

**Marcellus Shale Advisory Commission
Workforce & Economic Development Subcommittee
Draft Recommendations**

ECONOMIC DEVELOPMENT

1. Reactivate the Governor's Energy Council

Logic: Our overall goal as a state is to have a state energy policy. The Governor's Energy Council can be the solution because right now our policy is being developed by the Department of Environmental Protection (DEP) and the Public Utility Commission (PUC). What's more, DEP is primarily focused on alternative energy (i.e., wind and solar) and the PUC is rate-based.

- We need to have a new agency that sets energy policy because the PUC cannot get compressed natural gas vehicles (out of their range).
- Develop energy policy to balance our resources – coal, natural gas, solar, etc.

Background on the Governor's Energy Council (according to Rose Mape):

- Created by Governor Shapp in 1975; created as a result of the energy crisis
- The office "did a couple of different things" – federally funded ("Institutional Conservation Program" for schools and hospitals to do energy conservation
- Worked on the State Energy Program (still inexistence?) that would create programs to save energy (wind, biofuels, solar, etc.); extreme flexibility; there was an entire on clean coal technology.
- Contacts: Rod Fletcher (Bureau Director of DEP), Dane Bickley (PA Energy Development Authority), Jan Freeman, Nate Goldhaber, Dan Desmond (Deputate in DEP, Energy and Technology Development)

Other: It's Non-Regulatory; created by an Executive Order.

ACTION ITEM: Rose will look into funding/background information on Governor's Energy Council

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2. Develop a series of Green Corridors for Compressed Natural Gas Vehicles

- a. Natural Gas Corridor Tax Credit – House Bill 1087 (Representative Gordon Denlinger) – part of the “Marcellus Works” bill package.

Eligibility:

- A company must demonstrate to the department a comprehensive plan to build one or more natural gas fueling stations (Compressed Natural Gas or Liquefied Natural Gas) or to add compressed natural gas fueling capacity to one or more existing stations which sells gasoline or a combination thereof.
- Must be open to the public.
- The stations must be located within 2 miles of an eligible corridor.
- Eligible corridors include the PA Turnpike, I-78, I-79, I-80, I-81 and I-83. **(WE WANT TO INCLUDE RT-6, RT-15 AND I-95)**

Prioritization:

- Ranking will be according to the total number of stations proposed to be built along a single eligible corridor or a continuous travel route utilizing the eligible corridors. Stations must have a spacing of at least 50 miles from another natural gas station which is within 2 miles of the eligible corridor and a maximum spacing of 100 miles.

Tax Credit:

- Worth 50% of the total cost of the natural gas station or the total cost of adding natural gas fueling capacity to an existing station which sells gasoline.
- The total cost is capped at \$500,000. **(WE WANT THE MAXIMUM ALLOCATION TO BE \$25 MILLION, WHICH WOULD ALLOW US TO DO ROUGHLY 50 SITES)**
- The tax credit is transferable.

QUESTIONS/ACTION ITEMS:

- *Is there sufficient infrastructure for this?*
- *Research SB 20 (Texas) to determine the spacing between their natural gas corridors.*

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- b. Repeal of CARB Regulation – House Bill 1089 (Representative Scott Perry) – part of the “Marcellus Works” bill package.
- Repeals California Air Resource Board regulation 2030.
 - EPA standards are already in place and the CARB standards add an additional costly certification to vehicle manufacturers.
 - This costly certification effectively prohibits bi-fuel vehicles in Pennsylvania.

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3. Downstream Business Attraction

* *From Brent Vernon*

Recommend an evaluation of Pennsylvania's competitive standing and resources (*eg: policies and business assistance programs, sites, infrastructure, workforce, industry cluster opportunities, etc.*) for the purpose of attracting significant private sector investment and job creation opportunities involving natural gas downstream business. A goal of the Commonwealth should be to attract a wide-range of long-term, value added opportunities - realize maximum economic gain and monetize Pennsylvania's natural gas, particularly opportunities in downstream activities including chemicals manufacturing such as polyethylene for domestic and export markets. Emphasis should be given to aggressively identify and evaluate sites, infrastructure, workforce, permitting factors, etc., as necessary to effectively widen shale gas industrial opportunities having a significant economic impact. Since the Marcellus, and other shale plays span several Appalachian states, Pennsylvania should explore working relationships with neighboring states for mutual benefit.

