



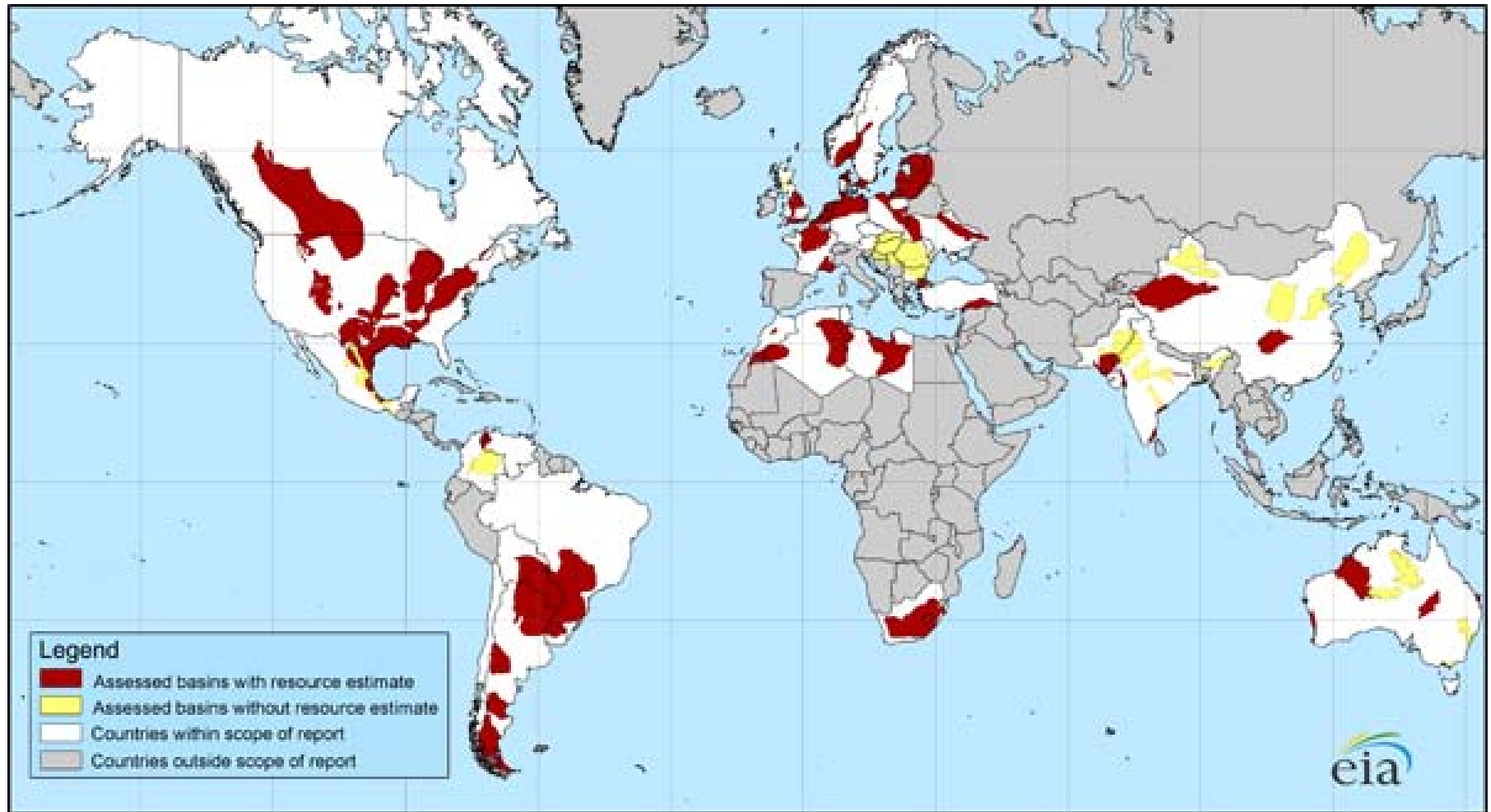
# Society of Petroleum Engineers

## *Pittsburgh Section*

**Kathryn Z. Klaber**  
**President**  
**January 11, 2012**

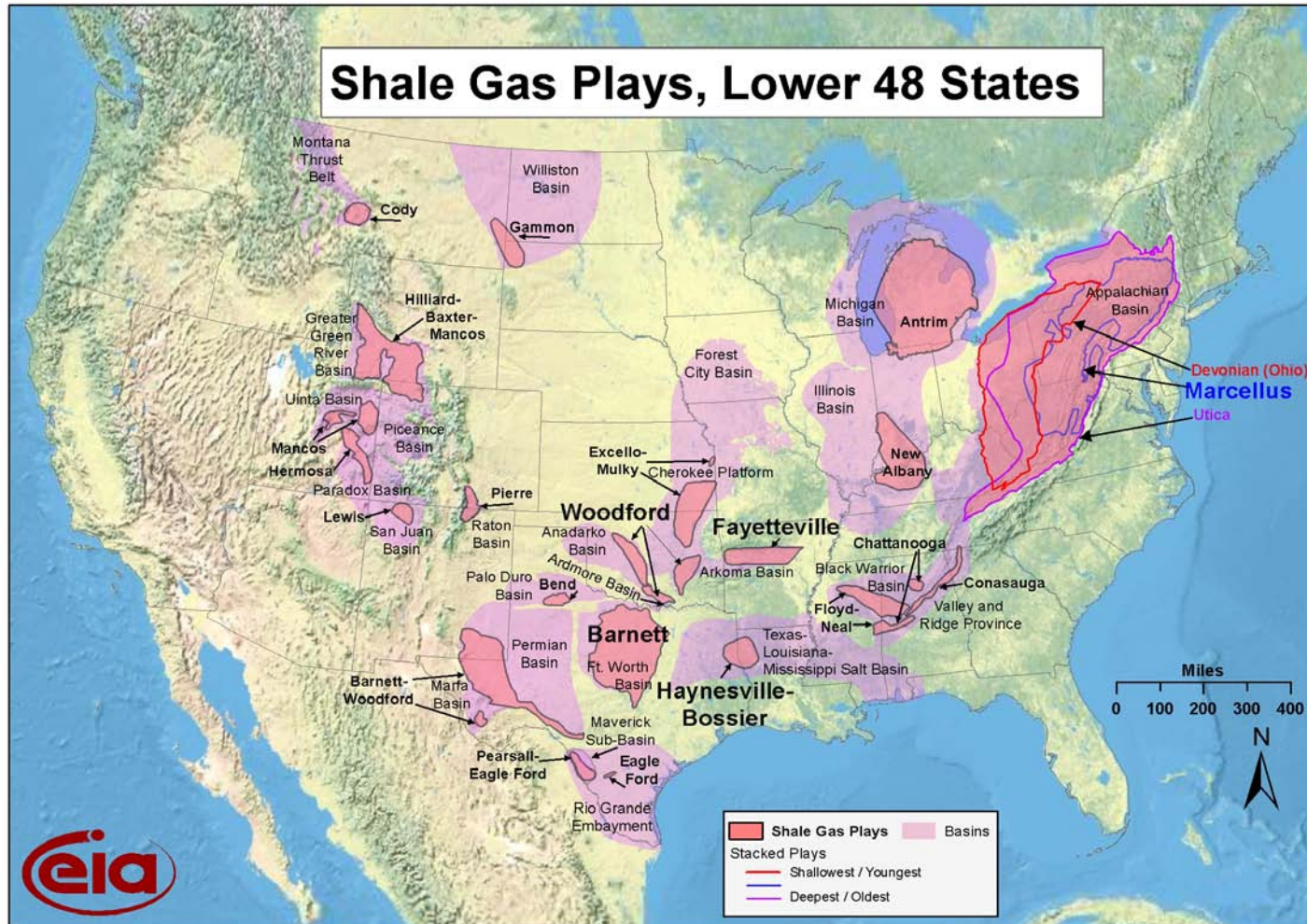


