



MARCELLUS
SHALE COALITION

Marcellus Shale Coalition: *Presentation before the* ***Marcellus Shale Advisory Commission***

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President & Executive Director
May 20, 2011

Guiding Principles for the MSC

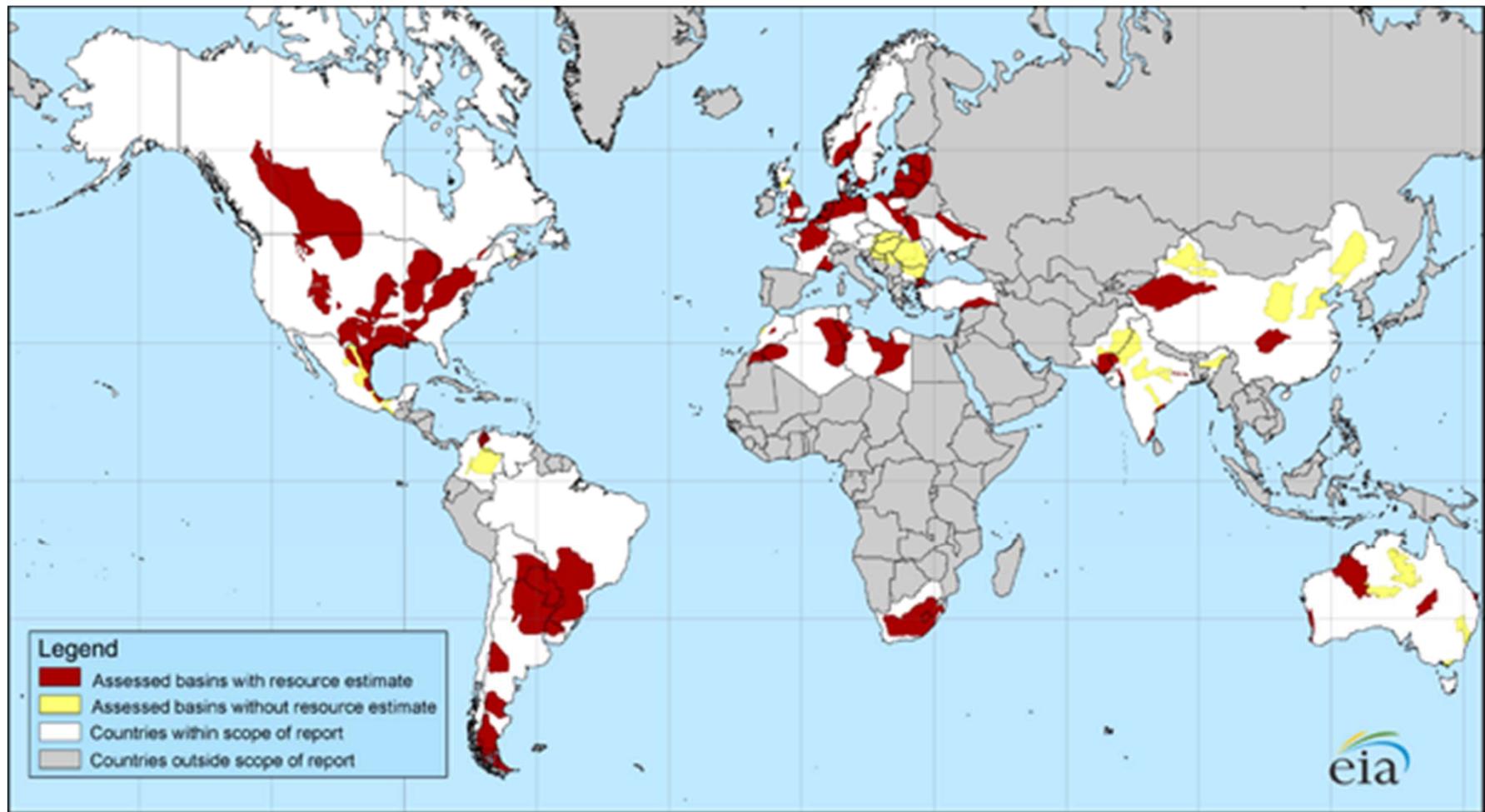
Our Guiding Principles

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.*

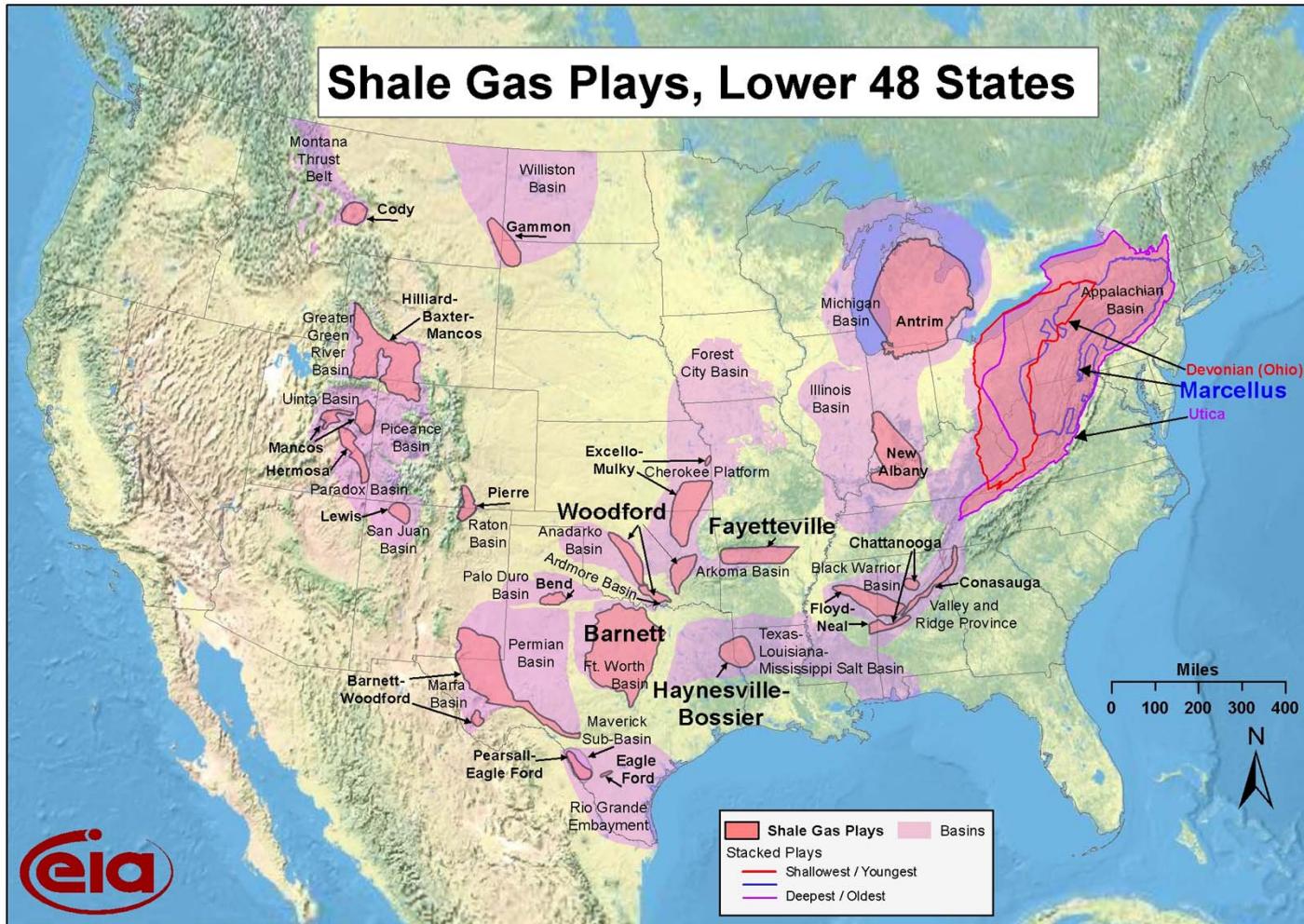
Shale Gas Revolution

Shale Gas: A Global Phenomenon



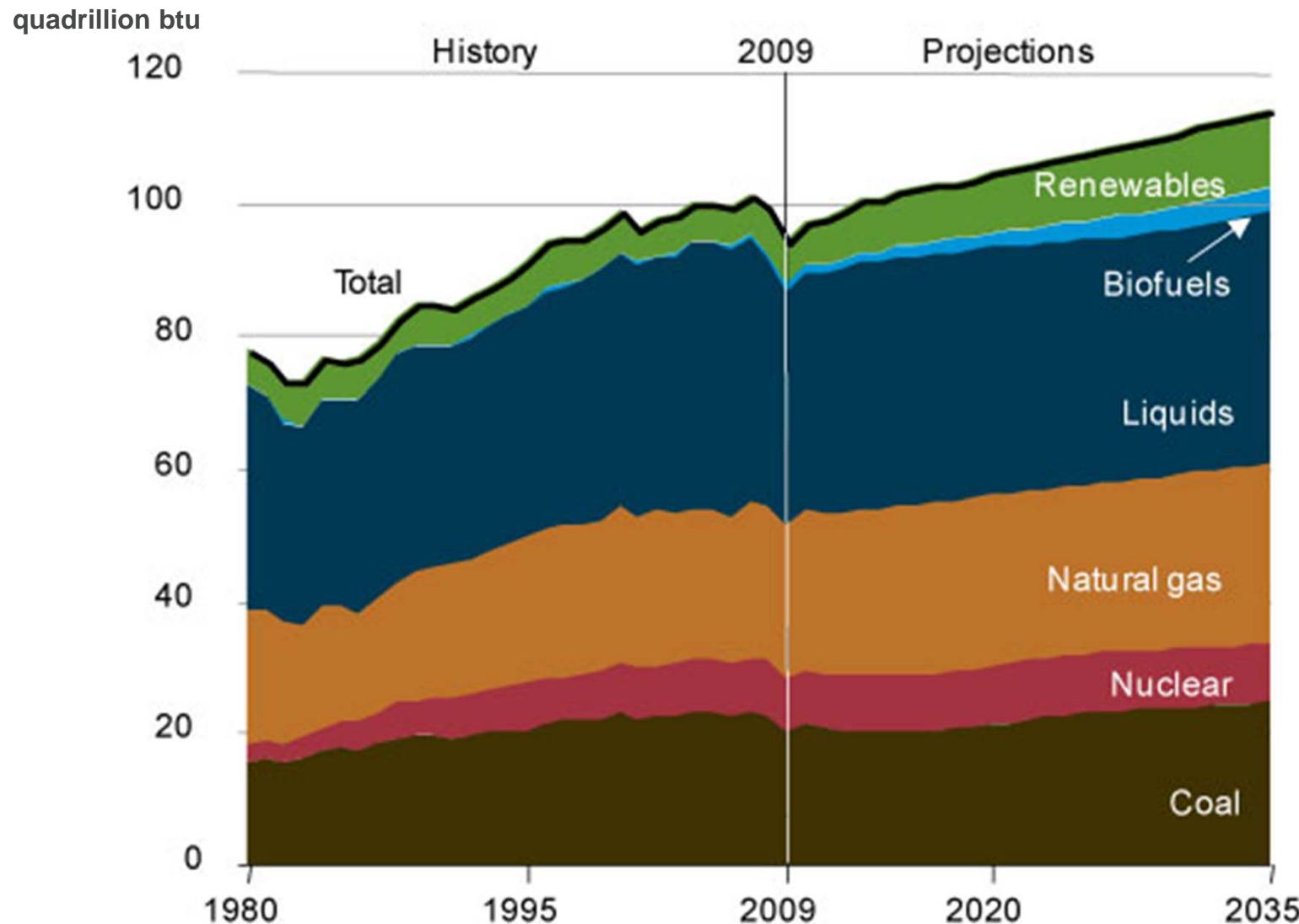
Source: Energy Information Administration

Shale Gas Revolution Across the U.S.



