OneSubsea Overview

One comprehensive resource for integrated subsea solutions
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OneSubsea delivers integrated solutions, products, systems, and services to the subsea oil and gas market, offering a step change in reservoir recovery through the integration and optimization of the entire production system over the life of the field.

Our unique pore to process approach leverages flow control expertise, process technologies, and world-class manufacturing capabilities along with Schlumberger petrotechnical reservoir expertise and R&D capabilities.

As a result, you achieve end-to-end solutions, from reservoir to surface, tailored to their field, application, and objectives.
Integrated Solutions

OneSubsea integrated solutions deliver expertise and technologies to optimize the entire production system. Our capabilities extend from the reservoir pore space to the surface, including the well completion and subsea production system.

This unique combination of skills helps to ensure the most adaptable solution to improve performance throughout the changing reservoir and production conditions over the full life of the field, increasing production and enhancing recovery. Current offerings include:

- Petrotechnical services that combine our reservoir and wellbore technology knowledge with industry-leading subsea technologies to deliver enhanced productivity, reliability, and integrity of your subsea developments.
- Collaboration through early engineering engagement (EEE) to design high-efficiency production systems to reduce risk and ensure timely project execution.
- Flow assurance consulting to manage the inherent changes of the reservoir and production system conditions over the life of the field.
Petrotechnical services
Effectively producing oil and gas reservoirs requires strong competencies in and coordination of all related geosciences and engineering disciplines. OneSubsea petrotechnical services offer a multidisciplinary, collaborative, and integrated approach for reservoir characterization and production solutions over the life of the field. Our well-connected team of leading technical experts has a deep understanding of the reservoir and the competencies to predict well and field production over time. The offerings include productivity analysis, history matching and reservoir simulations, geomechanics studies, and field development planning. Our unique reservoir and production systems approach includes both the well and the complete subsea processing plant. Through close collaboration, we can achieve significant improvements in the performance of subsea development assets.

Early engineering engagement
In OneSubsea EEE services, highly skilled industry experts work in partnership with you from the beginning stages of the project life cycle. Our objective for EEE is to align your strategic targets and the project execution plans using front-end engineering and design (FEED) studies, state-of-the-art 3D modeling, systems engineering, and life-of-field support. From pre-FEED through the full life of the field, the EEE team offers a suite of services to help optimize field development solutions prior to project execution. By addressing these issues early, you reduce capex, opex, and cycle time; reduce project risks; preclude costly redesign efforts; and, most importantly, ensure timely system delivery for first oil production.

Flow assurance consulting
Flow assurance (FA) is the science and engineering of predicting and managing production behavior as fluids move from the reservoir to the market through the changing environment of the reservoir and production systems. Changes in production are rarely avoidable because oil and gas fields mature and decline. Solids may form in wells and flowlines, gas or water cut may increase, and reservoir pressure may fall. The OneSubsea flow assurance consulting team focuses on the entire fluid journey from the reservoir pore space to the topside facilities and from exploration to abandonment. Optimal FA design and operations require a detailed understanding of the fluid, reservoir, well, pipeline gathering system, surface facilities, and surrounding environmental conditions. Based on our in-depth knowledge of multiphase fluid flow dynamics and all related technical disciplines, our FA offerings comprise fluid chemistry and processing, production engineering, surveillance, and operations. Our unique and fully integrated approach focuses on the design and operational changes of the entire subsea production system, which helps to optimize production and enhance ultimate recovery.
Production Systems

OneSubsea trees, manifolds, connection systems, and wellheads offer fully integrated subsea production systems solutions, incorporating a blend of advanced field-proven technologies and products from Schlumberger and Cameron.

