



AIRBORNE OIL & GAS

Thermoplastic Composite Pipe

Airborne Oil & Gas was established in 1999 by four pipeline engineers. The company is the world's first and leading manufacturer of fully bonded thermoplastic composite pipe (TCP). It employs more than one hundred and thirty people and has a manufacturing facility in Lijuiden, The Netherlands.

TCP features a solid pipe wall constructed from glass or carbon reinforcement fibres and thermoplastic materials. It has a variety of application areas offshore including flowlines, risers, jumpers, choke and kill lines, expansion spools, access lines and chemical injection lines as well as commissioning and intervention lines. The spoolable, robust, lightweight, high strength and corrosion resistant pipe is fast becoming a viable choice for those looking to avoid excessive and corrosion costs.



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BACKGROUND

In 2008, armed with a concept for composite coiled tubing, Airborne approached ITF in response to a call for proposals on 'unlocking the hydrocarbon potential'. Despite a tough selection process in front of ITF members, a year-long joint industry project (JIP) for cost-effective risers was instigated in 2009, involving 8 operators and costing in excess of EUR2 million.

CHALLENGE

There is a constant need for new and enhanced technology to improve the economic viability of hydrocarbon developments particularly in remote, hostile and deepwater onshore and offshore fields. ITF works closely with its members and the developer community to understand the technical challenges and through collaboration with the wider oil and gas industry, deliver the workable solutions that are highly efficient and economical.

ITF's call for proposals, 'unlocking the hydrocarbon potential' sought technology solutions to overcome challenges in subsea production enhancement, flexible, flowlines and pipeline technology, remote hydrocarbon developments, integrity, maintenance and reliability, flow assurance and large floating structures.

Despite the fact that prior to 2008, Airborne focussed mainly on downhole coiled tubing and much less so on offshore riser applications, the pioneering team of engineers immediately recognised the potential for their TCP technology to transform the offshore industry.

ACTION

Airborne responded with a proposal for developing a 'cost-effective thermoplastic composite riser', and with the support of OTM Consulting and the ITF facilitation process, the proposal initially attracted 8 global sponsors from within the ITF membership, raising an impressive EUR2 million of direct member investment.

The collaborative project involved participants supplying a number of scenarios involving varying diameters, water depths and pressures which would be used to produce individual riser designs. The sponsorship group then selected a design to build and test at the company's manufacturing facility in Ijmuiden, which now has 3 production lines and plans are now in place to expand the plant for larger diameters. Extra funding by late participants allowed for qualification to take place, such was the confidence and conviction by ITF and its collaborators in this new technology.

RESULT

Following completion of the JIP with ITF further work with some of the individual sponsors through one-to-one arrangements has been agreed. This included a project with Total to qualify TCP for a deepwater jumper spool application and Chevron on the Alder development. Also as a direct result of the ITF JIP, Airborne is now introducing the first qualified TCP flowline for hydrocarbon use, which will be installed offshore in Malaysia by Petronas.

Airborne was the first TCP manufacturer to have its design, production and materials in compliance with the new DNV GL Recommended Practice for Thermoplastic Composite Pipe, DNVGL-RP-F119. Its TCP products have also obtained a number of product qualifications from several leading operators such as Chevron, Petronas and Shell.

Airborne has since opened the world's first large-scale TCP manufacturing facility and plans are already in place to expand the base and its workforce. More than EUR23 million in investment was recently raised from both new and existing shareholders.

'I always tell this to people. If it wasn't for ITF then we wouldn't be sitting here now. We stay in touch with ITF as we see other opportunities on some higher TRL technologies. So who knows where the future will take us. ITF provides a good, very effective platform that helps you learn about the market and where your product needs to be, however you should not sit down and relax and think that clients will come to you, the hard work still needs to be done.'

Martin van Onna
Chief Commercial Officer, Airborne Oil & Gas

