



CLEAN AIR & CLEAN ENERGY
ARE GOOD BUSINESS

Air Focus

Issue One, 2007

News you can use from the Ohio Air Quality Development Authority

CO₂ Test Well Sited in Tuscarawas County

As part of Governor Strickland's energy strategy to create jobs by supporting clean coal technology and next-generation energy production, the Governor's Office recently announced the selection of a Tuscarawas County site for a \$2.3 million project to measure Ohio's capacity for deep well storage of carbon dioxide emissions.

The test well is the result of work done last year as part of the competition for the US Department of Energy FutureGen project to locate and build the world's first near-zero emission coal-based power plant. OAQDA was the lead agency in Ohio's effort to win the project. Although Ohio was not on the short-list for FutureGen, the test well project is just one of the significant positive outcomes Ohio gained from its involvement in the competitive process, according to Mark R. Shanahan, executive director of OAQDA and Energy Advisor to Governor Strickland.

"This test well will provide the state with geologic data necessary for the development of clean energy technology that will support Ohio's continued leadership in energy and environmental issues," Shanahan said.

The carbon dioxide storage method to be tested in Tuscarawas County, known as carbon dioxide sequestration, is the first step toward making clean coal technologies a reality in Ohio, Shanahan explained. Deep wells will allow carbon emitted in the clean coal production process to be stored beneath the earth's surface so that it doesn't contribute to global warming.

"Ohio has one of the most energy intensive economies in the country," Strickland said.

"This project explores cutting edge technology to decrease those carbon emissions and protect Ohio's current manufacturing and energy industries while attracting new ones. I am proud Ohio is making this investment to plan for the future."

The deep well test site, approximately two miles northeast of Port Washington in Salem Township, was selected by a team of scientists with the Ohio Department of Natural Resources (ODNR) and Battelle Memorial Institute. The deep well will gather critical geological data on the region's ability to store or "sequester" carbon dioxide emissions far underground. If this deep well confirms favorable conditions for carbon dioxide sequestration, it could lead to future industrial development in the region.

The state budgeted approximately \$2.3 million from general revenue and clean coal research funds for drilling, testing, data analysis, and reporting on the project.

Developing ways to manage these emissions in an environmentally responsible way will position Ohio to attract and retain the kinds of high-tech industries targeted in the Turnaround Ohio initiative. ODNR, Battelle Memorial Institute, a non-profit research organization based in Columbus, and the Ohio Air Quality Development Authority are pioneering carbon dioxide sequestration research in Ohio.

"This is a great example of how economic development and the wise use of our resources can be compatible goals," said Sean D. Logan, director of ODNR. "Projects

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OAQDA Approves \$1,350,500 in Financing to Assist Sandusky County Laundry

Action will help retain 145 jobs at facility

The Ohio Air Quality Development Authority (OAQDA), at its monthly meeting in March, approved the issuance of up to \$1,350,500 in Air Quality Revenue Bonds to assist Reino Linen Services, Inc., of Gibsonburg in Sandusky County.

The commercial laundry company will use the funds to aid in the purchase of two continuous batch washers, two single-stage presses, an E-rail load station, air compressors and tanks, and other equipment deemed under Ohio law to be "air quality facilities."

Leonard Reino, president of the company, estimates that the new equipment will require less heat than the existing system, saving some 1,800 ccf of natural gas annually; will cut electricity usage by a continuous 12 horsepower; and will cut water consumption by 20 percent annually, representing 5.2 million gallons.

"We greatly appreciate the assistance we are receiving from OAQDA. The new equipment will help us operate our business much more efficiently, while also enabling us to cut our electricity costs and to conserve water," Reino said.

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Air Waves

OAQDA Plays Key Role in Turnaround Ohio Energy Policy

By Mark R. Shanahan, Executive Director, OAQDA



Mark Shanahan is the Executive Director of the Ohio Air Quality Development Authority. Questions can be directed to him at 614-224-3383 or mark.shanahan@aqda.state.oh.us

To say that the 21st century has been a time of change for the Ohio Air Quality Development Authority would be a major understatement.

In 2003, OAQDA assumed responsibility for managing Ohio's nationally recognized clean-coal program when the Ohio Coal Development Office was transferred to our auspices. Last year, OAQDA was privileged to play a leading role in Ohio's efforts to secure the FutureGen power plant. Today, the Authority is poised to occupy a pivotal role in Governor Ted Strickland's plan to bolster Ohio's economy and create thousands of jobs by transforming our state into a leader in the production of next-generation energy.

