

Technoeconomic feasibility of leveraging existing CO₂ EOR infrastructure for coupled enhanced gas recovery and CO₂ storage in gas shales

Jill Garcia

Tarleton State University

This report details research to examine the collocation of shale plays and enhanced oil recovery projects to help understand the potential for utilizing existing infrastructure for enhanced gas recovery from tight shales. In this study, a preliminary national scale examination is correlated by deeper regional case study. The New Albany, Eagleford, and Marcellus shales are examined as case studies based on geochemical ability, existing infrastructure, and geographical distribution. The existing infrastructure at the proposed study areas is evaluated for the potential to leverage EOR infrastructure, including carbon dioxide (CO₂) recycling plants, injection wells, and existing pipelines, for CO₂ enhanced shale gas recovery options. Many enhanced oil recovery sites are collocated with or in close proximity to the shale plays assessed as potential gas production targets to date. Where existing infrastructure could be re-assigned, negating or reducing the costs associated with new purpose-built capital, the overall cost of initiating a CO₂-EGR project could be reduced. These opportunities, particularly in areas where the CO₂-EOR locations overlap with current or prospective shale gas production sites could also represent some of the most promising locations for early demonstration and commercial deployment of projects for concurrent enhanced gas recovery and CO₂ storage in shales.