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Does Heavy Oil Recovery Need Steam?

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Abstract:

Heavy Oil recovery traditionally starts with depletion drive and (natural) waterdrive with very low recoveries as a result. As EOR technique, steam injection has been matured since the 1950s using CSS (cyclic steam stimulation), steam drive or steam flooding, and SAGD (steam assisted gravity drainage). The high energy cost of heating up the oil bearing formation to steam temperature and the associated high CO₂ footprint make steam based technology less attractive today and many companies in the industry have been actively trying to find alternatives or improvements. As a result there are now many more energy efficient recovery technologies that can unlock heavy oil resources compared with only a decade ago. This presentation will discuss breakthrough alternatives to steam based recovery as well as incremental improvement options to steam injection techniques. The key message is the importance to consider these techniques because steam injection is costly and has a high CO₂ footprint.

Biography:

Johan van Dorp holds an MSc in Experimental Physics from Utrecht University and joined Shell in 1981. He has served on several international assignments, mainly in petroleum and reservoir engineering roles. He recently led the extra heavy-oil research team at the Shell Technology Centre in Calgary, focusing on improved in-situ heavy-oil recovery technologies. Currently, he is senior consultant in the "Nederlandse Aardolie Maatschappij", a JV operated by Shell. Van Dorp is also Shell Group Principal Technical Expert in Thermal EOR and has been involved with most thermal projects in Shell throughout the world, including California, Oman, the Netherlands, and Canada. He (co-)authored 13 SPE papers on diverse subjects.