I was honored, earlier this year, when the Governor asked me to help him execute his Turnaround Ohio Energy Strategy by serving as his Energy Advisor. In this capacity, I will work directly with the Governor in implementing his energy policy and initiatives, while also working with state agencies to assure that each is operating with maximum energy efficiency, coordination, and consistency. Agencies have been tasked with reducing building energy consumption by 15 percent over the next four years, and also to cut petroleum use in its vehicles and raise biodiesel fuel consumption by 25 percent over the same time period.

Creating the position of Governor's Energy Advisor sends an important signal about the priority of energy issues in the new administration. But, far more importantly, as the accompanying article points out, Governor Strickland's Executive Order creates a mechanism through which all state agencies will coordinate energy programs and policies. The State of Ohio spends almost \$1 billion annually on those energy programs and on the purchase of energy. Making sure those expenditures are leveraged to achieve maximum benefit for Ohioans is not only common sense; it is an essential part of our role as stewards of public funds.

Ohio is the fifth most energy intensive state in the nation. Our economy spends more than \$30 billion annually on energy. Literally hundreds of thousands of Ohio jobs are concentrated in energy intensive and energy dependent businesses. And, Ohio is one of the national leaders in the emission of sulfur dioxide, nitrogen oxides and carbon dioxide. Solving our energy challenges cannot be separated from solving our environmental challenges. Solving both can be a significant economic development driver, taking Ohio toward the industries and the jobs of the future.

OAQDA welcomes its new responsibilities. In fact, we have been supporting the development of advanced next-generation energy sources for years, most notably through helping finance the construction of ethanol plants and clean coal technologies throughout Ohio. There is simply no reason why Ohio cannot, or should not, assume a leadership role in helping the United States break its dependence on foreign oil. OAQDA is ready to meet the exciting challenges that lie ahead.

CO₂ Test Well Sited in Tuscarawas County

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like this enable us to use our natural assets to create the greatest benefit for the most people for the longest possible time."

Current studies show that Ohio is well situated for deep well projects because of natural rock layers that might safely store and seal quantities of carbon dioxide once the gas is captured and injected in the ground.

This test, called the Ohio Stratigraphic Borehole (Ohio Strat Test), will require geologists to drill to a depth of 8,600 feet to look for porous rock layers that would hold carbon dioxide in much the same way oil and gas deposits remain trapped for millions of years underground.

Once the well is drilled, scientists will take specific physical measurements of the rock layers, especially their porosity, permeability, chemistry and ability to accept injected fluid.

"The Tuscarawas County project will expand our knowledge of Ohio's deep underground geology and fill in some gaps that currently exist," said Phil Jagucki, field project manager for Battelle.

Planning for site access is already underway. Drilling is scheduled to begin between April and July, with testing conducted for several months after that. The entire project, including analysis of the data that is gathered, is scheduled for completion by the end of 2008.

All data will be available to the public on the ODNR website and via reports to be published by the Division of Geological Survey, Shanahan said. Representatives from the ODNR Division of Mineral Resources Management and the Ohio Environmental Protection Agency will join the project in order to plan future regulation of carbon dioxide sequestration. A number of experts from the local oil and gas industry will serve as consultants.

Strickland Establishes Energy Advisor

Strickland's Energy Policy Seeks to Create Jobs Through Next-Generation Energy

Identifying energy production as one of Ohio's strongest characteristics, Ohio Governor Ted Strickland issued Executive Order 2007-02 shortly after taking office, establishing an energy advisor to the Governor to coordinate the state's efforts to create jobs through becoming a leader in the production of next-generation energy.

"One of the core principles of my *Turn-around Ohio* plan is to invest in Ohio's strengths," Strickland said. "Clearly, energy production is one of those strengths. I am convinced that we can create thousands of good-paying jobs by encouraging next-generation energy production in Ohio including ethanol, clean coal, wind and solar."

The Governor's energy advisor will coordinate the administration's energy policy. Each executive agency will designate a deputy director-level or higher liaison to work directly with the energy advisor to coordinate their agency's energy policy. In addition, the energy advisor will sit on the Third Frontier Commission as the Governor's science and technology advisor.

"The energy advisor will work directly with the agencies to secure maximum efficiency, coordination and consistency across state government," Strickland said. "This advisor will keep energy a state priority while creating a better environment and boosting

economic development in energy and manufacturing sectors."

Strickland designated Mark Shanahan, executive director of the Ohio Air Quality Development Authority, as the Governor's energy advisor.