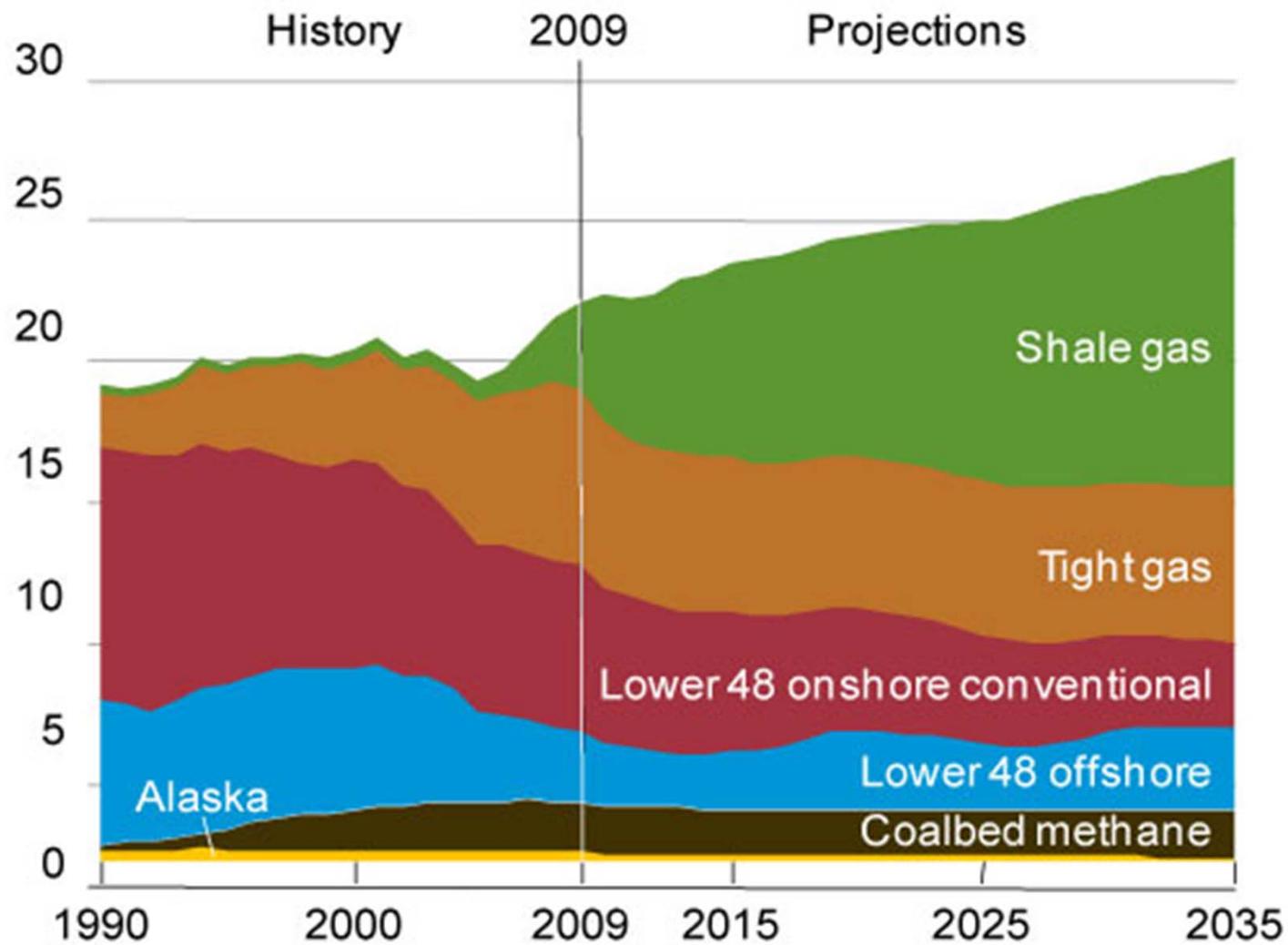
Source: Energy Information Administration

Natural Gas: Stable, Reliable, and Abundant



Source: Energy Information Administration Annual Energy Outlook, April 2011

Growth of Shale in Natural Gas Production



Source: Energy Information Administration Annual Energy Outlook, April 2011

Economic and Workforce Development

Fast Facts

- ✓ \$4 million is invested in producing each well
- ✓ At 3,000 produced annually, \$12 billion investment in well site operations alone
- ✓ Each mile of pipeline represents = \$1 million investment



