

# Natural Gas

## Industry Partnership & Training Grant

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*Submitted by*

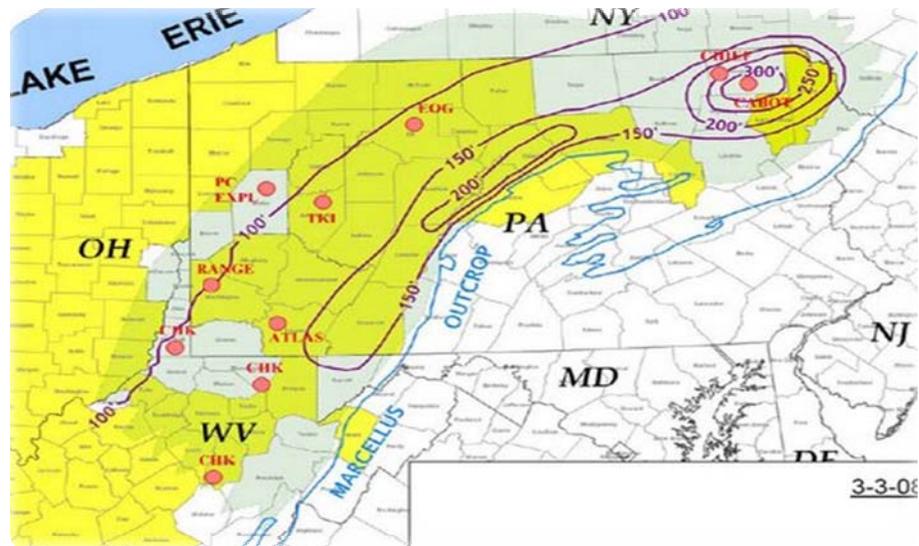


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## Partnership Data Analysis

For approximately the past three to five years there has been increasing interest in Pennsylvania deposits of natural gas. While it has been long known that certain parts of the Commonwealth are abundant in natural gas it has been the increasing cost of crude oil combined with new technology that is currently driving exploration and drilling. The Marcellus Shale encompasses several states and has the potential to pump hundreds of millions of dollars into the Pennsylvania economy.



In the Central Pennsylvania Workforce Investment Area, natural gas exploration and speculation has increased dramatically over the last 12 months with gas companies paying upwards of \$2,000 per acre, plus royalties, to lease land for drilling. The primary target for this activity has been Lycoming County but significant activity is also occurring in Centre and Clinton and could possibly spread to include six of the region's nine counties.

While it is difficult to measure the exact size and scope of the potential impacts, experts agree that it could be "big" with an estimated \$500 billion in recoverable natural gas in Pennsylvania.<sup>1</sup> In other parts of the country that have recently experienced similar "gas-rushes" such as in the Fort Worth area, Texas and Sublette County, Wyoming their history tells us that there is likely to be a sizable economic impact. For example, in Texas, the Barnett shale exploration resulted in over 83,000 direct and indirect jobs for the local economy. This development occurred around the greater Houston Texas economy. In the example of Sublette County, Wyoming which is an extremely rural area the employment impacts have been somewhat lower ranging (as a best estimate) from 1,300 to 3,000 with much of this workforce being comprised of individuals that are not considered local residents. In either situation – the size of the natural gas deposits in Pennsylvania are equal or greater than these two examples.

The bottom line is that currently there is extensive speculation occurring in the areas covered by the Central PA Workforce Development Corporation, the North Central and the Northern Tier Workforce Investment Boards. There are a range of activities that include leasing of property, pipeline development, trucking and transshipment, and site development to name a few. In

<sup>1</sup> Tim Kelsey, Ph.D. in a power point presentation on July 17 at the Williamsport Community Arts Building, Williamsport, PA.

reality there is no way to know at present the size of the impact that natural gas development will have on Pennsylvania and the Central Region. However, there appears to be enough information to suggest that the region must look at this potentially large economic development expansion proactively, and also view it as a workforce, economic development and regional transformational opportunity.

What is extremely concerning to the Central Region is that prior to the discussion regarding expansion of the natural gas industry there was already concern regarding the size of the future labor force given the demographics of the region. By 2012, assuming no significant economic development expansion, the CPWDC estimates that the region could be dealing with a shortfall in the workforce by as much as 5,000 to 8,000 individuals. This shortfall is attributed almost exclusively to the fact that there will be more individuals eligible to leave the workforce due to retirement than those entering the workforce for the first time.

