

Innovative, Standardized Subsea Equipment Solution Exceeds Total E&P Absheron's Expectations

Minimized already-stringent delivery time enables earlier ROI, Caspian Sea

CHALLENGE

Provide highly reliable subsea trees and a new-technology drop-in-place (DIP) electric actuator on an unprecedented 12-month delivery schedule to optimize the cost base.

SOLUTION

Deploy a complete 90%-standardized subsea equipment solution that included

- 5-in 10,000-psi horizontal tree from the FasTrac* subsea tree program
- standard production controls
- standard 6-in 10,000-psi CVC* flowline connector
- standard OneSubsea horizontal clamp system (OCS-H) 500 Series flowline connection system
- ¾-in DIP electric actuator for manual valves.

RESULTS

Expedited subsea tree delivery in a timeframe of 12 months through the use of 90% standard equipment.



Proposing a significantly short delivery timeline

Total and SOCAR challenged OneSubsea to provide innovative ideas to achieve equipment delivery in less than 12 months—unachievable by legacy executions models—and to optimize capex for the Absheron project in the Caspian Sea. Previous Total project experience had required specific requirements beyond the industry standard, and this prompted OneSubsea to take the supplier-led approach to achieve the delivery timeline. Total awarded the work to OneSubsea due to the maturity of the FasTrac subsea tree program and the standard product portfolio. In June 2015, conversations began on the alignment of the standard product offering. The contract was signed in May 2017.

Implementing a standard solution

At the heart of the solution is the 5-in 10,000-psi horizontal tree from the FasTrac subsea tree program. The tree is built from standard components that are stocked to minimize delivery timelines and enable operators to achieve first oil and minimize cost through reduced project teams, documentation, and leveraging economies of scale. Standard production controls (subsea control module [SCM], subsea distribution unit, umbilical termination assembly, tree-mounted controls, and flying leads) are also part of the solution, as is a standard 6-in 10,000-psi CVC flowline connector and the standard OCS-H 500 Series flowline connection system.

New subsea technology in the form of a ¾-in DIP electric actuator for manual valves was utilized. This technology mechanically operates the ¾-in chemical injection valve with activation from the tree SCM and provides the operator with a more accurate understanding of valve position while eliminating the need for an additional hydraulic line. The Absheron project is the first use of the DIP electric actuator subsea.

Delivering as promised

Based on a deep analysis of the OneSubsea standard configurable product portfolio initiated in 2015, Total accepted the use of 90% standard equipment, enabling the project to deliver in 12 months. Not only did the use of standard equipment enable an earlier return on investment, the standard tree and controls equipment also improved HSE and reliability through repetitive processes and standard purchasing. The Total E&P Absheron project and the standard equipment approach have set the precedent for future projects.

“We really want to build on the success of Absheron and to extend the standardization collective work to other types of equipment. We use this standardization within our technical roadmap that we put in place last year. It’s one brick toward reduction of the global cost of subsea development. We want to continue working with OneSubsea on that approach and to deliver the next projects with the same quality and same excellence as on Absheron. Lean is very key for Total, so we want to improve our efficiency, and part of it is standardization.”

Jean-Herve Morard, Deputy Vice President of Deepwater and Subsea, Total