These industry-trusted and proven products, combined with decades of experience and engineering innovation, have helped to ensure that the OneSubsea product range provides technically and functionally superior field development solutions. From wellheads, trees, manifolds, and flowline connectors to production controls and workover systems, OneSubsea is here as your one source to provide the best solution for any challenge.
Trees
OneSubsea vertical and horizontal trees are built and installed with proven technology based on extensive subsea experience and years of testing under some of the most demanding conditions. Our trees provide reliable operations in all environments, including shallow water, deep water, and ultradeep water. OneSubsea trees have the flexibility and durability to meet specific job requirements with minimal customization. The monitoring and feedback capabilities of OneSubsea trees reduce operator risk and provide data and communication for operations management.

Manifolds
Our manifolds are designed and developed based on more than four decades of applied subsea experience. With a wide selection of manifold types installed in virtually every water depth and rated for pressure up to 15,000 psi, OneSubsea manifolds are available in all material classes. Our portfolio includes manifold styles for production, water injection, and water-alternating-gas operations, and they can be configured for both pipeline end manifolds and pipeline end terminations. Fabricated and manufactured using local facilities, OneSubsea manifolds can have a pile or mud mat foundation and can tie in up to eight wells.

MARS system
The OneSubsea MARS* multiple application reinjection system serves as a universal interface for all trees (topside and subsea), enabling processing equipment to be installed between the existing isolation barriers, thus eliminating the need for high-risk and costly intervention. The MARS system provides flexibility and choice for production optimization in new and existing fields, enabling low-cost, low-risk intervention and wellhead processing.

Connection systems
Our connection systems reflect more than 50 combined years of experience, engineering, R&D, and technological innovation. We offer both collet- and clamp-style connections to ensure that there is a connection solution that suits your particular application. In addition, OneSubsea connection systems are designed so that hubs and connectors are interchangeable within specific size and pressure ranges. OneSubsea offers several types of connection systems, including the CVC* and CHC* flowline connectors.

Wellheads
OneSubsea wellheads are flexible in design, reliable, and field proved. Our unique parallel-bore metal-to-metal seal is standard in all 15,000-psi systems and has consistently delivered superior performance in more than 20 years of installation history. From standard bore to large bore, in ultradeep water and harsh, severe environments, OneSubsea has the right wellhead for your particular application. Our subsea wellhead systems are available in an array of designs from standard configurations to the most complex designs.
OneSubsea offers unique and field-proven pumps, meters, and state-of-the-art subsea processing systems for development and technology projects worldwide, covering all aspects of subsea separation and processing. As a market leader in subsea multiphase boosting, subsea wet gas compression, and multiphase metering, we provide a wide range of technical solutions to help increase efficiency in subsea oil and gas developments. Our pump, meter, and multiphase compressor systems can be applied as stand-alone solutions or as part of the OneSubsea total field offering.

**Multiphase pumps**
With an accumulated operation experience of more than one million hours, the OneSubsea multiphase pumps are unmatched in the industry. Our multiphase pumps are specifically developed to handle hydrocarbon flow with any gas content from 0% to 100% and can generate differential pressures of up to 2,901 psi [200 bar] depending on the actual gas volume fraction (GVF) at suction conditions.

**Single-phase pumps**
A centrifugal design is used for single-phase applications or where the GVF is low. Single-phase pumps also use the dynamic pumping principle. The single-phase and multiphase pumps are designed and built with the same high-quality components. Both technologies have identical mechanical and electrical interfaces to accommodate changing requirements through the life of the field.

**Multiphase compressors**
OneSubsea’s multiphase compressors are designed for pressure boosting of an unprocessed well stream in the high-gas/liquid ratio (GLR) area between 95% and 100% gas at suction conditions. The multiphase compressor unit is integrated and fully encapsulated based on a well-proven design from the range of single-phase and multiphase subsea pumps. Multiphase compressors are designed from first principles for subsea applications with a compact design that removes the need for auxiliary antisurge control systems, intercoolers, inlet scrubbers, or any other sophisticated fluid treatment or control system.
Multiphase meters and wet gas meters
OneSubsea PhaseWatcher* subsea multiphase flowmeter with Vx* multiphase well testing technology is ideal for subsea applications as a production management tool applied in well testing, well management, and production allocation. Based on physical metering principles, this robust, independent measurement equipment offers a more flexible, cost-effective solution compared with conventional separator systems and includes several value-added benefits, such as continuously monitoring well parameters and enabling key actions for efficient, optimized production.