# Shale Gas: A Global Phenomenon



Source: Energy Information Administration

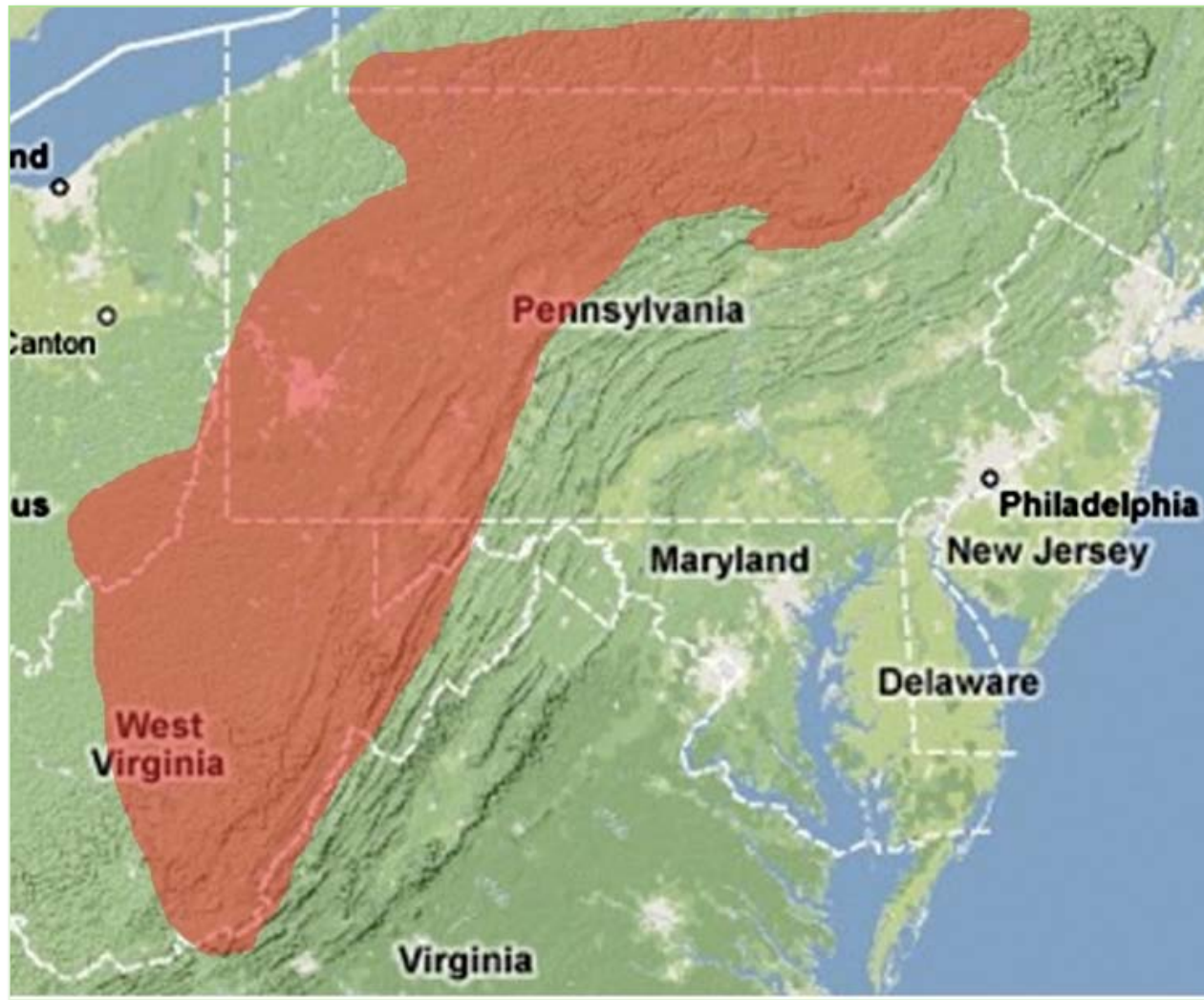
# Shale Gas Revolution Across the U.S.



