

Plenary Session – Big Sky Carbon Sequestration Partnership

The plenary session will feature a presentation by the [Big Sky Carbon Sequestration Partnership](#) (BSCSP). Led by Montana State University, BSCSP is one of the U.S. Department of Energy's (DOE) seven regional partnerships. The BSCSP region encompasses Montana, Wyoming, Idaho, South Dakota and the eastern part of Washington and Oregon. Its membership includes universities, national laboratories, private companies, state agencies and Native American tribes. The primary objective of the BSCSP is to promote the development of a regional framework and infrastructure required to validate and deploy carbon sequestration technologies. To achieve this objective, the BSCSP is focusing on the most promising geologic and terrestrial field validation tests coupled with market assessments, economic and regulatory analyses and public outreach. The supporting infrastructure includes a geographic information system (GIS)-based assessment tool to help determine optimal energy development strategies and potential regulatory and permitting approaches. The project also includes an education and outreach program to enhance public understanding and acceptance of new technologies and to communicate the contribution carbon sequestration technologies can make to the region's clean energy future. The BSCSP has completed Phase I and is currently in Phase II of the project.

Phase I – Characterization

The phase I work of BSCSP focused on identification and characterization of regional carbon dioxide (CO₂) sources, potential CO₂ storage opportunities and infrastructure needs for both geological and terrestrial sequestration. This information has been incorporated into the Carbon Atlas, a GIS framework that includes a suite of regional maps, metadata and online interactive mapping tools.

Phase II - Validation

In 2005, the Department of Energy awarded the BSCSP Phase II funding to continue the regional characterization work and conduct geological and terrestrial validation tests. In announcing the Validation Phase in June of 2005, Secretary of Energy Samuel Bodman emphasized the goal of the initiative stating, "By moving carbon sequestration technology from the laboratory to the field, we are another step closer to significantly reducing greenhouse gas emissions while maintaining the important role coal plays in America's energy mix." The BSCSP pilot tests are designed to validate the technical and economic feasibility of carbon sequestration, develop monitoring and verification protocols and to analyze the policy and regulatory frameworks of carbon sequestration in the Big Sky Region. Two different types of sequestration options will be pursued by the BSCSP; terrestrial and geological.

Terrestrial sequestration relies on management practices and technologies that transfer atmospheric CO₂ to storage in trees, plants, and soil. This sequestration method can be implemented today and is on the front-line of voluntary, market-based approaches to reduce CO₂ emissions. BSCSP efforts have focused on market opportunities, cropland soil carbon changes, and rangeland pilots.

Geological field tests will explore several options for storing CO₂ and other greenhouse gases in geological formations, such as depleted oil and natural gas fields, saline formations, and unminable coal seams. The BSCSP is planning to conduct two geologic demonstration projects in prominent geological formations located throughout the region—mafic rock formations and sedimentary rock hosted saline aquifers. Collectively, these two types of geological formations hold the potential to sequester more than 200 Gt CO₂. The Validation Phase aims to use the knowledge gained from the pilot tests to develop commercially viable technologies that will be integral to a carbon constrained future.