Language from PSU which may be useful in substantiating this recommendation:

Industrial Uses:

Liquid fuels and natural gas currently account for about two-thirds of industrial energy use, and provide the basic feedstocks for many chemicals and materials. The newly abundant supply of clean, low cost shale gas creates an opportunity to attract and reinvigorate industries that have large energy or chemical feedstock needs.¹

¹ Penn State University-Office of Research: <http://www.research.psu.edu/events/naturalgas/working-groups>

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4. Develop regional/strategically located business parks for the development of the Marcellus Shale natural gas industry

- Utilize the \$25 million in the “Business In Our Sites” fund from CFA; priority will be given to Marcellus counties as well those that demonstrate need based on insufficient infrastructure due to economic reasons.
- The money will be used for site preparation/development and public infrastructure
- It will give us the potential to create 3-4 sites.
- According to Scott Dunkelberger, the initiative would play well in state House, particularly with areas directly affected by the Marcellus Shale

ACTION ITEM: Mike O'Rourke will reach out to Scott Dunkelberger for more details on his proposal.

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5. Create the “Commonwealth Legacy Fund”

- Take a percentage of royalties collected by the state from gas well production on state leases.
- This would be “real infrastructure development” for the Commonwealth – what the federal stimulus dollars were meant to be.

Rationale: We need infrastructure improvement, particularly bridges, throughout the Commonwealth; and an increasing number of Marcellus industry trucks will be using the state highway system.

Research:

- PennDOT study: \$12 billion dollars for ... (?)
- According to Katy Klaber/Marcellus Shale Coalition study, roughly \$11 billion in royalties will be coming into the state.

QUESTIONS/ACTION ITEMS: How many bridges are located in the Commonwealth?

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6. Advocate for a study by PennDOT or an independent consultant on the future rail needs based on Marcellus Shale development

Rationale: We could transfer Marcellus Shale industry trucks off the state highway system and onto rails; it would also be beneficial from a congestion and pollution standpoint.

QUESTIONS/ACTION ITEMS:

- *Do spurs need to be reconnected?*
- *Do we need more sidings?*

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7. Create incentives for mass transit/bus fleets to switch to natural gas / manufacturing of commercial natural gas engines and/or component parts

From Brent Vernon:

Recommend incentivizing Pennsylvania mass transit services and fleet operators (including public school buses) to convert to or purchase Compressed NG powered vehicles. The intended outcome is an increased demand for such vehicles in the Commonwealth powered by natural gas extracted within our own borders; similarly, the need for fleet and publically accessible natural gas fueling stations/infrastructure is expected to grow substantially. It is further recommended that specific opportunities be identified to aggressively market Pennsylvania as global leader in natural gas production, downstream manufacturing and Natural Gas Vehicles (“NGV”) utilization. By correlation the Commonwealth should equally promote investment opportunities by NGV manufacturers or NGV component parts manufactures, as well as manufacturers of fueling station equipment and/or component parts.

Consideration for strategic business incentive programs to attract large scale investment and jobs creation projects may include, but not limited to: investment tax credit, adoption or expansion of the KOZ program specifically for major investments involving downstream shale gas industrial opportunities, or other creative programs which otherwise make a Pennsylvania a location of choice for such projects.

Language from PSU which may be useful in substantiating this recommendation:

Transportation and Fuels:

Natural gas has proven to be an effective transportation fuel in transit and centrally refueled fleet applications. Compressed natural gas (CNG) and liquefied natural gas (LNG) vehicles represent a significant potential to directly displace petroleum. With natural gas presently at roughly a fourth of the cost of the pump price of gasoline and diesel fuel, significant operational cost savings are also an incentive to transition to natural gas vehicles. The Transportation and Fuels Working Group will discuss logistical, economic, policy, and engineering barriers to the deployment of natural gas in the transportation sector.²

² Penn State University-Office of Research: <http://www.research.psu.edu/events/naturalgas/working-groups>

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8. Addendum to Alternative Fuels and Incentive Grant Program (AFIG)

- For public transportation vehicles & public school bus companies
- A portion of the fines go to AFIG?

QUESTIONS/ACTION ITEMS: Do any of the “Marcellus Works” bills cover this?

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9. Creation of the “Shale Energy Innovation Greenhouse” (per Ben Franklin Technology Partners)

“To increase entrepreneurship, home-grown innovation, and new business development related to Shale gas. The Innovation Center I described during your subcommittee hearing is one example of how this plan could be implemented at the local level.” – Steve Brawley, President & CEO, Ben Franklin Technology Partners of Central and Northern PA



Accelerating Pennsylvania’s Shale Gas Opportunity

Ben Franklin Technology Partners (BFTP) recommends the creation of a “Shale Energy Innovation Greenhouse” that will accelerate the commercialization of high-impact technologies and create pilot sites to demonstrate their benefit to the shale gas economy in Pennsylvania.

