



OIL & GAS INDUSTRY SURVEY 2018 EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

Sandvik's second annual oil and gas executive summary reflects the degree of uncertainty being experienced in the industry today.

The dark days of the recent oil price downturn, when the commodity price dropped to its lowest at US\$28 per barrel for Brent crude in January 2016, are thankfully behind us. But the industry is not completely in the clear just yet.

Steady progress up to May 2018 saw oil prices reach US\$80 and led to assumptions that the industry would follow the conventional pattern seen in previous 'boom and bust' cycles of gradual and sustained post downturn growth.

However, a continuing global supply/demand imbalance and geopolitical influences involving the USA, Russia, Saudi Arabia and Iran as the main players, created significant price shock waves from the first quarter of the year onwards. A peak of US\$86 in October 2018 on the back of U.S. sanctions against Iran was followed by high volatility for the rest of the year.

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After four challenging years of delivering products and services at lower prices to support reduced project breakeven costs, suppliers may have been forgiven for hoping that improving market conditions would lead to an easing of pricing pressures.

However, despite super majors announcing record-breaking earnings in 2018, a report from Wood Mackenzie published towards the end of the year suggests cyclical cost inflation could threaten lower breakeven costs for deepwater projects – a clear warning for suppliers in this sector not to expect too much too soon from the operators.

The evolving relationship between suppliers and operators as both seek to establish new ground rules in today's rapidly changing industry is reflected in the findings of our second major oil and gas survey and executive summary.

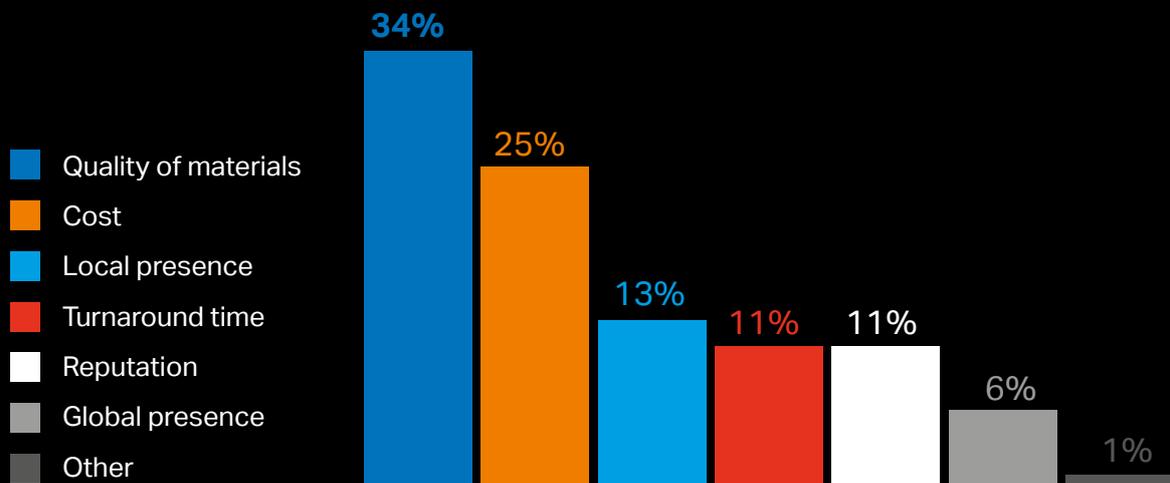
The survey was conducted throughout 2018 at four major oil and gas exhibitions around the world: OTC Asia in Kuala Lumpur, Malaysia; OTC Houston, USA; Rio Oil & Gas in Brazil and ADIPEC in Abu Dhabi, UAE.

It attracted 1,247 respondents covering a broad range of positions and disciplines, and offers unique insights and perspectives into some of the key challenges and trends from both sides of the supplier/operator debate.

It also provides a valuable contribution to how the industry currently sees itself and what it needs to do to navigate a successful future.

