



CLEAN AIR & CLEAN ENERGY
ARE GOOD BUSINESS

Air Focus

Issue Fall 2006

News you can use from the Ohio Air Quality Development Authority

Construction Under Way for Coshocton Ethanol Plant



Governor Bob Taft is joined by state dignitaries as he leads the groundbreaking for the new ethanol plant in Coshocton. Clifford R. Cloud, chairman of the OAQDA, is pictured to the right of the Governor.

Coshocton Ethanol LLC, part of Altra Inc. of California, broke ground in July on a 50-acre site for a corn-based ethanol plant capable of producing 60 million gallons of ethanol per year. The plant is scheduled to begin full-scale operations in October, 2007, creating approximately 40 jobs.

OAQDA is providing as much as \$85

million in financing for the project. Ethanol and other biofuel plants qualify as "air quality facilities" in Ohio under a law signed by Governor Taft in 2002, making them eligible for OAQDA financing.

In addition to the OAQDA funding, a \$1.4 million incentive package from the Ohio Department of Development

includes an Ohio Job Creation Tax Credit and an Ohio Investment in Training grant.

The Ohio Rail Commission is providing a \$250,000 grant to assist in defraying costs of railroad-related improvements to the site for transporting corn. It is estimated that the plant could consume 30 million bushels of corn per year, about 70 percent of which would be freighted in by rail.

Most of the ethanol produced will be shipped out by rail as will the byproduct animal feed for the region's dairy cow industry.

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Air Waves

Energy Policy Tops Agenda for U.S., Ohio

By Mark R. Shanahan, Executive Director, OAQDA



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Throughout the 2006 election campaign, candidates across the political spectrum gave more attention to energy issues than has been true for a number of years. Whether at the federal, state or local levels, Ohio's energy challenges will be an important focus of attention for those who are sworn into office in 2007.

This summer's drastic spike in gasoline prices made it painfully clear that a renewed commitment to finding alternative energy sources is now imperative for our

nation. This need is especially acute in states like Ohio, where energy-intensive industries remain at the core of our economy. It is encouraging that more and more of our leaders are talking about the need to break America's dependence on foreign oil produced in unstable areas of the world.

In September, Governor Taft reaffirmed Ohio's support for the nationwide 25X'25 initiative, which calls for 25 percent of America's energy usage to come from renewable energy sources by the year 2025. Also in September, Ohio University's Consortium for Energy, Economics and the

Environment produced a report calling for increased capacity at Ohio's coal-based power plants; continued upgrading of emissions technology; expanded use of wind, solar, and biomass products such as grasses and agricultural crops; and an expansion of the Third Frontier Fuel Cells Program. And nationally, the U.S. Department of Energy released a set of strategies aimed at generating further reductions in greenhouse gas emissions.

There is additional evidence that Ohio is making solid strides in our own efforts to find and use alternative fuel sources, which will have the additional desirable effects of fortifying our economy and protecting the environment. These include the four ethanol plants currently under construction in our state (with another six on the drawing boards); three operating bio-diesel plants; and our continued leadership in clean-coal technology, which is bringing about ever-more-dramatic reductions in the emission of pollutants like sulfur dioxide, carbon dioxide, nitrogen oxides, and others into our air.

Our challenge today is to preserve this momentum, while moving forward at a greatly accelerated pace in our quest for a more concerted, comprehensive energy strategy. This year's elections in Ohio will bring new leadership from the courthouse to the Statehouse; it is up to all of us to make sure that our political leaders take on the energy challenge and develop a clean energy for Ohio strategy—and then implement it.

OAQDA Provides Funding for Oxy-Fuel Clean Coal Retrofit Plant

Jupiter Oxygen Corp., based in Schiller Park, Ill., with funding through OAQDA and strong support from U.S. Rep. Ralph Regula (R-Canton) and other lawmakers, recently launched a project to install clean-coal technology at a municipal power plant in Orrville.

When the \$34 million retrofit is completed in 2008, the plant will meet

US Department of Energy 2020 goals for ultra-low emissions of various pollutants and will be capable of capturing carbon dioxide emissions. Plans call for the technology to be installed on a 25-megawatt boiler at the 68-megawatt plant.

"This innovative technology promises great economic benefits by providing existing power plants the capacity to

modernize and deliver clean and economical power to our country and helps reduce the need to construct costly new facilities," Rep. Regula said. "Developing a clean and cost effective way to convert coal to energy is vital to America's energy future. I am pleased to have been in a position to help secure the initial funding for this project."