Clean, Abundant, and Versatile Resource

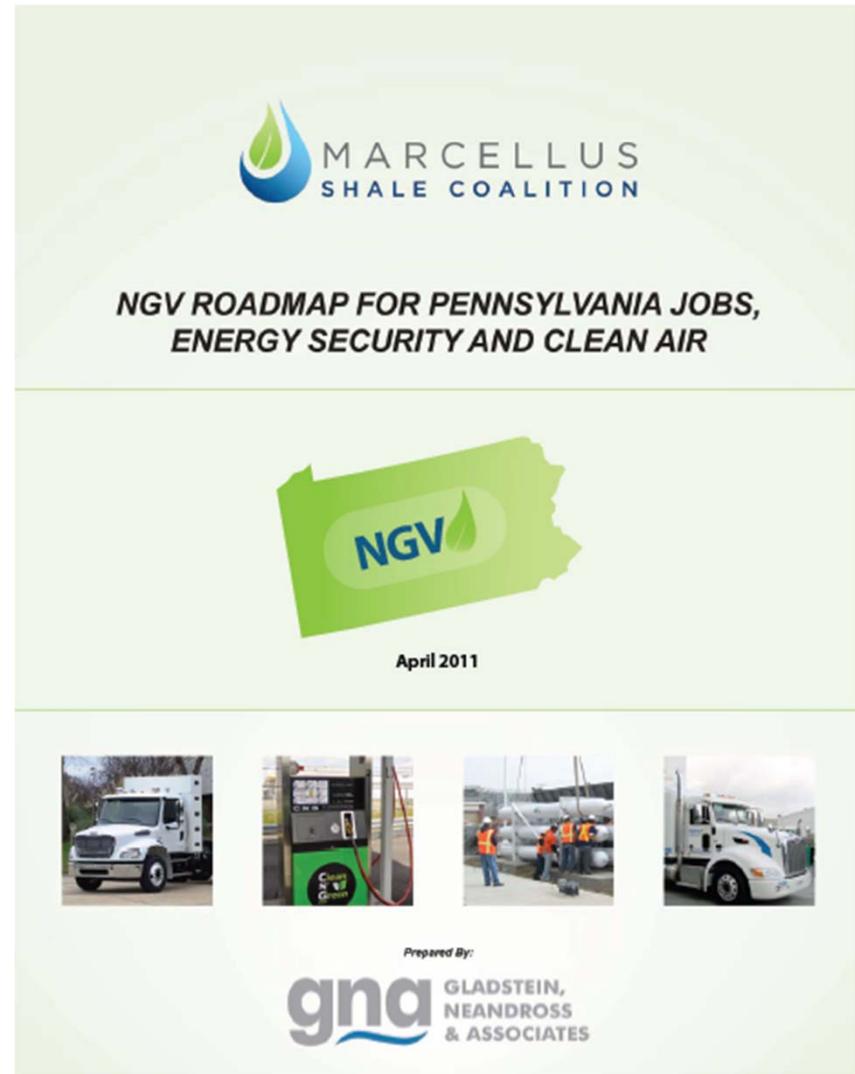


- Heating and cooling
- Light duty and heavy duty transportation applications
- Generation of electricity
- Combined heat and power applications
- Feedstock for industries
- Utilization of liquids

Clean, Abundant, and Versatile Resource



- NGV opportunities:
 - Replace requirement for CARB certification with EPA certification
 - Clarify AFIG program to allow grants to be used for heavy-duty vehicles above 26,000 lbs.
 - Fleet procurement
 - Development of NGV corridors



- PA Department of Labor and Industry
 - 141,000 employees in Marcellus and related industries (nearly 3 percent of statewide workforce)
 - 48,000 hires since fourth quarter, 2009
 - 9,000 new hires in first quarter, 2011
 - 7 in 10 hires are from Pennsylvania
 - Confirmed by MSC member survey

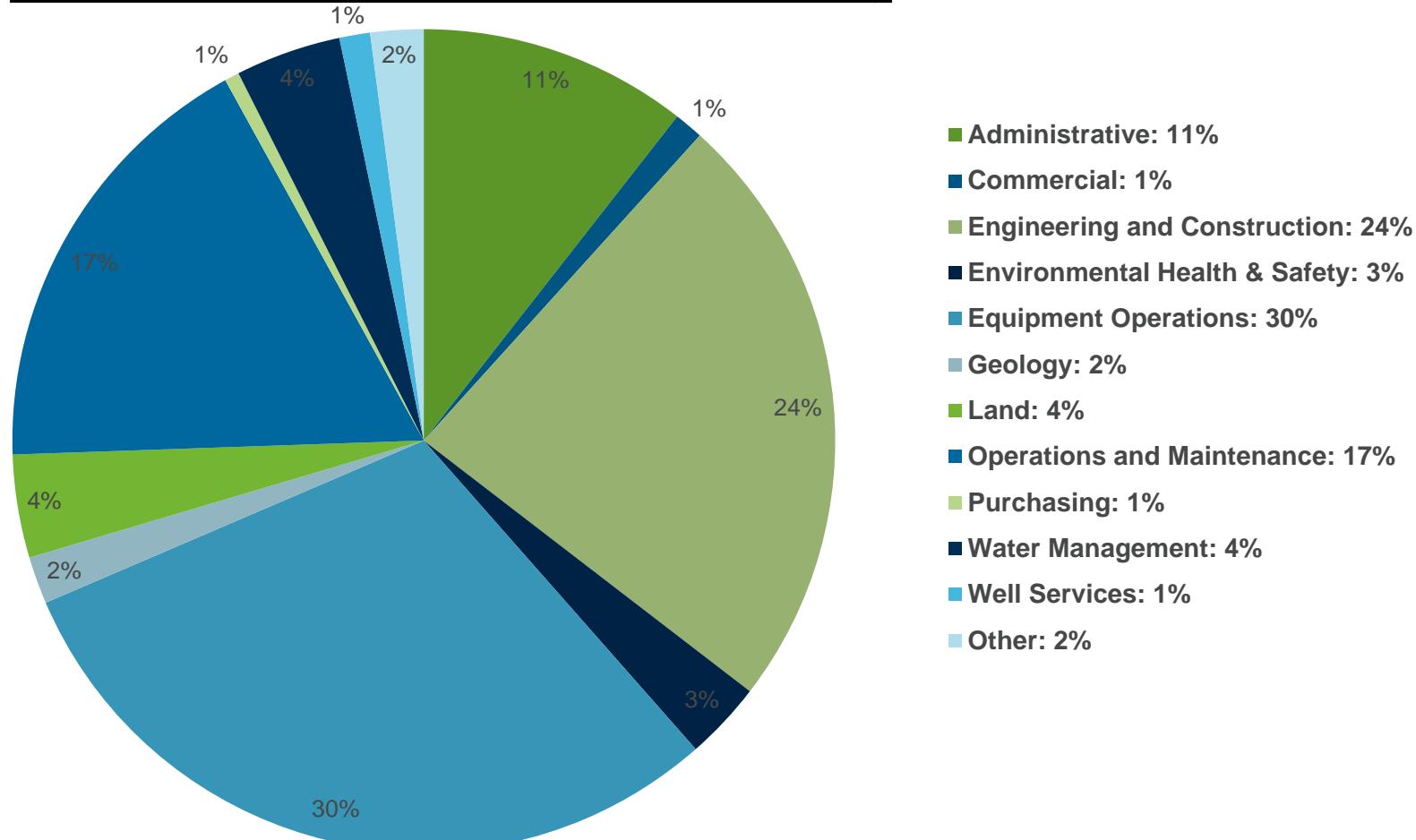


Source: Department of Labor and Industry Testimony, to Commission, April 14, 2011

Diverse Job Opportunities



Professional Functions Identified in MSC Survey



Source: Marcellus Shale Coalition Membership Survey, May 2011

Statewide Job Opportunities



- Department of Labor and Industry: almost 2,400 Marcellus job postings statewide
- Most found at MSC job portal
- Support for ShaleNET
- Training network responds to market demands

A screenshot of the Marcellus Shale Coalition job portal website. The top navigation bar includes "Home", "About", "Opportunity", "MSC Jobs", and "Find a Job". The main banner features the text "RENEWAL. PROSPERITY. MARCELLUS JOBS" over a background image of a green field under a cloudy sky. Below the banner, a callout box says "The Marcellus creates jobs for our region, giving people the ability to support their families during good economic times and bad. Explore this site and find jobs in your area today." A "Get Started" button is visible. The "Profiles" section shows four job categories with images and descriptions: "Compressor Operator" (maintains natural gas compressors and equipment), "Floor Hand" (operates well drilling and service rigs, assists with general maintenance), "Roustabout" (performs pipe fittings and all-around mechanical tasks), and "Driller" (supervises well drilling crew, operates rig controls and monitors drilling operations). The bottom right corner features the Marcellus Shale Coalition logo with the text "OFFICIAL SITE".

Revenue for Pennsylvania



- Department of Revenue:
 - \$1.1 billion in tax payments since 2006
 - First quarter, 2011 tax payments exceed all of 2010 by \$20 million
- Penn State Analysis of Major Marcellus Counties:
 - 11.36% increase in state sales tax receipts since 2007
 - Stronger realty transfer tax collections vs. remainder of the state
 - 7% more in individual taxable income



MARCELLUS EDUCATION FACT SHEET



State Tax Implications of Marcellus Shale: What the Pennsylvania Data Say in 2010

Development of Marcellus shale natural gas in Pennsylvania has brought with it many changes to parts of the Commonwealth. Because of the rather recent nature of the drilling activity, the extent of its effects on local economies and state tax collections has not been clearly understood. Marcellus-related activity can affect these through several means. Leasing and royalty income paid to mineral right owners increases household income, and since it is taxable under the state's personal income tax, it will affect state income tax collections. Increases in local employment or earnings due to Marcellus-related work can likewise affect state income tax collections. If mineral right owners and those employed due to Marcellus development spend more money locally, state sales tax collections can increase. If development of Marcellus shale affects local real estate markets, it may similarly affect realty transfer tax collections.