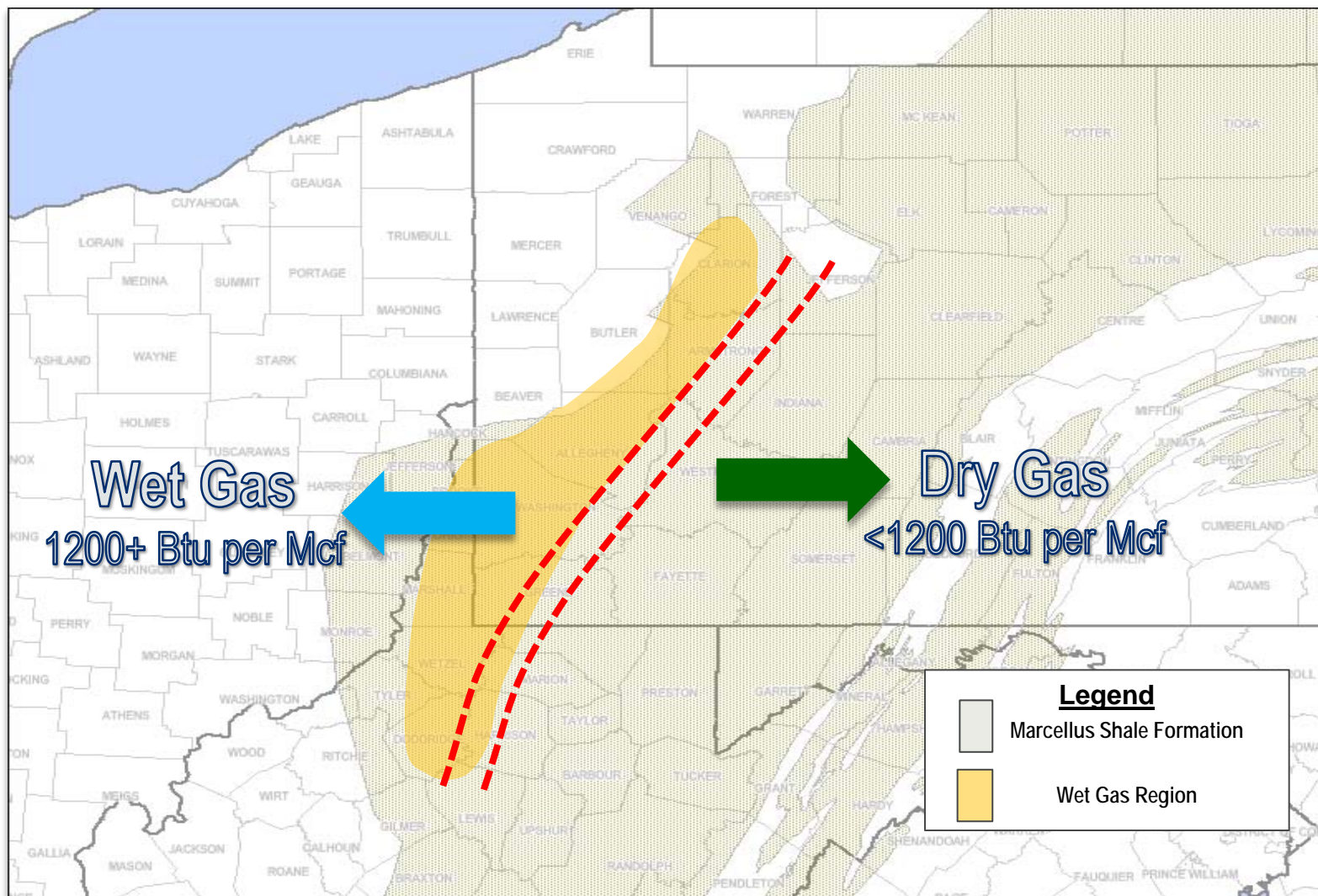
Source: Energy Information Administration



# Marcellus Shale: Geographic Footprint



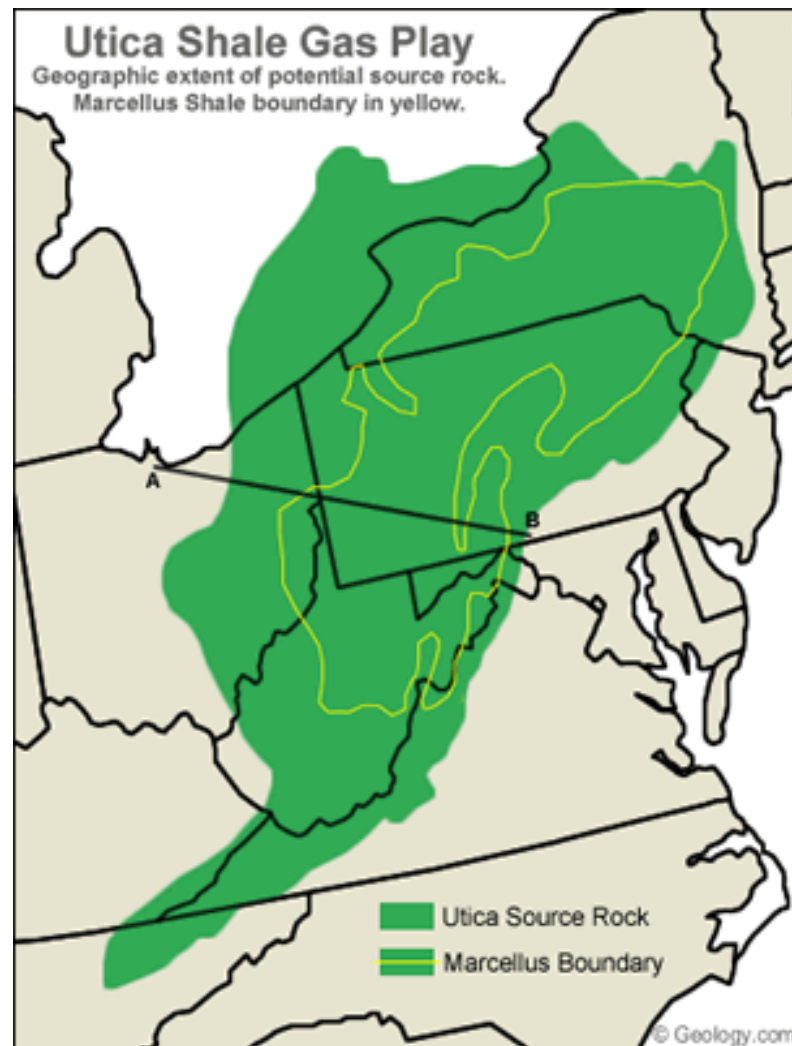
# “Wet Gas” Region of Marcellus Shale



Sources: Pace Global; Equitable Resources, MarkWest, Atlas Energy, Range Resources, and Caiman Energy.

