

*March 17, 2009*

## **Alberta continues to explore cleaner energy from coal**

### ***Clean gas produced more than 1000 metres below earth's surface***

*Edmonton....* Alberta is hosting demonstration of deep underground coal gasification - the first such project in North America, and the deepest underground coal gasification ever conducted in the world.

The Government of Alberta, through the Alberta Energy Research Institute (AERI), is providing \$8.83 million for the \$30-million project with Swan Hills Synfuels of Calgary. Swan Hills Synfuels expects the project to demonstrate the ability to manufacture environmentally clean synthetic gas from Alberta's vast, deep, coal resources, with the future potential of utilizing the coal seams for carbon capture and storage.

The project in north-central Alberta, aims to develop a commercial operation that produces clean, synthesis gas for power generation. The deep formations could also store carbon dioxide after the coal is turned into gas. Underground coal gasification has been used commercially outside of North America for close to 40 years with minimal surface impact when compared to traditional coal mining and production.

“We have centuries of coal supply beneath our feet and it's important to examine better ways to use this resource,” said Advanced Education and Technology Minister Doug Horner. “Alberta has had success with coalbed methane and cleaner coal technology is part of our overall climate change strategy. This is another project where our province is poised to open new markets and be a global leader in clean energy development.”

Deep underground coal gasification involves the injection of oxygen and saline water into the deeply buried coal to turn it into synthesis gas. This gas can be used as fuel for clean power generation, further processed into gas for home heating, or for other products like hydrogen, methanol or transportation fuels. Underground coal gasification does not use fresh water in its operation and is significantly different than other in situ processes, such as those used in oil sands development. Underground coal gasification is used at depths where conventional coal mining is not economic or currently possible.

Funding for this project and advancing coal gasification technology in Alberta supports the goals of the Provincial Energy and Climate Change Strategies by promoting, demonstrating and deploying clean-energy technology. For information on these strategies, visit: [www.energy.alberta.ca](http://www.energy.alberta.ca) and [www.environment.alberta.ca](http://www.environment.alberta.ca). The Government of Alberta, through AERI and other publicly-funded research and innovation organizations, moves new technologies forward through partnerships with industry and post-secondary institutions in priority areas for the benefit of Albertans and world markets.

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**Attachment:** Underground coal gasification Q and A

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## Underground coal gasification

The Government of Alberta, through the Alberta Energy Research Institute (AERI), is providing funding for a new demonstration project of underground coal gasification. The project with Swan Hills Synfuels LP is the first of its kind in North America to demonstrate coal gasification at depths greater than 1,000 metres below the surface.

### What is underground coal gasification?

Underground coal gasification (UCG) is an *in-situ* process using injection and production wells drilled from the surface, which enables the coal to be converted into a synthetic gas. The process is flexible in operation and is capable of producing commercial quantities of gas to be used like natural gas, such as for home-heating chemical feedstock or as fuel for clean power generation.

### What are the land, water and environmental impacts of underground coal gasification?

Underground coal gasification is completely sealed from the surface and offers significant benefits to the environment over traditional coal mining or coal gasification methods. Underground coal gasification occurs at depths greater than 1000 metres in a contained saline environment and thus poses no risk to shallow fresh groundwater.

### What is in-situ development?

In situ means "in place", and refers to recovery techniques which apply heat in energy development. There are several varieties of in situ techniques -- the most common in Alberta is in the oil sands.

### How are underground coal gasification and carbon capture and storage related?

The synthetic gas produced by underground coal gasification is amenable to efficient pre-combustion carbon dioxide (CO<sub>2</sub>) capture, producing a high-purity CO<sub>2</sub> byproduct. It may also be feasible to sequester captured CO<sub>2</sub> in coal seams depleted by underground coal gasification.

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