

World's first heavy-oil, subsea-separation system headed to Petrobras field

20 August 2009 in [Facilities \(PFC\)](#), [Latin American and Caribbean, Production \(PO\)](#)



FMC Technologies has been awarded a USD 90 million-contract by Petrobras to supply a subsea-separation system for the mature, deepwater Marlim field in the Campos basin, offshore Brazil. The contract marks the first deepwater deployment of subsea-separation technologies in a mature field and the first separation of heavy oil and water in a subsea environment.

In operation since 1991, Marlim is Petrobras' largest field in the Campos basin and is located in water depths ranging from 2,100 to 8,500 ft (650 to 2 600 m). With 129 wells and 8 floating production units (FPUs) devoted to oil and gas production, the field was once considered the world's largest subsea development. Nearly 20 years of operation has brought about increasing production of water—which limits the oil-handling capacity of the surface facilities—and sand—which could potentially damage the system's internals.

The main purpose of the subsea-separation system is to debottleneck the FPU and increase production by removing unwanted water from the production stream at the seabed. The scope of supply consists of a subsea-separation, pumping, and water-reinjection system, developed jointly by Petrobras and FMC.

The system will be installed at a depth of 2,950 ft (900 m) and will receive the production stream—which contains a mixture of oil, gas, water, and sand. It will first separate the gas from the liquids and then the heavy oil will be separated from the water using a novel pipe-separation design that was licensed and developed by FMC in cooperation with StatoilHydro.

The system also integrates FMC's proprietary water-treatment and sand-handling technologies as part of the subsea-separation system. The separated gas will be added back to the oil stream to aid its lifting to the FPU, while the separated water will be pumped back into the reservoir to further increase production. This also marks the first time this system has been used to reinject water to increase reservoir pressure and boost production, according to FMC.

Marlim is the fifth project awarded to FMC that will utilize subsea-separation technologies. Other projects include StatoilHydro's Tordis field, Shell's Perdido and BC-10 developments, and Total's Pazflor field.

The equipment will be jointly engineered among FMC's operations in Brazil, Norway, and The Netherlands. Final manufacturing and integration activities will be performed at the company's Rio de Janeiro facility, with deliveries projected to begin in 2011.

For more information, please visit [FMC Technologies' subsea systems web page](#).

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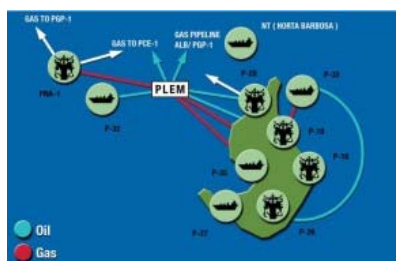
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