# Utica Shale: Next Frontier?

- Below the Marcellus
- Bigger, deeper, denser
- One of the last U.S. unconventional energy fields
- Particularly attractive in OH
- Success in the Marcellus will lead to success in the Utica



# **Marcellus Shale Coalition**





## About Us

- Founded in 2008
- More than 250 members strong
- From producers to midstream to suppliers

## Our Focus

- Long-term development of resource
- Protecting the environment and responsible use of water resources
- Addressing landowner, government and public issues
- Benefits to our region's future

# Our Guiding Principles

We recognize that to succeed in business, we not only embrace these principles, we live by them each and every day. This will be our legacy.

- ✓ *We provide the safest possible workplace for our employees, with our contractors, and in the communities in which we operate;*
- ✓ *We implement state-of-the-art environmental protection across our operations;*
- ✓ *We continuously improve our practices and seek transparency in our operations;*
- ✓ *We strive to attract and retain a talented and engaged local workforce;*
- ✓ *We are committed to being responsible members of the communities in which we work;*
- ✓ *We encourage spirited public dialogue and fact-based education about responsible shale gas development; and*
- ✓ *We conduct our business in a manner that will provide sustainable and broad-based economic and energy-security benefits for all.*

*We provide the safest possible workplace for our employees, with our contractors, and in the communities in which we operate.*

- Partnership with State Fire Academy
  - More than 3000 trained
  - 58 sessions in one year
  - 42 counties covered
  - Planning for phase II



## MARCELLUS SHALE SAFETY PROGRAM FOR PENNSYLVANIA'S FIRST RESPONDERS

Pennsylvania's first responders are on the front lines of public safety during a variety of emergencies, including rare emergencies involving Marcellus Shale operations. The Marcellus Shale Coalition (MSC) and its member companies are dedicated to ensuring these men and women have the training they need to improve safety on production sites—and throughout their communities.

Members of the MSC seek to provide the safest possible workplace for their employees, while remaining committed to being responsible members of the communities in which they work. These are Guiding Principles of the MSC, which collectively drive the work of an industry making history in the Commonwealth of Pennsylvania and throughout the Marcellus region.

With these principles at the forefront, the MSC has worked in a cooperative manner with both state and local officials in the area of public safety. In May 2010, the Coalition launched a partnership with the Pennsylvania State Fire Academy to expand training for first responders, adding new components targeted specifically at shale gas development and production. This collaborative program is giving Pennsylvania's fire and emergency management personnel the tools they need to respond to the broad range of unlikely scenarios associated with the production of resources from the Marcellus.

### By the Numbers:

**3,000+**

Volunteer firefighters trained

**58**

Training sessions

More than

**40**

Counties have  
trained personnel

**\$212,000**

Contribution from  
Marcellus Shale Coalition





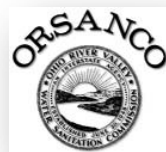
- Partnering with the PA State Police, Department of Transportation, Public Utility Commission, and Department of Environmental Protection on a Marcellus Transportation Safety Day seminar

- Educate carriers and truck drivers supporting the industry on the Commonwealth's regulations to improve safe operating practices



*We implement state-of-the-art  
environmental protection across our  
operations.*

