WÄRTSILÄ

WÄRTSILÄ CORPORATION

WÄRTSILÄ'S YEAR 2020

CONTENTS

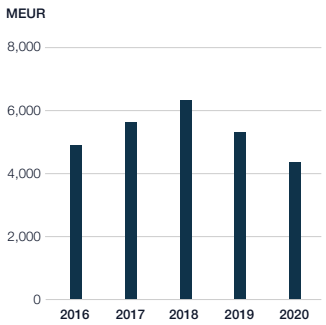
WÄRTSILÄ IN BRIEF
Wärtsilä is a global leader in smart technologies and complete lifecycle solutions for the marine and energy markets. By emphasising sustainable innovation, total efficiency and data analytics, Wärtsilä maximises the environmental and economic performance of the vessels and power plants of its customers.
www.wartsila.com

OUR PURPOSE
Wärtsilä's purpose is to enable sustainable societies with smart technology. The demand for clean and flexible energy, and the need for efficient and safe transportation are increasingly affecting the way that customers operate. This forms the basis for Wärtsilä's Smart Marine and Smart Energy visions.

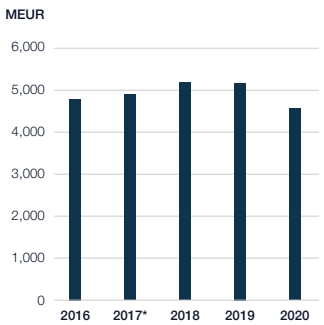
THIS IS WÄRTSILÄ

KEY FIGURES

Order intake

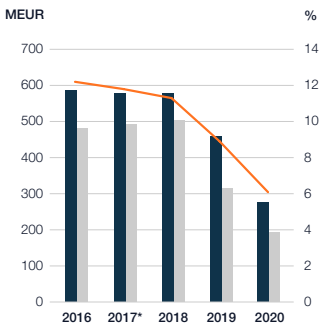


Group net sales development



* Restated due to IFRS 15

Result



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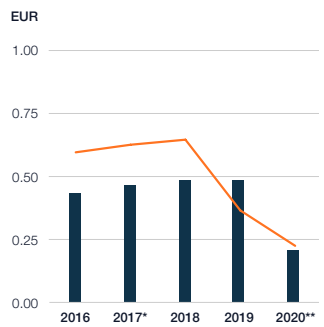
Dividend/share, earnings/share

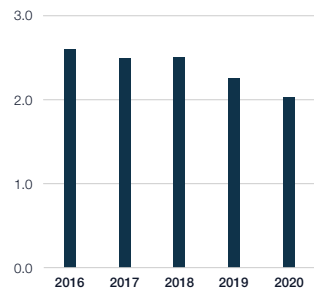


* Restated due to IFRS 15

** Proposal of the Board

Dividend/share and earnings/share for 2016–2017 have been restated to reflect the increased number of shares.

Lost-time injury frequency rate (LTIF)



Personnel
17,792

Operations in
>70 countries

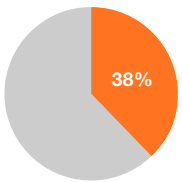
Sales and service network
258 locations

BUSINESSES IN BRIEF

Wärtsilä Marine Power

Wärtsilä Marine Power leads the industry in its journey towards a decarbonised and sustainable future. Our portfolio of engines, propulsion systems, hybrid technology, and integrated powertrain systems deliver the reliability, safety, and environmental performance that Wärtsilä's Smart Marine vision encompasses. We offer our customers performance-based agreements, lifecycle solutions, and an unrivalled global network of maritime expertise.

Share of total net sales



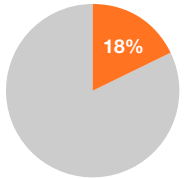
Personnel

8,355

Wärtsilä Marine Systems

Wärtsilä Marine Systems offers high-quality products, solutions, and lifecycle services related to the gas value chain, exhaust treatment applications, seals & bearings, shaft line repair services, underwater services, and marine electrical integrations. Our aim is to provide the latest and most efficient solutions in line with Wärtsilä's Smart Marine Ecosystem vision for a safer, better, and more sustainable future for our customers.

Share of total net sales



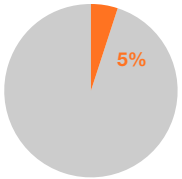
Personnel

1,897

Wärtsilä Voyage

Wärtsilä Voyage transforms how vessels perform their voyage by leveraging the latest digital technologies to deliver a step-change in safety, efficiency, reliability, and emissions. We are committed to creating a Smart Marine Ecosystem, whereby every vessel can connect to digital services that make voyaging safer and greener. With the broadest Smart Marine portfolio in the market, we are well positioned to lead the industry towards becoming digitally connected across the entire value chain and to be the first partner of choice when leveraging the latest digital technologies.

Share of total net sales



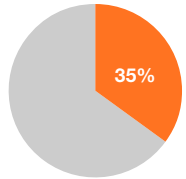
Personnel

1,915

Wärtsilä Energy

Wärtsilä Energy leads the transition towards a 100% renewable energy future. We help our customers unlock the value of the energy transition by optimising their energy systems and future-proofing their assets. Our offering comprises flexible power plants, energy management and storage systems, as well as lifecycle services that enable increased efficiency and guaranteed performance.

Share of total net sales



Personnel

4,888

HIGHLIGHTS

HÅKAN AGNEVALL APPOINTED WÄRTSILÄ'S PRESIDENT AND CEO

Wärtsilä's Board of Directors appointed Håkan Agnevall as the new President and CEO for Wärtsilä. Mr Agnevall assumed the role on 1 February 2021. He succeeds Jaakko Eskola, who continues as a senior advisor to the Board and executive team until he retires on 30 June 2021.

