World’s First Subsea Turbocompressor Unit in Operation

On 17th September, Norwegian Statoil announced the production start of the world’s first subsea gas compression facility at the Åsgard field in the Norwegian Sea. The facility features two MAN Diesel & Turbo HOFIM™ motor-compressor units which were supplied to Statoil’s contractor Aker Solutions.

“This technology represents a quantum leap for the entire oil and gas industry, which is closely monitoring the subsea developments in Norway” says Uwe Lauber, CEO of MAN Diesel & Turbo SE. “We’re proud to be part of this historic achievement that is sure to shape the future of the industry.”

Compared to conventional upstream facilities on platforms or FPSOs (Floating Production, Storage and Offloading), the subsea technology not only saves investment costs, but also raises recovery rates while reducing energy consumption and CO2 emissions of oil and gas production.

While the natural pressure of the reservoir is constantly decreasing, MAN’s motor-compressor units help to extend the reservoirs’ productive life on the Åsgard field for another 15 years. Overall, 306 million barrels of oil equivalent will be added.

“After an extensive development, qualification and testing program, we’re very excited to see our units in operation,” says Patrik Meli, MAN’s head of engineering and development and Åsgard project director in Zurich. “Our remotely controlled, encapsulated and emission-free HOFIM™ compressor met all the requirements needed for a maintenance-free operation on the sea bed.”

MAN Diesel & Turbo has worked with Statoil on a joint subsea compressor qualification program. The project required an extremely robust motor-compressor design in order to withstand the harsh conditions of subsea environments 300 metres below sea level. The adapted subsea HOFIM™ features a tailored motor design, casings designed for 220 bar pressure, a 7-axes active magnetic bearing system and a special cooling gas extraction.

In 2010, Aker Solutions awarded the contract for the Åsgard turbocompressors to MAN in Zurich. The scope of work comprised the supply of four hermetically-sealed single HOFIM™ units, each compressor (size RB
45) with integrated MAN motor (size M43). The contract also encompasses long term field services and life cycle support.

While the first compressor train started production, the second train is under commissioning.

About MAN Diesel & Turbo
Based in Augsburg, MAN Diesel & Turbo is the world's leading supplier of large diesel engines and turbomachinery. MAN Diesel & Turbo employs around 14,900 staff at more than 100 international sites, primarily in Germany, Denmark, France, Switzerland, the Czech Republic, India and China. The product portfolio includes two- and four-stroke engines for maritime and stationary applications, turbochargers and propellers as well as gas and steam turbines, compressors and chemical reactors. Complete solutions such as ship propulsion systems, engine power stations and turbomachinery sets for the oil and gas and process industry round off the scope of supply and services. Customers receive worldwide after-sales services marketed under the MAN PrimeServ brand.
Åsgard subsea gas compression system - © Statoil

Åsgard subsea compressor station on the seabed - © Aker Solutions

Subsea HOFIM™ compressor by MAN Diesel & Turbo – © MAN Diesel & Turbo