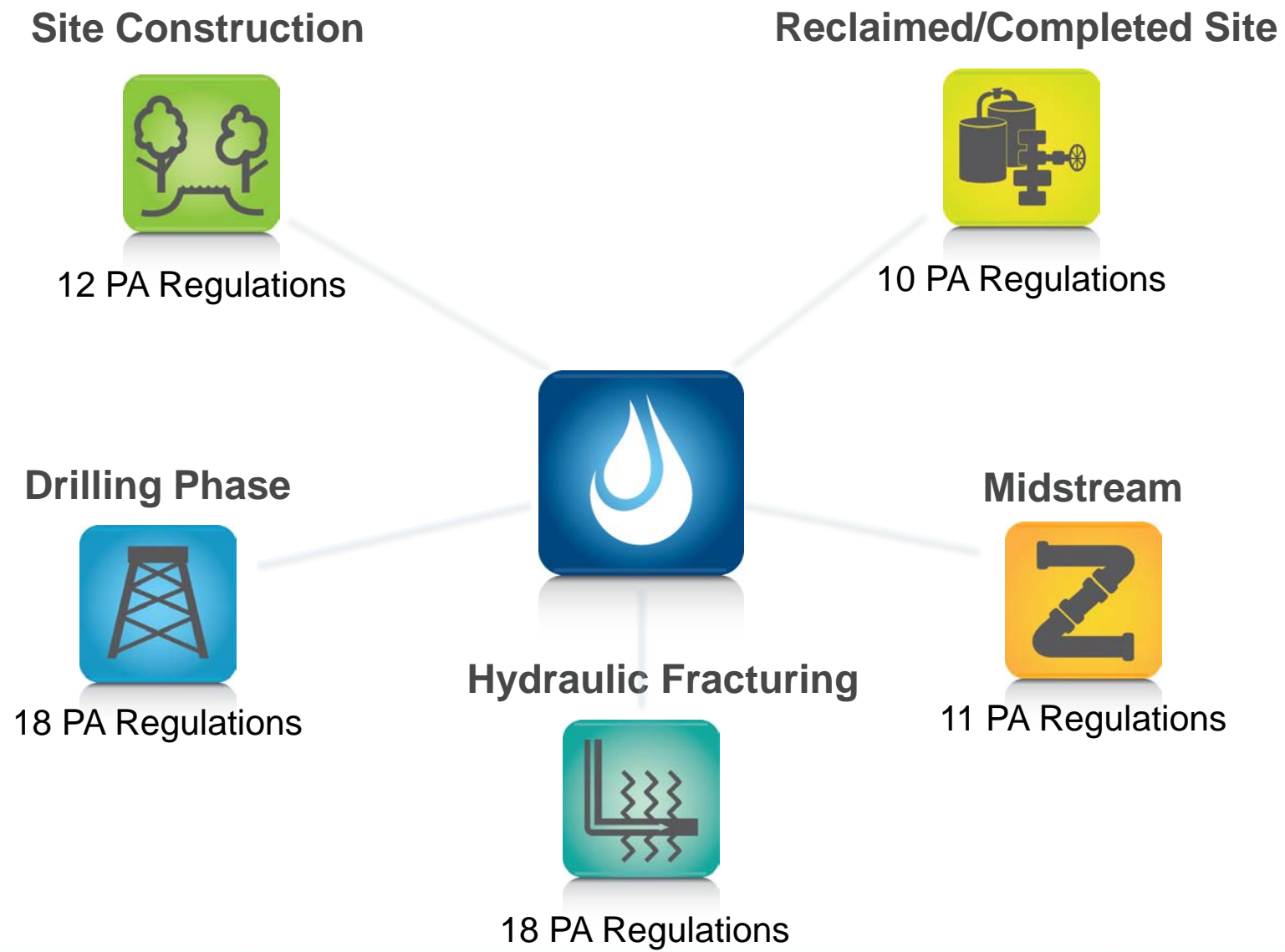
# Environmental Protection



## Highly regulated. Highly sophisticated.

- Transparency in permitting
- Staffing, permit fee increases
- Advances in water recycling and reuse
- Protective well casing standards
- Focus on best practices







*We continuously improve our practices and seek transparency in our operations.*

## State Regulations

### Regular reporting of:

- Well site
- Municipality
- Production info
- Operator

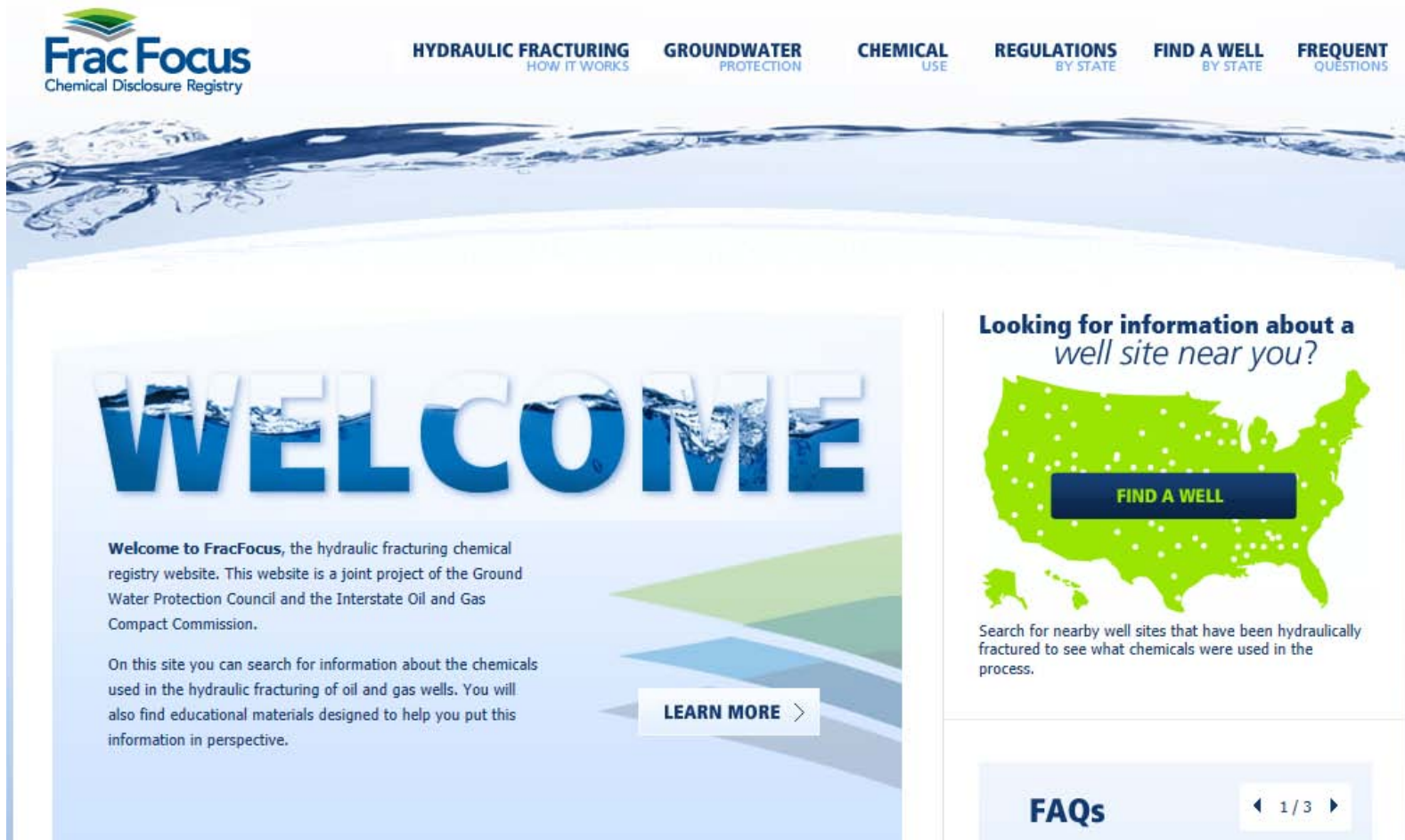


The screenshot shows the Pennsylvania Department of Environmental Protection (PA DEP) website. The header features the PA DEP logo and a banner image of a landscape with wind turbines and a lake. Below the header, there is a navigation bar with links to "Bureau of Oil & Gas Management Home Page", "Quick Access", and "Oil & Gas Production". The "Quick Access" menu lists various resources, including "Abandoned / Orphan Wells Program", "Bureau Contacts and Driving Directions", "Education Links", "Fact Sheets", "Forms", "Laws & Regulations", "Marcellus Shale Page", "2010 Training & Workshops", "O & G Industry Resources", "NEW - PA DEP Oil & Gas Reporting Website", "Oil & Gas Production Data View or Download", and "Oil & Gas Inspections, Violations Reporting". The "Oil & Gas Production" section lists several key links: "Marcellus Shale Production Information", "Reporting Schedule" (with a sub-link for "Production Reporting Schedule"), "Reporting Results" (with a sub-link for "Summary of Reporting Results"), "Marcellus Production Data (as reported by Operators)" (with a sub-link for "July 1, 2009 - June 30, 2010"), and "API County Codes".

