

Session Title: Hydrogen

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Abstract title: Hydrogen from hydrocarbon-based feedstocks with CO₂ capture

Steam reforming of hydrocarbons is currently the prevailing technology for hydrogen production. Over the longer-term, hydrogen produced from electrolysis of water using alternative energy sources may become important, however, it still requires continued research to reduce cost and increased availability. In the meantime, distributed hydrogen production at or near refueling stations from liquid fuels offers a promising path forward. Generating hydrogen from already available feedstock at the fueling sites offers a low cost production potential particularly in areas where the last-mile cost for hydrogen delivery to the customer is high. Recent advances in high temperature metal-alloy membranes offer new opportunities for economically feasible on site hydrogen production from liquid fuels with CO₂ capture. This presentation will cover Saudi Aramco Research and Development efforts in this important area and highlight key carbon capture and utilization technologies under development at Saudi Aramco.