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Ohio State University “Clean Coal” Research Project Receives \$790K in OAQDA Funding

OSU researchers to be joined by up to six industrial partners

The Ohio Air Quality Development Authority (OAQDA) recently approved \$790,185 to help fund a scale-up, from laboratory to “bench scale,” of a new process aimed at capturing carbon dioxide (CO₂) from flue gas using a specially tailored calcium sorbent. The process is unique in that it captures CO₂ from flue gas, which is produced during coal combustion, without first cooling the gas. The total project cost is \$2,087,177. OAQDA’s share of the funding is in the form of a grant from its Ohio Coal Development Office.

In addition, the steam heat released by the reaction of CO₂ with the

sorbent is then captured and used to produce additional electricity. The process also captures sulfur dioxide, another by-product of coal combustion. Of critical importance, the process results in a considerable cost reduction for CO₂ capture compared to estimated costs of alternative processes.

“This is a great example of how a novel concept takes its initial steps along the continuum that can lead to commercial success in the marketplace. The lab work conducted at OSU confirmed that the process has merit, and our funding will help it move to the small-scale demonstration stage. Further, the interest from six potential industrial partners underscores the reasonable possibility

that this technology is, indeed, commercially feasible,” said Mark R. Shanahan, OAQDA Executive Director.

The project’s industrial partners will play a variety of roles. The sorbent will be manufactured by Specialty Minerals, Inc. Airpol, Inc. will provide expertise on devices that collect fine particles produced during coal combustion. Babcock & Wilcox will provide experiment design and test evaluation and has tentatively committed to hosting the pilot test. Consol Energy, Inc. and American Electric Power will also assist with experiment design and test evaluation. Cinergy has tentatively offered to host a pilot-level study at one of its units if the bench-scale test is successful.

OAQDA Provides Funding for Oxy-Fuel Clean Coal Retrofit Plant

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It marks the first time the technology will be tested in a power plant of Orrville’s size.

“This is the type of project that celebrates advances being made in Ohio and in other states for clean coal technology,” Mark R. Shanahan, executive director of OAQDA, said. “OAQDA supports the development of air quality facilities such as the one that will be created by the retrofit at the Orrville plant.”

Not only will Jupiter’s oxy-fuel technology reduce greenhouse gas emissions from coal power plants, it will do so at a cost that will not affect them financially. If successful, the fuel savings and increased power plant efficiencies will give Jupiter’s technol-

ogy a clear cost advantage over some other clean coal technologies.

While there are several types of technology available to reduce pollutants released from coal burning, the advantage of the Jupiter technology is it can be used on as many as 600 existing power plants across the country. Advocates say projects like the one at the Orrville plant would avoid the need to construct costly new facilities, as may be required by other clean-coal technologies.

Jupiter’s oxygen combustion equipment uses pure oxygen, rather than regular air, to burn coal, thereby producing fewer pollutants.

The initial phase of the project will

determine the feasibility of retrofitting the Orrville facility and will identify all necessary changes to environmental permits. It is supported by a grant to OAQDA from the United States Environmental Protection Agency. Cost for the first phase is approximately \$595,000.

The Orrville Utility, a municipal-owned power plant that provides electricity to 7,000 customers, expects to benefit from cleaner emissions through the project.

“We are excited to have had our plant chosen for this first-of-its-kind oxy-fuel clean coal power plant,” said Dan Preising, director of utilities at Orrville. “It is important to find a way to make our country’s existing fleet of power plants cleaner and safer for our environment.”

AirFocus

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About the Ohio Air Quality Development Authority

The Ohio Air Quality Development Authority (OAQDA) is a non-regulatory government agency created in 1970 to help Ohio business comply with clean air regulations. OAQDA provides financial help to hundreds of large and small businesses in Ohio, and has awarded more than \$4 billion in bonds to finance air quality projects. Its small business program, the Clean Air Resource Center, also offers one-on-one technical assistance, confidential compliance assessment and grants to help defray the costs of financing for small businesses. With the addition of the Ohio Coal Development Office in 2003, OAQDA also oversees the State of Ohio's coal research, development and technology deployment efforts, one of the nation's largest state programs of its type. For additional information about OAQDA and its services, visit www.ohioairquality.org.

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