

Oil & Gas MIDDLE EAST

NEWS, DATA AND ANALYSIS FOR THE MIDDLE EAST'S ENERGY PROFESSIONALS

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PIPING HOT

THE REGION'S MAJOR OIL & GAS PRODUCERS ARE IN THE MIDST OF A MAJOR SHIFT IN PIPELINE MATERIALS. CORROSION RESISTANT FIBREGLASS AND SPECIALITY PLASTICS HAVE BECOME THE NEW MATERIALS OF CHOICE FOR UPSTREAM OPS

With access to the approximately 50% of the world's oil and gas reserves, the Middle East region finds itself under increasing pressure to deliver to a resource-hungry market.

However, as time passes access to such reserves is becoming more difficult, and hence more costly, prompting an analysis of every aspect of the industry in a bid to improve efficiency and cut unwanted outlay.

The pipeline sector – an unheralded but integral aspect of the industry is one such tranche of business which continues to push ahead with improvements. In the upstream oil and gas sector, any concerns over a lack of investment appear unfounded, as projects continue to be rolled out.

Just last week, an \$18bn pipeline project was announced between Iraq and Jordan. The 1,043 mile-long dual pipelines would be capable of transporting 1 million barrels of oil and 258 million cubic feet of gas per day from Iraq to Jordan's port city of Aqaba. Officials claim the line, which includes a sub-line to Jordan's refinery at Zarqa, will be operational by 2017.

January saw the start of the \$518 million Iraq Crude Oil Export Facility Reconstruction project, for the South Oil Company of Iraq. This was completed by Leighton Offh-

sore and is designed to stabilise and expand Iraq's crude oil export facility, by constructing a pipeline that connects crude oil storage facilities to the offshore crude oil export terminal in Fao, Basrah in southern Iraq. The project involved the development of two offshore valve station platforms, a 75 kilometre 48" oil pipeline and a Single Point Mooring system.

Closer to home, in June 2012, Saudi Arabia and the UAE opened new pipelines bypassing the Strait of Hormuz in order to secure exports following Iran's renewed threats to close the shipping lanes. The UAE's pipelines runs from oilfields near Abu Dhabi to the port of Fujairah. The 370-kilometre pipelines has a capacity of 1.5 million barrels/day, equivalent to 65% of the country's exports.

Once again, as with many elements of the oil and gas industry, there is an every-present demand in terms of development of new technologies. One such tranche is the use of composite fibreglass materials, which, as Fouad Makhzoumi, chairman of Future Pipe Industries explains, has become increasingly prominent, given its technical and economic advantages.

FPI, which has worked in a number of oil and gas upstream and downstream sectors, including the Sayyala pipeline for Petroleum Development Oman (PDO), the Jubail refinery and Assab and Sahil fields for ADCO in Abu Dhabi.

\$18
billion

estimated cost of new pipeline project between Iraq and Jordan



Approximately 45% of the annual \$2.2 trillion cost attributed to corrosion each year is from O&G infrastructure.

“FPI is a leading producer of fibreglass pipes and one of the fastest growing companies in the fibreglass sector with a wide range of products covering many oil and gas applications across the Middle East. Our composite corrosion free fibreglass cover applications in the exploration, production and transmission. Our high pressure fibreglass pipes are used on offshore platforms and rigs and floating production and storage of oil (FPSO), oil fields, flow lines, injection lines and disposal lines,” says Makhzoumi.

As with other sectors of the oil and gas industry, the twin pressures – time and money dominate thoughts. FPI utilise an integrated engineering approach and bespoke products, providing manufacturing, supply, engineering, site installation, field support and fabrication support.

The strains of operating at high-pressure and tempera-

“As the current conditions for oil and gas production get more challenging, the key to our success has been in understanding the challenges our customers are facing”

Fouad Makhzoumi, chairman of Future Pipe Industries

ture mean that technologically, the materials used must be of high quality. Composite fibreglass has the added advantage of being not just able to withstand these factors, but to withstand H₂S to a certain level of concentration.

“As the current conditions for oil and gas production get more challenging, the key to our success has been in understanding the challenges, predicting the market changes and investing in technologies to provide reliable solutions to our customers,” said Makhzoumi.

The growth in fibreglass pipes has been increasing over

the last 10 years. Primarily this is because of its physical properties of superior anti-corrosion, safety, and longer life cycle cost-effectiveness, gives it an innate advantage over traditional materials used in the oil and gas sector in the 1960’s, 70’s and 80’s. Fibreglass pipes can also compete effectively in the large diameter pipe market, in high-pressure areas and in elaborate pipe networks extending over several thousand of kilometres.