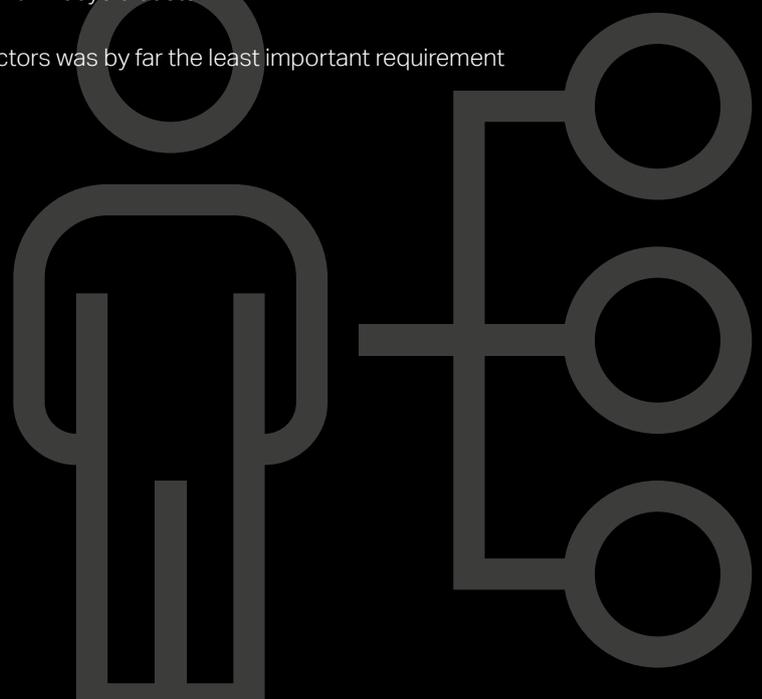
WHAT ARE THE MOST IMPORTANT FACTORS IN YOUR CHOICE OF SUPPLIER/CONTRACTOR?

(PICK UP TO TWO OPTIONS)

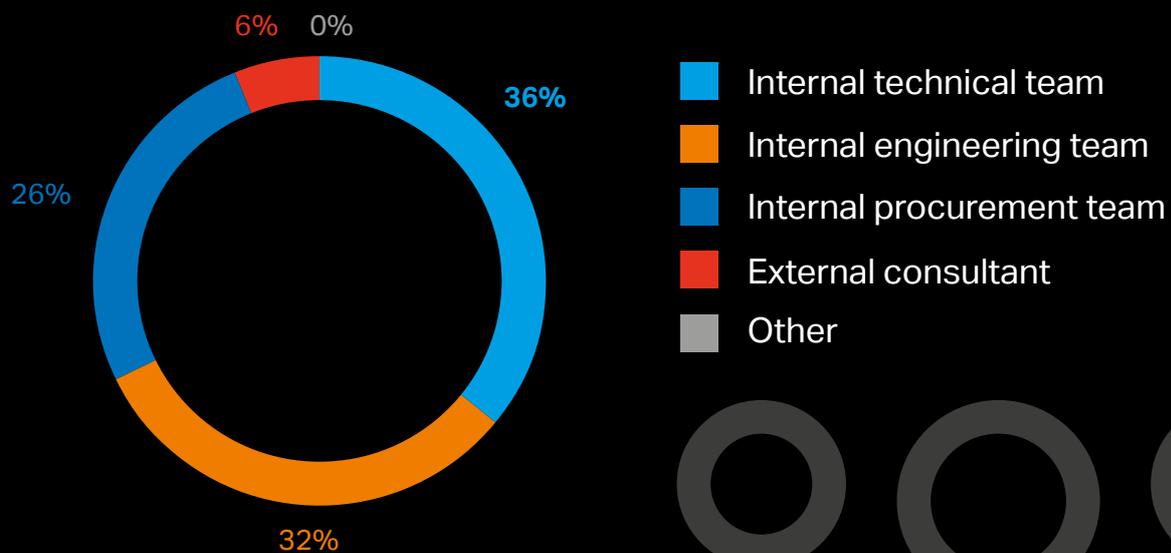


The industry's initial response to the downturn of 2014-2017 was to concentrate on short-term cost reduction as a solution to declining oil prices. Coming out of the recent hiatus, the emphasis on quality materials, with the inherent expectation of less maintenance and repair issues, indicates the return of a longer term approach to financial savings as part of full lifecycle costs.

Surprisingly, a global presence for suppliers/contractors was by far the least important requirement identified by respondents across all locations.



WHO HAS THE GREATEST INFLUENCE ON PURCHASING DECISIONS IN YOUR COMPANY?

