Institute worked with Chesapeake Energy, Cabot Oil and Gas, and Williams to prepare an agenda and invitee list for a regional roundtable discussion. Approximately 15 industry leaders and 15 business leaders met in May to discuss opportunities and challenges. As a result, the task force formed an investor group consisting of representatives from Baker Tilly (under Parente Beard ownership), Borton Lawson, Cabot Oil & Gas, Chesapeake Energy, Mohegan Sun Pocono, SCE Environmental, Sordoni Construction, UGI, and Williams to support the development of a regional economic development strategy produced by The Institute.

In order to develop a sound economic plan concerning shale, the Energy Task Force conducted a case study of different communities across the U.S. whose economy is either directly or indirectly affected by shale. The six states that have had shale activity greatly impact their economy are Arkansas, Louisiana, New York, Ohio, Oklahoma, and Texas. The scope of research included examines the shale plays in each state, followed by the economic development strategies that are employed there. Lastly, the research delved into the economic impact that shale activity has had on the states and how effective those strategies were in aiding the impact. By examining these states and their economic strategies for shale activity, the Energy Task Force was able to articulate the most beneficial economic development strategy for Luzerne and Lackawanna counties.

Economic Development Strategy

The Task Force suggested that there is an abundance of economic opportunity for Luzerne and Lackawanna counties through the shale industry. Unlike other states that were examined, the Task Force proposed that shale plays in Luzerne and Lackawanna have the potential to be longer lasting and more efficient. These wells are currently producing a large surplus and each well has the expected capacity to produce this product for 50 to 100 years. Experts that were cited in the study have suggested a refurbishing of existing structures and a moderate expansion of small businesses to sustain operations.

The study took nearly nine months to complete. During this time, more and more media focused on increasing manufacturing in the US.

Manufacturing Outlook – US manufacturers are bringing production back to the US and foreign firms are opening US facilities. Lenovo and Apple are shifting some production back to the US to

manufacture specific products and a Taiwanese manufacturer is opening a US facility to complete work for a new Google product. While not growing as fast as the high tech manufacturing sector, foods, chemicals, and plastics are growing slowly. (Kiplinger Letter – April 2013).

“...the U.S., as a result of its increasing competitiveness in manufacturing, will capture \$70 billion to \$115 billion in annual exports from other nations by the end of the decade. About two-thirds of these export gains could come from production shifts to the U.S. from leading European nations and Japan. By 2020, higher U.S. exports, combined with production work that will likely be “reshored” from China, could create 2.5 million to 5 million American factory and service jobs associated with increased manufacturing” (Sirkin, Zinser, and Rose).

Couple the recent attractiveness of the US for manufacturing and a concerted regional effort to attract expanding manufacturers in chemicals, plastics, and other products to Lackawanna and Luzerne County – the result could be added manufacturing jobs even in a region where there is no active drilling. Given its proximity to shale, the pipeline network, the transportation infrastructure, education infrastructure, and availability and affordability of commercial real estate, Lackawanna and Luzerne Counties have the best prospects to maximize economic impact with targeted business attraction strategies and a system to capitalize on the supply chain or vendor network of the natural gas industry.

The target industry section of the strategy explains how natural gas is used beyond heating residential or commercial structures. Natural gas can be used as a heat source or a raw material in a variety of industrial processes. Natural gas consumption has increased over the past 50 years and will continue to do so with more domestic manufacturing, fleet transitions to natural gas, and export opportunities.

Natural gas provides feedstock in making chemical products, fertilizers, plastics, antifreeze, pharmaceuticals, and fabrics. For instance, different chemicals, such as ammonia, methanol, ethane, butane, propane, and acetic acid are manufactured from natural gas. As a source of power and heat, natural gas is used in the production of glass, steel, cement, tile, paper, bricks, ceramics, and food products.

According to Energy Information Agency, between 2012 and 2021, the consumption of natural gas for industrial power and heat will rise by 6.25 percent. Moreover, for industrial feedstock, natural gas consumption will rise 25 percent between 2012 and 2035. Many domestic industries, such as the steel and chemical industry, depend on natural gas as both feedstock and energy source. The abundance and availability of cheap natural gas encourages industrial groups to increase their use of this product, which motivates greater investment and job

creation. As a result, the competitiveness of domestic manufacturers will result in a 3 percent and 4.7 percent growth of industrial production by 2017 and 2035, respectively.

The study also includes strategic priorities to market the region to these types of companies. It also discusses the workforce and education development opportunities because of the shale play; provides details on industry, employment, occupations, and education; and identifies various strategic initiatives to achieve results. These efforts will serve the needs of NG companies, their vendors and the employees generated through target industry attraction.