It still is very early in the development of Marcellus shale, so much cannot be known about its full long-term economic implications. However, recent state tax collection information gathered by the Pennsylvania Department of Revenue can provide some insight into the short-term economic and state tax implications of gas development in

the Commonwealth. This fact sheet provides basic analysis of state tax information as reported in the Department of Revenue's "Pennsylvania Tax Compendium," and "Personal Income Statistics." The data show distinct differences between counties with Marcellus shale gas drilling and those without.

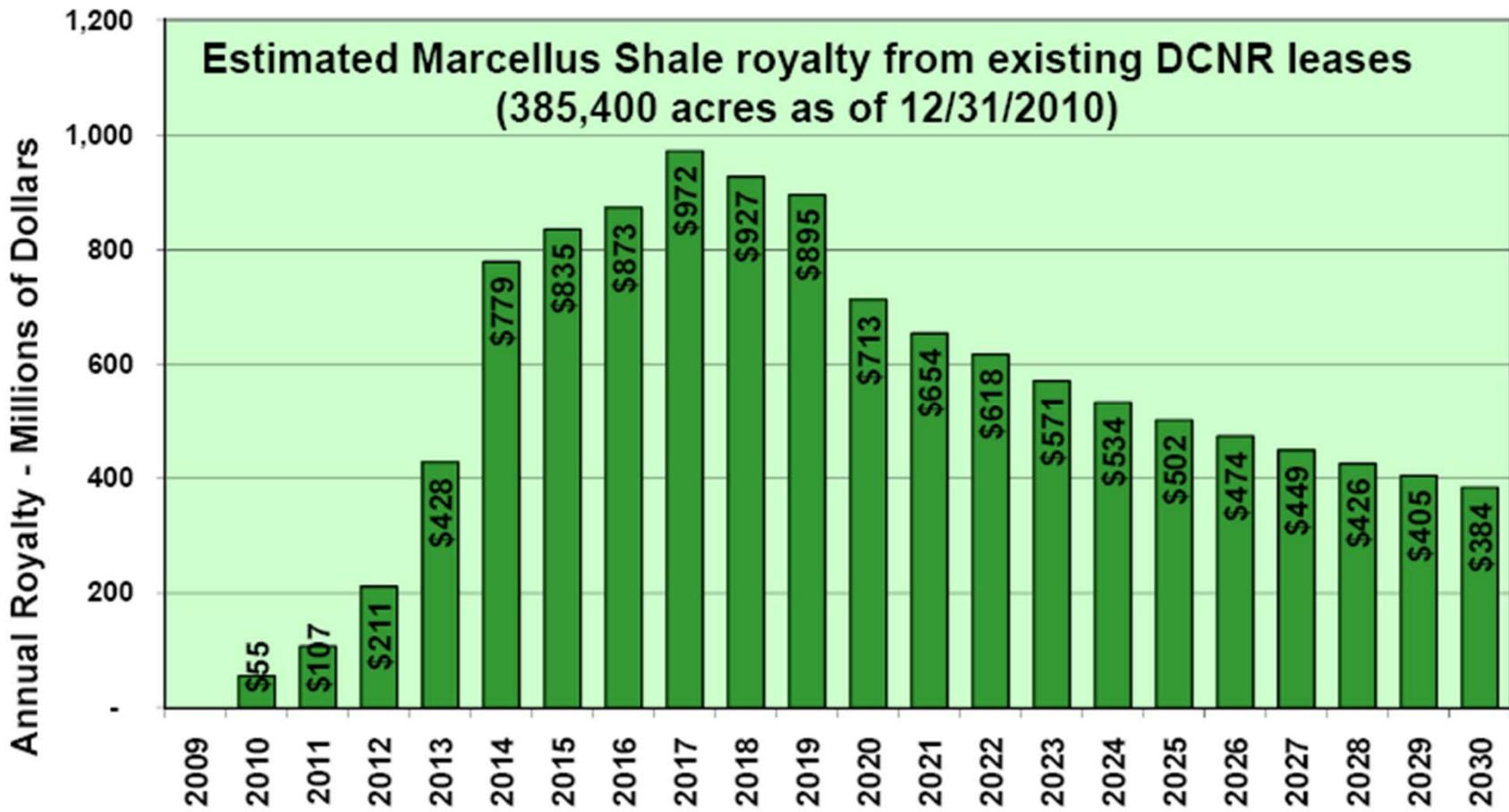
Method of Analysis

Counties were categorized by the number of Marcellus wells drilled during the study years using Pennsylvania Department of Environmental Protection data. Changes in tax collections within each county were calculated using the Department of Revenue data, and then the average change was calculated within each category. The base years used for analysis vary between the state income tax (2007-2008) and the other state taxes (2007-2010) because the 2009 state income tax data had not been released at the time of this writing.

Eight counties had ten or more Marcellus wells as of 2008, including Bradford, Butler, Fayette, Greene, Lycoming, Susquehanna, Washington, and Westmoreland. As of December 8, 2010, five Pennsylvania counties had had more than 150 Marcellus wells drilled since 2007, including Bradford, Greene, Susquehanna, Tioga, and Washington.

Source: Department of Revenue, May 2, 2011; Penn State Marcellus Education Team, February 27, 2011

Revenue for Pennsylvania



Infrastructure

- Record of improving state and township roads
 - More than \$200 million invested in roads in 2010
 - Marcellus industry and supporting businesses paying fuel taxes to the Commonwealth
 - Reasonable PennDOT road repair and maintenance standards; equitable standards for distributing responsibility
- Recommendations on pipeline safety
 - Extend PUC pipeline safety program consistent with federal laws and regulations
 - Establish a pipeline safety inspection training infrastructure

Public Health, Safety and Environmental Protection

Highly Regulated, Highly Sophisticated



Site Construction



12 PA Regulations

Reclaimed/Completed Site



10 PA Regulations

Drilling Phase



18 PA Regulations



Hydraulic Fracturing



18 PA Regulations

Midstream

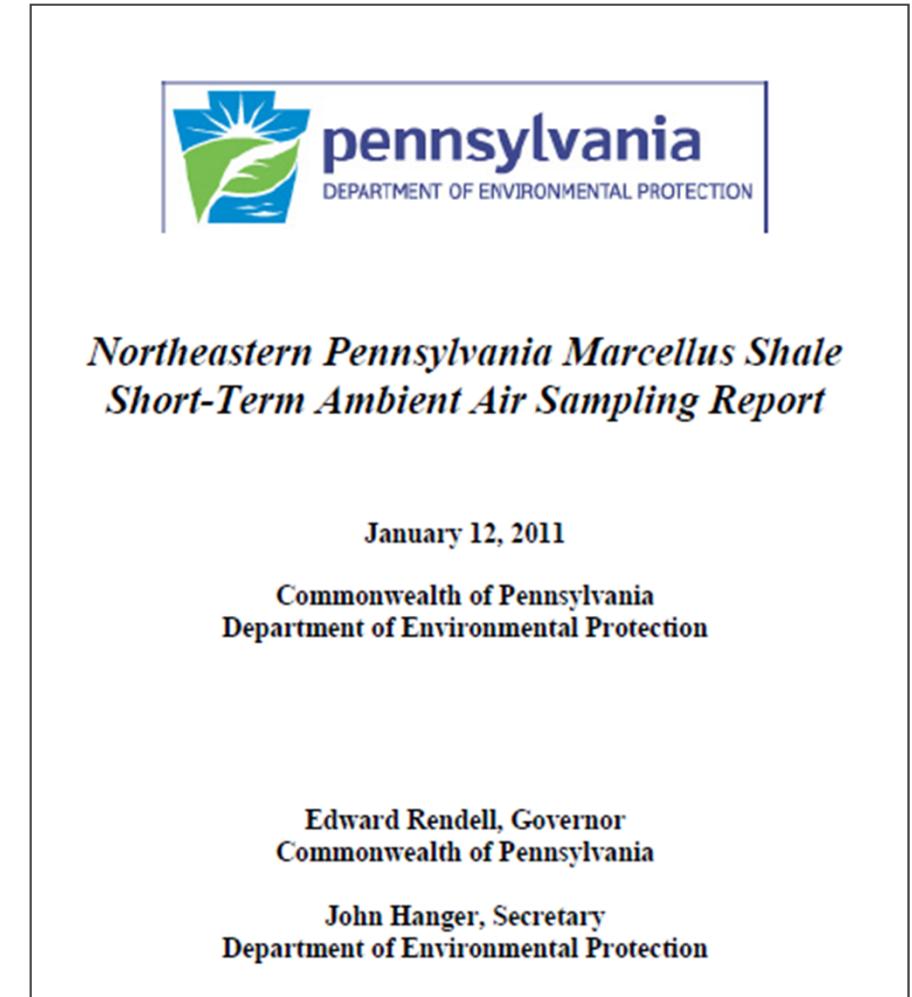


11 PA Regulations

Ensuring Air Quality



- Short-term monitoring in NE, SW PA
- New results for Bradford, Lycoming, Sullivan and Tioga Counties
- Gas Processing Plants
 - Plan approval/air permit
- Compressors
 - Covered by GP-5
- Fugitive emissions
 - Roads
 - Compressor stations
- Flares
 - Temporary sources