In this “Greenhouse” initiative, Ben Franklin will partner with the Commonwealth, the Regions, Industries, Universities and Entrepreneurs to discover, support and advance technologies that will result in new business opportunities and increased employment in Pennsylvania. Public/Private Partnerships of stakeholders will be convened in each region to identify the most promising opportunities, and provide the capital, knowledge and networks needed to create new shale-energy-based businesses.

This recommendation has precedent. Policymakers have often leveraged Ben Franklin’s broad networks of universities, industry, investors and sector experts to speed the commercial launch of promising technology. Specific sector initiatives that BFTP has led include nanotechnology, alternative energy, and powdered metals. The BFTPs were among the first investors at the start of the biotech industry in Pennsylvania almost 30 years ago. Most recently, an Alternative Energy Greenhouse initiative run by Ben Franklin and supported by a \$40 million investment from the Commonwealth has leveraged considerably more in private resources and is resulting in commercial and employment successes. We envision a similar accelerator initiative for shale gas innovation and gas-utilization technologies, and the resulting new business creation. This Shale Energy Greenhouse model, formulated from best practices and lessons learned would include the following elements:

- **Seed Capital** – Capital is the life-blood of start-up companies, and is critically difficult to secure. This will be the same for start-ups looking to capitalize on the Shale-gas resource. BFTP, through the Shale Energy Greenhouse, will provide seed funding and create a financial bridge between the assets of an entrepreneur and capital markets.
- **Business Assistance** – BFTP will provide strategic and tactical management assistance to emerging and existing companies to accelerate their growth. For example, through an Executive-in-Residence program, BFTP will strategically locate and assign seasoned industry executives to examine new shale and gas-utilization related technologies, look for opportunities to start their next business, and to work as mentors with emerging

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companies, while fostering the transition of those executives into leadership positions with appropriate start-up companies. Individual Portfolio Managers will be provided to

each company to offer support and coaching, and consultants and advisory teams will be charged with addressing specific company development issues.

- **Incubation** –Research conducted by the National Business Incubation Association shows that the benefits of participating in an incubator greatly increases the success rate of early-stage companies. BFTP will create a concentration of business and market development services, and a synergistic community of shale gas impact companies.
- **Translational Research**–There is a large amount of technology relevant to the shale gas industry resident in Pennsylvania’s many colleges, universities, entrepreneurial community and its mature companies. BFTP, through the Shale Energy Greenhouse, will provide funding and expertise for activities intended to progress these technologies guided by industry and market needs, and to test commercial applications of these home grown discoveries. These projects will achieve specific development milestones that will greatly enhance the economic development impact of shale gas activities and get the most promising of these technologies in the hands of entrepreneurs and existing businesses who can commercialize them.

The Commonwealth, through the BFTP network, has the existing infrastructure in place to deploy resources dedicated to the Shale Innovation Greenhouse quickly, and to integrate it productively into existing industry coalitions. Ben Franklin’s decentralized structure, with 4 regional centers managed by 4 private-sector Boards, can launch the Greenhouse in each region with tactics designed to address the opportunities and the strengths of each part of Pennsylvania. We recommend that funding be identified to seed this effort to create the next generation of Shale-energy businesses and employment for the Commonwealth.

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10. Keystone Alliance for Marcellus Shale and Natural Gas Technologies

** Courtesy of Jeannine M. Marttila, Acting Deputy Secretary, Technology Investment Office (DCED)*

The mission of the Keystone Alliance for Marcellus Shale and Natural Gas Technologies would include the activities of: 1) research and technology development; 2) real-time problem solving; and 3) specialized training and workforce development. These three broad categories of activities would support the following Principal Objectives of the Alliance:

- Build and strengthen Pennsylvania's world-class capabilities in technology development for the Marcellus Shale and natural gas industry, leveraging at every opportunity additional federal support for PA R&D activities;
- Foster collaboration among Pennsylvania universities and companies to bring to Pennsylvania a large portion of the technology development and associated jobs required to execute the energy missions of the state and federal government;
- Provide real-time science and technology solutions to meet the challenges facing industry, government, environmental and health and human services providers in Pennsylvania;
- Meet the related education and training needs of federal, state, and local government agencies, and private industry.

Representation from research universities:

- The Pennsylvania State University
- University of Pittsburgh
- University of Pennsylvania
- Carnegie Mellon University
- Temple University
- Drexel University
- Lehigh University
- State System of Higher Education (SSHE)
- Pennsylvania Commission for Community Colleges

Alliance structure will facilitate communication and coordination between Alliance participants and PA state government agencies as the Departments Community and Economic Development, Labor and Industry, Environmental Protection, Conservation and Natural Resources, Agriculture, Education, Transportation, PEMA, PUC and any other governmental agencies as appropriate. This new Alliance structure is not intended to replace well-established and efficiently functioning contractual arrangements between state agencies and any of the Alliance

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participants. The Alliance will aid coordination among new and existing contributions to related activities being provided by the academic community.

