



## IGCC Front End Engineering Design Study

<b>Project type</b>	Preliminary engineering/FEED
<b>Project proponent</b>	Capital Power Corporation
<b>CO<sub>2</sub> source</b>	Genesee coal-fired electricity power plant
<b>Capture application</b>	Coal-fired electricity generation
<b>Project timeframe</b>	2006 to 2010
<b>Project location</b>	CPC's Genesee power plant, located west of Edmonton, Alberta, Canada
<b>Funding</b>	
<b>Government of Canada</b>	\$11 million
<b>Provincial government</b>	\$11 million
<b>Private sector</b>	\$11 million
<b>Total project cost</b>	\$33 million

### Project description

Between 2006 and 2010, Capital Power Corporation (CPC), on behalf of the Canadian Clean Power Coalition, performed a Front End Engineering Design (FEED) study for an approximately 240-megawatt (MW) (net) integrated gasification combined cycle (IGCC) facility with carbon dioxide capture. This study was aimed at discovering the true cost and viability of such a facility, which would be built at the existing Genesee Generating Station in Alberta, Canada, approximately 50 kilometres west of Edmonton.

The facility was designed to provide baseload electric power to the Alberta electricity grid, with carbon capture of more than 85 percent and a significant reduction in all other criteria air emissions. The project's final report discusses the process, methodology, engineering and cost estimates completed in the course of producing the FEED work. It also outlines the costs and benefits associated with the facility and possible areas of investigation for future study. The study found that there are no major technical issues with using western Canadian subbituminous coals in a carbon capture IGCC facility and was able to develop detailed cost estimates for the construction and operation of such a facility.

### Outcomes

The Genesee IGCC FEED study was a significant undertaking, and a substantial amount of knowledge was gained regarding the development of gasification for power generation in Alberta. The final report highlights the challenges associated with high capital and operating costs for advancing IGCC with carbon capture and storage technologies.

### Proponent profile

Capital Power is a North American, independent power producer. The company is recognized as one of North America's most respected, reliable and competitive power generators. CPC has interests in 32 facilities across North America, with nearly 3800 MW of owned or operated power generation capacity, as well as 371 MW of capacity owned through power purchase agreements. Headquartered in Edmonton, Alberta, Capital Power draws on a 118-year heritage of innovation and reliability and a history of developing, acquiring, operating and optimizing power generation from a diverse range of energy sources. Capital Power employs approximately 1100 people.

### Proponent Web sites

[www.capitalpower.com](http://www.capitalpower.com)

[www.capitalpower.com/MediaRoom/news/Pages/igccreport.aspx](http://www.capitalpower.com/MediaRoom/news/Pages/igccreport.aspx)

*Aussi disponible en français sous le titre :*

Étude de l'ingénierie de base pour le cycle combiné à gazéification intégrée

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