Protecting Water Quality



Less Reliance on Water Resources

	Gallons per million BTU Range	Mid-point
Deep shale natural gas	0.60 – 5.80	3
Nuclear	8 – 14	11
Conventional oil	8 – 20	14
Coal	13 – 32	23
Fuel ethanol from corn	2,510 – 29,100	15,800
Biodiesel from soy	14,000 – 75,000	44,500

Source: Ground Water Protection Council, U.S. Department of Energy

Pre-drill conditions

- ~1.2 million private water wells in the Commonwealth
- Significant pre-existing water quality problems
 - Prior efforts to address not successful
 - Legislature's Center for Rural PA 2009 study
- Current practices by natural gas industry
 - Minimum 1,000 ft radius from proposed well site, often farther
 - >10,000 now pre-tested
 - Industry pre-drill tests delivered to homeowners

Preventing new problems

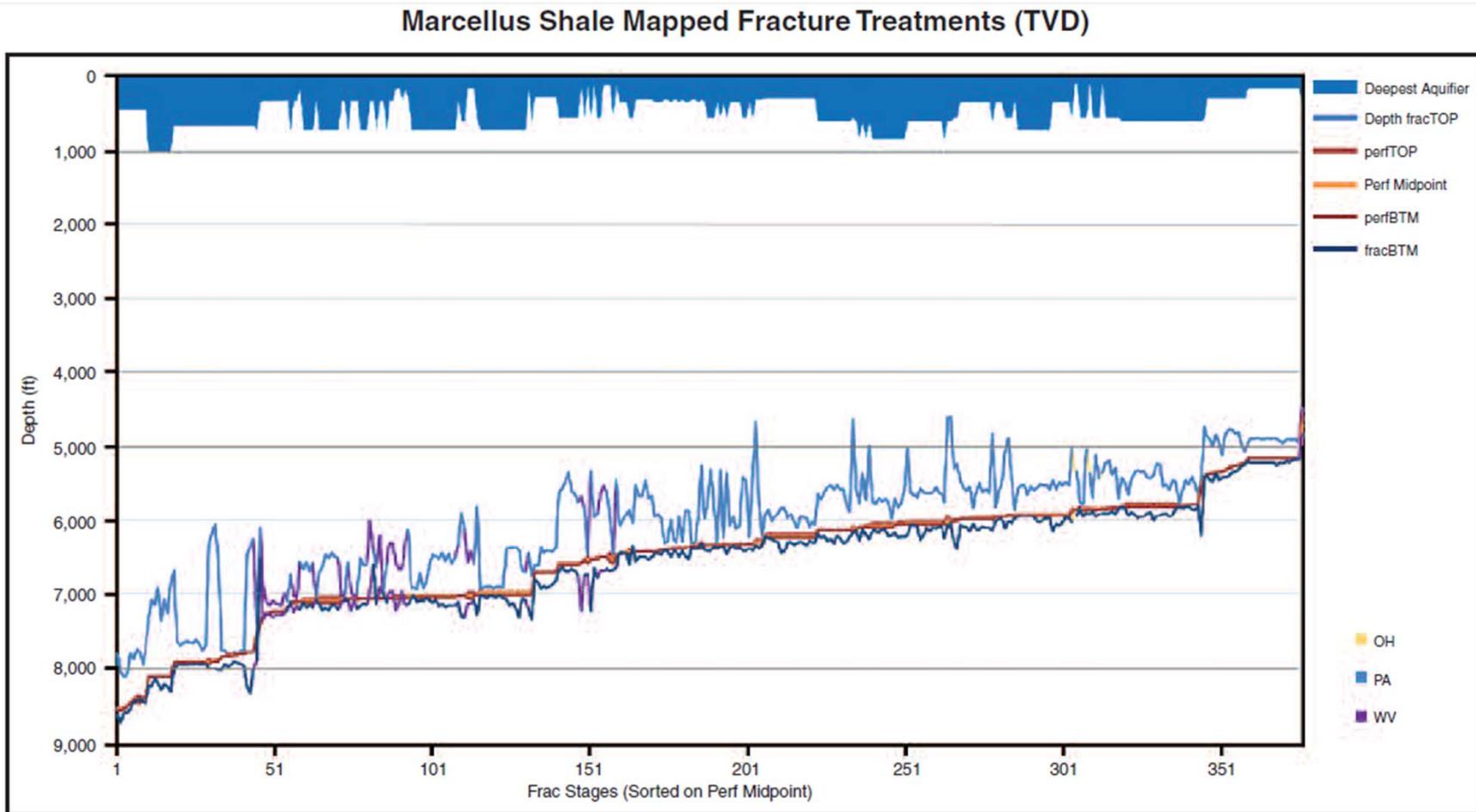
- Permits from state regulatory agencies for water withdrawal
- New technologies allow producers to recycle most water
- 30 State and federal agencies monitor hydraulic fracturing
- STRONGER review of PA regulations
- Hydraulic fracturing produces high amounts of salt, solids
- Pennsylvania Chapter 95 regulations
 - Limit total dissolved solids (TDS) in oil and gas wastewater
 - No direct discharges from drilling sites
 - Wastewater with high TDS: stringent recycling requirements
- Increased water recycling, reuse at the next well

Wastewater issues best addressed by state regulators

Protecting Water Quality



No Impact on Deepest Aquifers



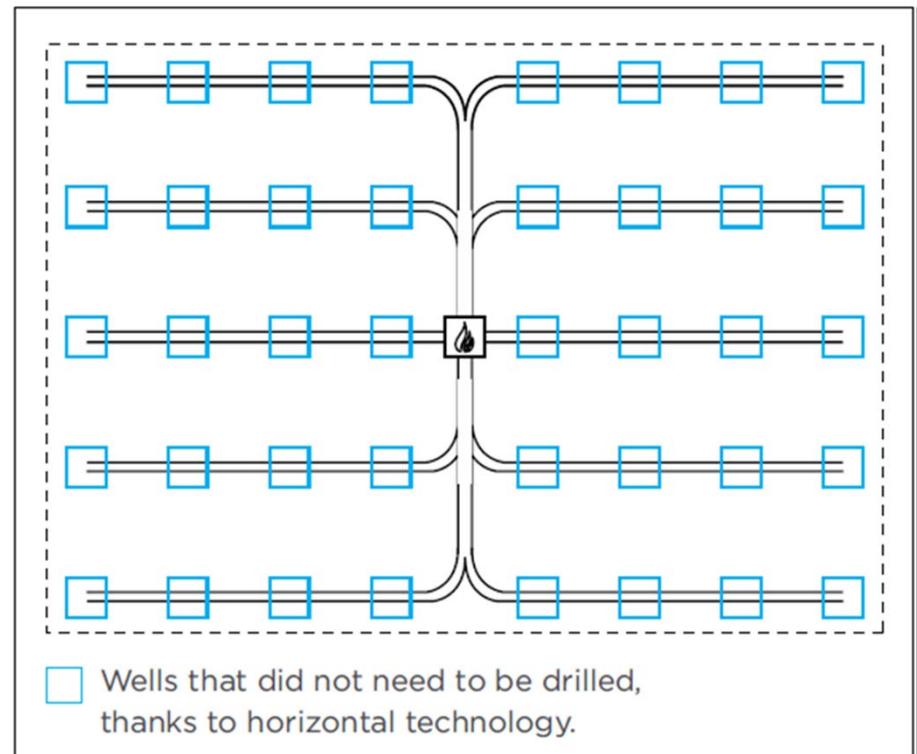
Source: The American Oil and Gas Reporter, July 2010

Preserving Our Lands



- Reducing land impacts
- Efficient production units
- Eliminates waste, consolidates development

