

FutureGen: The world's most advanced, emissions-free power plant



What is FutureGen?

FutureGen is the first of its kind coal-fueled power plant that will link state-of-the-art technologies to produce electricity and hydrogen with near-zero emissions. The project will take a significant step in strengthening the United States' ability to produce reliable energy, improve the environment and reduce our dependence on foreign oil. This effort will serve as a prototype for the next generation of power plants throughout the country and the world.

FutureGen will also serve as a research laboratory for discovering and refining clean coal technology, hydrogen production and carbon sequestration. As new technology is discovered and evolves, it will be incorporated into the design and operation of the plant. FutureGen will foster innovations that will affect the energy industry for years to come.

The Department of Energy announced plans to build FutureGen in 2003. By May 2006, 12 sites in seven states had applied to host the plant. In July 2006, the FutureGen Alliance announced the four finalists for the facility: Mattoon and Tuscola in Illinois; and Jewett and Odessa in Texas.

The \$1.4 billion project is a government-industry partnership between the U.S. Department of Energy (DOE) and the FutureGen Alliance, a consortium of the world's largest coal and energy producers.

The final decision on where FutureGen will be located will be announced by the U.S. DOE and the FutureGen Alliance in late 2007.

An Integration of Cutting-Edge Technology

How does FutureGen work?

Over the years, major technological advances have been made in coal gasification, electricity generation, emissions control, carbon dioxide capture and storage, and hydrogen production. For the first time, FutureGen will integrate and study all of these methodologies under one roof.

Coal Gasification

FutureGen will utilize coal gasification technology to supply enough electricity for 150,000 U.S. homes, producing an output of approximately 275 megawatts. Gasification will also produce significant amounts of clean hydrogen. This hydrogen can be used in fuel cell technology that will serve as the next generation "battery" to operate everything from a computer to a car.

The coal gasification process uses heat and steam to transform coal into syngas — a mixture of hydrogen and carbon monoxide. Syngas can be used to fuel a combine-cycle electric power plant. Alternatively, the hydrogen can be separated from the carbon monoxide for use in fuel cells. Either path results in the highly efficient conversion of coal into energy.

Carbon Sequestration

Currently, about one third of the carbon dioxide emissions released into the atmosphere comes from power plants and other large-point sources. FutureGen will employ technology to stem and eventually decrease the amount of greenhouse gas released into the air. Carbon sequestration technology allows for the capture and storage of the emissions in geological formations deep underground.

Captured carbon dioxide can also be used to recover untapped natural gas and oil reserves. Through enhanced oil recovery, captured carbon dioxide is pumped into oil reservoirs, pushing previously irretrievable resources out of the ground. Natural gas can be retrieved in a similar manner by pumping carbon dioxide into underground coal seams.

By limiting the amount of carbon dioxide released into the environment, carbon sequestration will afford the U.S. the opportunity to utilize its large coal reserves in an environmentally sound, safe and efficient manner.

FutureGen Will Change the Way We Think About Energy

FutureGen will place the U.S. at the forefront of new energy development, while addressing global climate change issues.

FutureGen will provide safe, reliable and affordable energy through clean coal technology.

FutureGen will strengthen our energy security by producing considerable amounts of both electricity and hydrogen.

FutureGen will answer the government's call to end our reliance on foreign sources of energy.

FutureGen is the future of energy for the U.S. — and the world.



Who is the FutureGen Alliance?

American Electric Power – Columbus, Ohio
www.aep.com

Anglo American plc – London, UK
www.angloamerican.co.uk

BHP Billiton – Melbourne, Australia
www.bhpbilliton.com

China Huaneng Group – Beijing, China
www.chng.com.cn/minisite/en

CONSOL Energy – Pittsburgh, Pennsylvania
www.consolenergy.com

E.ON U.S. LLC – Louisville, Kentucky
www.eon-us.com

Foundation Coal – Linthicum Heights, Maryland
www.foundationcoal.com

Peabody Energy – St. Louis, Missouri
www.peabodyenergy.com

PPL Corporation – Allentown, Pennsylvania
www.pplweb.com

Rio Tinto Energy American (RTEA) – Gillette, Wyoming
www.rtea.com

Southern Company – Atlanta, Georgia
www.southerncompany.com

Xstrata Coal – Sydney, Australia
www.xstrata.com

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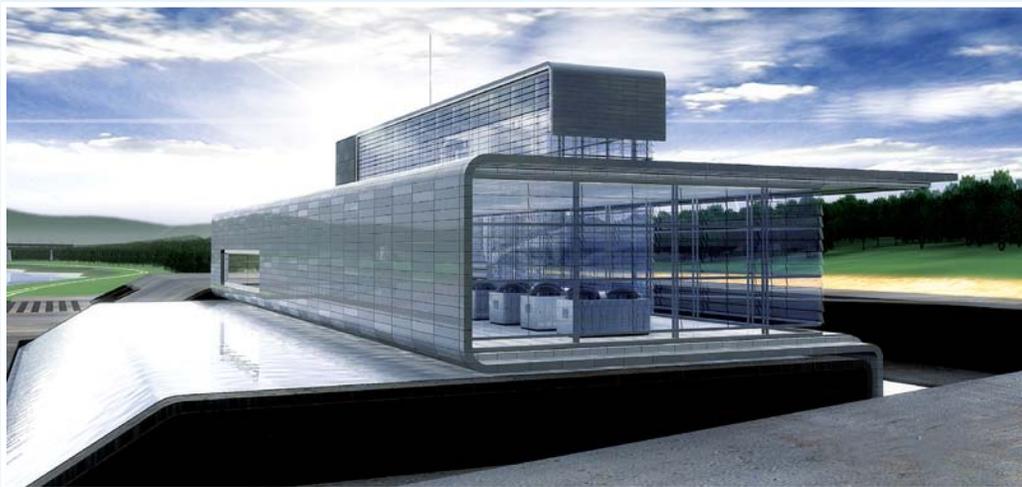
www.FutureGenForIllinois.com



FutureGen: The prototype for modern, clean and advanced power plants.



