RMOTC

Partnering to Power the World

CO_2 STORAGE & ENHANCED OIL RECOVERY

Objective

RMOTC can play a significant role in carbon dioxide (CO_2) storage and enhanced oil recovery technology development and field demonstrations. RMOTC completed a scoping engineering study on Naval Petroleum Reserve No. 3's (NPR-3) CO_2 enhanced oil recovery potential. More recent characterization studies indicate geologic carbon storage would also be an excellent use of NPR-3 resources beyond their economic life in conventional production.

Geologic Storage

Fossil fuels will remain the mainstay of energy production well into the 21st century. Availability of these fuels to provide clean, affordable energy is essential for the prosperity and security of the United States. However, increased atmospheric concentrations of CO_2 are possible unless energy systems significantly reduce carbon emissions to the atmosphere. To stabilize and ultimately reduce concentrations of this greenhouse gas, it may be necessary to employ carbon capture, separation, and geologic storage or reuse of CO_2.

Enhanced Oil Recovery

Western and Central Wyoming contain an enormous resource base of CO_2. In addition, many producing oil fields with good CO_2 enhanced oil recovery potential are located in the major basins of Wyoming. A pipeline was recently constructed by Anadarko Petroleum Corp. to transport up to 250 million cubic feet per day of CO_2 from Bairoil, Wyoming, to the Salt Creek Field, adjacent to NPR-3 and RMOTC. Infrastructure in Wyoming is in various stages of planning and completion to make additional large-scale CO_2 supplies available.

Experience

RMOTC staff has extensive experience in gas injection for pressure maintenance and enhanced oil recovery operations. RMOTC helped develop a Rocky Mountain-based regional partnership in CO_2 research and field testing, and was a key participant in a state-sponsored initiative in enhanced oil recovery/increased oil recovery research and development. NPR-3 has

Current and planned CO_2 infrastructure in Wyoming.

the core characteristics for long-term activity in both CO_2 storage and enhanced oil recovery projects. A 2010 RMOTC white paper details the relevance of RMOTC's various reservoirs, several of which are direct geologic analogs to reservoirs in many sedimentary basins where CO_2 enhanced oil recovery and/or storage are either underway or planned .

Stakeholders

Power plant operators, oil and gas companies, pipeline operators, carbon offset markets, industry groups such as Interstate Oil and Gas Compact Commission, and environmental organizations are primary industry stakeholders. Federal laboratories and state and federal regulatory agencies are viewed as the primary governmental stakeholders. The University of Wyoming Enhanced Oil Recovery Institute and School of Energy Resources could also benefit from RMOTC activities. Other relationships exist or are being developed, including collaborations with the National Energy Technology Laboratory, national laboratories, major Wyoming CO_2 producers, regional and national education and research institutions, and operators of Wyoming CO_2 enhanced oil recovery candidate fields. Interest has been expressed by several of these groups in various types of CO_2 demonstration projects at RMOTC.

Contact

For more information, contact RMOTC toll-free at 888.599.2200, or visit our website at www.rmotc.doe.gov.

Office of Fossil Energy