In addition to naming an energy advisor, the executive order establishes measurable goals and deadlines for Ohio state government's energy consumption. The order instructs state agencies to immediately implement energy savings policies that recently became law.

The Ohio Department of Administrative Services must work with the energy advisor to establish a tool for state agencies, boards and commissions to measure their energy consumption, which must include means of calculating each organization's "carbon footprint." As directed by the Governor's order, a common measurement tool was identified by mid-March. State agencies are now being trained in its use.

Each state agency, board and commission must also complete an energy use audit of all of its facilities by June 2007. Upon completion of the energy audit these organizations must perform an overall reduction of 5 percent in building energy use for its facilities within the first year of the next biennium and 15 percent by the end of four fiscal years.

The executive order also instructs ODAS to reduce the state's consumption of petroleum

by increasing the number of state vehicles that use alternative fuel sources and prepare plans to establish E85 and biodiesel fuel pumps. E85 is fuel made up of 85 percent ethanol and 15 percent gasoline, and biodiesel is diesel fuel made from vegetable oil or animal fats. ODAS must develop and implement a plan to raise biodiesel fuel consumption to at least 25 percent of the state's diesel purchases by no later than January 1, 2008.

"By using the purchasing power of the state and transforming our energy infrastructure to use biofuels from sources here in Ohio, we will decrease our dependency on foreign sources for oil and help our agricultural industry in the process," Strickland said.

Lastly, the executive order launches the Governor's Higher Education Energy Challenge, and creates an award and recognition program to encourage energy efficiency innovation at Ohio's colleges and universities. The energy advisor will establish a competition for teams of students, faculty, administrators and staff to develop energy savings initiatives on their campuses.

"We must engage Ohio's future leaders to face the energy challenges of today so they can create the energy possibilities of the future," Strickland said. "Alternative fuels and energy innovation are the future of Ohio jobs, and this executive order lays the foundation to ensure Ohio is ready."

Air Pollution and Wastewater Discharge Permits Issued for Summit Ethanol Plant

Summit Ethanol LLC, has been awarded a 50 percent tax credit for a seven-year term from the Ohio Department of Development to establish a 60 million gallon per year ethanol production facility to be located in the Village of Leipsic (Putnam County).

The value of the tax credit is estimated at \$135,174 over the term, and the company would be required to maintain operations at the project site for 14 years.

Summit Ethanol is a subsidiary of the Broin

Companies of Sioux Falls, S.D., which has designed and constructed 22 operating ethanol plants in five states and has nine others currently under construction. Currently, Broin is the second largest ethanol producer in the United States, managing, producing, and marketing more than 750 million gallons of ethanol annually.

Construction of the Summit Ethanol plant is currently underway, and start-up is expected this fall. The plant site is located at the junction of Route 65 and a CSX rail line that

intersects a nearby Norfolk Southern line. This transportation infrastructure made the site attractive.

The company plans to invest \$26.8 million for the purchase of 100 acres and construction of a 50,000 square-foot ethanol production facility in Leipsic, as well as \$47.8 million for new machinery and equipment. The facility is expected to produce up to 6 million gallons of ethanol per year.

The Summit Ethanol plant is expandable to more than 100 million gallons of production per year and will initially consume more than 21 million bushels per year of area

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AirFocus

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Sandusky County Laundry

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Reino Linen Services is a family-owned business that has operated since 1943. It has expanded from 2,500 square feet to its current 40,000 square-foot facility. The company employs 145 people.

"This financing package demonstrates one of the important ways OAQDA

supports Ohio's economy, while also preserving our environment. We help strengthen companies all across the state through our financing mechanisms, each of which includes a component for conserving natural resources or cutting pollution," said Mark R. Shanahan, OAQDA executive director.

Air Pollution and Wastewater Discharge Permits Issued for Summit Ethanol Plant

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corn. The project will contain Broin's trademarked BPX raw starch hydrolysis technology.

Ohio EPA recently issued two final permits for the Summit Ethanol plant in Leipsic.

The air pollution control permit-to-install allows the company to begin constructing the ethanol production facility. The permit sets air emission limits for

nitrogen oxides, carbon monoxide, volatile organic compounds and particulate matter. The limits are designed to protect human health and the environment.

The wastewater discharge permit allows up to 305,000 gallons of wastewater a day to be discharged. The permit regulates the levels of contaminants that can be discharged to maintain water quality standards that protect aquatic life and human health.

OHIO AIR QUALITY DEVELOPMENT AUTHORITY

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