New Technologies Allow for Increased Production, Reduce Aboveground Disturbance



Recommendations



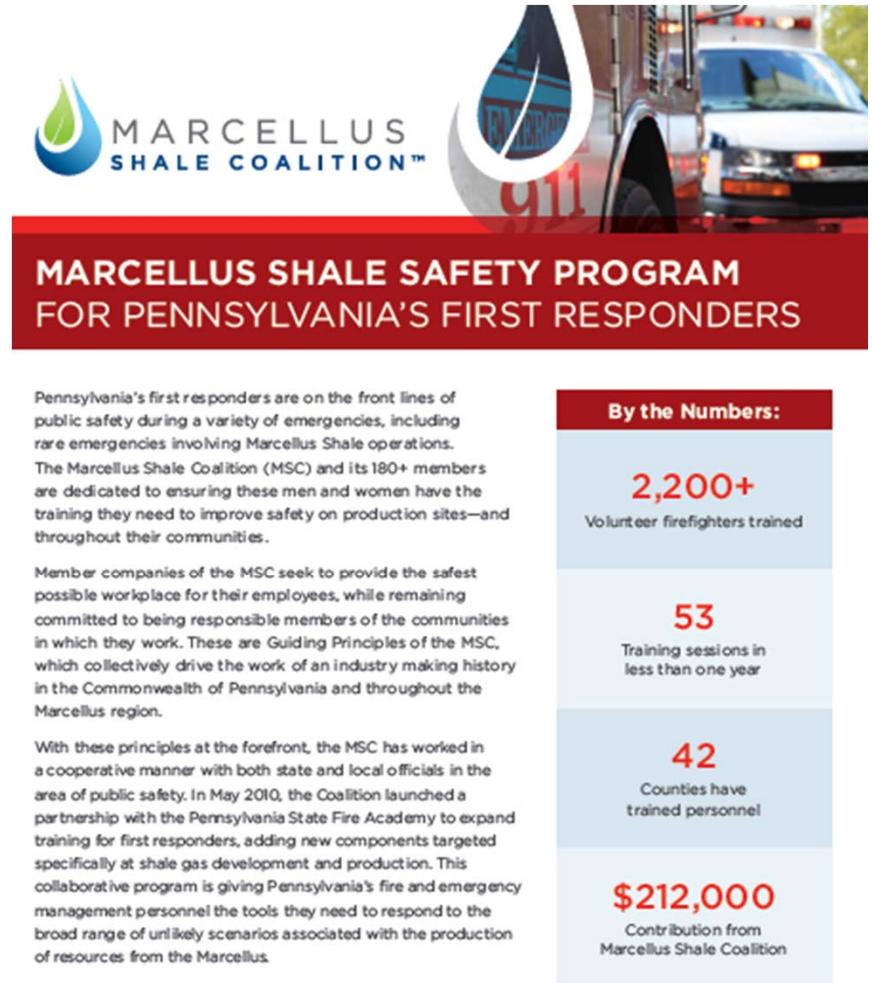
- Private water well construction standards
- Reasonable updates to Oil and Gas Act:
 - Well bonding
 - Setbacks from occupied buildings
 - Presumption of liability for water impacts
 - Notification of permit application

Local Impact and Emergency Response

Emergency Response



- Partnership with State Fire Academy
 - More than 2200 trained
 - 53 sessions in one year
 - 42 counties covered
 - Planning for phase 2
 - Need commitment for long term source of funding



The graphic features the Marcellus Shale Coalition logo at the top left. To the right is a photograph of a white emergency vehicle with "EMERGENCY" and "911" visible on its side. Below the photo is a red banner with the text "MARCELLUS SHALE SAFETY PROGRAM FOR PENNSYLVANIA'S FIRST RESPONDERS". To the right of the banner is a "By the Numbers" section with four data points: 2,200+ volunteer firefighters trained, 53 training sessions in less than one year, 42 counties with trained personnel, and a \$212,000 contribution from the Marcellus Shale Coalition.

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 180+ members are dedicated to ensuring these men and women have the training they need to improve safety on production sites—and throughout their communities.

Member companies 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:

- 2,200+**
Volunteer firefighters trained
- 53**
Training sessions in less than one year
- 42**
Counties have trained personnel
- \$212,000**
Contribution from Marcellus Shale Coalition

Transportation Safety



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

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



Pennsylvania's Oil and Gas Act (Act 223)

TITLE 58. OIL AND GAS

CHAPTER 11. OIL AND GAS ACT

CHAPTER 1. PRELIMINARY PROVISIONS

Sec. 601.101. Short title

This act shall be known and may be cited as the Oil and Gas Act.

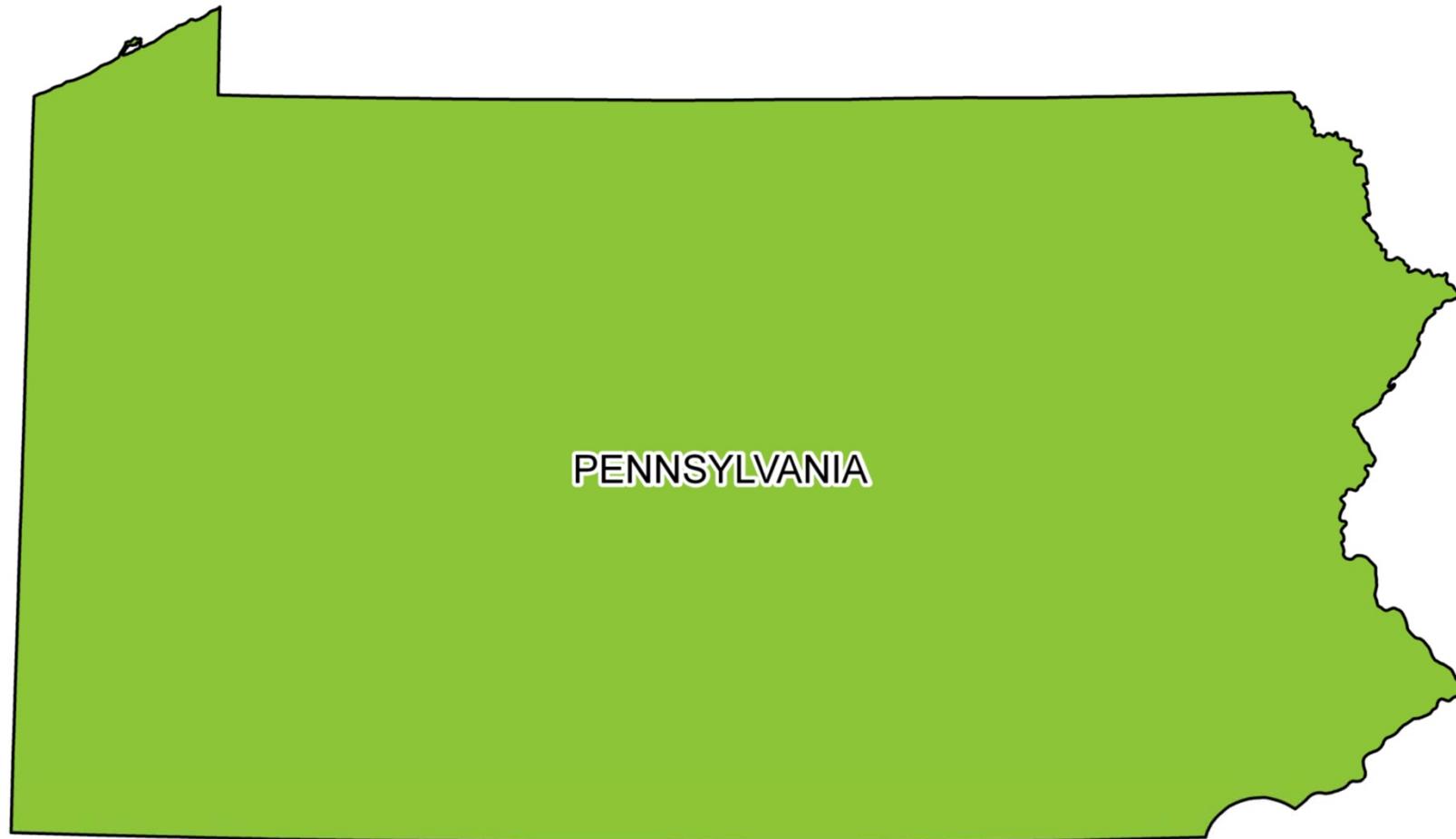
Title of Act:

An Act relating to the development of oil and gas and coal; imposing duties and powers on the Department of Environmental Resources; imposing notification requirements to protect landowners; and providing for definitions, for various requirements to regulate the drilling and operation of oil and gas wells, for gas storage reservoirs, for various reporting requirements, including certain requirements concerning the operation of coal mines, for well permits, for well registration, for distance requirements, for well casing requirements, for safety device requirements, for storage reservoir obligations, for well bonding requirements, for a Well Plugging Restricted Revenue Account to enforce oil and gas well plugging requirements, for the creation of an Oil and Gas Technical Advisory Board, for oil and gas well inspections, for enforcement and for penalties. Dec. 19, 1984 P.L. 1140 No. 223

