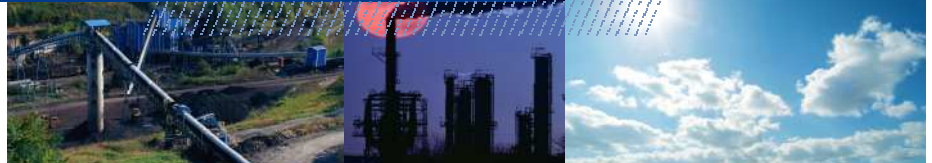


Carbon Capture and Storage and Chartis



The Intersection of Cutting Edge Technology and an Innovative Insurance Response

For years, carbon dioxide (CO₂) emissions have been in the public cross-fire.

The world remains dependent on inexpensive power produced by burning coal and industrial processes that create CO₂. However, CO₂ is a gas which is implicated in contributing to global climate change. Emitters of CO₂ face significant pressure from environmental groups, investors and politicians, causing many to seek methods to reduce their emissions.

Carbon Capture and Storage (CCS) is one method that may potentially reduce CO₂ emissions to the atmosphere. CCS consists of capturing CO₂ from power plant or other industrial emissions and injecting it deep underground for permanent storage, thereby preventing it from being released to the atmosphere where it may contribute to global climate change.

CCS is receiving significant attention from coal-fired power plant operators. With coal accounting for most of the world's CO₂ emissions¹ and the International Energy Agency estimating that CO₂ emissions from the energy sector will increase 130% by 2050 in the absence of new policies², this cutting edge technology represents a significant step forward in the fight to mitigate climate change.

Targeted Carbon Capture Facilities

- Coal-fired power plants
- Industries with major CO₂ emissions
- Natural gas processing
- Synthetic fuel plants
- Fossil fuel-based hydrogen production plants

Countries around the world are investing in CCS research and development to be able to apply the technology at a commercial scale. There are currently approximately 60 large CCS projects either planned or underway³.

As the CCS process continues to evolve, so do the risks. Chartis is committed to providing environmental and other risk management solutions to companies and organizations looking to advance the CCS technology through upcoming world wide projects.

Risk and Liability – The Environmental Impact

CCS consists of three distinct phases. First the CO₂ is captured from the emissions of a facility, a process that uses a number of existing and innovative technologies. Then the CO₂ is compressed and transported, typically via pipeline, to a suitable storage location. The captured CO₂ is then injected into the ground through an injection well. Storage locations are chosen based on a number of factors, including local geology, land use regulations, and proximity to population centers and underground sources of drinking water. While the technologies used throughout the

¹ International Energy Agency. *Key World Energy Statistics, 2009.*

² International Energy Agency. *Carbon Capture and Storage Full-scale Demonstration Progress Update, 2009.*

³ International Energy Agency. *Carbon Capture and Storage Full-scale Demonstration Progress Update, 2009.*

Carbon Capture and Storage

Continued

storage process have been in use for years, there is still the potential for CO₂ or associated constituents to be released resulting in an environmental impact. Releases could be due to:

- Failure of seals at the wellhead
- Leaks through abandoned boreholes and wells
- Underground stress or pressure change caused by injection process resulting in fracturing
- External forces that damage or compromise well integrity

A CO₂ release could cause human health effects, impacts to environmental resources such as groundwater or soil, property damage to mineral or water resources, or business interruption.

Market-Focused Product Development

Chartis has crafted a special endorsement for our Pollution Legal Liability (PLL) insurance policy, designed to address the environmental risks associated with CCS operations. The endorsement provides tailored CCS coverage while allowing the client to access the full benefits of the broad-based PLL policy form. The CCS endorsement includes a modified definition of pollution conditions to specifically address CO₂ and it is designed to allow flexibility in defining the specific activities for which coverage is sought. CCS coverage includes third-party claims for bodily injury, property damage and cleanup costs.

Potential Carbon Dioxide Underground Storage Sites

- Oil field
- Gas fields
- Saline formations
- Unminable coal seams

Chartis is committed to providing a full range of risk management and insurance solutions for CCS projects. Chartis also offers related insurance coverage for CCS projects, including property, cargo, primary casualty, and for the construction operations related to building new CCS facilities or modifying existing power facilities to accommodate CCS operations.

For More Information

800 348 4314 Telephone
environmental@chartisinsurance.com Email
www.chartisinsurance.com/us/environmental



Chartis is a world leading property-casualty and general insurance organization serving more than 40 million clients in over 160 countries and jurisdictions. With a 90-year history, one of the industry's most extensive ranges of products and services, deep claims expertise and excellent financial strength, Chartis enables its commercial and personal insurance clients alike to manage virtually any risk with confidence.

Chartis is the marketing name for the worldwide property-casualty and general insurance operations of Chartis Inc. For additional information, please visit our website at www.chartisinsurance.com. All products are written by insurance company subsidiaries or affiliates of Chartis Inc. Coverage may not be available in all jurisdictions and is subject to actual policy language. Non-insurance products and services may be provided by independent third parties. Certain coverage may be provided by a surplus lines insurer. Surplus lines insurers do not generally participate in state guaranty funds and insureds are therefore not protected by such funds.