

Digest of Green Reports and Studies

Title	<i>IGCC with Carbon Capture and Storage: Opportunities and Challenges for Labor</i>
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Author Contact	http://www.cows.org
Publication Type	Policy Analysis
Publication Date	October 2007
# of Pages	35
URL	http://www.cows.org
Summary	America is entering a new Industrial Revolution using new cleaner energy technology. As new energy technology emerges to replace old technology, Unions should be at the beginning stages of this new age and take a proactive approach by promoting new energy projects and becoming involved politically. If Unions become involved early on in promoting new cleaner energy technology, they will have the opportunity to help the environment and expand Union presence in manufacturing, transportation, and construction jobs. Early Union presence could provide high quality, family supporting jobs and worker benefits. Currently, there are two types of new energy technology being developed that Unions should promote and become politically involved in. The first new technology involves a new type of power plant called "integrated gasification combined cycle," or IGCC. These new technology plants produce lower emissions than the old technology of burning pulverized coal plants. The second technology involves carbon capture and storage, or CCS. This technology allows Carbon dioxide (CO ₂) from IGCC power plants to be concentrated and removed prior to combustion and then stored away.
Key Findings	<ul style="list-style-type: none"> • For decades, the United States has relied heavily on power plants that utilize the old technology of burning pulverized coal, however environmental concerns and regulation make pulverized coal plants less attractive. • Unions can help the environment and slow global warming by promoting a new technology that utilizes coal more efficiently and with less environmental pollutants. This technology is called "Integrated gasification combined cycle," or IGCC plants. They may cost more to build and operate than do pulverized coal plants, however the cost advantage is diminished if regulation increases the cost of emitting CO₂ in the air. • Carbon Capture and Storage, or CCS allows carbon dioxide (CO₂) from IGCC power plants to be concentrated and removed prior to combustion and then stored away. • IGCC power plants are better than pulverized coal plants because they emit less pollutants in the air and have the ability to remove mercury, sulfur oxides(SOX), and carbon dioxide (CO₂) from coal-fired power plant emissions. • IGCC has a 25-40 percent reduction in water use compared with pulverized coal plants. • IGCC plants produces 15-50 percent less waste volume than pulverized coal plants. • The sulfur can be sold as a feedstock for the chemical industry. • Workers will be left behind if unions do not take a proactive approach and become involved early in new energy technology projects. This will ensure they have a presence in new energy technology jobs, thus providing this economy with high quality, family-supporting jobs and worker benefits. • Carbon dioxide regulation is inevitable and would be an incentive for utilities to build less-polluting plants such as IGCC power plants.
Recommendations	<ul style="list-style-type: none"> • Unions should become politically active and promote carbon tax law which promotes new energy technology projects such as IGCC with CCS. • The United States should use IGCC with CCS because it will help the environment by lowering pollutants. • Unions need to become active in promoting new energy technology such as IGCC power plants with CCS. • Unions should promote their role in technologies like IGCC with CCS by: <ol style="list-style-type: none"> 1. Talking to regulatory bodies to let them know that the union would look favorably on IGCC proposals. 2. Meeting with legislators and energy task forces to encourage them to begin

	<p>making IGCC part of the states' plan for meeting energy needs when new coal capacity is considered.</p> <ol style="list-style-type: none"> 3. Educating members and community about IGCC through guest speakers, educational materials, or community forums. 4. Passing resolutions and local, state, district, and national union bodies endorsing IGC with carbon capture and storage. 5. Using bargaining and other meetings with employers to get companies to investigate the feasibility of IGCC with CCS for any new generation. 6. Emphasizing the importance of union labor not only in plant construction, but also in maintenance, operations, mining, and coal transport.
Definition of "Green"	<p>Green is referred to as newer, cleaner energy technology that generates environmental and economic benefits.</p> <p>Integrated gasification combined cycle and carbon capture and storage are two components that generate electricity from gasified coal and other feedstock to convert to synthetic gas or syngas and capture CO₂ from entering into the air by storing it underground.</p>
Methodology	<p>Analysis using charts that show mercury emission rates, IGCC vs. Pulverized Coal Plants.</p> <p>Analysis using charts that show other pollutants emission Rates, IGCC vs. Pulverized Coal Plants.</p> <p>Table 3 showing existing state-based incentives for IGCC Development.</p> <p>Appendix A showing employment estimates for IGCC and indirect employment opportunities.</p> <p>Appendix B showing state-level greenhouse gas goals.</p>
Data Sources Cited	Refer to Bibliography
Report Geography	United States
Green Occupations Cited	<ul style="list-style-type: none"> • Construction • Transportation • Manufacturing • Carbon Transport • Agriculture • Forestry • Coal Mining • Markets that can use plant byproducts
Green Industries Cited	<p>Energy Generation</p> <ul style="list-style-type: none"> • IGCC power plants • Solar • Wind <p>Energy Storage</p> <ul style="list-style-type: none"> • Carbon Capture Storage (CCS)
Keywords	Integrated Gasification Combined Cycle (IGCC); Carbon Capture and Storage (CCS); Carbon Regulation; Carbon Tax; Cap-and-Trade System; Carbon Dioxide(Co ₂);Pulverized Coal Plants; Unions; Cleaner Technology; Sulfur Oxide (SO _x); U.S. Environmental Protection Agency; Clean Coal Power Initiative.
Legislation Cited	Regional Greenhouse Gas Initiative (RGGI); Western Regional Climate Action Initiative (WRCA); Global Warming Solutions Act.
Bibliography (Y/N)	Y
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