C-EOR Projects – Offshore Challenges

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ABSTRACT

The development of Chemical EOR (C-EOR) projects is on fast pace, led by the necessity to increase the final recovery of mature field and to speed up exploitation of newly developed reservoirs. This development is also driven by the improvement of the chemicals involved in those practices in terms of resistance to salinity, temperature, viscosity… and the deployment of specifically designed equipment to fit with most of injection conditions. Research and development dedicated to C-EOR technologies is one of major interest for off-shore applications as all challenges are concentrated, ranging from additional criteria for polymer type and form selection, new design constrains in terms of available foot-print, acceptable load, mechanical resistance, modularity, ... and enhanced supply chain criticality. This didactic paper aims at reminding all those specificities to be considered to fully assess project feasibility and anticipate properly preliminary budget parameters.

Figure 1 Polymer flooding pilot installed on a FPSO

KEY WORDS: EOR, Offshore, Polymer Flooding, ASP, SP

C-EOR PROJECTS – OFFSHORE CHALLENGES

The development of Chemical EOR (C-EOR) projects is on fast pace, led by the necessity to increase the final recovery of mature field and to speed up exploitation of newly developed reservoirs. To respond to those enlarge demands and C-EOR range of application a significant R&D effort has been sustained by the major chemicals producers to improve the resistance to salinity, temperature, shear rate and fit them to new geological, permeability conditions (See EOR references)

Figure 2 Polymer flooding conditions

C-EOR players active on the facilities field have also developed specific range of equipment to fit with most of injection conditions while preserving chemicals properties integrity. Offshore projects are more and more common among the latest C-EOR programs to be launched by oil companies worldwide. Those projects present specific challenges which deserve to be carefully assessed right from conceptual studies all along the next engineering phases. Deployment of C-EOR technologies in off-shore conditions requires a different approach in terms of engineering, supply chain organization and O&M conditions.