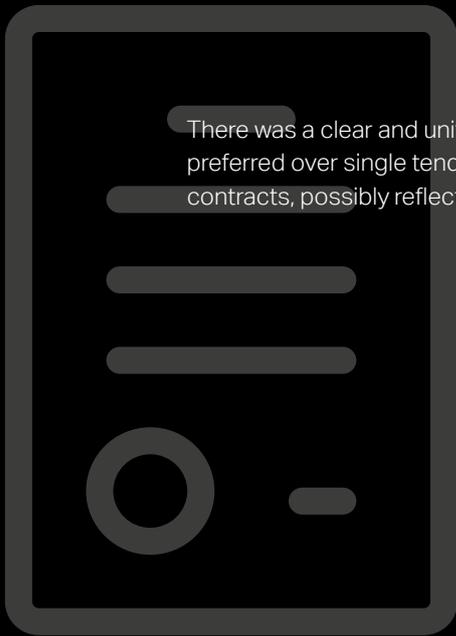


Despite an emphasis on cost consciousness in the post downturn oil and gas industry, our survey suggests technical and engineering departments still have a greater influence than procurement teams in purchasing decisions. Respondents at Rio Oil & Gas, OTC Asia and ADIPEC identified internal technical teams as the top influencers, while voters at OTC Houston felt engineering teams held the most sway. OTC Asia, ADIPEC and OTC Houston put procurement departments in second place while at Rio Oil & Gas procurement came third behind the engineers.

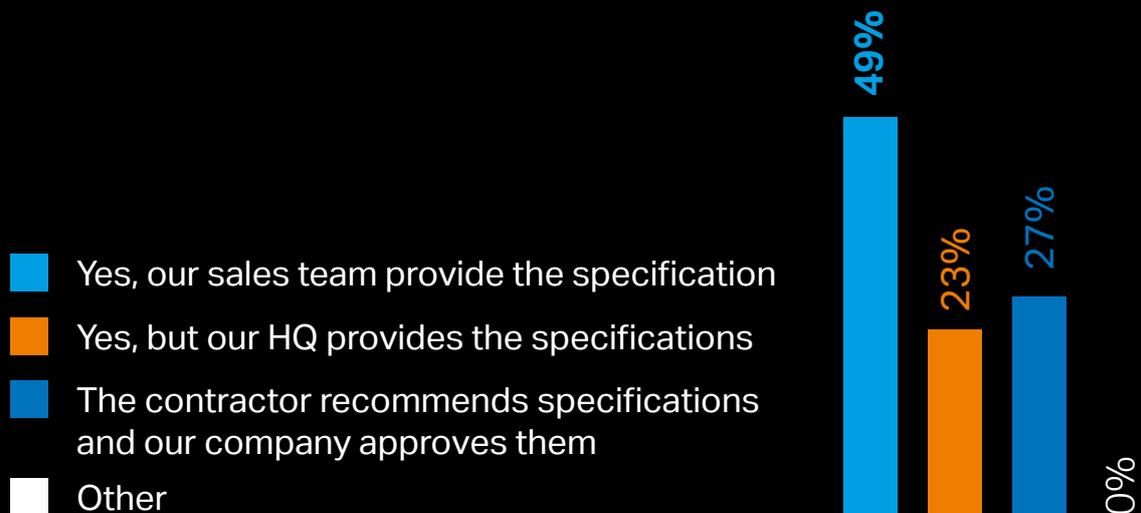
DOES YOUR COMPANY PREFER LONG TERM CONTRACTS OR SINGLE TENDERS WHEN DEALING WITH SUPPLIERS?



There was a clear and unified message across all regions that the security of long-term contracts is preferred over single tenders. Respondents at Rio Oil & Gas recorded the highest vote for long-term contracts, possibly reflecting the traditional contracting models of the industry in Brazil.



WHEN DEALING WITH CONTRACTORS, DOES YOUR COMPANY DECIDE ON PRODUCT/MATERIAL SPECIFICATIONS?