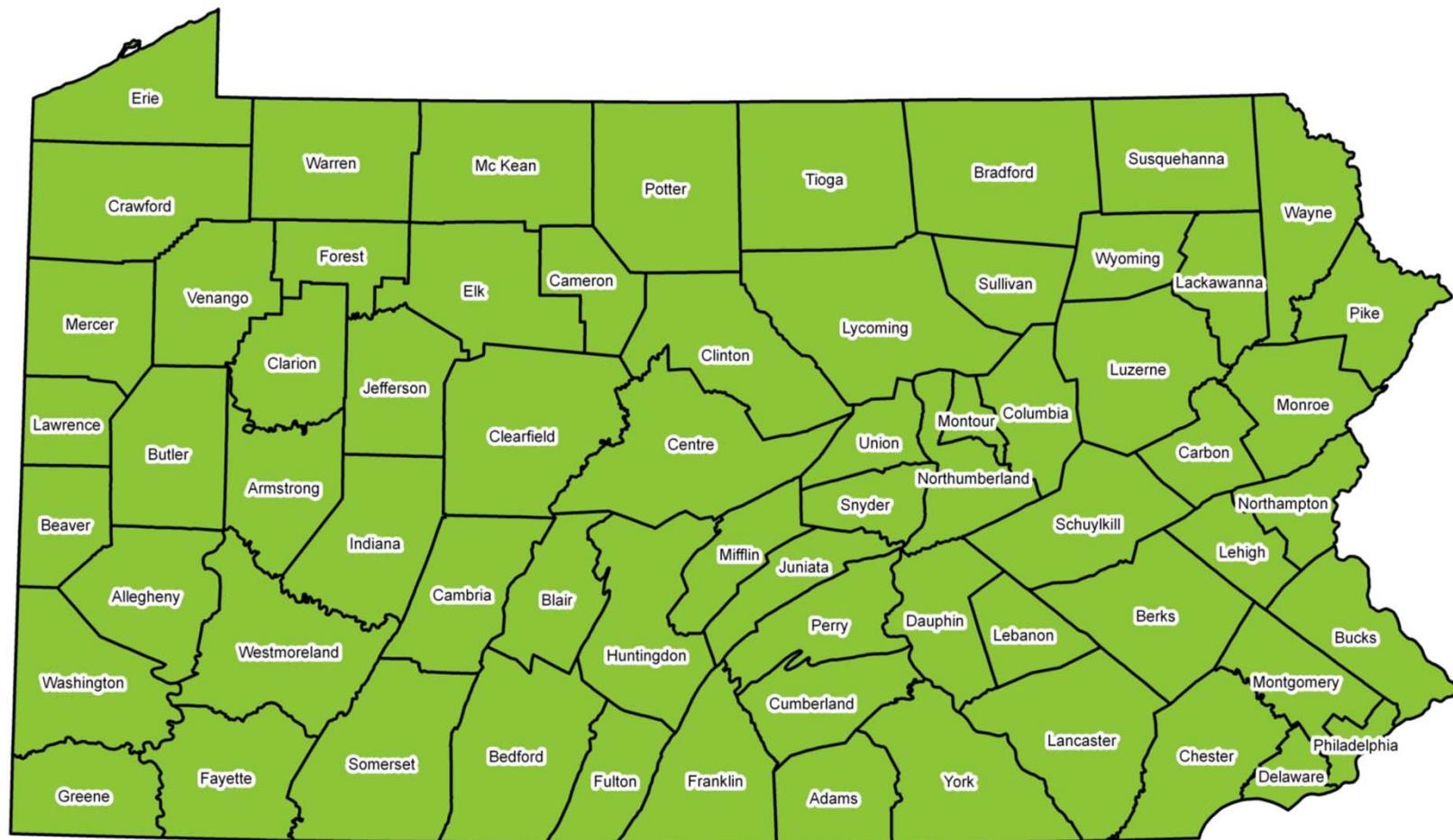
“[A]ll local ordinances and enactments purporting to regulate oil and gas well operations regulated by this act are hereby superseded.”