With the prospect of a major economic expansion that could impact most if not all of our counties directly, and more certainly indirectly, the CPWDC believes that the region needs to assess what the overall employment impacts may be and develop systems and strategies to mitigate this impacts.

### **Role of the WIB**

Natural gas development in Lycoming, Clinton and Centre Counties will likely have enormous impacts on the entire region's workforce and workforce system. The CPWDC, which is the 501c3 non-profit organization that serves as the local Workforce Investment Board (WIB), will play a major role in both the organizational and the leadership aspects of the Partnership. The role of the CPWDC is to represent the regional strategic workforce development interests and ensure that linkages are made between the existing workforce and economic development programs and the efforts of this Partnership. These linkages include but are not limited to the integration of the PA CareerLink and youth pipeline programs, such as the Regional Career Education Partnership. Under the Board's direction, the CPWDC will be responsible for seeding best practices and aggregating needs across industry partnerships as appropriate.

Specifically, the CPWDC will serve as the fiscal agent and serve as the liaison to the Commonwealth on all aspects of reporting, project management, sharing of best practices, etc. The CPWDC will also provide the lead staff, either directly or through a contracted arrangement, who will be responsible for staffing the Natural Gas Industry Partnership

### **Abstract and Project Goals:**

The purpose of the industry partnership and worker training grant is to assist Central Pennsylvania to plan and implement strategic initiatives that will address the potentially vast workforce, economic and community impacts that will arise from the development of natural gas reserves throughout northern Pennsylvania.

The industry partnership will focus on three distinct but related goals:

1. Develop a plan of action to respond to the workforce needs of the natural gas companies and their suppliers.
  - a. Engage the key natural gas companies and the key suppliers to the industry.
  - b. Identify the overall direct employment needs of the natural gas companies over the next ten to fifteen years and build a model that can be routinely updated to

- help the region better prepare a workforce by linking projected development scenarios to employment.
- c. Engage multiple components of the workforce systems (K-12 system, Career and Technology Centers, CareerLinks and colleges and universities) to determine the supply capabilities of their systems and programs to respond to the projected needs of the industry.
2. Develop a plan of action to respond to the consequential workforce demand that the natural gas exploration will cause for the region's current employer base.
    - a. Investigate occupations that will be in demand and the type of companies in the region that could be at risk of losing their workforce due to competition from the natural gas industry.
    - b. Build and offer retention models and strategic human resources training to existing companies to help them retain their current workforce and attract future workers.
    - c. Develop new pipeline models through the workforce system that can expand the labor force and help other companies in the region remain competitive despite the potential employment pressure of the gas industry.
  3. Make connections with the Northern Tier and North Central Workforce Investment Boards and their existing and/or planned industry partnership activities to maximize industry partnership resources and activities.

This industry partnership grant proposal is as much about the Natural Gas sector as it is about those other companies in the region that could be impacted by the full development of these resources. If only a fraction of the estimates hold true, the natural gas development in Northern Pennsylvania has the potential to *transform the regional economy*. This industry partnership will be about assisting the region in preparing for this transformation by both supporting the natural gas development and giving significant attention to those companies that could be severely impacted by the migration of the workforce from one industry to another.

Ultimately, these efforts will lead to a linkage between the Central Pennsylvania natural gas companies to the some of the other energy related partnerships that currently exist. It will also help band together “non-gas” companies that could be impacted and that will require new business and human resources models to manage the transformation. This group of companies is key to the region because in many cases they comprise the existing economic base and any loss would impact the region's diversification and potentially force an increasing reliance on a single sector.

### **Needs Statement & Business Strategy:**

There are several components of this industry partnership that need to be addressed as part of the needs statement and business strategy. Some of these issues relate directly to the natural gas industry and others focus on the direct impacts on other businesses that could result from the full development of the natural gas industry in Pennsylvania.

The challenge for Northern Pennsylvania is that there is just not enough information to determine how the region will be impacted by natural gas development. The predictions suggest that the impact could be immense and how well the region is prepared to address the needs of these impacts will determine whether or not this potential economic transformation has a long-lasting positive or negative impact on the regions of Northern Pennsylvania.