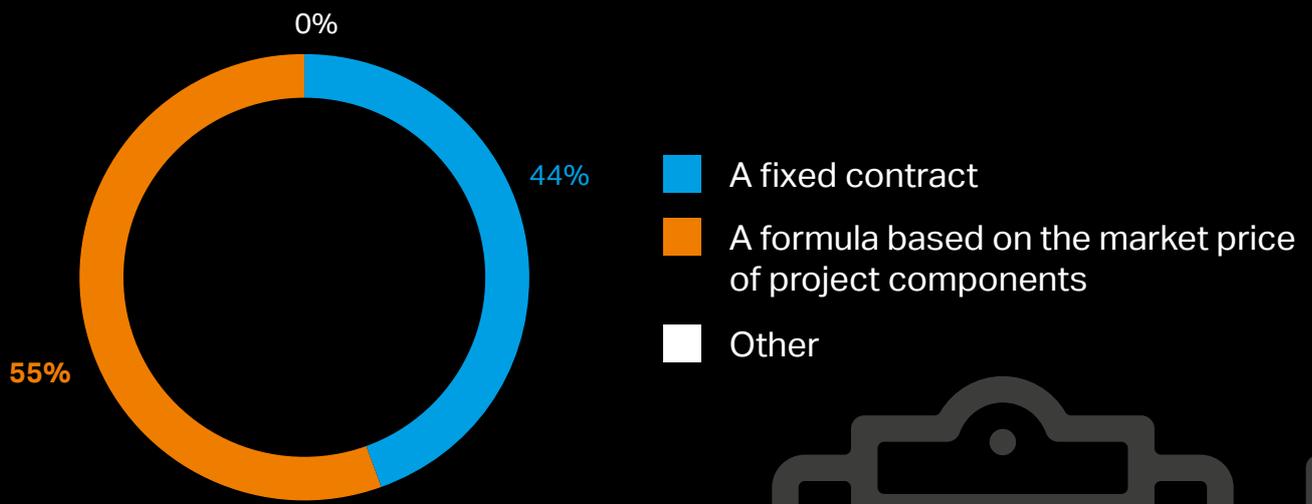


Across the board, there was recognition that sales teams hold the most influence in this field, with more than 50 percent of respondents at ADIPEC and OTC Houston agreeing. However, while contractors were ranked as the second most influential group across the four events overall, voters at OTC Asia and OTC Houston thought the influence from company headquarters was greater.

Some service sector respondents commented that the end user was involved in key decisions on material choice.



WHAT IS YOUR COMPANY'S APPROACH TO SUPPLIER CONTRACTS?



Voters at OTC Houston stood alone in supporting fixed price contracts over a formula-based approach. This may reflect both traditional purchasing model preferences and a desire for stability in the highly turbulent North American oil and gas industry, particularly in the shale sector, which has shown the greatest sensitivity to oil price fluctuations.

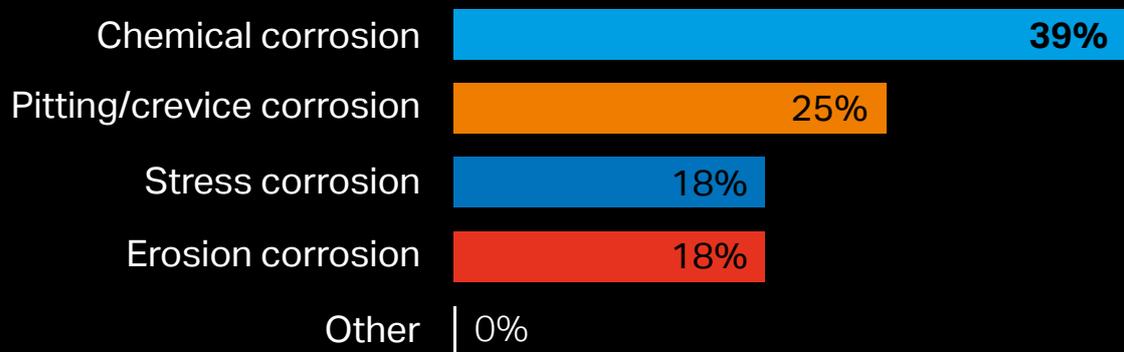
All other regions showed a clear preference for market price formulas, suggesting agreement with industry forecasts of a gradual but sustained rise in oil prices and component costs.

However, across the regions, respondents commented that contracts would often be looked at on a case-by-case basis.



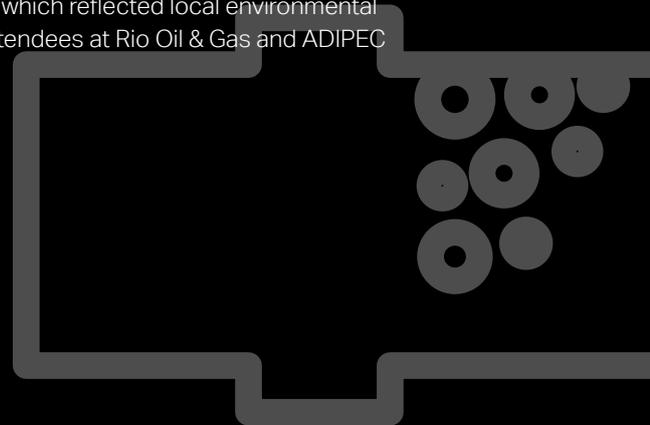
WHAT ARE THE MOST COMMON CORROSION CHALLENGES YOU FACE IN YOUR APPLICATIONS?

