Secretary Salazar: National Geological Carbon Capture Program Can Help Develop Cleaner Energy, Reduce Greenhouse Gases

Interior Lands, Science and Technology Play Key Role in Initiative

WASHINGTON, D.C. – Secretary of the Interior Ken Salazar today sent Congress his recommendations for a national program to help reduce greenhouse gasses by selecting appropriate underground geological formations on public lands to inject and store carbon dioxide emissions from coal-fired power plants and other carbon-dioxide producing facilities.

The Interior report, prepared by the Bureau of Land Management with assistance from the U.S. Geological Survey, Environmental Protection Agency and Department of Energy’s Office of Fossil Energy, recommends criteria for identifying potential sites for geological carbon sequestration and a proposed regulatory framework for leasing these public lands. It also discusses an array of issues that are being addressed, including environmental protection, public participation, rights-of-way and federal liability.

“President Obama’s national energy plan calls for reducing greenhouse gas emissions by 80 percent by 2050,” said Secretary Salazar. “Capturing carbon dioxide emissions in secure geologic formations prevents their release into the atmosphere, reducing the carbon intensity of our economy. These recommendations provide a structure for a national initiative to identify appropriate public land geological sequestration sites that will help us reach our clean energy goals.”

The report, entitled Framework for Geological Carbon Sequestration on Public Land, is an important step in developing a national program that makes effective use of the vast underground storage capacity of federal lands, the expertise of Interior’s Bureau of Land Management and the science capabilities of the U.S. Geological Survey to reduce the amount of harmful carbon dioxide emissions into the atmosphere.

Geological storage of carbon dioxide in subsurface rocks involves injection of carbon dioxide underground into the pore space of permeable rock units, such as oil and gas fields, deep saline water-bearing formations or coal beds. Operating and depleted oil and gas fields are considered potentially suitable sequestration sites, but most of the probable storage capacity for carbon dioxide in the United States is in deep saline formations.

A critical issue for evaluating storage capacity is the integrity and effectiveness of geologic formations for sealing carbon dioxide underground, preventing its release into underground sources of drinking water, mineral resources or the atmosphere. The report recommends that candidate sites must have sufficient capacity to accept the volume of
carbon dioxide expected for the life of the sequestration project and the geologic structure to ensure long-term containment of the carbon dioxide.

The recommendations call for research to address several unknowns related to carbon sequestration, so that proper mitigating measures to protect the environment can be included in land use authorizations. Interior supports efforts to ensure science-based monitoring and verification of the injected carbon dioxide plume throughout the life of a project to beyond the closure phase. The Department also supports the need for large-scale demonstration projects to address key questions of long-term carbon storage.

As the nation’s largest land manager, Interior’s Bureau of Land Management administers 256 million acres of land, known as the National System of Public Lands, and 700 million acres of sub-surface mineral estate. The surface owners of this mineral estate are not only federal agencies but also state governments and private entities, creating “split estates” in some cases with federal ownership of the sub-surface minerals and private or state ownership of the surface land.

The Bureau, whose lands are located primarily in 12 Western states and Alaska, also has experience regulating the injection of carbon dioxide into geologic formations on land it manages -- in practical applications known as Enhanced Oil Recovery. This process allows the recovery of additional energy resources from older oil and gas fields. Current Enhanced Oil Recovery efforts are helping the Bureau to better understand these types of critical scientific and geologic issues.

Another Interior agency, the U.S. Geological Survey, also plays a vital role in this national initiative through identification and evaluation of geologic criteria that will be important for geologic site selection on federal lands. The USGS has developed a new assessment methodology to evaluate carbon dioxide storage potential and will apply this methodology in a national assessment of geologic storage resources in oil and gas fields and saline formations. Initial stages of this assessment are funded in the FY 2010 budget.

The Interior report to Congress, which fulfills the requirements of Section 714 of the Energy Independence and Security Act of 2007, also examines existing authorities under the Mineral Leasing Act and the Federal Land Policy and Management Act that could be used to permit carbon sequestration activities. The report is available online at:


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