**Oil & Gas Production**

- [Marcellus Shale Production Information](#)
- **Reporting Schedule**
  - [Production Reporting Schedule](#)
- **Reporting Results**
  - [Summary of Reporting Results](#)
- **Marcellus Production Data (as reported by Operators)**
  - [July 1, 2009 - June 30, 2010](#)
- [API County Codes](#)

## MSC Commitment to FracFocus.org Bolsters PA Requirements



The screenshot shows the FracFocus.org website. At the top left is the FracFocus logo with the tagline "Chemical Disclosure Registry". To the right are navigation links: "HYDRAULIC FRACTURING HOW IT WORKS", "GROUNDWATER PROTECTION", "CHEMICAL USE", "REGULATIONS BY STATE", "FIND A WELL BY STATE", and "FREQUENT QUESTIONS". The main content area features a large "WELCOME" headline. Below it, a paragraph states: "Welcome to FracFocus, the hydraulic fracturing chemical registry website. This website is a joint project of the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission." Another paragraph follows: "On this site you can search for information about the chemicals used in the hydraulic fracturing of oil and gas wells. You will also find educational materials designed to help you put this information in perspective." A "LEARN MORE" button with a right arrow is positioned to the right of this text. On the right side of the page, there is a section titled "Looking for information about a well site near you?" featuring a map of the United States with numerous white dots representing well sites. A "FIND A WELL" button is overlaid on the map. Below the map, text reads: "Search for nearby well sites that have been hydraulically fractured to see what chemicals were used in the process." At the bottom right, there is an "FAQs" section with a pagination indicator showing "1 / 3".

FracFocus.org is a Project of the Groundwater Protection Council and the Interstate Oil & Gas Compact Commission

*We strive to attract and retain a talented and engaged local workforce.*

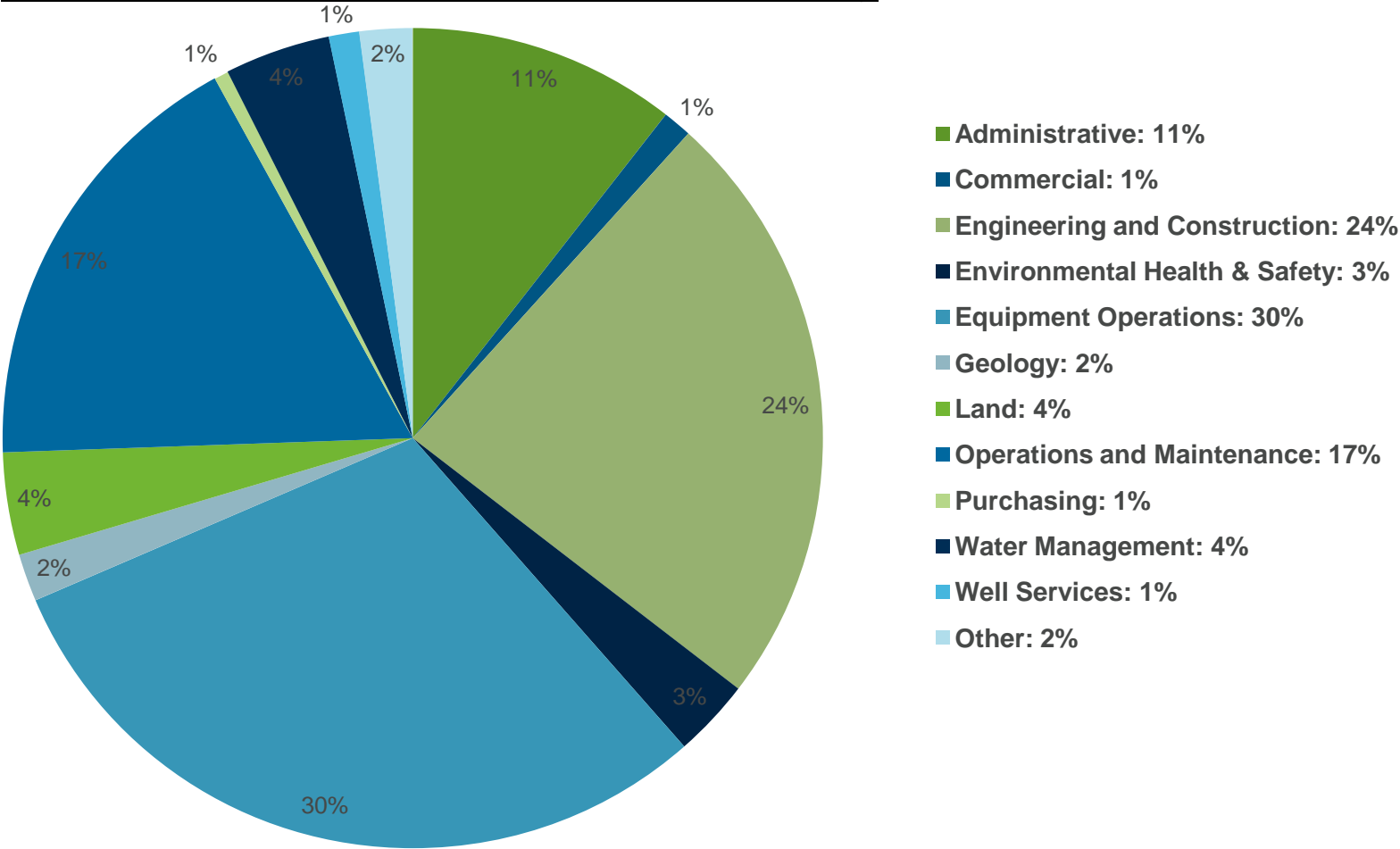


- PA Department of Labor and Industry
  - 214,000 employees in Marcellus and related industries
  - \$76,000 – average Marcellus wage
  - 27,000 hires in first half of 2011
  - 74% of hires are from Pennsylvania
  - Confirmed by MSC member survey
  - 3,600 online job postings in industry



Source: PA Department of Labor and Industry

## Professional Functions Identified in MSC Survey



Source: Marcellus Shale Coalition Membership Survey, May 2011

*We are committed to being responsible members of the communities in which we work.*

# Responsibility: PA Flood Relief

- Tropical Storm Lee – flooding throughout northern Pennsylvania
- Industry controls operations – no environmental damage, no well pads compromised
- MSC members donated approximately \$1 million in financial and in-kind contributions
- Water management, road use, and land management professionals in the Marcellus industry – key to recovery
- Beyond expertise, donations of:
  - Excavating equipment
  - Dump trucks
  - Vacuum trucks
  - Tankers with drinking water



# Responsibility: PA Flood Relief



centredaily.com

## Gas industry helps out in time of need

By Laurie Alberts Salita

Posted: 12:01am on Oct 6, 2011; Modified: 8:29am on Oct 6, 2011



3 people like this. Be the first of your friends.