(PICK UP TO TWO OPTIONS)

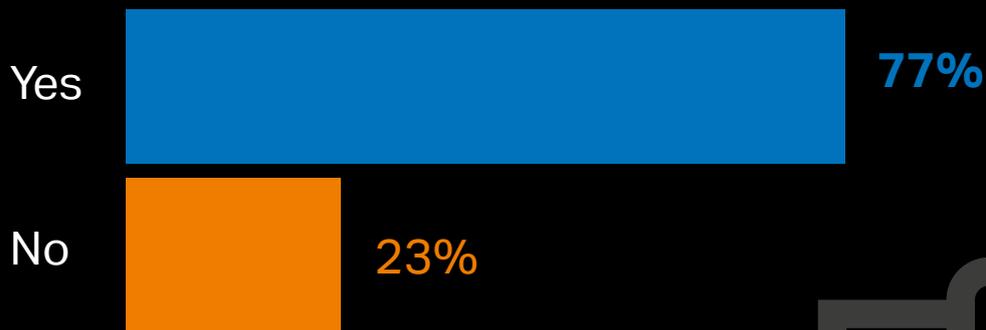


Technological advances combining the drive to find and produce oil and gas in ever more challenging environments with high concentrations of chloride, H₂S and CO₂ make chemical corrosion the most common corrosion challenge in every region.

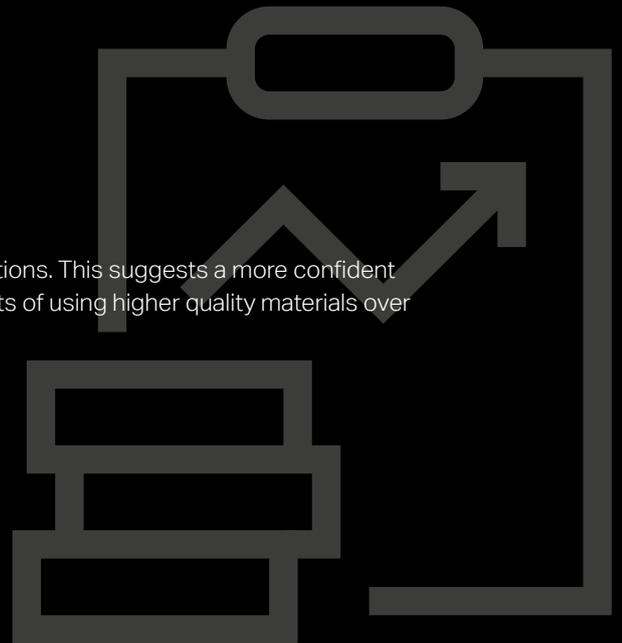
However, there was a split for the second most common challenge, which reflected local environmental variations. OTC Houston respondents identified stress corrosion; attendees at Rio Oil & Gas and ADIPEC highlighted pitting while those at OTC Asia stated erosion corrosion.



