

Agile Subsea Production Systems Save bp up to 60% in SPS Hardware Costs, GOM

Robust, simplified approach optimized infrastructure and accelerated deployment in Mad Dog 2 project

For its Mad Dog 2 subsea production project, bp sought a more efficient approach to engineer and deploy the required hardware. bp and OneSubsea® collaborated on the supplier-led Agile subsea production system (SPS) approach that would enable flexible installation, standardized designs, and operational agility. As a result, bp accelerated its timeline by batch-setting the infrastructure and saved 50%–60% in SPS hardware costs.

Enhance efficiency for field expansion

The Mad Dog 2 Field, tied back to the Argos platform, is approximately 190 miles south of New Orleans. The field is an extension of the original Mad Dog Field—bp’s biggest discovery in the Gulf of Mexico to date. For the next phase of field development, bp sought to adopt an innovative approach to subsea production that would optimize end-to-end operations for a more competitive and predictable project outcome.

Leverage supplier-led approach

OneSubsea collaborated closely with bp to understand the full scope of work and unearth opportunities to improve efficiency and productivity. The proposed portfolio of products was optimized utilizing a supplier-led approach—Agile SPS.

Agile SPS enhances subsea performance from appraisal through abandonment to unlock the full economic potential of the field. This agility considers the total asset journey from day one to maximize the value of an asset over time and provide a new level of customer collaboration.

The suite of field-proven standardized products included

- 10,000-psi horizontal trees for production
- 15,000-psi horizontal trees for water injection
- flowline clamp connection system
- traditional header manifold
- common controls system.

Throughout tendering, OneSubsea worked alongside bp to recommend a more robust, simplified field architecture instead of overspecified, bespoke equipment. In the revised tender, bp scrubbed specifications of all requirements that had previously driven specialized engineering across product lines; instead, bp focused only on core baseline requirements. As a result of this introspection, bp signed up for one of the world’s first systems-level supplier-led-solution projects.



The Agile SPS approach enabled bp to batch-set its subsea production hardware, decreasing time to delivery and carbon emissions through optimized logistics.

Case study: Agile subsea production systems save bp up to 60% in SPS hardware costs, GOM

Save costs and fast-track delivery

By accepting OneSubsea standard SPS designs, reviews formalized quickly, which expedited tree engineering and delivery. The use of optimized infrastructure and standard supplier-led products enabled bp to save 50%–60% in SPS hardware costs.

The trees arrived from Johor, Malaysia, ahead of schedule. As well plans became better defined, some changes to the trees were unavoidable; adding downhole flow control to each production tree and rearranging the downhole line configurations were undertaken in the Berwick, Louisiana, facility. Although this task may have overrun project timelines in the past, delivering ahead of schedule meant that engineering, procurement, and testing could all take place without affecting the planned tree delivery dates.

The early delivery of the production trees enabled batch-set installation, which led to additional savings in terms of costs, timeline, and carbon emissions. In all, the adaptability, configurability, and flexibility of the Agile SPS helped bp save considerable costs and maximize return on investment while decreasing its environmental footprint. To date, nine production trees and four water injection trees have been successfully installed and completed with no tree-related nonproductive time. The final manifold was installed in January 2021.

Further improve global operations

bp also adopted the OneSubsea program approach to accelerate production targets in Egypt. By reconfiguring the production flow path module, bp was able to convert a water-injector tree into a gas-production tree and then quickly reallocate the subsea trees from the Gulf of Mexico to Egypt. Leveraging the common core functional modules, the subsea tree required minimal changes to accommodate this conversion.

More information

- Press release: [BP Awards Schlumberger Contract for Mad Dog 2 Project](#)
- Expert interview: [Standardization Helps BP Achieve Project Objectives](#)
- Panel discussion: [What is Agile SPS?](#)

“The project team showed tremendous discipline and arrived at a far better and more resilient concept that we expect to generate strong returns for years to come, even in a low-oil-price environment.”

Richard Morrison, Regional President of GOM and Canada, bp

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