The FutureGen plant will be a medium-sized coal-fueled plant, generating approximately 275 megawatts of electricity, enough to supply approximately 150,000 U.S. households.



If selected, Mattoon plans to build the plant on 444 acres of land located one mile northwest of the city.

Tuscola plans to build FutureGen on 345 acres located one and half miles west of the city.

Mattoon and Tuscola are located 25 miles apart from each other in east central Illinois.



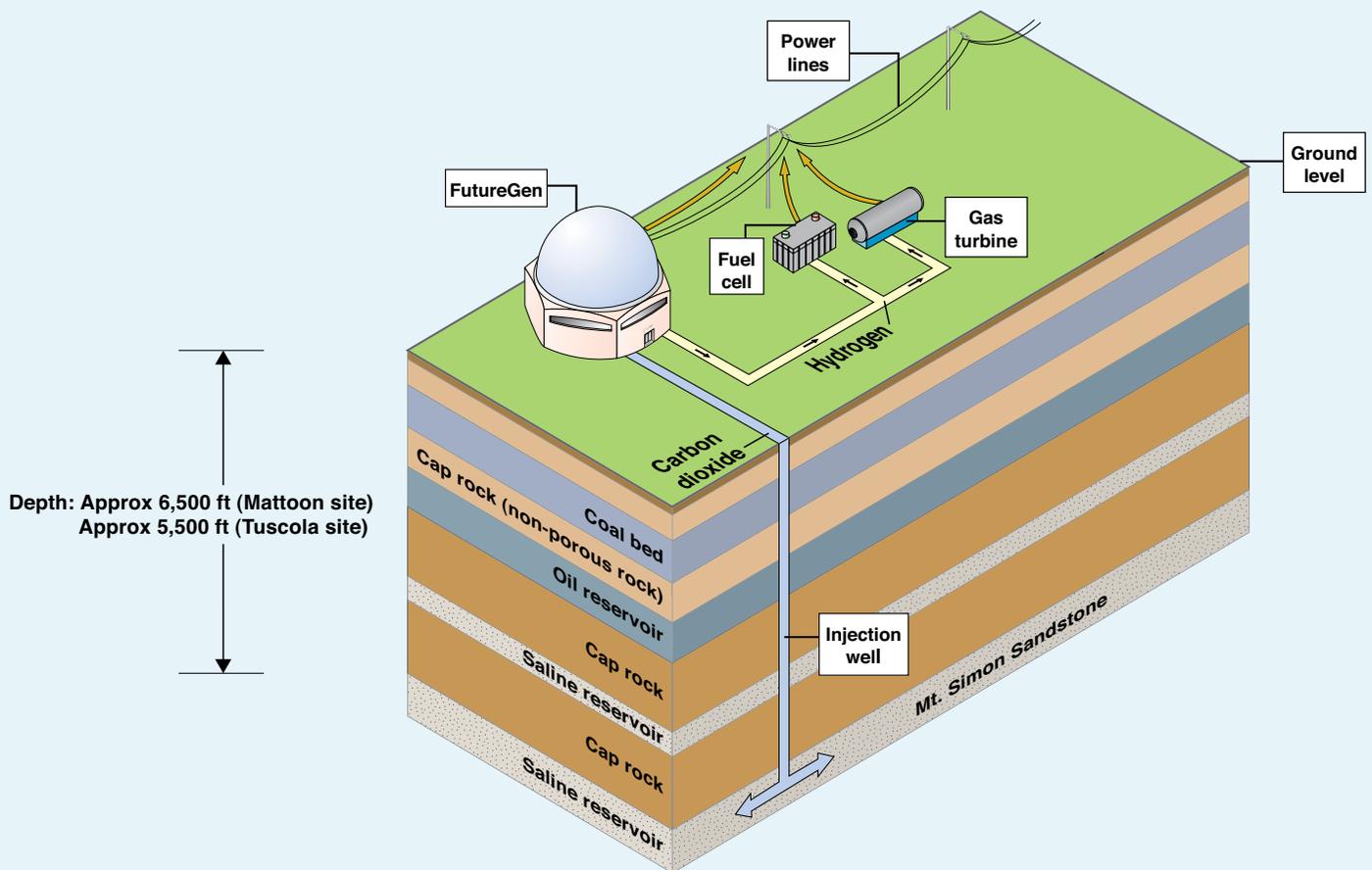
ILLINOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY



The FutureGen Power Plant: How will it work?



FutureGen will employ coal gasification technology to produce both electricity and hydrogen. Inside the plant, coal is converted into a gas made up of large amounts of hydrogen. The hydrogen-based gas can then be used to power a fuel cell or a gas turbine, producing electricity.



FutureGen's use of carbon sequestration technology will improve the environment by capturing and storing greenhouse gases underground. As carbon dioxide emissions are produced inside the plant, they will be stored and injected into geological formations 5,500 to 6,500 feet below ground surface.