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Sustainable oil industry development with carbon-constrained economies: Challenges and opportunities

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The ongoing accumulation of greenhouse gas (GHG) concentrations in the atmosphere from various anthropogenic sources is believed to be the primary cause of the increase in the global temperature of the Earth's surface. Carbon dioxide is the most significant GHG where electricity generation with other stationary industry sectors powered by fossil fuels are the top anthropogenic sources of CO₂ emissions. Among other technologies, Carbon Capture and Storage (CCS) in geologic formations including hydrocarbon fields is expected to play a key role in addressing the GHG challenge. In this talk, we

review the current CO₂-EOR field implementations worldwide including injectivity rates and oil incremental contributions. We highlight the potential of the CO₂-EOR technology in enhancing oil recovery and in its contribution for CO₂ emission reduction. The main challenges of the CCS technology are then discussed where we show some technical challenges related to CO₂ capture, transportation, injection, and displacement in hydrocarbon fields. We close with some thoughts regarding the role of the Oil industry in promoting CCS as a win-win technology.

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