Therefore, this partnership and training grant will be used to better understand the needs of the industry and how the region's long standing industry clusters (lumber and wood, diversified manufacturing, health care and education) may be impacted by the development of the industry.

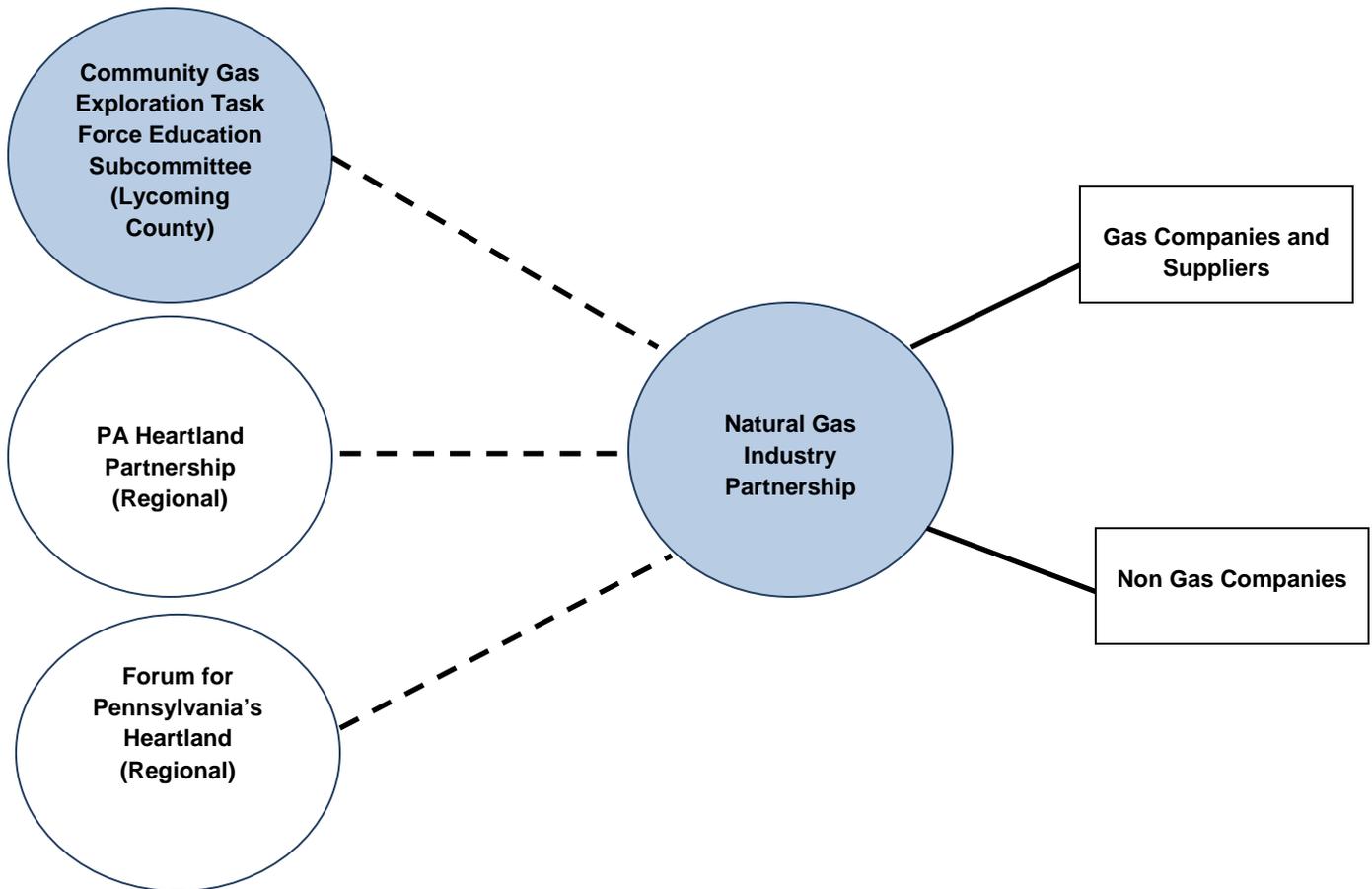
Interestingly, the potential scope of the entire development could go far beyond those counties where drilling occurs. If the wages for the gas development begin to approach those of Sublette County it is almost a certainty that individuals will travel from great distances to obtain these jobs. The \$50,000 plus salaries that could be offered are in comparison to the average manufacturing wage of \$32,000 per year.