Tropical Storm Lee deposited record-breaking rainwater in north and central Pennsylvania on Sept. 7, drowning the landscape in about 19 counties. Although circumstances of Lee's wrath may seem eerily similar to that of Hurricane Agnes 39 years ago, something is different this time.

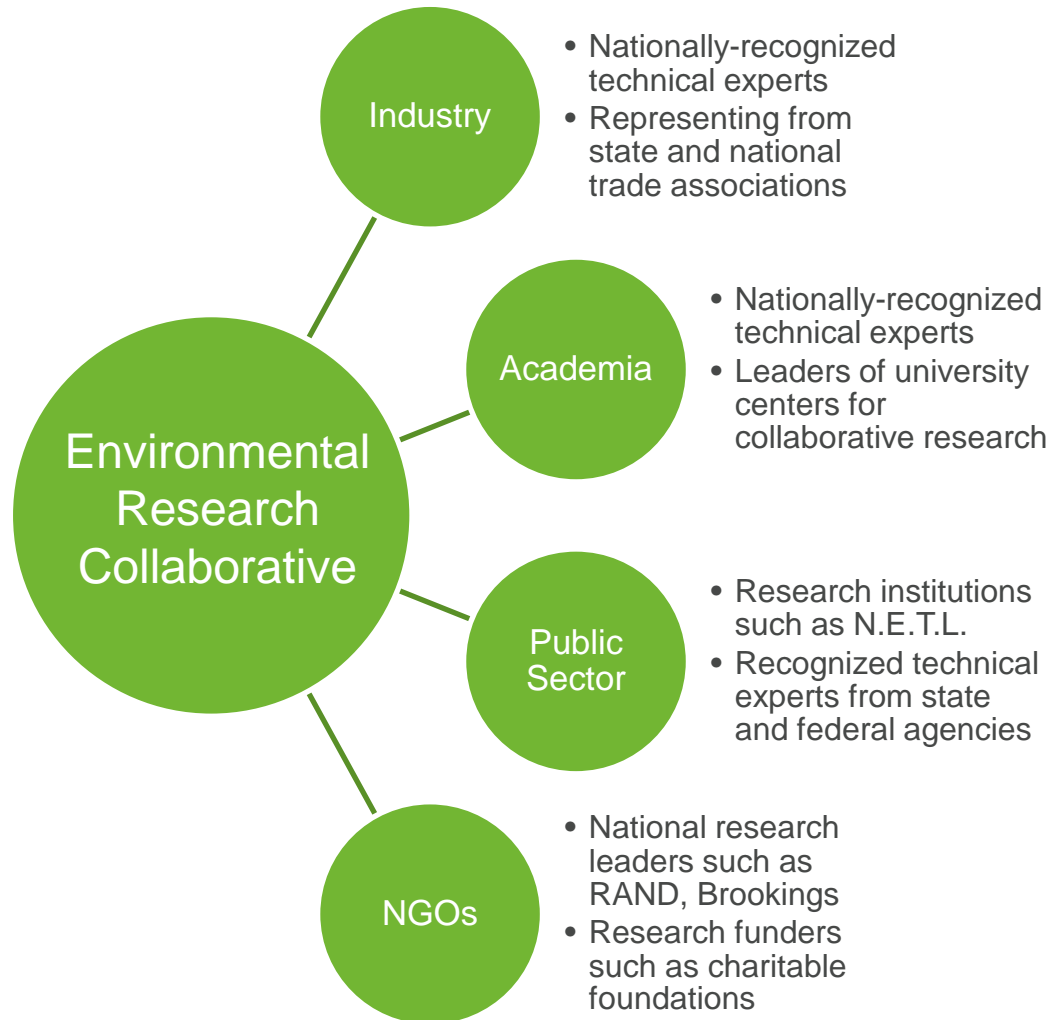
The Marcellus Shale gas industry was not there in 1972. But, thankfully, it is there now.



*We encourage spirited public dialogue and fact-based education about responsible shale gas development.*

- Coalition meetings with legislative and executive officials:
  - PA Department of Environmental Protection
  - PA Department of Community and Economic Development
  - Members of U.S. Congress, PA General Assembly
- Public speaking engagements and presentations:
  - Chambers of Commerce
  - West Virginia University
  - Federal Reserve Bank
  - Sierra Club
  - Pennsylvania Environmental Council
- Outreach to:
  - Agriculture community
  - K-12 education
  - Local government
  - Metropolitan areas
  - Small and mid-sized businesses
  - Sportsmen's groups
  - Workforce training organizations

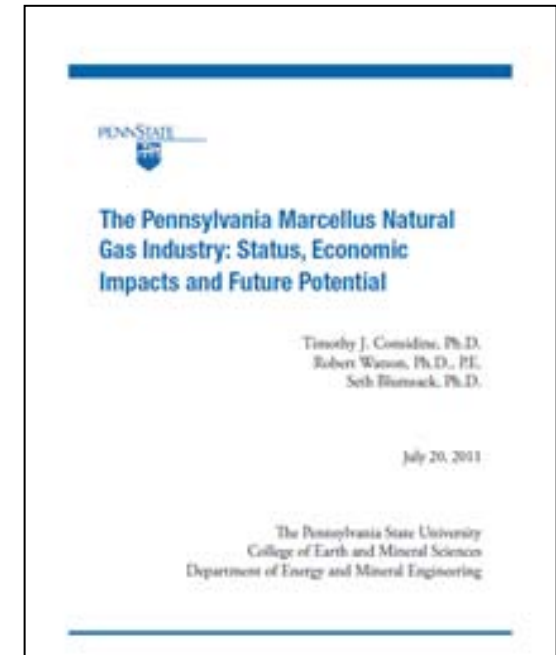




*We conduct our business in a manner that will provide sustainable and broad-based economic and energy-security benefits for all.*



	2011	2020
Economic Value Added:	\$12.8 billion	\$20.2 billion
State/Local Taxes:	\$1.23 billion	\$2 billion
Cumulative Employment:	156,695	256,420
Wells Spudded:	2,300	2,497
Output (bcfe/day):	3.5	17.5



## Key Report Findings

- Pennsylvania is self-sufficient in natural gas (net exporter)
- 2020 output levels (17 billion cubic feet per day) could make the Marcellus the single largest producing gas field in the U.S.
- Marcellus could produce a quarter of U.S. natural gas by 2020.
- \$1.6 billion in lease and bonus payments in 2010.
- Given a 12.6 percent reduction in natural gas prices due to higher Marcellus output, total energy expenditures declined by \$633 million during 2010.



