Subsea Boosting System Estimated to Increase Recovery by 10%–30%, Ultradeepwater Gulf of Mexico

Powerful technology improves field economics by reducing backpressure on the reservoir and increasing well flow rates and total recoverable reserves

**CHALLENGE**
Improve recovery of hydrocarbons from tight reservoirs in ultradeepwater Gulf of Mexico.

**SOLUTION**
Provide and install a high-power subsea boosting system in approximately 7,000 ft of water.

**RESULTS**
Successfully deployed and commissioned the boosting system, increasing recovery by an estimated 50–150 million bbl of oil.

**Improve economics of complex, tight, ultradeepwater reservoirs**
An operator in the ultradeepwater Gulf of Mexico wanted to improve hydrocarbon recovery from the Lower Tertiary trend, characterized by low porosities. The fields in question are located within 25 miles of each other, approximately 280 miles south of New Orleans, Louisiana, USA, in about 7,000 ft of water. The project comprises three subsea centers tied back to a floating production facility that has a capacity of 170,000 bbl of oil and 42.4 million ft$^3$ of natural gas per day. To produce hydrocarbons economically from these depths, the operator needed a boosting system that would reduce backpressure on the reservoir and increase well flow rates and total recoverable reserves.

**Provide powerful subsea boosting technology**
OneSubsea recommended a subsea boosting system—the largest of its kind—comprising three subsea pump stations, three subsea control modules, and associated instrumentation. The three, 3 MW, single-phase pumps are built to withstand pressures up to 13,000 psi.

This industry-leading subsea boosting technology provides a cost-effective means of accelerating and prolonging production, and it enables long step-out fields to be tied back to existing production facilities. It has an established track record with more than 30 installations worldwide, incorporating more than 85 subsea pumps.
Increase recovery factor by an estimated 10%–30%

The subsea system was successfully installed and commissioned. The operator estimates that by reducing backpressure on the reservoir, the boosting pumps have the potential to improve the recovery factor by 10% to 30%, which translates to 50–150 million bbl of additional oil over the life of these fields.