



## SERCNote #1

### Ohio State Extension's Shale Energy Development Education and Outreach

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For many years, geologists have been aware of hydrocarbon-bearing shale formations in Ohio. Part of the Marcellus play extends into Ohio from Pennsylvania and West Virginia. The Utica play runs from western Ontario into the U.S., although energy extraction from the deposit is currently confined to eastern Ohio and nearby counties in Pennsylvania and West Virginia.



In 2010, shale industry interest in Ohio was unmistakable, evidenced by up-front bonus payments to landowners in return for leasing their subsurface resources. As recently as 2009, payments ranged from \$15 to \$30 per acre. By 2010, per-acre bonuses were at least \$150 and as high as \$500. In 2011, up-front payments rose to \$2,000 per acre and county-based educators in the Ohio State University Extension (OSUE) system started to receive questions and concerns from farmers and other rural landowners. Our educators responded by organizing expert presentations about land leasing and contracting with energy companies.

The first rigs capable of horizontal drilling and hydraulic fracturing—the combination of technologies that makes the harnessing of shale energy possible—moved into Ohio in 2011, and land leasing bonus payments surpassed \$2,000 per acre, approaching \$5,000 per acre within a few months. This fundamental indicator of resource values continued its upward trajectory even as the price of dry natural gas, used primarily for heating and electricity generation, plummeted as shale development nationwide caused overall gas supplies to grow faster than the demand for the fuel.

Since Ohio's Utica Play is a source of ethane and other natural gas liquids, bonus payments have continued to strengthen. To date, approximately 4,000,000 hectares have been leased in eastern Ohio by numerous firms, including leading publicly-traded oil and gas companies. Bonus payments currently exceed \$4,000 per acre, in some cases by a wide margin.

In March 2011, OSUE organized a Shale Energy Work Group, which has grown to 30 members. The Group serves as an information clearinghouse—certainly for OSUE educators, but also for faculty throughout the university as well as the Ohio Farm Bureau, state agencies, and other stakeholders. This information sharing allows OSUE and other institutional actors to keep close tabs on events and trends in the Utica and Marcellus Plays.

Having taken the lead in Ohio State's response to shale energy development, OSUE helped spearhead the creation of the Subsurface Energy Resource Center (SERC). SERC is a joint initiative of OSUE and five colleges: Arts and Sciences; Fisher College of Business; Engineering; Food, Agricultural, and Environmental Sciences; and Public Health. Part of Ohio State's Office of Energy and Environment, SERC coordinates research, education, and outreach related to underground energy resources, including shale deposits.



As a rule, Extension learns about shale drilling and other energy development at an early stage, thanks to its network of educators in each of Ohio's 88 counties. It is a key partner and resource for the university as the Utica Play unfolds. Also, OSUE's shale-related program evolves as the public demand for education and outreach strengthens and broadens:

- The initial focus of the program was on leasing, bonus and royalty payments, and property rights—topics of educational programs for many years, but of more interest as leasing activity has burgeoned. Since Utica gas and oil extraction promised to exceed anything the state had seen in decades, OSUE urged landowners to seek legal advice before signing any documents.
- As leases have been signed and landowners have received bonus and royalty checks, their newfound wealth has raised unfamiliar concerns about investments and taxes. Extension has responded with financial management workshops.
- Soon after initial drilling confirmed the size of hydrocarbon resources in the Utica, construction of processing plants and pipelines for the collection and gathering of fossil fuels accelerated, thereby affecting many landowners. OSUE has offered educational programs that address questions about eminent domain, regulations, and property owners' rights concerning pipeline construction and placement.
- In light of all the rules, regulations, and issues associated with leasing, financial management, and the construction of infrastructure, educational opportunities have arisen for the legal community, which is experiencing greater demand for its services. Extension has responded by developing and coordinating educational workshops for attorneys and paralegals.
- With the larger workforce required for increased drilling, demands for housing and hotel space increase, service agencies have more clients, restaurants and fast-food outlets are overwhelmed, and school classrooms fill with new students. Extension is assisting eastern Ohio communities unaccustomed to this expansion by offering workshops that address the social and economic consequences of shale energy development. The core message for leaders and residents alike is that advantage should be taken of economic opportunities today while at the same time looking ahead to when drilling and construction end and the current flurry of activity subsides. What are the midstream and downstream opportunities and can they be developed in the community or region to create jobs into the future?

From early on, OSUE recognized that shale energy development was going to happen. State laws and regulations assured that. There was going to be controversy, perhaps even conflict, between those who were pro-development and those who were opposed to shale energy extraction. As Extension has done historically, education and outreach efforts take no sides, but focus on getting out the best, unbiased information to clients as they face important decisions about their land and property rights.

Similarly, communities face important decisions on how to address the public issues that arise because of shale energy development, including health and safety concerns associated with increased traffic and infrastructure demands as well as increased demands on local services associated with increased economic activity. Helping individual residents and entire communities prepare for the future will be a focus of OSUE's education and outreach efforts as the Utica Play continues to evolve.

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