- Pennsylvania Oil and Gas Act, July 31, 1968

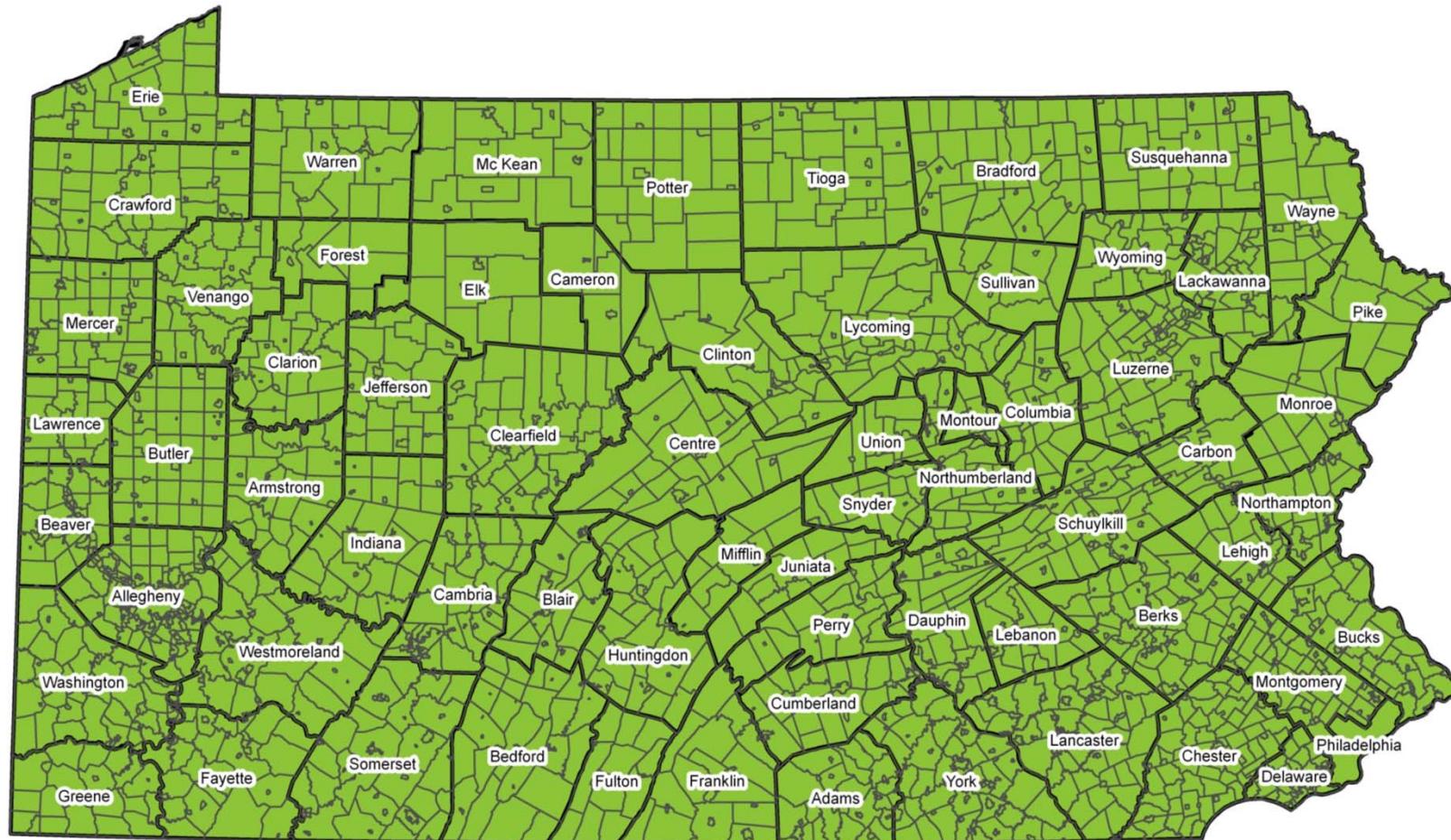
Local Impacts



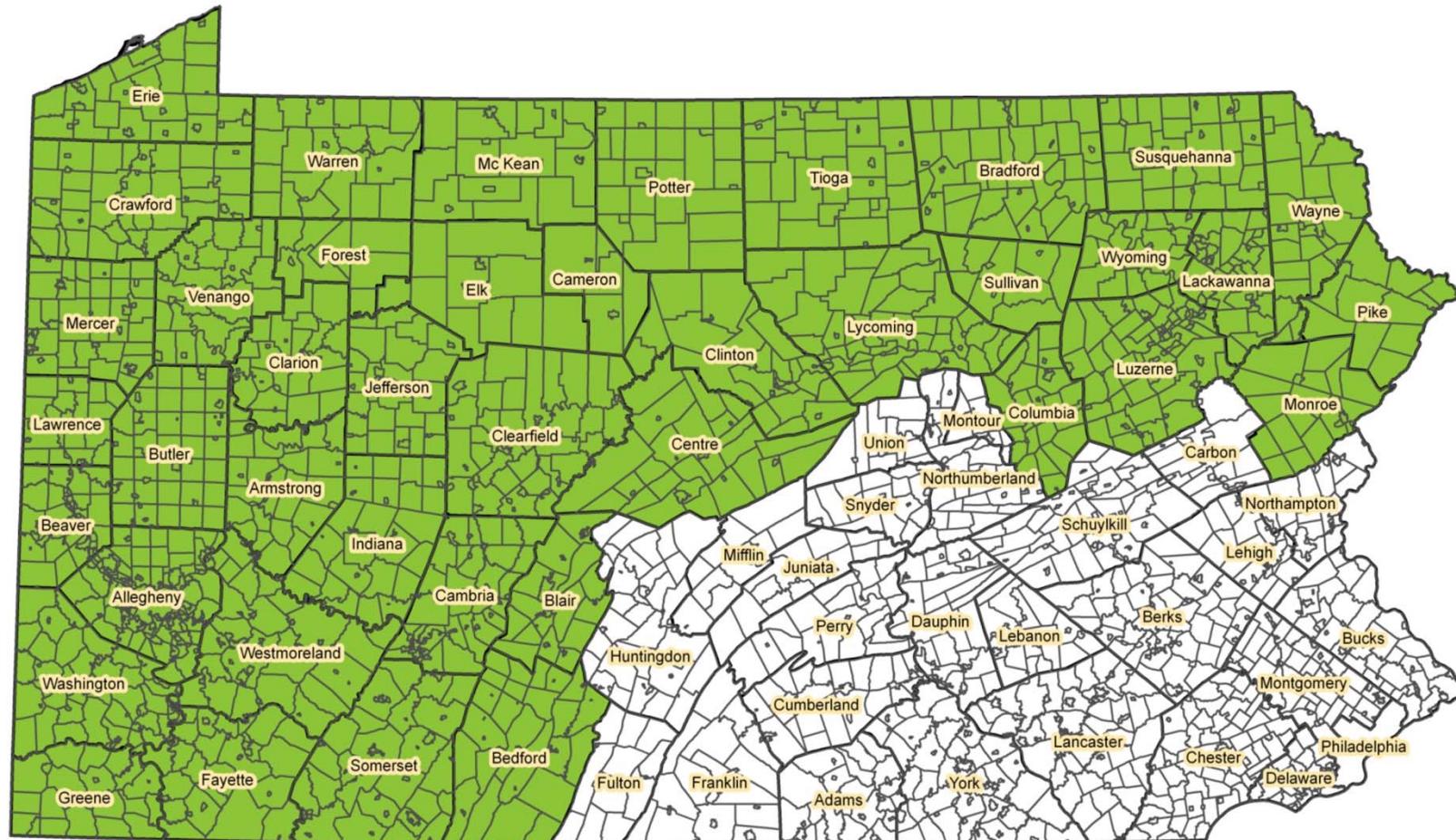
PA Counties



PA Municipalities



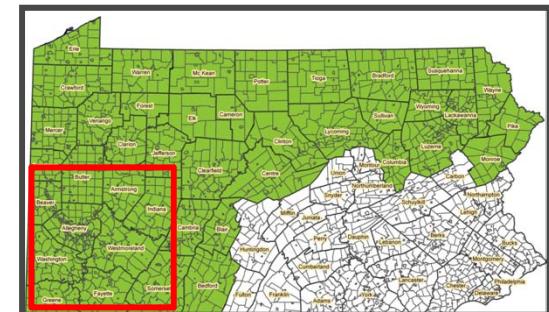
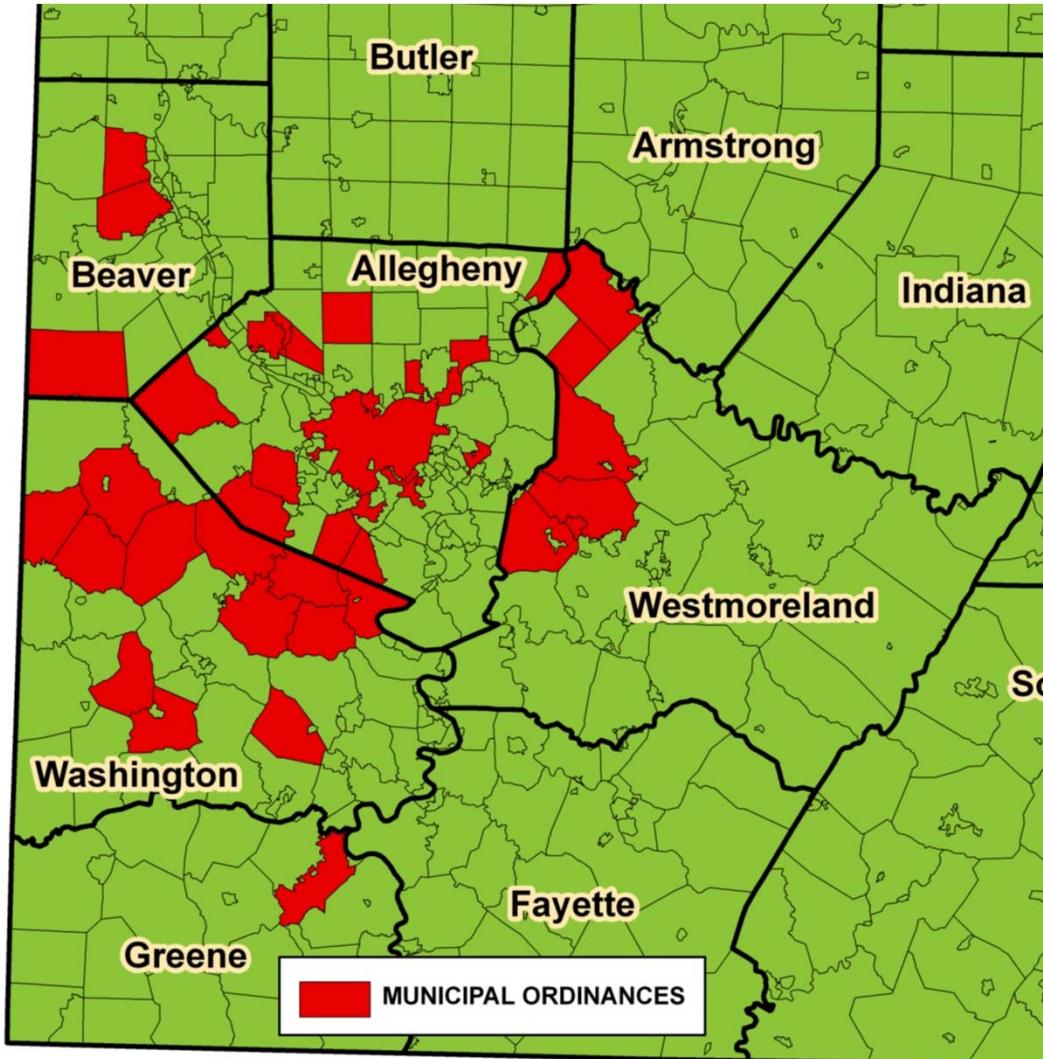
Marcellus Counties



Local Government Regulation in the Marcellus Play

- 37 Counties
- 1491 Municipalities
- 779 Municipal Zoning Ordinances
- 9 County Zoning Ordinances Covering 160 Municipalities

Focus on SW Pennsylvania



Patchwork of Municipal Ordinances

Type of Limit	Frequency of prohibitive terms
Exclusionary provisions	23/66
Setback restrictions	10/66
Noise limits	35/66
Well features/environmental restrictions	10/66
Excessive fees	8/66
Midstream restrictions	39/66
Road use restrictions	10/66
Constitutional problems	4/66
Total with at least one type of prohibitive limit	57/66

Recommendations



- Clarity in limits on zoning powers, without directly or indirectly banning industry activities
- Baseline level of consistency across the Commonwealth
- Prevent disparate treatment of natural gas industry

Recommendations

Summary of Recommendations

- **Increased use of natural gas to maximize environmental, economic benefits**
 - Leverage supply to encourage manufacturing growth and competitive business costs
 - New electricity generation, including co-firing
 - NGV opportunities:
 - Replace requirement for CARB certification with EPA certification
 - Clarify AFIG program to allow grants to be used for heavy-duty vehicles above 26,000 lbs.
 - Fleet procurement
 - Foster development of key NGV corridors
- **Pipeline safety**
 - Extend PUC pipeline safety program consistent with federal pipeline safety laws and regulations
 - Establish a pipeline safety inspection training infrastructure
- **MSC can support amendments to Oil and Gas Act providing reasonable updates to:**
 - Well bonding
 - Setbacks from occupied buildings
 - Presumption of liability for water impacts
 - Notification of permit application
- **Sustained support for widespread first responder training**
- **Clarity and consistency in zoning powers: cannot single out natural gas industry, directly or indirectly ban industry activities**

Thank you
**Marcellus Shale
Coalition**