# Revenue for Pennsylvania

Paid by Marcellus Industry	
<b>Overall taxes since 2006<sup>1</sup></b>	<b>\$1.1 billion</b>
<b>State and local taxes in 2011<sup>2</sup></b>	<b>\$1.23 billion</b>
<b>Road construction investments since 2008<sup>3</sup></b>	<b>\$411 million</b>
<b>Royalty payments to state in 2011<sup>4</sup></b>	<b>\$107 million</b>
<b>Permitting and enforcement fees to increase DEP personnel</b>	<b>\$11 million</b>

1 – Pennsylvania Department of Revenue, May 2011

2 – Penn State University, “The Pennsylvania Marcellus Shale Natural Gas Industry: Status, Economic Impacts and Future Potential,” July 20, 2011

3 – Survey of Marcellus Shale Coalition Full Members

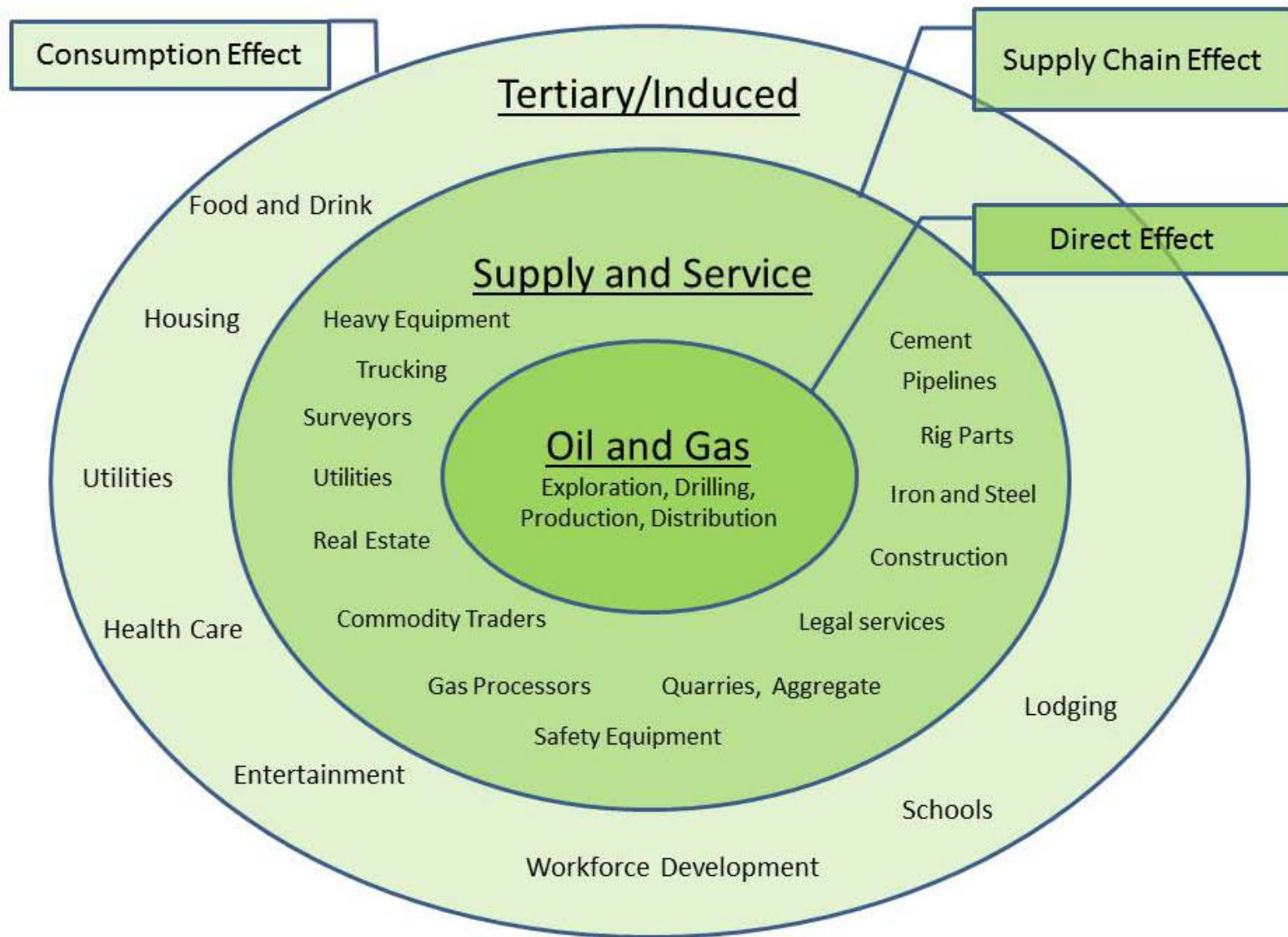
4 – Pennsylvania Department of Conservation and Natural Resources

## Fast Facts

- ✓ \$5+ million investment to produce each well
- ✓ \$12.5 billion investment in well site operations alone (2,500 produced annually)
- ✓ 400+ individuals & 150 different jobs required to complete and produce gas from a Marcellus Shale well



# Shale Economic Spectrum





**We recognize that to succeed in business, we not only embrace these principles, we live by them each and every day. This will be our legacy.**

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# Thank you!

**Marcellus Shale  
Coalition**

Kathryn Z. Klaber

January 11, 2012

*[www.MarcellusCoalition.org](http://www.MarcellusCoalition.org)*