The natural gas industry generates direct and indirect employment. The direct employment includes occupations requiring a high school diploma or various certifications to college and graduate degrees. The indirect employment is because of the increased population brought about by the expansive amount of direct jobs and the impact of natural gas workers spending their money locally. These also include those with a wide range of skills that cover occupations in personal and business services, healthcare and education, finance, retail, and hospitality.

The third and final component of the strategy provides another method to advance the regional economy — to link local businesses with the shale industry. Many local businesses including various manufacturers, trucking firms, equipment and professional services firms already work with the drilling industry. There is an opportunity to try to expand the number and type of local businesses that contract with the industry. By helping keep the natural gas industry's supply chains local whenever possible, the economic impact of the shale play can be maximized.

The study also discusses the types of services needed by the drilling industries by NAICS code. The region has existing business representation in almost all of the sectors. Further, there exists an opportunity for organizations like the Small Business Development Centers to help entrepreneurs further their start up business in some of these areas.

An online system needs to be developed that will allow for the natural gas industries to post RFPs or announcements and for businesses to develop online profiles and respond to RFPs. The "NEPA Shale Exchange" could serve that purpose.

The Institute's Energy Task Force needed to find partners for implementation. Given the three major areas of business attraction, education and workforce development, and business startup and expansion, a list of organizations was assembled.

Implementation

Before successful implementation could begin, several perceptions had to be addressed – long term need, pipeline networks, and cost.

Per the US Conference on Mayor's 2014 report, *"Energy intensive manufacturing has played a key role in the recovery of our nation's metropolitan economies, and the recently new availability of inexpensive natural gas and unconventional oil plays will support long term economic growth in a variety of industries...."* *"... Lower costs will make US produced goods more attractive to both domestic and foreign buyers and should act to improve the trade balance by decreasing imports and adding to exports. The nation's metropolitan areas offer skilled populations, advanced infrastructure and highly productive industry clusters, all of which make them attractive destinations for companies looking to expand. Through 2020, we anticipate energy intensive manufacturing employment to expand by more than 1% annually nationwide with 72% of those jobs coming to metropolitan areas."*

The pipeline network in the region is expanding so that the natural gas is delivered to numerous points within the region. Interstate and intrastate pipelines are both in the construction and proposal stages (undergoing appropriate regulatory approvals) and gathering lines are expanding. Therefore, the infrastructure is growing to meet increasing demand. More detailed information is available in The Institute's Regional Natural Gas Pipeline Brief (2015).

In a recent special report from UGI to The Institute regarding the cost savings of natural gas in the region, it was stated that, *"based on natural gas commodity prices over the past year, businesses can expect as much as 50% or more in natural gas commodity costs by locating in northeast Pennsylvania over New York and New Jersey. While these savings may change over time, users locating in northeastern PA next to locally produced Marcellus Shale gas should continue to have an advantage over those users out of state."*

There are multiple initiatives taken when implementing the strategic priorities concerning natural gas, education/workforce, and economic development. These initiatives will take the cooperation of partners, industry representatives, and local business leaders to accomplish. The Energy Task Force has identified four major implementation components.

The first key component is regional marketing and business attraction. Penn's Northeast, The Greater Scranton Chamber of Commerce, The Greater Wilkes-Barre Chamber of Commerce, and CANDO are working as the implementation partners. Penn's Northeast is serving as team leader and thus far used the identified target industries from the report and their global business database to create a targeted business list. They are reaching out to 250 companies per month beginning June. They recently completed a regional profile based on the data and had it published in a publication that reaches 300,000 global executives. It can be replicated for ongoing promotion use in digital format and hard copy format: http://www.businessinfocusmagazine.com/e_mag/BIFNAFeb2015/#?page=100. Further, PNE has used the Pipeline paper with two clients in the 90 days to demonstrate that the infrastructure is in place to support high volume natural gas delivery.

The Greater Scranton Chamber is working to advance the strategies designed to promote existing business to become part of the natural gas vendor pool and the Greater Wilkes-Barre Chamber is focusing on policy implications. Furthermore, outreach to the Pittston and Hazleton Chamber to participate in the existing business and policy review occurred and both organizations are committed.

Education and workforce development is also of importance. The approach with higher education is to present the appropriate sections of the reports that emphasize the appropriate skillsets that will be needed in the region's economy in the future. Then, through continued meetings, the Task Force will encourage the development of programs that correlate with career opportunities in the natural gas industry, their vendor network, and in the industries targeted for attraction.

Next Steps

Over the next few months, the Energy Task Force and several of the implementation partners will continue to work together to foster implementation and engage other stakeholders.