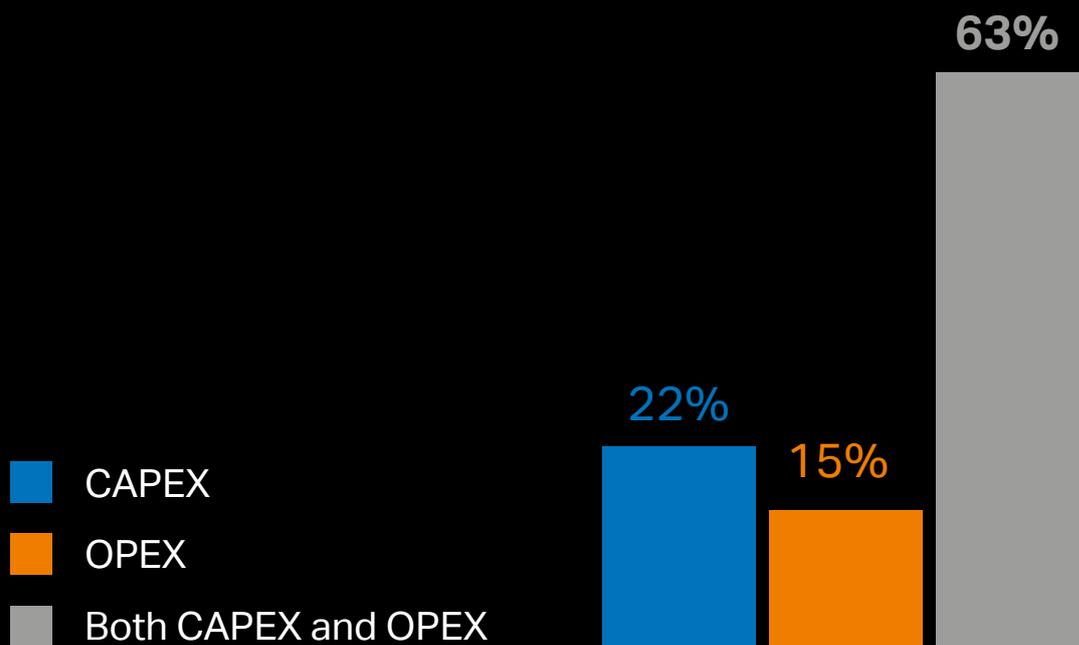
DO YOU USE LIFE CYCLE COST CALCULATION IN YOUR MATERIAL SELECTION PROCESS?



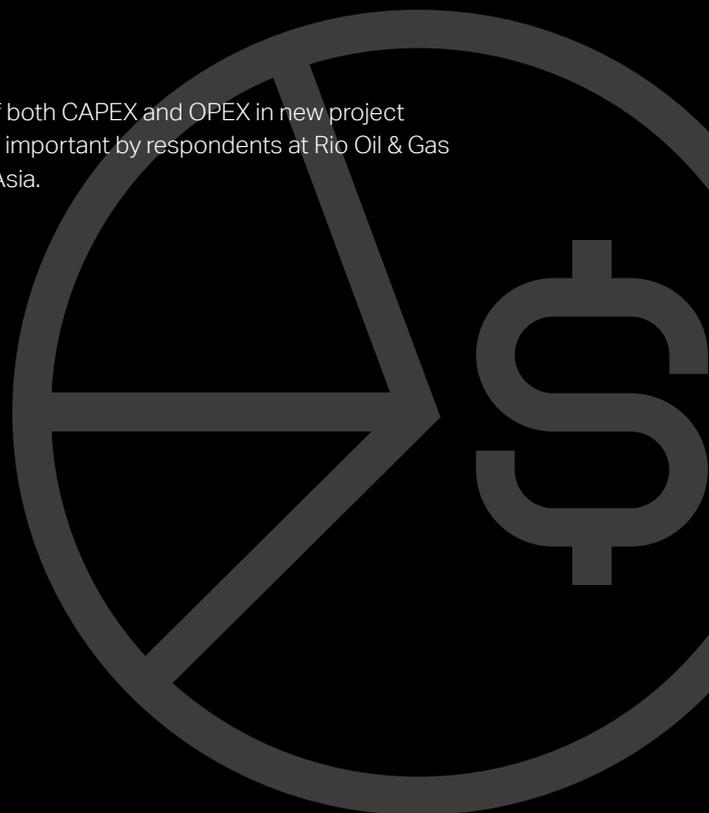
There was widespread emphatic support for life-cycle cost calculations. This suggests a more confident industry is once again thinking about the long-term financial benefits of using higher quality materials over short-term cost savings from lower quality products.