According to the World Corrosion Organisation, corrosion costs \$2.2 tn to the global economy, and almost 45% of the cost

is attributable to the oil, gas and petrochemical industries.

Whilst there is no doubt-ing its competitive advantages, Makhzoumi believes a disadvantage currently with fibreglass, is that it isn’t reaching its full potential, with the industry yet to take full advantage.

‘What we could say is that the fibreglass industry in general, is that the product is in its early stages of lifecycle and users haven’t captured its full value.

‘The fibreglass pipe market size within the oil and gas sector is estimated to be \$1bn, with the majority in the US. And with the positive results coming out of the country, we have been witnessing lately a positive adoption shift to fibreglass products in the Middle East as well and we expect these adoption rates to improve as we move forward,’ he said.

The growth in fibreglass technology was illustrated recently when FPIG recently acquired 100% of Specialty Plastics, Inc from ITT Exelia.

SPI, based in Louisiana, US, is a leading supplier of fibreglass pipes and systems for offshore platforms and marine vessels. The takeover is a strategic addition to FPIG’s composite pipe business and adds significant new offering to its already extensive product range extending FPIG’s global capabilities in the offshore rig and floatation production and storage of oil (FPSO) market.

‘We are excited about this new opportunity,’ said Makhzoumi. ‘The acquisition of Specialty Plastics is a strategic fit to FPIG that will complement its product offerings, geo-



Traditional high-grade steel is being replaced by fibreglass piping.



Major pipeline projects are underway throughout the Middle East.

graphical reach and customer sectors.'

Makhzoumi adds the utilising SPI's solutions, people and expertise will extend FPIG's ability to deliver competitive services. 'The acquisition of SPI will further enhance our existing manufacturing and sales operations in the US and expand our reach within the oil and gas sector,' he said.

The GCC has the largest penetration rates of fibreglass from an overall pipe market perspective, and 5% within the oil and gas industry. FPI claims this number could rise to 20% in the coming years, driven primarily by the vast increase in exploration and production,

both onshore and offshore, which ensures a substantial need for pipe systems, which can efficiently transport resources directly to consumers.

Away from the UAE, there are big projects underway Saudi Arabia, which will require extensive input from pipeline companies. Larsen & Toubro learned this week it was the lowest bidder for the \$800 million Saudi Aramco Midyan Gas field (EPC) project in Saudi Arabia, according to reports. The contract is to build it's the plant's upstream processing facilities including a 135 km pipeline to transport to the power plant in Saudi Arabia.

The Midyan gas field, located in Tabuk province will produce 75 million ft³/day gas concentrate over a 20-year period. The output will be transported to the coastal city of Duba, 135 km away.

Meanwhile, the Abu Dhabi Maritime Operating Company (Adma-Opco) is currently

preparing the evaluation of technical bids to be submitted in Q2 2013, on the EPC packages of the Al-Nasr Full Field Development project offshore Abu Dhabi.

Technologically, firms continue to drive for better materials. In March, Sabic began manufacturing thermoplastic grades at its affiliates in Jubail and Yanbu in Saudi Arabia, which could revolutionise the domestic pipelines sector.

Named Bimodal High Density Polyethylene (HDPE), the qualities include safety, cost-effectiveness and earthquake-resistant with a good tensile strength. Being lightweight means it is also requires much less energy to produce and transport.

Sami Al-Osaimi, General Manager, Global HDPE Business Unit, SABIC Polymers Strategic Business Unit, said, 'SABIC's HDPE range offers exceptional value and is superior in many ways to similar

imported products. They deliver exceptional low sag performance for large-diameter pipes and pressure pipes with a low standard dimension ratio.'

With the demand for oil and gas set to increase ever more, NOC's and other players will need to adopt new methods to access resources from non-conventional deposits. This means higher temperatures, pressure, increased presence of H₂S and ultimately more costly. Any advance which meets these challenges will be welcomed by the industry, as there is no doubt the pipeline market will not be standing still.

As Makhzoumi concludes, 'As operating environments in these industries become increasingly challenging as a result of higher temperatures, higher pressures, higher corrosion and higher wear, the demand is increasing for materials that can better withstand these environments.' **Oil&Gas**

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20%
New Materials
 cost of corrosion attributable to the oil, gas and petrochemical industries.