In summary, the business strategy not only needs to be about supporting the development of the natural gas industry but also about maintaining our existing industry base by projecting and planning for their combined workforce needs. Integrated within this strategy is a focus on finding ways to maximize the potential economic outcomes for all citizens in the region, including building a scenario for those who previously have not had the opportunity to fully participate in the economic wellbeing of the region.

#### **Description of Regional Partnership:**

This is a new partnership and the CPWDC along with other regional partners (Lycoming and Clinton County Commissioners, Pennsylvania College of Technology, IMC, Ben Franklin, and Penn State University among others) are just beginning to develop relationships with the industry. Currently, Lycoming County has developed a county-wide and regional Task Force to begin looking at the overall impacts of the industry's development on Lycoming and surrounding counties. The intent would be that this project would work hand in hand with the Task Force to ensure that there is value added as opposed to duplication of efforts. The Task Force does have established links to the industry and this is basis from which the partnership would be formed.

Because of the unique circumstances of this proposed project (i.e. the partnership being as much about organizing non-natural gas related companies as it is about the gas companies themselves) the exact membership has not yet been determined. A significant component of this project is about predicting the regional impact of a transformational economic change. From this basis, we will be positioned to recruit the right industry, educational and community partners to develop and implement the appropriate strategies. Based on the current information, it appears that the structure could look as follows:



The Natural Gas Industry Partnership is not intended to duplicate efforts that are already underway via other organizations. Rather, the work of the industry partnership will be responsive to the direction and needs coming out of the Community Gas Exploration Task Force Education Subcommittee, the PA Heartland Partnership and the Forum for Pennsylvania’s Heartland. Each of these stakeholder groups would be in position to assist in preparing strategies both locally and regionally. Simultaneously, the industry partnership will provide information and support to the existing efforts.

The CPWDC would be the grant recipient but would work closely with Penn State Cooperative Extension which has been heavily involved in some of the initial research and impact estimates of the industry’s development. Specifically, the project team would include the CPWDC (as the fiscal agent and primary researchers), Penn State Cooperative Extension (as the Project Manager, “industry” experts, and primary researchers) and the *Community Gas Exploration Task Force Subcommittee on Education* as the initial stakeholder group that will help organize industry. This Task Force is comprised of County Commissioners, workforce agencies, school districts, educational institutions among others.

## **Project Design:**

In addition to convening industry and suppliers the project design will resemble a series of smaller research and engagement projects that will ultimately provide the region with a better grasp of the overall impacts and workforce needs of gas exploration on the Central Region.

### **Responding to the workforce needs of the natural gas companies and their suppliers**

- ***Engage the key natural gas companies and the key suppliers to the industry:***

The first and primary goal of the partnership's activity would be to convene the leading natural gas companies for an initial meeting. This would occur in conjunction with the Lycoming County Commissioners, Penn State Cooperative Extension and *the Community Gas Exploration Task Force Education Subcommittee*. The purpose of the meeting would be to explore their willingness to work as a partnership and to develop the relationship from which key industry employment data could be developed. The goal would be for the companies to meet three times in the first year and slowly add additional companies and stakeholders to the table in the process. To be clear, however, it must be stated that the purpose of these meetings is not to interfere with some of the broader work of the large Community Gas Exploration Task Force but rather to use the industry input to get a better handle on local and regional workforce and employment impacts.

Once the relationship is established with these companies and their suppliers, the CPWDC will explore all possible connections to collaborate with the natural gas partnership that has emerged in the North Central region.

Penn State Cooperative Extension, as the Project Manager, would take the lead in organizing these meetings.

- ***Identify the overall direct employment needs of the natural gas industry:***

One of the largest issues is identifying the type and number of local employees that would be needed by the industry during the development, operations and shut-down phases of natural gas extraction. This would include construction jobs (electricians, welders etc.), operational jobs (such as drillers, rig hands, tool pushers), transportation and storage related jobs, pipeline development and direct industry support positions. Research from Sublette County suggests for example that each rig in their area requires 25 direct jobs related to the operation of that rig (earning about \$1.4 million in wages annually).<sup>2</sup> This component of the project proposes to work with gas companies, their suppliers, universities, past research and other parts of the country that have had to deal with similar natural gas developments. The ultimate outcome would be an employment model that would allow for community and regional planning for the industry based upon projected development schedules. It is quite possible that this could also allow the region to develop models for indirect impacts as well, assuming that as the sector grows there will be corresponding indirect employment growth in support sectors.

