

ABSTRACT

Carbon Dioxide Generation and Top Side Equipment in Support of Enhanced Oil Recovery -- Enhanced Geothermal Systems, or Both!

Paul M. Dunn (Presenter), COO, Gas Equipment Engineering Corporation (GEECO);
Rick Mobley, CEO, Plasma Energy (PE); Greg Gutoski, Technical Director, Fairbanks Morse Engine (FME);

Geothermal Power and Enhanced Oil Recovery (EOR) have been around for a long time, but next generation Enhanced Geothermal Systems (EGS) and Tertiary EOR, may have at least one thing in common, supercritical CO₂. Gas Equipment Engineering Corporation, founded in 1921 as a producer of CO₂, has teamed with Plasma Energy, Fairbanks Morse Engine, and many others in several efforts which pursue the common need of low cost CO₂ and new lower or zero emission power generating technology.

The synergistic strengths of GEECO, PE, and FME are briefly reviewed as an introduction, and paper reviews the benefit of CO₂ over water for EGS and EOR. Simple models have indicated gains in power generation / efficiency of 58% to 181% depending on approach and details of the geology, for EGS-CO₂ over conventional EGS. EOR yield varies widely from site to site, but similar or greater gains in delivered product can occur with supercritical CO₂ (Tertiary EOR) vs. conventional water based Secondary EOR.