

Case Study: ITT supplies pumps for oil production in West Africa



Country of reference: West Africa

The exploration and production of oil in West Africa has been growing rapidly over the past decade, with much demand for the oil from Europe and the USA. Several countries and multi-national oil companies are exploiting fields off West African coastlines – including Gabon and Congo – through on-shore plants and off-shore platforms.

Using water to deliver oil

Space on oil platforms is at a premium and is shared by many drilling technologies, as well as oil storage and facilities for workers. One such oil production technology is the provision of water to compensate the oil level in the natural oil field reservoir. Water pumped into the reservoir (mixed with oil and separated later) will replace the oil produced, maintaining pressure and pushing remaining oil to the surface.

The water used can be highly corrosive, due to salt and hydrogen sulphide, and cannot be disposed of in the sea, so it is separated from the oil and re-injected into the well. Similar requirements exist in onshore plants, where space is less of a problem but accessibility to plant sites can raise logistics issues.

French pump distributor CREATIV works closely with oil producing companies and has specified Vogel Pumpen branded MP and MPE series pumps to handle this task.

Compact, resilient and reliable pumps

The MP series of horizontal multistage pumps find a home in many industrial environments where delivery of clean or mildly contaminated water is required, such as saline, oil suspensions and acids. Among its features, the MP series is of a compact design, which is perfect for limited space locations, and requires minimum maintenance. The pumps are also ATEX compliant (suitable for working in a potentially explosive environment) and are driven by frequency inverters.

In an on-shore plant in Gabon four MPE pumps were shipped and installed in a remote jungle location, reached by river four hours from Port Gentil. For water delivery these pumps are ideal:

made from duplex steel construction, with silicon carbide cartridge mechanical seals, and efficiency of 66 to 70%. They deliver pressure up to 80 bar and flow of 66 to 100m³/h, depending on the requirements of the installation. Three further Vogel Pumpen MPE pumps have been located at the on-shore Muanda International Oil Co. Plant in Congo.

Two Vogel Pumpen MPAI end-suction type multistage pumps were also specified for water adduction at an Addax Petroleum facility in Gabon. These are driven by two 110Kw Caterpillar motors in a configuration designed by CREATIV.

By contrast, the Yombo field off-shore oil platform is far out to sea off the Congo coast. Two duplex steel MP 125 pumps were specified for use here, due for June 2010 delivery.

The MP series is regularly sold as a versatile solution for petroleum companies, and customers worldwide now understand the possibilities and maintenance requirements of this pump series. For example, the MP pumps also come in cast iron construction and can be used to pump oil from the well to storage tanks for a complete ITT solution.