

Beat: News

Oil majors experiment with technology to weather crisis

WORLD NEWS

LONDON/OSLO, 16.10.2016, 19:44 Time

USPA NEWS - Oil majors including Statoil, Shell and Chevron are experimenting with various technologies, from drones and drill design to data management, to drive down costs and weather a deep downturn. Crude prices have more than halved since mid-2014, forcing companies to cut billions of dollars in costs

Determined to shield dividends and preserve the infrastructure that will allow them to compete and grow if the market recovers, they are increasingly looking to smarter tech and design to make savings.

French oil and gas major Total said it was now using drones to carry out detailed inspections on some of its oil fields following a trial at one of its Elgin/Franklin platforms in the North Sea.

Cyberhawk, the drone company that led the trial, said this kind of work was previously carried out by engineers who suspended themselves from ropes at dizzying heights. It said the manned inspection used to take seven separate two-week trips with a 12-man team that had to be flown in and accommodated on site.

The drones do the work in two days and at about a tenth of the cost, according to the Britain-based firm's founder Malcolm Connolly, who said it had also worked with ExxonMobil, Shell, ConocoPhillips and BP.

Total declined to comment on how long the manned or drone inspections took, or specify how much money was saved.

Statoil's giant Johan Sverdrup field, the largest North Sea oil find in three decades which is due to start production in 2019, is a leading industry case study for cutting costs in the era of cheap oil.

The Norwegian company has cut its development costs for the first stage of the project by a fifth compared with estimates given in early 2015, to 99 billion crowns (\$12.2 billion).

The savings have largely been made by focusing on the most efficient technology and designs from the beginning, Statoil's head of technology Margareth Oevrum told Reuters in an interview.

Executives say the growing attention on technologies that have been around for some time shows how wasteful the global industry had been in the years before the downturn when - with crude at above \$100 a barrel delivering bumper profits - oil companies' had little incentive to develop fields efficiently.

For example, simply finding a more efficient route for the oil pipeline that would carry the crude from the Sverdrup field to the onshore refinery cut 1 billion crowns, Statoil said.

ROBOTS, FOAM

Statoil has also developed a drilling "template" that is acting as a guide for the first eight wells to be drilled at the field. It said it had reduced the overall drilling time by more than 50 days, saving about 150 million crowns per production well compared with what it would have cost with 2013 techniques.

"By far the biggest driver (of savings) has been simplification," said Oevrum. "To think much simpler and start from the bottom, or the bare bone, and then rather add to that, instead of starting very big."

The company could not give a figure for its group savings made from improved technology and design. But it said that, partly because of such innovations, projects set to start production by 2022 would be able to make a profit with an oil price at \$41 a barrel, down from \$70 in 2013.

Global upstream - exploration and production - oil and gas spending has fallen by more than \$300 billion across the industry in 2015-16, according to the International Energy Agency (IEA), roughly equivalent to the annual GDP of South Africa. Around two-thirds comes from cost cuts, rather than cancelling or shelving projects, it said.

Shell, for example, has developed a new type of pipe, called a steel lazy wave riser, to carry oil and gas from its deepwater Stones field in the Gulf of Mexico for processing. It bends to absorb the motion of the sea and the floating platform, which the company says boosts production at extreme depths.

The Anglo-Dutch major could not say how much the pipes contributed to increased efficiency, but said innovations at Stones had played a significant part in cost savings of \$1.8 billion in its projects and technology division last year - equivalent to the 2015 core profits in its upstream division.

The fall in oil prices has led to the introduction of other new engineering and maintenance techniques.

Chevron is using a robotic device to clean and check the inside of pipelines on their Erskine field in the North Sea more quickly. The improvement has helped raise the field's daily production rate to the highest in two years.

Oil services firm Amec Foster Wheeler, working for BG Group which is now part of Shell, has applied a new technique to remove the pillars of an old platform, a procedure that is often dangerous because corroded elements can slip off.

It pumped in expanding foam to hold the pillar's elements together, allowing workers to safely cut the metal away. This work took just over seven weeks instead of the 22 weeks typically needed using traditional methods.

Alex Brooks, oil and gas equity analyst at Canaccord Genuity, said tech innovation in the industry was about "100 tiny things", adding: "The bottom line is you end up with a much lower cost."

The downturn has presented opportunities for some services firms that can offer cost-saving innovations. Inspection drone firm Cyberhawk, for instance, said its revenue from oil and gas had doubled from mid-2014 to mid-2016, while the wider inspection market had shrunk.

VAST DATA

Another way oil companies are looking to cut costs is by using their vast amounts of data to better predict their needs.

Since the price slump, companies including Shell, ExxonMobil and Statoil have started using software that can better manage their data to cut wastage in the ordering of construction materials.

Stuck with excess material, some companies suffered huge losses because the resale value was much lower and in some cases they even took to burying unwanted material, according to Intergraph, a unit of Swedish tech firm Hexagon that develops such systems for oil industry clients.

"Previously, it was industry standard to order 3-5 percent more materials than needed, which in a billion-dollar project is a lot of money," said Patrick Holcomb, executive vice president at Intergraph.

Better managing data has helped oil firms understand exactly how much material is needed and when it will be delivered, cutting excess to one or two tenths a percent, he added.

Gunnar Presthus, Nordic energy lead at consultancy Accenture, who advises oil majors and national oil companies, said the downturn had led the industry waking up the potential of the data they store.

"The oil industry, some extent, is one of the most digitalized industries," he said. "Companies are now able to use this wealth data to make changes that will save money

Article online:

<https://www.uspa24.com/bericht-9599/oil-majors-experiment-with-technology-to-weather-crisis.html>

Editorial office and responsibility:

V.i.S.d.P. & Sect. 6 MDSiV (German Interstate Media Services Agreement): Karolin Schaps and Jessica Jaganathan

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