Sampling
Long-term production optimization requires representative sampling for flow assurance, fluid control, and reservoir understanding. OneSubsea offers the hardware, tooling, and analysis capability to perform this sampling for subsea wells. This service is based on the technology developed by Schlumberger over several decades and now available for use in subsea environments.

Separation
Our separation technologies, including NATCO* separation technology and PETRECO heritage designs, help to ensure unparalleled performance and reliability for two- and three-phase separation and solids removal. Compact separation and the DC* all-electric production control system enable a smaller footprint for deepwater developments. Advanced technologies, such as the CES* compact electrostatic separator, provide an efficient method to separate water from heavy oil with the benefits of easy installation, simple operation, and redundant design.
Control Systems

Ever since subsea production became an integral part of the energy industry, OneSubsea has been supplying production and seabed boosting control systems designed to meet rigorous demands and reliability requirements.

With hundreds of subsea control modules installed and working throughout the world, OneSubsea understands that control systems require meticulous precision and expertise. Through investments in R&D, testing, and highly skilled personnel, we have ensured that the facilities and people that design and manufacture our control systems are among the best in the world. Subsea control systems and their related ancillary equipment are critical to supporting the evolution of existing and new technologies that can be placed on the seafloor. Not only does it provide the needed control, but, more importantly, it enables feedback of important process information. With OneSubsea state-of-the-art copper or fiber-optic systems using common TCP/IP technology, we can connect all current and future devices to a fully integrated control system.
Tree and manifold controls

The OneSubsea tree and manifold controls are designed for a wide variety of field functionalities. Their modular setup enables the use of field-proven subcomponents, providing high flexibility and high reliability. Our subsea control modules (SCMs) are qualified in accordance to API Spec 17F and ISO 13628-6, International Welding Inspection (IWI), and Subsea Instrumentation Interface Standardization (SIIS) and are designed to handle a variety of subsea instruments. Accommodating AC and DC power and using copper or fiber-optic communication, OneSubsea tree and manifold controls can connect distances in excess of 124 mi [200 km] while using low-voltage range connectors.

Multiphase pump controls

A seabed boosting system is a dynamic system that requires active control of the multiphase pump to ensure optimal performance. The basis for the control system is the EH MUX* subsea electrohydraulic multiplex system, seamlessly integrated with a programmable logic controller (PLC)–based pump system located topside. A high-speed fiber-optic topside-to-subsea Ethernet communication system enables closed-loop control and fast-acting safeguarding of the seabed booster pumps. The SCM can be configured with up to 28 hydraulic functions and offers SIIS Level 1–, 2–, and 3–compliant interfaces for process sensors and other subsea devices.

Multiphase flow controls

The OneSubsea multiphase flow monitoring system is based on a retrievable subsea module that acts as a hub for up to six PhaseWatcher flowmeters with Vx technology. This unique module distributes switchable power to the individual flowmeters and provides an Ethernet IP backbone communication path to the topside. The data from the individual flowmeters are stored in a data server that is located topside. The system seamlessly calculates the combined flow rates and fractions and also provides a single interface for the transfer of data to the external systems. Not only does the interface include interactive mirrored screens with well testing functionality, but it also provides complex trending capabilities and automated reporting functions.

Topside and FPSO controls

OneSubsea topside and FPSO vessel controls are reliable and robust and use commercially available components. They can be easily interfaced with the supervisory control system of the host facilities. Backward compatibility and provisions for obsolescence ensure integrity of the system during its field life. As the standard for our production control systems, OneSubsea uses a Linux®-based operating system that has set industry benchmarks with respect to functionality, scalability, and software robustness. In addition, the control system offers a remote monitoring feature and access to a 24/7 call center for main control station software support.