The CPWDC believes that there has been enough post mortem research of previous and current natural gas development completed in other areas of the country that a predictive regional model could be developed to provide the region with the ability to estimate growth and

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<sup>2</sup> *Sublette County Wage and Employment Study – July 2006*, prepared for: The Sublette County Commissioners & The Sublette County Socioeconomic Analysis Advisory Committee; Prepared by Jeffery Jacquet, Sublette County Socioeconomic Analyst.

adjust accordingly based upon the plans of industry, their business models and the energy business environment. The goal here *is not* to build a model that suggests 100% accuracy. Rather, the point will be to develop a tool that will help the region find better ways to manage the supply and demands of the workforce related to the developing the natural gas industry and the existing construction and advanced manufacturing sectors.

This research would be conducted by CPWDC and Penn State Cooperative Extension staff (including Penn State faculty with working linkages to Continuing Education).

- ***Determine the supply capabilities of the workforce system and programs to respond to the projected needs of the natural gas industry.***

Once the overall scope and size of the employment needs for the industry are defined the next task will be to determine how to prepare and train the local workforce and regional companies in a way to maximize this economic opportunity. To be clear, the region is keenly interested in finding ways to maximize the long term economic benefit of this expansion for the residents of Lycoming County and the surrounding region. While it is likely that some level of a non-resident workforce already exists, the region is very interested in finding ways to train and employ as many local residents as possible and thereby retain local investment and long term economic impact.

To accomplish this outcome, the region will need to develop the necessary systems through the CareerLinks, colleges and universities, Career and Technical Centers, and K-12 to be sure that the residents of this region understand and have access to the opportunities related to this economic expansion.

While this grant will not allow for the full development of each of these components, a realistic outcome is the creation of various pipeline strategies to maximize the impact for Central PA residents. This may involve working with other areas of the country to explore programs and curriculum that have been used by Community College, Career and Technical Centers and One-Stops that have helped the industry satisfy the demand for skilled workers. Much of this component will be linked to the region's overall ability to understand and predict (even with a margin of error) the demands.

This component of the project would be coordinated jointly by the CPWDC and the Cooperative Extension. The outcome of this component will be a supply gap analysis identifying the current offerings and opportunities to expand training opportunities related to the natural gas industry demands. Based on the results of the analysis, the project management team will convene a group of training providers, representing the full continuum of the educational system, to discuss coordinated strategies to close the gaps.

### **Responding to the consequential workforce demand that the natural gas exploration will cause for the region's current employer base**

- ***Investigate occupations that will be in demand and the type of companies in the region that could be at risk of losing their workforce due to competition from the natural gas industry.***

In the Sublette County study it was estimated that the 25 individuals working on a rig – approximately 20 would earn an average annual wage of over \$50,000, four could earn about

\$60,000 and one would earn an estimated \$90,000 per year.<sup>3</sup> While this is just one example and certainly not all individuals employed by the industry will earn these wages, there is expected to be enough jobs in these categories to put significant pressure on existing employers and their workforce. Therefore, this industry partnership will work to identify the types of existing occupations that will likely be recruited by the gas industry as well as to identify the sectors and hopefully the specific companies that will be most at risk of losing employees. This information will be used to help these employers that are at risk to improve retention strategies. This component of the grant will also be used to build workforce systems (in conjunction with CareerLink system) that will assist these employers in attracting new talent.

The CPWDC will conduct this research in-house. The research will be designed to identify occupations most in demand by the Natural Gas Industry and link these occupations, through inverse staffing patterns, back to existing sectors and companies to determine the areas of vulnerability to losing their workforce to this development. Ultimately the goal will be to be able to identify “at risk” sectors and begin engagement with those sectors on building strategies for retention and better recruitment.