The Alliance will provide communication and coordination for Pennsylvania's leadership of or participation on teams comprising major industry partners and other prestigious universities for addressing critical energy challenges.

Providing Real-time Solutions

State and local government, private industry, non-profit organizations and others in Pennsylvania may be increasingly challenged to rapidly solve Marcellus Shale and natural gas related problems.

Pennsylvania's research universities, in partnership with the SSHE universities and PA community colleges, will work together to help find real-time solutions to problems as they emerge. In addition, local and regional economic development organizations such as industrial development corporations, Small Business Development Centers, Ben Franklin Technology Centers, Industrial Resource Centers, Pennsylvania Technical Assistance Program (PENNTAP), regional planning and development commissions, and others will play crucial roles in linking industry's need to the scientific resources available within the Alliance's colleges and universities.

Training and Workforce Development

The new Marcellus Shale industry represents a very large workforce development challenge. Workers with skills will be needed at all levels, requiring education programs for new and current workers alike. Workers in private industry will need specialized skill sets. Education and training resources will be required. The 35 colleges and universities of the Keystone Alliance possess education and training capacity spanning associate degree through graduate education and include professional programs to upgrade worker skills. Delivery mechanisms represented by the KA membership geographically spans the entire commonwealth and demographically covers all sectors of PA's population both urban and rural. Discussion between the KA will be required to develop standardized course content and uniform statewide training and certification, if required. The Keystone Alliance will help organize new and coordinate existing resources to develop and deliver important workforce development programs.

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- 11. Use pipeline rights-of-way for off-road recreational vehicles (including snow mobiles and ATVs)**
 - Include letter from the PA Snow Mobile Association

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12. Make natural gas a Tier II fuel in the Alternative Energy Portfolio Standards (AEPS)

- This would require an act of legislation.

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13. In a general sense, recommend policy or actions from the state level that would encourage significant private investment

- To show that Pennsylvania is pro-natural gas industry/Marcellus Shale development

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14. Improve customer service in the permit review system.

QUESTIONS/ACTION ITEMS:

- *How are we going to address the permit process?*
- *We need to encourage better coordination of permits needed for the development of downstream industries between all agencies involved in issuing permits.*
- *We need to develop accountability and benchmarks – “When a permit is submitted, how do you prevent from going into the black hole?”*

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WORKFORCE DEVELOPMENT

Note: Somewhere we need to insert Katy Klaber's data/pie chart and breakdown the 220,000 jobs directly related to Marcellus Shale.

Administrative -- 11% (24,200)
Commercial -- 1% (2,200)
Engineering & Construction -- 24% (52,800)
Environmental Health & Safety -- 3% (6,600)
Equipment Operations -- 30% (66,000)
Geology -- 2% (4,400)
Land -- 4% (8,800)
Operations & Maintenance -- 17% (37,400)
Purchasing -- 1% (2,200)
Water Management -- 4% (8,800)
Well Services -- 1% (2,200)
Other -- 2% (4,400)

1. "Careers for Heroes"

- Military recruitment for Marcellus Shale careers.
- Tie-in an educational element (via Vo-Tech, Department of Education, WIBs, etc.)

Rationale: The demand will be there with the gradual withdrawal of Iraq and Afghanistan operations, and the overall downsizing of the military.

ACTION ITEM: Alisha will contact the US Chamber about their related initiatives.

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2. Strengthen training programs for CDLs

- Tie-in PA Careerlink
- Include a drug and alcohol education/rehabilitation component
 - Public Service Announcements on the importance of being drug/alcohol-free
(this could be a separate subcommittee recommendation)

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3. Facilitate organizing a series of collective workforce symposiums among all stakeholders to address industry needs and existing/proposed training programs

- Use a regional approach
 - Southwest, Northcentral and Northeast
 - The needs may be different in each region (wet gas vs. dry gas)
- Include the State System of Higher Education, Community Colleges, WIBs (Workforce Investment Boards) and technical schools
- WIBS organized on a regional basis (9 total?)

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4. **Better alignment of the unemployed with shale opportunities that may not be in the area**

QUESTIONS/ACTION ITEMS:

- *Once we exhaust the in-state resources, how do we assist the industry to attract out of state resources?*
- *71% of Marcellus Shale industry employees are from Pennsylvania – why isn't the number higher?*

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5. Rural Workforce Initiative