



## DEVELOPMENT OF OHIO'S SHALE

### OHIO'S KEY TO ECONOMIC RECOVERY, JOBS AND ENERGY SECURITY

#### IMPACT ON OHIO

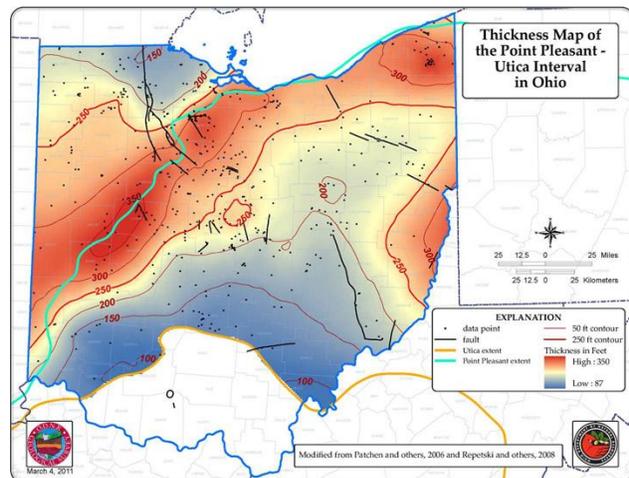
Geologists and energy companies have indicated they can tap vast reserves of natural gas and crude oil from two shale formations in Ohio, the Marcellus and Utica. The private investments being made by oil and gas companies in Ohio have the potential to lower utility bills, create jobs and improve the economy. Here are some frequently asked questions related to oil and natural gas development in Ohio.

#### WHAT IS THE HISTORY IN OHIO?

Ohio's natural gas and crude oil industry has a rich heritage with the first commercially producing well drilled in 1860. Since then, Ohio has drilled more than 275,000 natural gas and crude oil wells in 76 of Ohio's 88 counties. Ohio ranks fourth in the nation in the number of wells drilled following Texas, Oklahoma and Pennsylvania.

#### WHAT IS THE IMPACT ON OHIO'S ECONOMY?

A study commissioned by the Ohio Oil and Gas Energy Education Program (OOGEEP) in 2011 indicates that Ohio's natural gas and crude oil industry reinvested approximately \$246 million on new exploration and development in 2011 and is estimated to ramp up to \$14 billion by 2015. The study also shared that the industry, via its expenditures, could generate approximately \$12.3 billion to the gross state product and have a statewide output or sale of \$23 billion.



The affordability of natural gas is likely to encourage continued manufacturing investments in the state. Energy-intensive manufacturing companies, which had been moving overseas for cheaper energy, can stay home promising more jobs, higher incomes and a better energy future for Ohioans.

#### HOW MANY JOBS DOES THIS CREATE IN OHIO?

Ohio's natural gas and crude oil industry could help create and support ten of thousands of Ohio-based jobs from the leasing, royalties, exploration, drilling, production, and pipeline construction activities from the Utica shale reserve. According to the OOGEEP study, this could result in Ohio experiencing an overall wage and personal-income boost of \$12 billion by 2015 from industry spending if the Utica shale play proves viable. The OOGEEP study indicates that the expansion of the oil and natural gas industry will also support job growth in the retail, hospitality and real estate sectors.

#### HOW DOES THIS HELP WITH OUR ENERGY SECURITY?

Ohio is the seventh-largest consumer of natural gas in the country — which means the state doesn't produce enough natural gas to meet its own demand. Development of the Ohio shale formations can change the equation, providing the state with energy resources right beneath our feet. In 2010, Ohio wells produced 78 billion cubic feet of natural gas, creating enough energy to heat over 1 million homes and businesses. Increased production of natural gas can provide more energy while lowering utility bills.

Ohio is also the ninth largest consumer of oil in the country. Ohio produced 4.8 million barrels of crude oil in 2010. Today, natural gas and crude oil are refined into more than 6,000 products including medicines, personal care products, plastics, synthetics and fuel.

### **WHO REGULATES THE OIL AND GAS INDUSTRY?**

Natural gas and crude oil exploration and drilling is regulated by the state through the Ohio Department of Natural Resources (ODNR), Division of Mineral Resource Management as well as the Ohio Environmental Protection Agency, which generally regulates pollution of water and air.

In December 2010, an independent review team appointed by the State Review of Oil and Natural Gas Environmental Regulations, Inc. (STRONGER) conducted an in-depth review of the ODNR's Oil and Gas Resources Management program and their hydraulic fracturing guidelines. The team's report concluded that Ohio's program was "over all, well managed, professional and meeting program objectives and has a lot to recommend to other states."

Ohio's oil and natural gas industry is also subject to the federal Safe Drinking Water Act, Clean Water Act, OSHA, Community "Right to Know" Act, and the Clear Air Act.

### **HOW IS THE ENVIRONMENT PROTECTED?**

Operators are required to address major environmental issues including water management, air emissions, spill prevention, and emergency response during the permitting process. Operators are subject to stringent state and federal laws and regulations put in place to protect our drinking water. For example, Ohio's oil and gas laws require each well contain multiple layers of casing and cementing to isolate the formation from which oil or natural gas is to be produced. Proper casing and cementing are critical parts of the well construction that not only protect any water zones but are also important to successful oil or natural gas production from hydrocarbon bearing zones.

In Ohio, waste created in the natural gas and oil drilling process, often referred to as brine, can be disposed of in Class II underground injection control (UIC) wells, regulated under the Safe Drinking Water Act. UIC wells are an effective and environmentally safe means of disposal and have been used in Ohio since the 1960's. The wells are regulated by ODNR.

### **ABOUT OERA**

The Ohio Energy Resource Alliance is comprised of the Ohio Petroleum Council (OPC), a division of the American Petroleum Institute (API); the Ohio Oil & Gas Association (OOGA); the Ohio Oil & Gas Energy Education Program (OOGEEP); Energy In Depth – Ohio (EID OHIO), and the Buckeye Energy Forum.

Each member is a separate group with its own focus. These groups have come together to answer Ohioans questions about opportunities and challenges related to oil and natural gas development its potential to power Ohio's economy, job growth and energy security.

### **For more information on each group, visit these websites:**

Ohio Petroleum Council/American Petroleum Institute [www.energyfromshale.org](http://www.energyfromshale.org) or [www.api.org](http://www.api.org)

Ohio Oil & Gas Association [www.ooga.org](http://www.ooga.org)

Ohio Oil & Gas Energy Education Program [www.oogeep.org](http://www.oogeep.org)

Energy In Depth Ohio [www.eidohio.org](http://www.eidohio.org)

Buckeye Energy Forum [www.buckeyeenergyforum.com](http://www.buckeyeenergyforum.com)