- **Build and offer retention models and strategic human resources training to existing companies to help them retain their current workforce and attract future workers.**

This proposal requests funds to provide initial training to non-gas companies – primarily in the Lycoming County area that could assist them in retention and recruitment. The training will not be targeted to specific occupations or even to the bulk of the workforce. Rather, the training will be high level, strategic human resource training targeted to CEOs, HR professionals and recruiters. The purpose of the training will be to educate and coach these decision makers in best practices and alternative models for retention and recruitment.

- **Develop new pipeline models through the workforce system that can expand the labor force**

Because of the demographics of this region, this expansion could also create an unprecedented win/win scenario on the social and economic front. Given the anticipated pre-gas development shortage of workers, efforts were already underway to create a “workforce expansion model” for the nine county region. This model would require new public and private sector partnerships that could pave the way to bring employment and economic stability to a vast number of individuals that have been overlooked and/or underutilized as potential candidates for the labor force. If partnerships can be developed with federal, state and local agencies in the areas of child welfare, courts and corrections, public welfare, health and human services, drop-out prevention and re-engagement and others, there is the potential to expand the labor force needed for both the Natural Gas development and the other industries in this region that will be impacted by this development and the demographics of the region.

This component of the project will explore the feasibility of creating a workforce expansion model. The CPWDC, working in conjunction with regional community groups and industry will explore various options for partnerships including county prison systems, department of public welfare (cash and non-cash clients). The deliverable will be a strategic action plan outlining five

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<sup>3</sup> *Sublette County Wage and Employment Study – July 2006*

key areas: demand driven research, talent recruitment and assessment, career pathways, talent promotion and placement and attraction and retention assistance.

### **Projected Outcomes**

There are six desired project outcomes from this industry partnership proposal.

1. By June of 2009 there will be an operational Natural Gas Industry Partnership in Central Pennsylvania that will have met on three occasions. In addition, this partnership will at a minimum have begun to explore linkages to other Natural Gas Industry Partnerships operating in Northern Pennsylvania.
2. By March of 2009 the region will have an operational model in place that will provide estimates of the employment demand of the industry by occupational area. The goal will be to develop this model in a way that links to industry defined variables included in forecasts of gas development. In addition, researchers will explore the possibility of developing the model in a manner that will allow for estimates of in-direct employment at a minimum by industry sector and if possible by occupation.
3. By June of 2009 the region will have a needs assessment completed that will link occupational training opportunities that are currently available in the region against the occupations of the industry. The report will highlight areas of strength, duplication and gaps that need to be filled in order to meet the demand of the Natural Gas industry. In addition, this report will examine other parts of the country that have experienced rapid expansion due to natural gas development in the hope of identifying other training programs that have been recognized by the industry and successfully used in these areas.
4. By February of 2009 the region will have a report prepared by the CPWDC and Penn State that will highlight occupational areas and potentially specific companies that could be significantly impacted by a workforce migration to the Natural Gas Industry. The report will highlight the occupations and skill sets that are most prevalent in the Natural Gas Industry and cross walk this information to other key sectors in the region.
5. By June of 2009 the region will have sponsored at least one and possibly two training/seminars that will initially target Lycoming County businesses that will focus on retention and recruitment strategies. The goal will be to bring state and/or national experts that can provide initial training to employers on how to maintain and grow their workforce in an environment of very high labor shortage and competition for human capital.
6. By June of 2009 a report will be published that will discuss the various possibilities of partnerships that will allow for the expansion of the labor force. This report will highlight potential areas for partnership and explore various models that could be used to increase the likelihood of gainful employment and economic prosperity for those residents of the region that have barriers to employment. This report will also focus on various innovative models that can be used to ensure high levels of employment for these various populations (offenders, cash and non-cash TANF, youth in transition, vocational rehabilitation to name a few).

## **Appendix A - Evaluation**

CPWDC and its partners are willing to collect participant data, FEIN of participating companies and social security numbers of all individuals who receive training. The CPWDC is willing to participate in a third-party evaluation by providing data and access for interviews and by participating in networking with other partnerships. If appropriate, CPWDC and its partners would be willing to serve as part of a state learning collaborative on innovation and sector-based workforce development

