



## **Governor's Announced Support for Jamestown Board of Public Utilities' (BPU) Clean Coal Power Plant Project an Economic Boost for Jamestown**

*The following announcement was issued by the Jamestown BPU on behalf of the coalition of companies, including Praxair, who are participating in the oxy-coal demonstration project in Jamestown, New York.*

JAMESTOWN, New York, June 10, 2008 -- New York State Governor David A. Paterson's announcement of support for the Jamestown Board of Public Utilities (BPU) Oxy-Coal Power Plant project and his authorization of \$6 million in state funds to support the continuing development of the project, is an essential step forward for the BPU initiative.

If successful, this demonstration project will be the first of its kind in the United States, integrating several tested technologies in one place for the first time in what is called Oxy-Coal technology. The project has the potential to remove more than 90% of carbon dioxide emissions from coal power plants.

Governor Paterson's financial commitment today is in addition to \$800,000 in previously-awarded state funds designated for geological studies.

The BPU has worked since 2003 to design and construct a \$145 million power plant project, beginning with Circulating Fluidized Bed (CFB) technology that received draft Environmental Protection Agency (EPA) permits in April, 2007, and has been working with the State Department of Environmental Conservation (DEC) on the permits to progress the project.

The BPU undertook the State Environmental Quality Review Act (SEQRA) process for the CFB plant in November, 2004. During that time, the BPU prepared three scoping documents regarding the Clean Coal Project, identifying topics to be covered in the Environmental Impact Statement (EIS), solicited public input by conducting four public scoping meetings and more than 50 public informational meetings, and executed an Environmental Justice Outreach program. This public input was used in preparing both the Draft Environmental Impact Statement (DEIS) and the Final Environmental Impact Statement (FEIS).

On July 31, 2007, in response to comments regarding the impact of the plant during the SEQRA process, the BPU and a coalition of Western New York companies including Praxair, Inc., Ecology & Environment, Dresser-Rand and the State University of New York at Buffalo School of Engineering and Applied Sciences, along with Foster Wheeler and Battelle Labs, announced a plan for a potential carbon capture and sequestration (CCS) demonstration project that could become an international model for future energy development.

Praxair's Oxy-Coal technology cools air into a liquid in an air separation unit attached to a power plant. Nitrogen is removed, leaving pure oxygen. The oxygen is then combined

with recycled flue gas and helps fuel the fire in the CFB unit. Since the nitrogen has been removed, the only by-products of the combustion are carbon dioxide, ash and impurities.

An amount of the concentrated carbon dioxide flue gas is sent to Praxair's carbon dioxide processing plant. There, the carbon dioxide is purified and compressed for transport and beneficial reuse or sequestration (storage).

The carbon dioxide can be sequestered deep into the earth in a supercritical (almost liquid) state. Sequestered 3,000-5,000 feet below the ground, the carbon dioxide is contained beneath a layer of solid cap rock. Carbon dioxide emissions from the Oxy-Coal process also may be used to refract old oil and gas wells. The Jamestown project would include research into beneficial reuse of the carbon dioxide.

The team of companies will apply for substantial federal funding for the project.

"We are thrilled that the Jamestown project is in a position to play a critical role in the demonstration and deployment of advanced CCS technology while protecting our ratepayers from the costs of exploring and demonstrating CCS technology," said Mayor Sam Teresi. "Jamestown historically has played a pioneering role in respect to providing public power, including deployment of hydropower. We are pleased to play a significant role in the development of world-wide energy technologies which could make such a difference in the production of environmentally-clean power for the world."

According to Ecology & Environment (E & E), a Buffalo-based environmental consulting firm, the Jamestown project has the potential to grow into one of the most significant economic development initiatives in upstate New York. If local western New York companies begin supplying the Oxy-Coal global market, CCS initiatives are likely to generate \$900 Million in annual economic impact and 3,500 new jobs in future years to New York State. Direct annual spending from the global demand for oxygen supply systems, compressors and carbon dioxide capture systems could potentially total \$573 Million annually. Initially, the project will create 525 construction jobs over a four to five year period, generate a \$50 Million regional payroll direct impact and more than \$15 Million in regional economic impact.

