

Research and development, product launches

Research and development expenses totalled EUR 165 million (141) during the review period January-December 2018, which represents 3.2% of net sales (2.9). The key focus areas included digitalisation, efficiency improvement, fuel flexibility, and the reduction of environmental impact.

In the marine markets, Wärtsilä completed a series of test procedures related to its automated dock-to-dock solution during the year. The auto-docking tests culminated in autonomous operation being utilised uninterrupted for the entire route of the Norwegian operator Norled's 83-metre long ferry 'Folgefonn'. Developments in the area of environmental solutions included type approval being received for the Aquarius EC ballast water management system by the United States Coastguard (USCG), as well as the completion of all testing processes required for USCG approval for the Aquarius UV ballast water management system. In October, Wärtsilä inaugurated its new Hybrid Centre. The facility represents an innovative concept that will enable further development and deployment of the Wärtsilä HY hybrid power module, while at the same time providing customers with the possibility to experience the benefits of the Wärtsilä HY. It will also be used to train crews and provide hands-on experience for technicians. Products launched during the year included the new Nacos Platinum solid state S-Band radar system, as well as the first Wärtsilä-branded high-speed engine. The Wärtsilä 14 is a compact engine designed to fit requirements for limited space and weight, lower capital expense, compliance with current and future global emission regulations, and to provide customers with improved efficiency, safety, and environmental sustainability.

In the energy markets, June saw the launch of Wärtsilä's new solar PV and storage hybrid solution. The Wärtsilä Hybrid Solar integrates engines, solar PV generation and storage to deliver a solution that is climate-friendly, with increased resilience and efficiencies, and that can be supported by a power producer's existing grid infrastructure. A critical component in maximising the value of this hybrid solution is the GEMS software and controls platform developed by Greensmith Energy, a Wärtsilä company. In September, GridSolv, an advanced, modularised storage solution designed to offer maximum flexibility and speed of deployment, was introduced. The solution architecture supports both standalone deployments, as well as hybrid solutions with thermal or renewable generation assets. The latest generation of Wärtsilä's advanced energy management software platform, the GEMS 6, was released in December. GEMS is deployed across more than 70 grid-scale systems in nine countries, and is integrated with a multitude of thermal and renewable generation assets, as well as load and weather forecasting data.

During the year, Wärtsilä, together with Templar Executive, introduced MCERT, an international cyber intelligence and incident support platform enhancing cyber resilience for the entire maritime ecosystem. It provides international intelligence feeds, advice and support, including real-time assistance to members on cyber attacks and incidents, and a cyber security reporting portal for its members. The MCERT operates from the Wärtsilä Acceleration Centre facilities in Singapore, which was launched during the year.