

OE

GLOBAL OFFSHORE MARKET FORECAST

Offshore's opportunity?

**Innovate, collaborate, standardize;
lead with lean.**

One could argue that the future of the global offshore E&P business, particularly deepwater development, is ours to create. Confronted with the steep decline in oil prices and weak outlook for near-term recovery, the industry must pull together to navigate the current down cycle. Rather than wait for prices to rebound, we need to proactively drive efficiency and create value with the objective to reduce costs and cycle times, while keeping safety the top priority. Operators, contractors and suppliers must innovate, collaborate and standardize—or as we say at Hess, lead with lean.



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**Rob Fast, Vice President,
Offshore - Americas
and West Africa, Hess**

By most accounts, the future demand for oil is huge; and so is the investment required. To meet demand, an estimated US\$1.3 trillion is required to develop global deepwater resources between 2015 and 2030. Given that an estimated 75% of new deepwater development projects are uneconomic below \$70/bbl, the challenge is to reduce costs by about \$25/bbl to make these projects competitive with other supply sources such as tight oil.

While the challenges are immense, we need to remember the path forged by our predecessors. Most innovations were achieved during low oil

prices. For example, hydraulic fracturing, 3D seismic and floating production facilities. The average price of oil since 1900 has been low—about \$35/bbl, adjusted for inflation. Much of the bloat in deepwater development costs over the last decade was self-inflicted, due largely to unneeded complexity and customization of industry kit.

Innovate, collaborate, standardize

For more than a hundred years, innovation has been a key enabler of our success. We must continue to drive innovation every day. We can and are transforming subsurface characterization (through improved 3/4-D seismic and integrated modeling), modernizing drilling techniques (through improved modeling, optimization and real-time monitoring), improving facilities design/operability, and leveraging crossover technologies (through

applications such as advanced data analytics, medical and defense technology applications, etc.).

Collaboration is another area we can improve. For example, sharing logistics support across installations, rather than allowing under-utilized helicopters and empty vessels sailing past competitors' platforms. Existing facilities ullage can be better utilized to reduce capital investment and improve returns. Imagine the potential efficiencies we can capture through cooperation across the value stream from design, engineering, construction, operations, through abandonment!

Standardization is another large value-creation opportunity. Design complexities and custom spec choices have driven offshore

development cost increases by an estimated 50% versus early 2000's designs. Countermeasures include adopting common designs for topsides and floating structures, applying standard well designs/components, and utilizing common SURF equipment including subsea trees. Hess is currently cooperating with other operators to agree subsea tree design standards, in order to capture improved inventory management, and reduce cycle times and cost.

Lead with lean in low-cost environment

Hess believes disciplined application of the lean management system will be a competitive differentiator. We are leveraging lean to create a high-performance culture based upon continuous improvement principles. Onshore, we applied lean to reduce Bakken drilling and completions costs by 58% in three years. Now, we are applying these techniques offshore. Hess' Stampede deepwater development project in the Gulf of Mexico is leveraging lean to deliver first oil safely, on time and on budget in 2018. For example, working as one team, Hess and Kiewit Offshore Services used lean problem solving techniques to transform the process for fabricating the blast wall. Rather than "stick building" in place, the wall was assembled indoors, in a horizontal configuration as a single

unit. This approach eliminated working at heights, reduced environmental impact, and improved weld quality. The blast wall was completed two months ahead of schedule, with 50% fewer man hours, and with reduced EHS exposure. The Stampede project is demonstrating how lean management practices learned onshore can be applied offshore.

Summary

Oil and gas are essential to human survival and growth. Offshore resources are plentiful; however development costs are marginal to uncompetitive versus alternative supply sources. The offshore industry has an opportunity to compete through innovation, collaboration, and standardization. Let's get after it! **OE**

***Rob Fast** is vice president, offshore – Americas and West Africa, Hess Corp. Fast, who has more than 29 years' experience in a variety of technical and executive management roles, oversees the company's assets and deepwater projects in the Gulf of Mexico, Equatorial Guinea, and Ghana.*

Prior to joining Hess in 2009, Fast held positions at Exxon Mobil Corp., Aera and Mobil Oil Corp. Fast holds a bachelor's degree in petroleum engineering from the University of Tulsa and is a registered professional engineer in California.

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