"New York State already hosts leading globally-integrated companies that for many years have supplied industrial technologies, power-generation equipment and components to European, South American and Asian markets impacted by the Kyoto protocol and carbon-management initiatives," said George Rusk, vice president of E & E. "By leveraging their well-established business relationships in the power sector, several local western New York companies are well-positioned to benefit from the developing Oxy-Coal global market and the carbon sequestration initiatives that would be showcased in the Jamestown demonstration project."

Praxair, a Fortune 300 company and the largest industrial gas supplier in North and South America, holds 200 patents relating to Oxy-Coal combustion. The company's largest technology center, with 1,400 employees, is located in Tonawanda, NY.

"This is an excellent opportunity to demonstrate new, world-class technology right in our own community," said Charles McConnell, vice president, gasification and Oxy-Coal technology at Praxair. "Demonstration projects are fundamental to building a road map to commercial implementation of carbon-dioxide capture technology in the future."

Houston-based Dresser-Rand Group, Inc., with 2,300 employees in New York's Allegany, Cattaraugus and Steuben Counties, could realize an increase in employment ranging from 200-500 resulting from the Jamestown base project and other potential Oxy-Coal projects worldwide. The company is a recognized leader in custom-engineered steam turbines and centrifugal and reciprocating compressors.

"We believe this is a very exciting initiative for everyone involved, and it is a terrific opportunity for New York State. This new technology has the potential to reduce the world's carbon footprint by retrofitting existing coal production plants, as well as creating an environmentally responsible means to continue with coal production in the U.S. and in other countries. Dresser-Rand has the compressor technology today to support the new carbon sequestration technology as it develops. Additionally, this project is a big win for New York State because it will demonstrate our leadership in building environmentally responsible energy production plants and at the same time create significant job growth in upstate New York," remarked Dresser Rand Chief Executive officer Vince Volpe.

From the academic prospective, the University at Buffalo School of Engineering and Applied Sciences envisions the establishment of a university education and research center in CCS. The Center would cluster a core group of research and education faculty and staff with CCS expertise to study carbon dioxide separation, byproduct utilization, sequestration methods and outcome, and the optimal production of alternative fuels.

"The Center would become an internationally-recognized destination where state-of-the-art low-carbon-emission technology can be shared, displayed and disseminated to an international technical community and the general public," said Dr. Harvey Stenger, Jr., dean, UB School of Engineering and Applied Sciences. "New senior staff members with doctorates in mechanical and chemical engineering, support staff and undergraduate and graduate students will be recruited for the Center, adding to the career opportunities generated from the project. This is a once-in-a-lifetime opportunity for our region that we need to bring to the forefront, and collectively make it happen."

The Jamestown BPU is the largest municipally-owned energy-generating utility in New York State, providing service to the City of Jamestown and the surrounding area for more than 115 years. In 2007, electrical customers of the utility totaled 19,251. The municipal entity also operates district heating/chilling, water, sanitation and waste water utility services.

"The BPU has been committed to developing a plan to replace our aging plant facilities in a way that would meet or exceed environmental restrictions, striving for carbon neutral or negative emissions," said John Zabrodsky, BPU Chairman. "The environment is a main

focus and that is why we continue to pursue the Oxy-Coal technologies to maximize the efficiency of our operations."

"This support from Governor Paterson and our state representatives is tremendously exciting news for the Oxy-Coal power plant project," notes BPU General Manager David L. Leathers. "Having New York State support is critically important to progressing this project from planning to reality; I couldn't be more pleased with this great news both for the community and for the hard-working Oxy-Coal team."

The \$6 million authorized by the Governor will fund studies to progress CCS engineering work. The \$800,000 authorization will assist Ecology & Environment in sequestration work in Western New York. The study would include permitting management; carbon capture and sequestration site selections; evaluation of costs and potential benefits; assessment of regulatory and permitting issues and assessments of legal/insurance issues.