



Performance monitoring delivers tangible fuel consumption and emissions reductions

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Golden Energy Offshore and KONGSBERG collaborate to reduce operational fuel consumption by 20%

Kongsberg, Norway, xxth November 2019 – Norwegian advanced Offshore Service Vessel (OSV) owner and operator Golden Energy Offshore has reported that its long-term collaboration on vessel performance monitoring with Kongsberg Maritime and deployment of the containerised SAVE Energy battery system earlier this year is delivering operational fuel savings of 20%.

The results have been achieved on Golden Energy Offshore's UT 776 CD

design Platform Supply Vessels (PSV), *NS Orla* and *NS Frayja*. Already operating efficiently with extensive Full Picture technology packages on board, Golden Energy Offshore and Kongsberg Maritime have been monitoring and analysing data from the ships since 2015.

Monitoring is provided by the Kongsberg Vessel Performance System (VPS) – with the new vessel data to cloud infrastructure Vessel Insight also deployed this year – enabling Golden Energy Offshore to gain deep insight and transform daily vessel operations to achieve significant fuel reductions. The VPS is integral to Golden Energy Offshore’s commitment to the UN Sustainability Goals, with focus on; 9 – Industry, Innovation & Infrastructure, 12 – Responsible Consumption & Production, 13 – Climate Action, 14 – Life Below Water and 17 – Partnership for the Goals.

KONGSBERG data scientist Joakim Kjølleberg said: *“With availability of historical data of all key components onboard from the previous four years from the VPS, we had all the information needed to further configure the systems to help the Golden Energy Offshore’s vessels to perform at their best.”*

Kongsberg Maritime’s data analytics team also found a significant potential for further savings by introducing battery power and in line with its strategy of taking knowledge based steps towards greener operations, Golden Energy Offshore selected the KONGSBERG SAVE Energy battery system, which was installed on both ships in 2019. The operational data already collected informed key

installation factors including the size of the batteries to be deployed for optimal operations. Both vessels have now been sailing with batteries for more than six months, returning significant operational cost reductions.

“By utilizing a redundant battery solution connected to the main switchboard in Dynamic Positioning operations, we are able to reduce total engine running hours by 43%. The increased load and improved efficiency are very beneficial, helping the vessels to achieve operational fuel savings of 20 percent. This combined with shore connection at port means that the vessels are on their way to achieving annual fuel savings of approximately 360m³, equivalent to around 1000 tonnes of CO₂ and 3 tonnes of NO_x,” said Kjølleberg.

Per Ivar Fagervoll, CEO, Golden Energy Offshore, added: *“We have been certified in ISO 50001 – Energy Management for five years. In addition, we are*

also certified in ISO 9001 – Quality Management, ISO 14001 – Environmental Management and OHSAS 18001 (ISO 45001).

“By this we commit to energy management and define goals for reducing fuel oil consumption. How well we manage to reach our goals is thoroughly audited and proven. We have a high focus on how our environmental footprint can be reduced, and how our operations can be optimised to contribute to the United Nations sustainability goals. Our long cooperation and hosting several pilot projects with Kongsberg Maritime has had a positive effect. By installing the battery system, shore-power connection and monitoring performance, our energy consumption and environmental impact are significantly reduced.

“We appreciate the good cooperation with Kongsberg Maritime, it enables us to reach our goals and at the same time we have a front row seat in developing Green Operations.”

Kongsberg Maritime’s SAVe Energy concept is an Energy Storage Unit that includes a highly efficient and liquid cooled battery system in a modular design. The system is scalable according to energy and power requirements, complies with international legislations for low and zero emission propulsion systems, and can be used for peak shaving, spinning reserve and for full battery power for offshore vessels, cruise ships, ferries, tugs and workboats.

The Kongsberg Vessel Performance System enables informed decision making by both crew and onshore teams, with the potential to assist customers in lowering energy usage, fuel consumption and operating costs. It provides details on fuel consumption and overall energy efficiency levels, benchmarked against historical performance, allowing the crew and ship management to exploit opportunities to minimise fuel usage and reduce emissions. Following the cooperation with Golden Energy and other customers, the Kongsberg Vessel Performance System has now been further developed to also cover battery performance monitoring.

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About Kongsberg Maritime

Kongsberg Maritime is a global marine technology company providing innovative and reliable 'Full Picture' technology solutions for all marine industry sectors including merchant, offshore, cruise, subsea and naval. Headquartered in Kongsberg, Norway, Kongsberg Maritime has manufacturing, sales and service facilities in 34 countries.

Kongsberg Maritime solutions cover all aspects of marine automation, safety, manoeuvring, navigation, and dynamic positioning as well as energy management, deck handling and propulsion systems, and ship design services. Subsea solutions include single and multibeam echo sounders, sonars, AUV and USV, underwater navigation and communication systems.

Training courses at locations globally, LNG solutions, information management, position reference systems and technology for seismic and drilling operations are also part of the company's diverse technology portfolio. Additionally, Kongsberg Maritime provides services within EIT (Electro, Instrument & Telecom) engineering and system integration, on an EPC (Engineering, Procurement & Construction) basis.

Kongsberg Maritime is part of Kongsberg Gruppen (KONGSBERG), an international, knowledge-based group that celebrated 200 years in business during 2014. KONGSBERG supplies high-technology systems and solutions to customers in the oil and gas industry, the merchant marine, and the defence and aerospace industries.

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