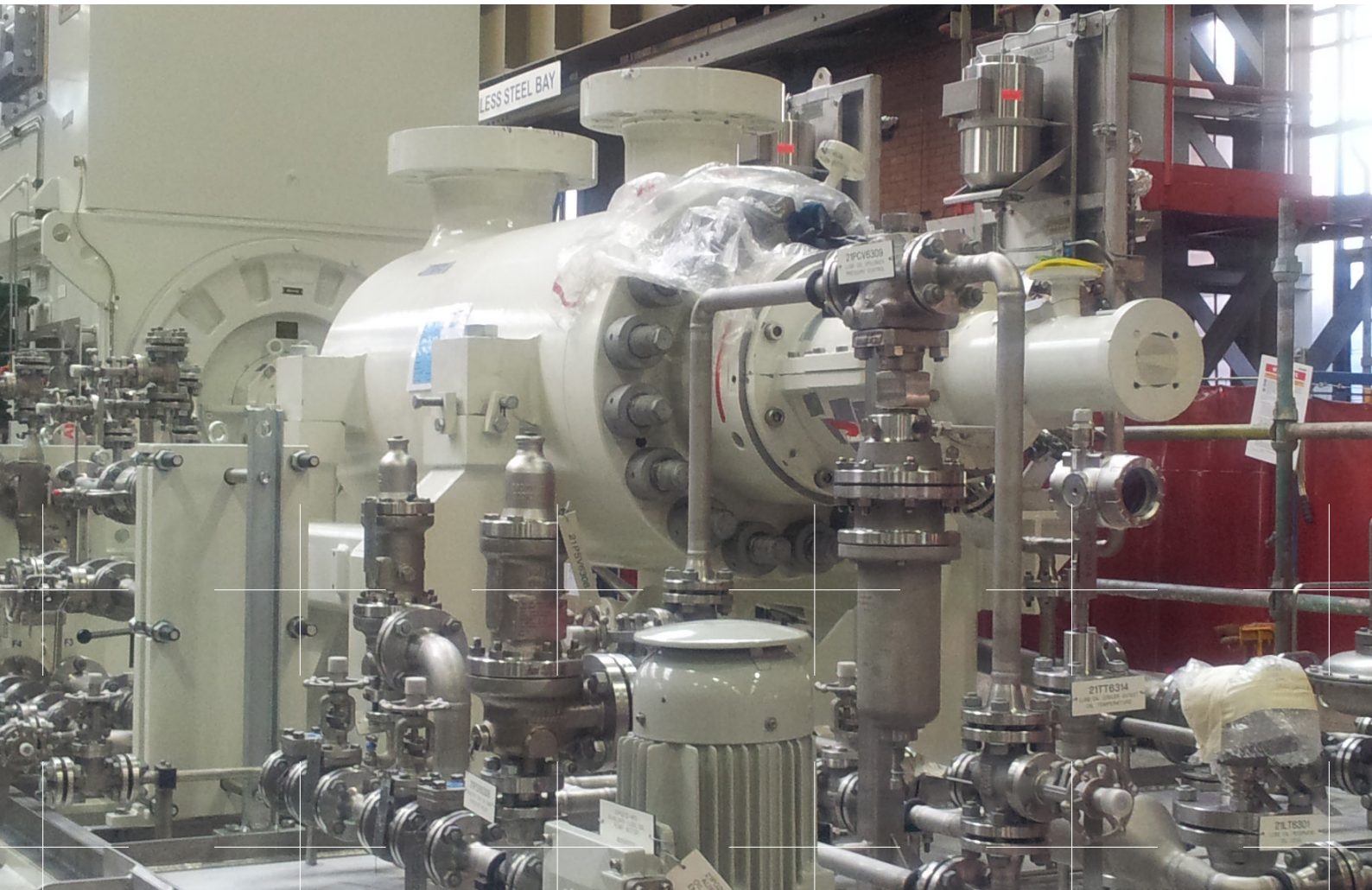
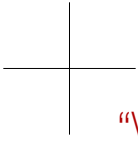


## An injection of advanced pump technology

Sulzer has been awarded a contract by FPSO services company Yinson to provide four large water injection pumps (WIP) for a major new conversion project.





“We have established an excellent working relationship with our colleagues at Yinson. We are very proud that Sulzer technologies have been selected for such an important and high-profile asset, and we look forward to supporting our partners during construction and in the field, as well as working on future projects together.”

**Mike Sorrell, Key Account Manager at Sulzer**

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Work is underway in China to convert a former tanker into a new floating production, storage and offloading (FPSO) vessel that will operate in the Marlim oil field off the coast of Brazil. When it enters service in 2023, the FPSO Anna Nery will have a production capacity of 70'000 barrels of oil per day and a storage capacity of 1.6 million barrels.

A key part of the vessel's functionality will be its high capacity seawater treatment and injection (SWTI) system, capable of delivering 38'000 m<sup>3</sup> (8.36 million gallons) of seawater per day for enhanced oil recovery waterflood injection. At the heart of the process is a specialist sulfate removal membrane technology that protects the oil reservoir against barium and strontium sulphate scaling as well as reservoir souring.

In operation, the main water injection pumps will handle a combination of purified seawater and produced water from the well. Since produced water contains sand and other erosive materials, the pumps will include a number of features designed to increase durability, including double pressurized seals and tungsten carbide coatings on all wear surfaces.

The contract includes four 6 MW (8'000 hp) HPcp Type BB5 barrel pumps powering the water injection system, along with four BBS booster pumps that take filtered water from the treatment module and deliver it to the water injection pumps. In addition, Sulzer is also supplying a number of OH2 pumps which will be used to clean the membranes in the purification system.

The four WIP will include an integrated oil lubrication system and will be supplied with direct drive electric motors. These motors will be constructed to comply with the Brazilian INMETRO standard for operation in potentially explosive atmospheres.

The pumps will be manufactured at Sulzer's global plants, with installation and commissioning support provided by the company's local facilities in Brazil. The availability of local support and expertise is a key benefit for Yinson, as the Anna Nery is contracted to operate in Brazilian waters for at least 25 years. In addition to the WIP contract, Sulzer will supply more than a dozen pumps for other systems on the vessel.

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