The Infrastructure (Regional Carbon Sequestration Partnerships) Technology Area highlights DOE's awareness of the importance of addressing CO_2 mitigation on a regional level to most effectively manage differences in geology, climate, population density, infrastructure, and socioeconomic development. This element includes a series of geologic CO_2 storage field projects through the Regional Carbon Sequestration Partnership (RCSP) Initiative, as well as small-scale geologic CO_2 storage field project efforts used to augment and build on the RCSP field project accomplishments. The Infrastructure Technology Area also includes crosscutting projects funded by the American Recovery and Reinvestment Act of 2009 that complement the existing Carbon Storage Program's efforts to develop carbon capture and storage (CCS) infrastructure in the United States. These Recovery Act-supported efforts include the establishment of seven CCS training centers to promote knowledge-sharing and lessons learned from field projects, and nine geologic site characterization projects to enhance and better understand the nation's CO_2 geologic storage capacity. These infrastructure efforts are highlighted below:

- **Regional Carbon Sequestration Partnerships:** Seven RCSPs are tasked with determining the best geologic storage approaches and applying technologies to safely and permanently store CO_2 in specific regions throughout North America. The RCSPs are public/private partnerships comprising more than 400 organizations in 43 states and four Canadian provinces. They include representatives from state and local agencies, regional universities, national laboratories, non-government organizations, foreign government agencies, engineering and research firms, electric utilities, oil and gas companies, and other industrial partners. This RCSP Initiative established the basic structure and initial findings for CCS storage resources throughout the United States and portions of Canada that are being further validated by additional small- and large-scale CO_2 injection projects designed to address specific applied research related to advancing geologic storage. In addition, the RCSPs began studying possible regulatory and infrastructure requirements that would be needed should CCS be deployed on a commercial basis.
- **Small-Scale Field Projects and Other Infrastructure Activities**: NETL is supporting four CO_2 field projects in geologic formations and depositional environments augmenting the initial small-scale field projects conducted through the RCSP efforts in order to understand CO_2 behavior and migration throughout a full spectrum of depositional environments/classes of storage formations. These small-scale projects generally involve relatively modest (<500,000 metric tons of CO_2) injection volumes and are aimed specifically at increasing understanding of CO_2 injectivity and storage in various geologic storage classes. In addition, NETL is supporting the Weyburn-Midale CO_2 Monitoring and Storage Project, an international research initiative that integrates large-scale commercial enhanced oil recovery (EOR) with carbon storage operations at the Weyburn and Midale oil fields in the Williston Basin, Saskatchewan, Canada. NETL has supported the site characterization, wellbore integrity assessment, storage monitoring, and risk assessment components of this project. The results of these research initiatives were integrated into a Best Practice Manual for CO_2 EOR and storage.
- **Recovery Act Site Characterization Projects**: NETL is promoting a significant effort to characterize storage formations and reduce uncertainty associated with geologic storage resource estimates in North America. NETL selected nine projects to characterize promising geologic formations for CO_2 storage. These projects focus on the regional site characterization of geologic storage formations that contain saline water, oil and gas, and coal with the goal of developing comprehensive data sets of formation characteristics, while also gathering information and gaining experience to refine best practices for storage site selection and characterization.
- **Recovery Act Regional Technology Training Centers**: Distribution of the results and lessons learned from both field projects and Core R&D efforts will provide the foundation for future large-scale CCS field projects across North America and address challenges associated with their public acceptance, infrastructure, and regulatory framework. Implementing CCS technologies will require a significantly expanded workforce trained in various specialties that are currently underrepresented in the United States. NETL is supporting seven Recovery Act-funded Technology Training Centers that are developing professional training classes and academic curricula for scientists, engineers, lawyers, business professionals, and others involved in CCS project development.

Even though this Technology Area is being implemented through several different initiatives, it should ultimately be viewed as an integrated whole, with many of the goals and objectives transitioning from one initiative to the next.