VICO Drilling for CAPEX and cycle time reduction

VICO Indonesia is a market-leading Oil and Gas explorer and producer in Indonesia. Operating the Sanga-Sanga production sharing contract for over 40 years, VICO has produced more than 12.6 TCF of gas and 0.4 billion barrels of liquids. More recently, VICO has also been developing unconventional gas resources such as coal bed methane (CBM).

ANALYSIS

Renoir conducted an analysis within the Drilling function to identify potential capital expenditure (CAPEX) reduction opportunities for VICO, covering the end-to-end process of a new well, from land acquisition to the close-out report of a well. The Analysis findings highlighted that cycle time reduction in drilling operations was a possible area, demanding further investigation, with key areas of focus being improved planning, contractor management and logistics. Renoir's commitment for the Project financial benefit was USD 2 million, annualized.

PROJECT APPROACH

In collaboration with VICO Task Force team members from related departments (Drilling, Workover & Well Intervention, Field Transportation and Planning & Performance) under the Technical Support Division, a 26 week Drilling Operational Efficiency and Optimisation project was initiated, focusing on the following areas:

1. Reduce rig move cycle times.
2. Minimise non-productive time during drilling operations.
3. Optimise logistics for heavy equipment (HE).

The project commenced with a 15-week Renoir Focus Process™. An in-depth study of the above areas was undertaken – which involved several rig contractors - in order to fully understand the opportunities for VICO and develop solutions that would have a sustainable and significant impact on field development. This phase was followed by an 11-week implementation stage to apply the solutions. Due to the nature of the business, solution development was focused on one drilling contractor. By utilising a Task Force of VICO staff and Renoir, better buy-in was fostered which was necessary for the sustainability of the project outcome. In addition, this helped to overcome the typical challenges of change projects and was clearly beneficial in supporting an overall strategy for continuous improvement. The project setup simplified the work with the rig contractors who own, manage and operate the rigs on contract with VICO.

Project governance was structured so that all issues and concerns were reviewed by a monthly steering committee, consisting of senior leaders from the operations executive team. The meetings were chaired by the VP Technical Support and VP SCM & IT.

Key Results

- Annualised benefit of USD 3 million
- A reduction of more than 3 days (37%) from the rig moving cycle time (given similar topography and distance)
- Introduction of a new systematic maintenance and material management control system
- Introduction of operational KPI's for the field transportation department.

“"The project was a full success and exceeded our expectations.""

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KEY INITIATIVES

At the heart of the project was the goal to reduce drilling cycle times. With this primary objective in mind, the project focused heavily on rig moving, which held the largest potential for significant improvement, in all areas within scope.

To encourage buy-in and ownership, the project team spent the first weeks identifying opportunities for improvement through process mapping, management control system critiquing, solution meetings and field trips to East Kalimantan with client staff and rig contractors. Fundamental processes were critiqued to identify areas for improvement and the management control systems were reviewed to detect which key elements of the system were either missing or needed to be improved.

The main opportunity areas were addressed through the Implementation Stage, which delivered:

1. **Rig Movements:**
   - Development of an overall movement and lifting plan that could be cascaded down into a daily plan to cater for operational short-interval management.
   - Equipping senior rig personnel with enhanced managerial skills to encourage improved supervisory behaviours.
   - Defining the required HE units and greatly improving the co-ordination of their availability.
   - Aligning working hours between rig crew and HE operators to increase truckloads moved.

2. **Drilling (Maintenance & Stock-holding):**
   - Implementation of a preventive maintenance dashboard report to enable the rig leader to have proper control over preventive maintenance execution.
   - Implementation of a material dashboard report to enforce compliance with the drilling contract.
   - Defining a list of critical items for contracts to ensure productive time is maximised.

3. **Logistics**
   - Introducing operational performance indicators as working tools to review HE utilisation performance.
   - Implementing scheduling, utilisation and work order completion progress tools to enable HE in improving work control.

The programme has helped VICO and its drilling contractors to deliver field development plans in a more efficient manner - not only in saving costs but also ensuring production is delivered sooner.