



## Pennsylvania's Gas Rush: Issues, Opportunities, and Education

**P**ennsylvania is experiencing a gold rush unlike anything seen in the state since the discovery of black gold (oil) near Titusville in 1859. This time, the rush is about natural gas contained in a geologic formation known as the Marcellus Shale.

### What's Fueling the Gas Rush?

The Marcellus shale is an energy-rich sedimentary rock formation that stretches deep beneath two-thirds of Pennsylvania and into neighboring states. It's been a known source of natural gas for decades, but extracting gas packed 7,000 feet deep in the shale was too difficult and expensive to be profitable. Recent advances in drilling technology, sharply higher natural gas prices, and strong drilling results from a similar shale formation in Texas reignited gas company interest.

A 2008 research study by geoscientists at Penn State and the State University of New York at Fredonia indicated the shale could contain more than 500 trillion cubic feet of natural gas. About 10 percent (up to \$1 trillion worth) of this natural gas could be recoverable—more than twice the amount used by the United States in a year. The sheer magnitude of this knowledge has gas companies, landowners, and rural communities scrambling to tap into the potential profits.

### Educating Landowners

Penn State Extension recognized how important an issue gas exploration could be for Pennsylvania landowners and communities when drilling company agents (land men) first started knocking on doors in 2000 to secure leases to drill on private property.

Extension spearheaded the first gas-leasing education workshop to help landowners analyze, negotiate, and understand the terms of a lease and market value before they sign. Leases are complex, legally binding contracts. Since our first leasing workshops in 2001, many of the more than 12,000 people in attendance have signed gas leases with a combined worth in excess of \$100 million, typically at much higher rates than originally offered by the gas companies.

As an outreach organization of Penn State, extension brings university research and fact-based information to people and communities to help them solve problems, make sound decisions, and deal with critical issues. We have no formal vested interest in natural gas or related services, so ours is an unbiased perspective without sales pressure.

### The Stakes Are High

Lease values were about \$2 per acre in 2000, rose to \$175 per acre in 2005, and today bring as much as \$2,800 per acre. Landowners can

also receive royalty payments of 12.5 percent or more of the value of the harvested gas, depending on their lease agreement, for as long as the well is productive.

The impacts of the Marcellus shale findings will likely be great. In a similar gas play in North Texas, drilling and gas production created an estimated 83,923 jobs in the region. Such an impact in Pennsylvania could literally transform and change our population, our economy, our environment, and our communities. Yet since this is a nonrenewable natural resource, we must view it as a short-run opportunity. The Commonwealth already has prime examples of what happens when the long run is forgotten, as we pay the price in our attempts to remediate the negative impacts of acid mine drainage resulting from abandoned coal mines. The challenge and opportunity for Pennsylvanians involve using the Marcellus to make Pennsylvania better off in the long run, even once the natural gas has played out.

### **Education for the Long Haul**

As exploration and drilling continue to escalate in Pennsylvania, new opportunities and challenges arise. Many of these new issues relate directly to Penn State Extension's existing expertise in land use, economic development, natural resources, and local government. We understand the context in which natural gas exploration and drilling is occurring. We are leading the way to address emerging issues such as water quality, workforce development, wildlife habitat fragmentation, infrastructure, farmland preservation, local economies, tax revenues, landscapes, and quality of life for Pennsylvanians. Penn State Cooperative Extension has resources for Pennsylvanians to utilize at every step of the natural gas exploration and leasing process.

Our educational workshops now include:

- Natural Gas Exploration and Leasing: What Landowners Need to Know
- Natural Gas: What Does Your Community Need to Know?
- Natural Gas Exploration: Challenges and Opportunities for Municipal Planning
- Natural Gas Wells and Drinking Water
- Managing Gas Lease and Royalty Income
- Support for Community Task Forces Focused on Natural Gas Issues
- Programs for Attorneys and Solicitors

Working with industry, government officials, and local leaders, Penn State is pulling together the best scientific information to educate the public and help the state prepare for this expected natural gas boom. With internationally respected researchers on its faculty and a cooperative extension presence in every county, Penn State remains well positioned to address Pennsylvania's emerging priorities and provide practical solutions for the state's citizens, communities, and businesses.

## **Put Our Experience to Work for Your Community**

The Penn State Extension Marcellus Education Team strives to bring you accurate, up-to-date information on natural gas exploration and drilling in Pennsylvania. Learn about your rights and choices as a landowner, a businessperson, a local official, or a concerned citizen. Discover the resources available to you.

**Visit [naturalgas.psu.edu](http://naturalgas.psu.edu).**

### **Penn State Extension**

Penn State Extension has a special mission—to enable individuals, families, communities, agriculture, businesses, industries, and organizations to make informed decisions. Through a system of county-based offices, we extend technical expertise and practical, how-to education based on land-grant university research to help Pennsylvanians address important issues, solve problems, and create a better quality of life. From improving agriculture and building stronger communities, to developing skills with today's youth, we are dedicated to giving Pennsylvanians the means to grow, achieve, compete, go farther, and do more. Learn what extension can do for you. Contact your county extension office or visit [extension.psu.edu](http://extension.psu.edu).

### **The Agricultural Law Resource and Reference Center**

The Agricultural Law Resource and Reference Center is a collaboration between Penn State's Dickinson School of Law and Penn State's College of Agricultural Sciences. Located at both the University Park and Carlisle facilities and funded in part by the Pennsylvania Department of Agriculture, the center is designed to provide the highest-quality educational programs, information, and materials to those involved or interested in agricultural law and policy.

## **[extension.psu.edu](http://extension.psu.edu)**

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

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Produced by Ag Communications and Marketing

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Code UA449 5/14pod