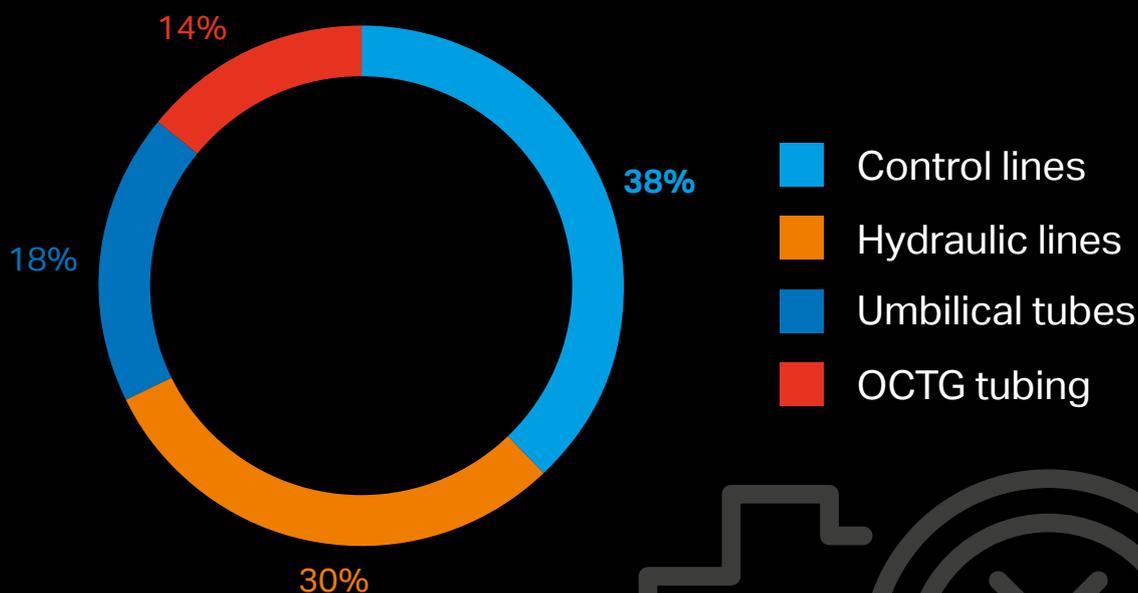
IN NEW PROJECT INVESTMENT, WHICH OF THE FOLLOWING IS MORE IMPORTANT TO YOUR COMPANY?



Results showed an overwhelming support for consideration of both CAPEX and OPEX in new project investment decisions. CAPEX on its own was considered least important by respondents at Rio Oil & Gas while OPEX was considered least important by voters at OTC Asia.



IN YOUR OPINION, WHICH OF THE PRODUCTS LISTED BELOW WOULD YOU LIKE TO SEE FURTHER IMPROVEMENTS ON, AND WHY?



This question generated by far the most comments from respondents whose priorities ranged from corrosion reduction and material robustness to increasing operational pressures, deepwater stress and leakage.

Improvements in control lines was clearly seen as the most important issue at OTC Asia, OTC Houston, Rio Oil & Gas and ADIPEC with hydraulic lines improvements in second place.

At the Rio event, just one vote split hydraulic lines from third-placed umbilical tubes, reflecting the dominance of deep and ultra-deepwater activity on the Brazilian market. OTC Houston voters recorded the narrowest gap between first and second (35 percent for control lines, 32 percent for hydraulic lines) while the greatest margin between the top two was among ADIPEC respondents (almost 53 percent for control lines and 25 percent for hydraulic lines).

Reasons behind the improvements included increased performance, durability, safety and competitiveness. One respondent suggested control line failures accounted for 30 percent of production downtime. Another called for hydraulic lines that would react with fluid to buffer severe leaks. The need for innovative products to support the emerging FLNG sector was also recognised.

AMPLIFYING YOUR POSSIBILITIES

A forecast from the U.S. credit rating agency and financial analyst Moody's at the end of 2018 suggested oil was unlikely to extend beyond US\$70 per barrel through to 2020. Predictions from the World Bank and the U.S. Energy Information Administration, among others, mirror expectations of limited price growth in the near future. If this is the case, it is clear that the industry cannot rely on ever increasing commodity prices to stimulate activity. Instead, it must focus on technological, operational and business model improvements to maximise returns and to continue to reduce breakeven costs in a subdued price environment.

The relationship between the operators and the supply chain will continue to be critical to success. This includes agreement on project outcomes, mutually beneficial contacts and a common understanding of the most appropriate project materials and products to be deployed.

As a world-leading developer and manufacturer of products in advanced stainless steels and special alloys for the most demanding environments, Sandvik has been delivering pioneering solutions to the oil and gas industry for many years, helping you reduce risks and costs in oil and gas exploration and production.

Sandvik's world-renowned metallurgical expertise and knowledge means we help you get there in achieving effective and efficient operations. Our long tradition of continual materials research and product development and testing ensures we are always ready to meet current and future challenges in developing oil and gas reserves, even in the most extreme conditions.

For further information please visit the website:
<https://www.materials.sandvik>

Note: The results in this report illustrate the cumulative results across the four events the survey was conducted at – OTC Asia, OTC Houston, Rio Oil & Gas, ADIPEC.

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