

Heavy Oil

Mission / Vision

The mission and vision of the Heavy Oil disciplines is to focus on collaboration and best practice sharing to resolve the technical challenges being faced.

Introduction:

“Grow Heavy Oil Production to Achieve KPC Target Capacity” is one of the Strategic Initiatives taken up to achieve KPC 2030 Strategic Direction of achieving sustainable crude oil production capacity of 4.0 MM bpd by 2020. As a part of this initiative, KOC has taken up development of the Lower Fars heavy oil reservoir by steamflood. However, steamflood technology poses enormous risks and challenges related to both steam generation and injection, as well as oil recovery from the reservoir.

KGOC has gained experience in harnessing the steamflood technology by successful implementation of the Small Scale Test (SST) and Large Scale Pilot (LSP) steamflood pilots at Wafra JO. It has the advantage of access to global expertise of Chevron Inc. through its partner Saudi Arabian Chevron (SAC). Additionally, KGOC has the experience of heavy oil primary production for nearly 60 years which can be useful in development of deeper heavy oil reservoirs like Tayaarat by KOC. The opportunity of sharing KGOC’s experience and lessons learnt in Heavy Oil development with KOC is thus well established.

To institutionalize the mechanism of collaboration among its subsidiaries KPC initiated the process of developing the Upstream Center of Excellence and Heavy Oil was one of its original disciplines. In the short span of 2 ½ years the discipline has successfully progressed from pilot stage to incubation stage and fulfilled its objective of providing a forum for knowledge sharing and technology transfer among Upstream K-Companies.

Objective of the Discipline

Identify and facilitate the application of existing best practices related to heavy oil across Upstream.

In Scope: Sharing knowledge, experience, and lessons learned in the discipline subject matter. New technologies’ evaluation, selection and application are out of scope.

Definition of success: In the short term (three months) success is defined by understanding and defining potential scope for improvement in specific areas, through collaboration.

In the medium term success will be defined by the tangible financial benefits that can be derived from applying best practices acquired through CoE collaboration. Financial benefits could come from cost savings or extra production. Savings could also come from decreased cycle time.

Pilot Stage: During the pilot stage objective was to conduct at least four specific knowledge transfer sessions, where knowledge and experience is transferred from one upstream subsidiary to another, covering two separate functional areas. Highlight of the Pilot stage was acceptance of the idea of piloting 13 Chrome metallurgy for downhole tubulars by KOC, which was found to be the only effective and economical solution to mitigate the serious issue of corrosion after extensive lab and field testing by KGOC.

Incubation Stage: The Heavy Oil Discipline conducted 27 meetings in which a number of topics of mutual benefit to the Upstream companies were discussed. To maximize benefit from the CoE, each organization identified issues confronting the field of HO development as well as competencies developed in addressing various issues. These issues and solutions were then paired, opportunities of knowledge transfer identified and action plan to work on the issues formulated.

The HO Discipline structured its activities under 4 categories:

- Provide Advisory Support
- Facilitate Knowledge Sharing
- Manage Capability Building
- Identify External Collaboration Opportunities with other IOCs / NOCs

Accordingly the discipline has provided advisory support to the West Kuwait Asset on Tayaat Formation development strategy; conducted a number of Knowledge Sharing sessions on various topics and arranged a number of lectures by external experts/service providers. From time to time we have participated in joint sessions with other disciplines to address topics of mutual interest.

To conclude the HO Discipline has been able to fulfill its objective and provide value for money to the participating organizations and will continue to do so.