Wet-mateable Diamould connectors

OneSubsea Diamould* electrical connectors provide a reliable connection throughout the subsea production system, whether delivering power to an ESP or enabling communication from a downhole intelligent completion. These connectors use pressure-compensating, oil-enclosed chambers around the contact pins, improving system reliability and eliminating the corrosion and contamination generally associated with exposed-pin connectors. Unique electrical stress control management in every connector enhances the overall electrical performance. Dual-contact instrumentation connectors enable advanced downhole telemetry systems for intelligent completions.
Swivel and Marine Systems

When an FPSO unit is operating in rough weather or rising and falling seas, it needs to be moored with a turret system, enabling the FPSO vessel to rotate or weathervane around its fixed mooring. Generally, a fluid swivel system on top of the turret handles both the large volumes and high pressures of the production and injection fluids that flow through it.

OneSubsea offers a swivel system for any type of FPSO application. Swivel stacks are critical elements onboard an FPSO facility. Swivels ensure that all fluids, controls, and power are transferred safely from the wells, flowlines, manifolds, and risers to the rotating vessel and its process plants under virtually any environmental conditions.
**Swivel stacks**
OneSubsea swivel technology is a fully integrated and compact fluid transfer system for oil and gas production, fitting any turret and any FPSO, floating storage and offloading (FSD), or floating LNG (FLNG) vessel. Compact and lightweight, the system requires minimal space and structural support. Our swivels are used to transfer liquid, multiphase fluids, or pure gas using the same swivel and fluid sealing technology. It offers high-capacity and high-pressure capabilities up to 7,500 psi [517 bar] gauge pressure and design temperatures to more than 212 degF [100 degC]. Sealing between process fluids and the environment is provided by remotely pressurized barrier-fluid-activated dynamic seals. The design features primary and secondary seals, which ensures continuous monitoring and protection of the natural environment.

**Turrets**
OneSubsea internal turret technology was developed more than 20 years ago for the challenging North Sea environment to ensure that vessels stay connected at a 100-year condition of maximum 98 ft [30 m] wave height and 135 ft/s [41 m/s] wind. The turret technology has been in operation on more than 10 fields in extremely harsh environments. The system offers multiriser capabilities with effective in situ adjustments and replacement of mooring lines. The same applies for the pull-in and replacement of risers and umbilicals. The turret design includes a robust bearing arrangement for horizontal and vertical loads using low-friction wheel-type upper axial and radial designs and a segmented pad-type lower bearing arrangement.

**Submerged loading systems**
OneSubsea loading systems are fully submersible and enable the transfer of processed crude from the production and processing facilities to a dynamic-positioning-based shuttle tanker. The system consists of a riser base, rigid riser, buoyancy tank with swivels, loading hose, and pickup system. The riser base contains connectors for two flexible flowlines, valves, and a control system to communicate with the processing facilities. The riser has a flexible joint at the lower end and is held in tension by the buoyancy tank. A swivel is placed at the top to allow the loading hose and shuttle tanker to freely weathervane. The loading system offers a large operating envelope and is based on the use of standard field-proven components with a service life of 25 years and a low degree of maintenance. The system is located subsurface and is subject to low environmental loads and motions.