## Appendix B - Industry Partnership/ Worker Training Time Line

	Outline of Process	Duration	Start Date	Finish Date
<b>Creating a program foundation</b>				
Identifying the Partnership	Recruit gas companies and their suppliers to engage around the workforce issues.	12 months	7/1/08	6/30/09
Align with existing efforts and organizations	Collaborate with the Community Gas Exploration Task Force Education Subcommittee, the PA Heartland Partnership and the Forum for Pennsylvania's Heartland	12 months	7/1/08	6/30/09
Developing the support network	The Project Manager will coordinate with the economic, workforce, and educational entities in the region to develop an appropriate mechanism for supporting the manufacturers while reducing duplication.	12 months	7/1/08	6/30/09
Identify non-gas companies for engagement.	Use inverse staffing pattern to identify companies with similar occupational demands that may face competition for workers due to the natural gas industry.	6 months	7/1/08	12/31/08

	<b>Outline of Process</b>	<b>Duration</b>	<b>Start Date</b>	<b>Finish Date</b>
<u>Program Design</u>				
Measure the impact of the natural gas expansion on workforce	Identify the overall direct employment needs of the natural gas companies over the next ten to fifteen years build a model that can be routinely updated to help the region better prepare a workforce by linking projected development scenarios to employment.	12 months	7/1/08	6/30/09
Assess the current education and training infrastructure to support the industry.	Conduct a supply vs. demand gap analysis to assess the available curricula and training programs.	12 months	7/1/08	6/30/09
Measure the impact of the natural gas expansion on non-gas companies.	Investigate occupations that will be in demand and the type of companies in the region that could be at risk of losing their workforce due to competition from the natural gas industry.	12 months	7/1/08	6/30/09
Aligning the resources of existing training systems	Utilize existing industry experts and training deemed appropriate by the Partnership. This should be an ongoing process.	12 months	7/1/08	6/30/09
<u>Program Support</u>				
Identify and implement initiatives/ activities	Partnership activities and needs assessments will help determine potential support activities.	12 months	7/1/08	6/30/09

	<b>Outline of Process</b>	<b>Duration</b>	<b>Start Date</b>	<b>Finish Date</b>
Define process for recruiting and selecting training participants	Participants will be both assigned by partners as well as open admission depending on the training event and its audience.	12 months	7/1/08	6/30/09
Define measures of program success	Participation by number and the success rate of the training assessments.	12 months	7/1/08	6/30/09
Develop a mechanism for sharing impacts of training with broad partnership.	Discussions on use of training, best practices, impacts and ROI	9 months	9/1/08	6/30/09
<u>Training Delivery</u>				
Confirm and refine training program and provider	Work with industry representatives to refine the training program and identify a provider. Investigate regional sponsorships.	12 months	7/1/08	6/30/09
Locate facilities	Will be based on training event, training sponsor and targeted audience.	12 months	7/1/08	6/30/09
Schedule training	Will be based on consortium model based on what is necessary to meet objectives.	12 months	7/1/08	6/30/09
Recruit and select participants	Will be determined by the individual company based on training event and targeted audience.	12 months	7/1/08	6/30/09
Deliver training	Support logistic of facilitating a training event.	12 months	7/1/08	6/30/09

	<b>Outline of Process</b>	<b>Duration</b>	<b>Start Date</b>	<b>Finish Date</b>
Assess training outcomes	Utilize selected assessments based on the individual training event. Typically determined by trainer. Partnership could influence based on overall strategic plan, goals, and objectives.	6 months	1/1/09	6/30/09
Define next step activities	Future activities and training events will be determined by market conditions, and partnership evaluation.	6 months	1/1/09	6/30/09

**Appendix C - Additional Supporting Documentation**

## **Appendix D – Sustainability Plan**

Because this proposal is exploratory in nature, it is difficult to project the need for and appropriate strategy for sustainability beyond FY09. However, an additional outcome of the partnership will be to develop a sustainability plan based on the research and interest generated through this funding.

Currently, the Partnership plans to add approximately 25- 30% on to the cost of each training activity as a registration fee. Unless a specific need is identified that warrants spending the registration fees in FY09, cash generated will then be carried forward to the next year and used under the industry's direction to support Partnership activities. Lastly, potential industry or vendor sponsorships will be investigated as appropriate.

The partnership will explore the potential to partner with and expand the efforts of other organizations to address the potential impacts of the natural gas expansion in Central Pennsylvania. As appropriate, the CPWDC will coordinate activities, particularly those associated with supporting the non-gas companies, with the other industry partnerships in operation in the Central Region. CPWDC will also work with other Workforce Investment Boards.