Improving Strategic Planning of Hydrocarbon Resources with Merak Software for Kuwait Oil Company

Streamline portfolio management with automated tools integrating reservoir-level production forecasting and economic workflows, Kuwait

CHALLENGE
Develop an optimized portfolio plan for the Kuwait Oil Company (KOC) to achieve both its short- and long-term portfolio development goals.

SOLUTION
■ Implement Merak* Peep and Merak Capital Planning to streamline portfolio management—replacing manual data analysis via multiple Excel spreadsheets with more efficient automated workflows.

RESULTS
■ Established a more structured, efficient process for KOC to reduce resource planning time and optimize the economic value of its portfolio.
■ Combined reservoir-level production forecasting and economic workflows to perform portfolio optimization based on technical and commercial criteria.
■ Delivered a full understanding of the forecast production, cost allocation, and economic potential of available resources and reserves.

“The Merak Peep and Merak Capital Planning solution has allowed us to efficiently perform our strategy formulation portfolio management initiative.”

Ali Ameen
Team Leader Strategic Planning
Kuwait Oil Company

Reduce planning time and optimize hydrocarbon portfolio
Kuwait Oil Company’s strategic planning team is responsible for optimizing and promoting a portfolio of hydrocarbon reservoirs to meet the company’s long-term 2040 objectives in alignment with five-year plan economics.

However, business planning at KOC has historically been a manual and time-consuming process. The company’s challenge was to reduce the planning time and balance project dependencies and resource constraints with strategic goals by using a consistent approach from technical production forecasting and opportunity maturation for the entire inventory to result in an optimized portfolio.

The key objectives for this project were to
■ facilitate the formulation of multiple strategies for the KOC team to rapidly approve and execute the strategic plan
■ incorporate various goals and objectives in the strategies
■ model gathering system constraints leveraging minimum production of different streams and minimum cash flow and maximum production in different areas, while optimizing the discounted net present value (NPV) of the portfolio
■ compare various options and select the most optimal strategy.

Integrate economic evaluation and portfolio analysis capabilities
It was determined early in the project that KOC’s traditional analysis via multiple Excel spreadsheets from disparate sources would not be an effective method for dynamic business planning.

Working closely with KOC, Schlumberger used Merak Peep and Merak Capital Planning software to integrate production forecasting, economics, and portfolio methodologies.

■ An automated data loader was built to bring in asset action plans (AAP) from Excel for each asset down to the reservoir level.
■ Cost allocation was completed from a capital program level down to the reservoir level.
■ Quality verification was completed on the AAPs to ensure robust production forecasting.
■ Economics results for each reservoir were brought into Merak Capital Planning as the basis for optimization in alignment with the KOC approved five-year plan economics, if the production cases were within the five-year plan horizon.
■ Multiple strategies under different prices were generated that met all business rules, constraints, and strategic production plateau goals.
■ Optimization was done primarily using the linear program: for each strategy, multiple options were generated including sensitivities on project delay, acceleration, and cost overruns.
CASE STUDY: Merak software streamlines strategic resource planning for KOC—enabling portfolio optimization

Workflow of the Merak Peep and Merak Capital Planning solution deployed for Kuwait Oil Company.

Revealed key portfolio insights in an efficient way to enable strategic resource planning

The integrated software solution combined reservoir-level production forecasting and economic workflows to allow portfolio optimization based on technical and commercial criteria. Through automation, the solution enabled efficient analysis of different development strategies—modeling complex scenarios including unstable, baseline, and lower future hydrocarbon price forecasts. The result was more effective and efficient strategic planning process for the KOC team that provided a full understanding of the forecast production, cost allocation, and economic potential of available resources and reserves.