**Offshore cryogenic transfer**
OneSubsea offshore cryogenic transfer (OCT) technology is based on a tandem ship-to-ship configuration that has been used successfully in offshore oil transfer for more than 30 years with more than 20,000 loading operations carried out worldwide. Because the OCT system can accommodate a separation distance to 328 ft [100 m], large relative movements are allowed by both the producer (FLNG vessel) and the LNG carrier. The system consists of an A-frame crane extending from the stern of the FLNG vessel toward the bow of the LNG carrier. Three corrugated stainless steel vacuum-insulated flexible pipes hang from the tip of the crane to the bow of the LNG carrier. Two of the flexible pipes are used for LNG, and one is used for a vapor return loading facility in the bow. Maximum wave heights during connect and disconnect are 15 ft [4.5 m] \(H_s\) and 18 ft [5.5 m] \(H_s\), respectively.
Services

Throughout the life cycle of a subsea field, from discovery to abandonment, OneSubsea offers the services necessary to fully optimize the overall performance of your valuable assets. With a worldwide footprint; experienced industry experts; rental equipment designed to meet installation, commissioning, and workover requirements; and real-time operational and technical support, OneSubsea is dedicated to enhancing the total performance of subsea fields anywhere in the world to make them productive and cost effective.

Installation and commissioning

With decades of experience throughout the world in virtually any conditions, OneSubsea provides wide-ranging and field-proven installation and commissioning services. While keeping the primary focus on HSE impact, we strive to maintain maximum operational quality and cost efficiency. Our extensive and continually expanding supply of rental tools is designed to handle the installation of all of our product lines. Our skilled offshore personnel, combined with our proven onshore support structure, help to ensure seamless coordination of logistics and mobilization during the installation process. Our target is to make sure you attain first production as quickly and efficiently as possible.
Life of field
OneSubsea services cover the full life of your subsea field with the objective of ensuring the engagement of your asset’s full potential. We offer distinct capabilities to remotely monitor subsea fields from the reservoir to the production facility to maximize both production and asset uptime, optimize recovery, and reduce operational and financial risks. Some of our life-of-field services include 24/7 engineering support, asset integrity management, flow assurance consulting, subsea sampling, fiber-optic remote monitoring, and subsea intervention. These services help ensure increased production over the full life of the field.

Asset management
From equipment upgrades and refurbishment to inventory management, OneSubsea is dedicated to helping you achieve maximum value from your assets through the implementation of a comprehensive asset management program. Our goal is ensuring the lifetime fitness of equipment and systems while enabling and supporting safer operations. Some of our asset management solutions include planned preventive maintenance, preservation and storage, management of spare parts, and workover programs. In addition, OneSubsea has facilities in all major locations, customized for the asset management requirements in that region.

Subsea landing strings
Our subsea systems have a proven track record of overcoming the complexities imposed by deep waters, high pressures, and extreme temperatures. Their monitoring and feedback capabilities help you reduce technical risk, their field-proven technologies achieve efficiency where it matters most, and their extensive testing programs assure reliability in operations. Additionally, our personnel support your subsea project from program design to project completion.

FRIEND system
Condition monitoring based on real-time data is an integral part of the operational support we provide. The FRIEND® remote surveillance and diagnostic system features a real-time historian database that enables event-driven data collection and trending of historical data. In addition, the automated alert feature continuously monitors system performance for suboptimal process and system conditions and notifies our 24/7 support engineers. This actionable information facilitates proactive support for operational issues, helping you extend equipment lifetime, avoid interruptions to production, and reduce operational costs.
At OneSubsea, our goal is to be recognized by the industry as the best in class in subsea project planning and execution.

Effective teamwork is enabled by industry-leading project management tools and systems as well as the timely application of the necessary levels of resources and information.

- Risk management framework for all projects
- Linking of activities and deliverables to key decisions
- Role and responsibility clarification
- Common methodology
With facilities located in major offshore hydrocarbon-producing regions, OneSubsea provides state-of-the-art, cost-effective solutions for all of your subsea requirements. Whether it is a manufacturing, service, engineering, or administrative office, each OneSubsea location is staffed with highly trained, skilled personnel. Because these offices serve specific regions, our personnel are familiar with challenges particular to your area. This provides the benefit of local support operating as part of a global network.
Related Products and Services

The OneSubsea distinctive value proposition was created by Cameron and Schlumberger, two of the foremost subsea providers. In addition to the consolidated services and offerings outlined in this brochure, both provide complementary support services.

