

BRAZIL

Petrobras puts gas flares out of fashion with GTL

Brazilians qualify new compact gas-to-liquids technology to reduce flaring at offshore wells

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PETROBRAS has qualified a modular gas-to-liquids technology developed by UK-based CompactGTL, offering a route to carrying out extended well tests in remote offshore areas without gas flaring.

Petrobras became interested in the concept five years ago, seeing a potential solution for handling gas from extended well tests in remote pre-salt fields.

The oil company has used small-scale floating production, storage and offloading vessels to carry out extended well tests in the Campos and Santos basins, but now has a commitment to phase out flaring, even on these temporary well tests.

Petrobras, through its Cenpes research and development division, backed a small UK pilot project with CompactGTL in 2008, then signed up to a technological co-operation agreement that included a funded \$45 million pilot plant pilot plant.

The qualification tests were held at a Petrobras research base in Aracaju, in north-east Brazil through the second half of 2010.

The project uses proprietary mini-channel team methane reforming and Fischer Tropsch reactors, operating in conjunction with new catalysts, achieving compact and low centre of gravity GTL processes.

The mini-channel reactor technology was originally pioneered by scientists working with the UK Atomic Energy Authority (UKAEA), subsequently acquired by UKAEA spin-off Accentus.

This company was later absorbed by private equity outfit Collier Capital, leading to the creation of CompactGTL in 2006.

Ricardo Beltrao, a Cenpes manager, told Upstream recently that the main challenge was to show that the technology was capable of handling significant proportions of carbon dioxide.

"We knew that the technology can be efficient when it is handling 15% carbon dioxide and that it would not be efficient at 50%. Our objective was to get to 35%," he said, suggesting that targets had been met.

Beltrao acknowledged the testing process had not been without problems, requiring some design adjustments.

These problems related to temperature profiles and coking in the non-proprietary pre-reformer reactor used to eliminate the higher-end hydrocarbons.

Beltrao said the problems were



Development: the CompactGTL small-scale GTL facility

Photo: COMPACTGTL

E&P unit studies its next step for project

PETROBRAS' exploration and production division is analysing the next step forward for the company's offshore GTL project, writes Gareth Chetwynd.

The CompactGTL pilot plant produced about 20 barrels per day of syncrude, but full-scale offshore application is expected to produce up to 1000 bpd, based on a Suezmax, or possibly an Aframax, vessel.

Petrobras had moth-balled a project calling for a dynamically-positioned FPSO – Guanambi-1 – designed to cater for a commercially-scaled GTL plant.

It is understood that the Guanambi project is starting to move forward again but Petrobras E&P is yet to decide on timing.

One option is to proceed with the newly-qualified technology to respond to regulatory agency pressure over flaring as soon as possible.

The other route would be to wait for the rival technology to pass the qualification hurdle, allowing a competitive process.

A half-way solution might be to move give the

approval from Petrobras the company has passed a critical milestone, demonstrating its leadership in an area with the potential to be a game-changer for oil and gas exploration," said Collier Capital chief investment officer Jeremy

nod to a pre-front-end engineering and design project, helping the CompactGTL project move into a greater state of readiness.

The Santos basin pre-salt oilfields are around 300 kilometres offshore, undermining the economics of alternative solutions.

The carbon dioxide content is typically 8% to 15% in the best pre-salt fields, but runs far higher on some, notably Jupiter.

Both potential suppliers have positioned themselves with floater specialists.

CompactGTL commissioned Genesis Oil & Gas at an early stage to work on conceptual studies linked to an FPSO but has since forged a partnership with SBM Offshore.

Velocys is working in partnership with Modec and Toyo Engineering.

CompactGTL partners Japan's Sumitomo for the supply of reactors and steam methane reformer units, plus integration of the cobalt-based catalysts, and recently forged a partnership with Fluor's UK subsidiary for front-end engineering work on commercial-scale modular GTL projects.

Petrobras will also have the opportunity to evaluate a rival technology being developed by Ohio-based Velocys, a spin-off from Batelle University in 2001.

Testing of Velocys's pilot system is starting at another site in north-east Brazil, from which

Petrobras expects results in March. Velocys has analogous reactor technology to CompactGTL, but uses smaller channels.

This technology was originally developed for Total by Velocys, and the US company agreed to fund the plant in Brazil.

Discovery for OGX at BM-S-57

BRAZILIAN EXPLORATION

Suggestions of big find at shallow-water well

BRAZILIAN independent OGX has found hydrocarbons on Santos basin Block BM-S-57, amid suggestions that the find is likely to be a big one, writes Gareth Chetwynd.

The shallow-water 1-OGX-63-SPS well, also referred to as Fortaleza, hit hydrocarbons in the Albian section before continuing to deeper Aptian horizons, where a big gas kick implied another sweet section.

OGX reported a 1000-metre hydrocarbon column with 110 metres of net pay in the Albian rocks.

Speculation that the find will be a big one was fed by influential Brazilian newspaper columnists, who suggested it will run into billions of barrels and is light crude. This was not confirmed by OGX.

The well is in 155 metres of water and is being drilled by the Diamond Offshore-owned semi-submersible Ocean Quest, which spudded the probe in October.

OGX, which holds 100% of the equity on the permit, saw its stock price surge by 5.79% in the wake of an announcement through Brazil's securities and exchange commission CVM.

OGX is pursuing an aggressive exploration campaign, but the publicity surrounding the EBX holding company and its entrepreneurial controller Eike Batista helps explain the volatility of its stock price.

Market sentiment has become more positive since OGX completed a delayed permitting process for its first floating production platform, and is now poised to start production in the Campos basin.

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