Press release

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MAN Energy Solutions Schweiz AG
Hardstrasse 319, 8005 Zürich
Switzerland

www.man-es.com

Communications Zurich
Roberto Rubichi
P +41 44 278 3325
roberto.rubichi@man-es.com

World's First Subsea Compressor Units Reach 100,000 Operational Hours

MAN subsea compression-trains at Equinor's Åsgard gas field achieve 100,000 operational hours six years after start-up; MAN Energy Solutions to deliver another Subsea HOFIM® compression system for Åsgard

Equinor has awarded MAN Energy Solutions a new contract to supply a subsea compressor unit for the Åsgard gas field in offshore Norway. The compressor system will be deployed at the active field in order to enhance production and extend the field's lifetime.

Åsgard became the world's first subsea gas-compression facility to commence operation 300 meters below sea level in 2016. It features two MAN Subsea HOFIM® motor-compressor units that have run for more than six years, accumulating 100,000 operational hours without any intervention and with an availability of close to 100%.

Subsea gas-compression is a lower-carbon alternative to conventional compressor solutions installed on platforms at sea level. The size and weight of the subsea solution is significantly smaller than a platform infrastructure, resulting in a reduction in the requirement for steel and other materials. Health and safety risks are also minimized by the remote operation of the subsea technology.

Dr Uwe Lauber, CEO of MAN Energy Solutions, said: "We are pleased to be awarded another important contract by Equinor and honored to continue our role as part of the groundbreaking Åsgard project together with our subsea alliance partner, Aker Solutions. 100,000 operating hours is an impressive achievement that demonstrates the unique value of our subsea-compression technology, which has a major part to play in making tomorrow's offshore-gas recovery more sustainable and efficient. This closely aligns with our company's aim to transform energy into sustainable progress."

In close cooperation with Equinor and Aker Solutions, the existing subsea compression modules at Åsgard are being upgraded to accommodate a higher compression ratio, thus maintaining output and enhancing recovery as the gas reservoir's pressure naturally declines. The need to further develop the subsea compression technology was identified early on as part of the initial Åsgard Subsea Compression project. The aim is to safeguard the total, additional production of around 306 million barrels of oil equivalents.

MAN Energy Solutions' scope of supply for the new order comprises a Subsea HOFIM® compressor unit – with compressor frame size RB 45 – with an integrated MAN motor, size M43. To increase the overall pressure-ratio capability, the unit features a new, overhung compression stage on the opposite side of the motor. The motor compressor unit is designed for continuous liquid injection, making it a

wet-gas compression solution. It will be developed, manufactured and tested at MAN's premises in Zurich, Switzerland, with delivery planned for March 2023.

More about subsea compression

The Subsea HOFIM® compressor has been specifically adapted for underwater use with all components designed to for maximum robustness to counteract the risk of corrosion inside the machinery. Hermetically sealed and oil-free, the system employs seven-axes active magnetic bearings and a high-speed motor. This design dispenses with a large number of components typically seen in conventional topside compressor solutions, including the gearbox, lubrication-oil system, instrumentation and valving.

Alexandre de Rougemont, Head of Sales, Turbo Solutions at MAN Energy Solutions, said: "Subsea gas compression solutions will increasingly be deployed to make energy recovery more efficient and sustainable. However, technological solutions that practically run autonomously in locations that are almost impossible to reach must fulfill high requirements: with our hermetically-sealed compression system, we are able to meet these. MAN's highly digitized Subsea HOFIM® is the ideal technology solution for unmanned operation because it operates uninterrupted and maintenance-free."

Subsea HOFIM® motor-compressor unit for Equinor's Åsgard gas field

MAN Energy Solutions enables its customers to achieve sustainable value creation in the transition towards a carbon neutral future. Addressing tomorrow's challenges within the marine, energy and industrial sectors, we improve efficiency and performance at a systemic level. Leading the way in advanced engineering for more than 250 years, we provide a unique portfolio of technologies. Headquartered in Germany, MAN Energy Solutions employs some 14,000 people at over 120 sites globally. Our after-sales brand, MAN PrimeServ, offers a vast network of service centres to our customers all over the world.