Chokes
Cameron subsea chokes are designed for use in production, water injection, gas injection, gas lift, and reverse flow applications, with chokes ranging from 2-in through 8-in nominal sizes and Cv up to 1,000. We offer both nonretrievable and insert-retrievable chokes. Our nonretrievable chokes remain permanently attached to subsea structures, and our insert-retrievable chokes are designed so that the trim, actuator, and retention mechanism can be retrieved and brought to the surface.

Actuators
Cameron has long provided a variety of subsea choke actuators, including hydraulic actuators, in operating pressures of both 3,000 and 5,000 psi. These actuators are compatible with water- or mineral-oil-based control fluids as well as optional stand-alone DC electric actuators.

Subsea valve technology
The modern demand for deepwater oil exploration gave rise to the wide range of Cameron ball, gate, and check valves to provide reliable solutions to the challenging environments of subsea. Our products include RING-O* subsea valves, TOM WHEATLEY* check valves, TK* trunnion-mounted ball valves, CAMERON T30 Series* fully welded ball valves, and GROVE* valves. Cameron has engineered purpose-designed valves that go beyond subsea production applications, ranging in sizes up to 42 in, suitable for pipeline usation.

Oil and gas software
In the continued effort to find new reserves, Schlumberger looks to increasingly complex reservoirs, both conventional and unconventional. A detailed understanding of the subsurface is critical to enable successful appraisal and development endeavors in these challenging reservoirs. Schlumberger E&P software systems provide the ability not only to integrate vast amounts of data from multiple sources to constrain and substantiate interpretations but also to run numerous iterations, which help us to understand the limits for key static and dynamic reservoir properties. Schlumberger proprietary software provides a powerful environment throughout the life of the reservoir.

Well intervention
Well intervention services include those that extend the life of producing wells by improving performance or providing access to stranded or additional hydrocarbon reserves. Schlumberger provides the broadest offering of well intervention technologies, including coiled tubing, wireline, and slickline, and has more than 30 years of subsea well intervention experience.

Artificial lift
Of the approximately one million oil and gas wells producing in the world, roughly 5% flow naturally—leaving nearly all of the world’s oil and gas production reliant on efficient artificial lift operations. Schlumberger offers an integrated lift platform that includes field-proven REDA* ESP systems. Our exclusive optimization services integrate real-time monitoring with expert input. Together, these products and services deliver comprehensive artificial lift solutions that optimize production within any environment.
Faced with more challenging reservoirs, more complex projects, remote field locations, and escalating interface challenges, subsea operators today require integrated solutions to reduce risk and maximize ROI. To help improve recovery, shorten scheduling, and reduce risks across the project life cycle, OneSubsea entered into alliances with Helix and Subsea 7 to leverage and improve upon the organizations’ technologies, cultures, and experience.

**Subsea Services Alliance**
Adding the expertise and capabilities of Helix, the Subsea Services Alliance delivers an advanced subsea well construction, intervention, and decommissioning portfolio, including marine support, well services, project management, and subsea well access and control. Eliminating the need to use drilling rigs for support, the Alliance commands vessels that can handle well commissioning, intervention, artificial lift, and abandonment services. The Alliance also develops technologies that provide efficient well construction, completion, and abandonment options for deep- and ultra-deepwater basins and HPHT environments as well as novel subsea well access, remediation, and intervention tooling for subsea production and processing systems. Added to these capabilities is a complement of project managers, who have extensive intervention experience and ensure operational efficiency by applying collaborative contracting and scheduling.

**Subsea Integration Alliance**
A partnership with Subsea 7, the Subsea Integration Alliance was developed to enable the joint design, development, and delivery of integrated subsea development solutions through the combination of subsurface expertise, subsea production systems (SPS), subsea processing systems, subsea umbilicals, risers and flowlines systems (SURF), and life of field services. Our goal is delivering complementary technology and expertise that help you extend field life and lower production costs, ensuring greater certainty of recovery and return on the investment.
State-of-the-art OneSubsea production systems have been installed worldwide in virtually all types of environments—from deep water to ultradeep water, from greenfield to brownfield.

**JACK AND ST. MALO FIELDS**

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<th>Award year</th>
<th>2010 and 2011</th>
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<tr>
<td>Water depth</td>
<td>7,000 ft (2,100 m)</td>
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<tr>
<td>Location</td>
<td>Offshore Louisiana, USA</td>
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<tr>
<td>Scope of supply</td>
<td>Subsea boosting system</td>
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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.

**AJE OIL FIELD**

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<th>Award year</th>
<th>2013</th>
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<tr>
<td>Water depth</td>
<td>3,281–3,937 ft (1,000–1,200 m)</td>
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<tr>
<td>Location</td>
<td>Offshore Nigeria</td>
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<tr>
<td>Scope of supply</td>
<td>Trees, manifolds, topside and subsea controls, and conventional and alternative intervention workover control systems</td>
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OneSubsea delivered the considerable scope of technologies and services on time, helping the operator meet critical milestone dates.
Subsea Boosting System Estimated to Increase Recovery by 10%–30%, Ultradeepwater GOM

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

**CASE STUDY**

The Jack and St. Malo fields are located within 25 mi [40 km] of each other and are approximately 280 mi [450 km] south of New Orleans, Louisiana in approximately 7,000 ft [2,100 m] of water. Chevron achieved first oil in these deepwater fields using OneSubsea subsea production and processing systems. The project comprised three subsea centers tied back to a floating-hub production facility with a capacity of 170,000 bbl/d of oil and 42.4 million ft³/d of natural gas.

The contract was awarded in 2010 and included the delivery of 12 15,000-psi subsea wellhead trees, production controls, four manifolds and associated connection systems, engineering, and project management.

In 2011, the subsea processing systems contract was awarded for three pump stations, three subsea pump control modules, and associated control and instrumentation equipment. The pump systems, which comprised 3-MW single-phase pumps, are remarkable for their combination of 13,000-psi design pressure and 7,000-ft [2,100-m] installed water depth.

**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.
Capital-Efficient Subsea Solutions

Incrementally rising capital expenses has impacted the development and production of oil and gas, especially in deep water, where long lead times and high infrastructure costs can push back initial production and even threaten a project’s economic feasibility.

The OneSubsea portfolio of standardized designs supports streamlined processes, documentation, and manufacturing to deliver integrated production systems that reduce project cycle time and overall cost.

Customized to your field architecture, these capex-optimized solutions help you maximize production from new fields to transform deepwater economics across the life of the asset.

**Integrative strategies**
- Standard material, quality, welding, and paint specifications
- Standard designs, including functional design specification
- Qualified components
- Released subassembly bill of materials
- Approved vendor list

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Subsea trees
Subsea tree systems offer the lowest initial capex and provide a universal design for operational efficiency in multiple fields.

Subsea manifolds
Our manifolds are versatile and flexible, enabling you to customize a solution for your field architecture requirements and build in project-specific features one component at a time.

Subsea connectors
At the heart of our standard connection systems is a suite of preauthorized quality control, material, welding, and coating specifications that simplify and expedite the execution processes.

Subsea controls
We deliver standardized control systems that help to reduce hardware requirements, improve project economics, and decrease lead time.

Subsea wellheads
Our wellhead portfolio brings together modularity, robustness, and field-proven engineering to help you successfully execute challenging offshore drilling and production operations.

Subsea pumps
Our suite of proven, reliable processing and boosting systems has helped improve well flow rates and total recoverable reserves in fields around the world.
OneSubsea capital-efficient subsea solutions enable achieving first oil as soon as 24 months after contract award.