CHANGES IN THE ORGANISATIONAL STRUCTURE AND NEW MEMBERS IN THE BOARD OF MANAGEMENT

Wärtsilä reorganised its Marine Business into three independent businesses, with the objective of accelerating strategy execution, simplifying the business structure, and strengthening business presence in the Board of Management. The new businesses, consisting of Wärtsilä Marine Power, Wärtsilä Marine Systems, and Wärtsilä Voyage, became operational on 1 July 2020.

Following this announcement, Roger Holm, previously the President of Wärtsilä Marine Business, was appointed President of Wärtsilä Marine Power, Tamara de Gruyter was appointed President of Wärtsilä Marine Systems, and Sean Fernback was appointed President of Wärtsilä Voyage.

Furthermore, Sushil Purohit was appointed President of Wärtsilä Energy.

WÄRTSILÄ'S LONG-TERM COMMITMENT TO SUSTAINABILITY RECOGNISED BY DOW JONES SUSTAINABILITY INDICES

For the fifth year in a row, Wärtsilä was selected as an index component of the Dow Jones Sustainability Indices (DJSI), both in the DJSI World and DJSI Europe indices. S&P Dow Jones Indices has been a pioneer in ESG indexing for 20 years.

Member of
Dow Jones
Sustainability Indices
Powered by the S&P Global CSA

DEVELOPING FUTURE FUEL READINESS

Wärtsilä, in close customer cooperation with Knutsen OAS Shipping AS and Repsol, as well as with the Sustainable Energy Catapult Centre, will commence the world's first long-term, full-scale, testing of ammonia as a fuel in a marine 4-stroke combustion engine. The project will begin in the Sustainable Energy Catapult Centre's testing facilities at Stord, Norway during the first quarter of 2021.

In addition, Wärtsilä announced that it is developing the combustion process in its gas engines to enable them to burn 100% hydrogen fuel. Wärtsilä has researched hydrogen as a fuel for 20 years, and has tested its engines with blends of up to 60% hydrogen and 40% natural gas.

SUCCESSFUL APPLICATION OF WÄRTSILÄ NAVI-PORT HIGHLIGHTS BENEFITS OF JUST-IN-TIME SAILING

Wärtsilä, together with project partners Carnival Maritime and HVCC Hamburg Vessel Coordination Center, have successfully implemented and tested the new Wärtsilä Navi-Port solution for just-in-time sailing. Together, the partners achieved seamless exchange of data between ship and shore under real-life conditions, thereby enabling optimal port arrival. Furthermore, Wärtsilä Navi-Port received approval in principle from Bureau Veritas Marine and Offshore for meeting the classification society's cyber security requirements.

SUPPORTING THE TRANSITION TO 100% RENEWABLE ELECTRICITY SYSTEMS

Wärtsilä published an extensive interactive map Atlas of 100% Renewable Energy on cost-optimal, 100% renewable electricity systems globally. The map provides valuable information on the potential of renewable energy in relation to geographical regions and their solar and wind conditions. Wärtsilä has modelled 145 countries and different regions of the world in one hour dispatch granularity to provide an illustrative guide as to the cost-optimal potential of developing 100% renewable electricity systems.

COOPERATING ON CARBON-NEUTRAL SYNTHETIC BIOGAS PRODUCTION

Wärtsilä and Vantaa Energy Ltd., a Finnish energy company, signed an agreement on a joint concept feasibility study for a power-to-gas facility at Vantaa Energy's waste-to-energy plant in the city of Vantaa. The power-to-gas facility would produce carbon-neutral synthetic biogas using carbon dioxide emissions and electricity generated at the waste-to-energy plant. The purpose of the joint study is to confirm the optimal size of the project and the cost of synthetic biogas for district heating, as well as to understand the boundary conditions for project feasibility.

WÄRTSILÄ POWERS THE WORLD'S LARGEST NGO HOSPITAL SHIP

Mercy Ships, a philanthropic organisation providing essential healthcare to needy patients in developing countries, will be utilising Wärtsilä's engine technology in the organisation's new hospital ship. When completed, the Global Mercy will be the world's largest vessel of its kind, and will be powered by four Wärtsilä 32 engines. Wärtsilä will also service the ship under a five-year agreement.

OPERATING ENVIRONMENT

MARINE

Decarbonisation and digitalisation transforming marine operations

The transition towards decarbonised operations is of paramount importance to the maritime industry, and stricter regulations on ship emissions are expected to come into force worldwide. Over the coming years, industry players must work together to develop economically viable options that meet the International Maritime Organisation's (IMO) emission targets. The IMO aims to reduce the average CO_2 emissions per transport work by at least 40% by 2030 and the total annual greenhouse gas (GHG) emissions by at least 50% by 2050, compared to 2008 levels. Furthermore, the EU is set to include shipping in its emissions trading scheme, while green finance has gained traction with increased attention on green bonds and sustainability linked loans.

Vessel owners must embrace changes in four areas for the transition towards decarbonisation to succeed:

- A shift in energy sources and fuels towards green alternatives
- The use of abatement technologies to remove harmful emissions
- The adoption of technologies that improve energy efficiency
- The use of data to optimise voyage and operational factors

The adoption of alternative fuels is key to the achievement of GHG targets. Significant investments have been made in zero-carbon fuels, such as green ammonia and hydrogen. However, LNG remains the most well-developed alternative, with 3% of the fleet and 26% of the order book fitted or set to be equipped with dual-fuel engines, and more than 120 ports currently providing LNG bunkering services. The abatement of local pollutants is also a key focus area, where the global sulphur cap set by the IMO came into force at the beginning of 2020. This means that ships have either to use low-sulphur fuel or install scrubbers. Currently, 23% of the fleet and 28% of the order book in terms of gross tonnage is fitted with scrubber systems.

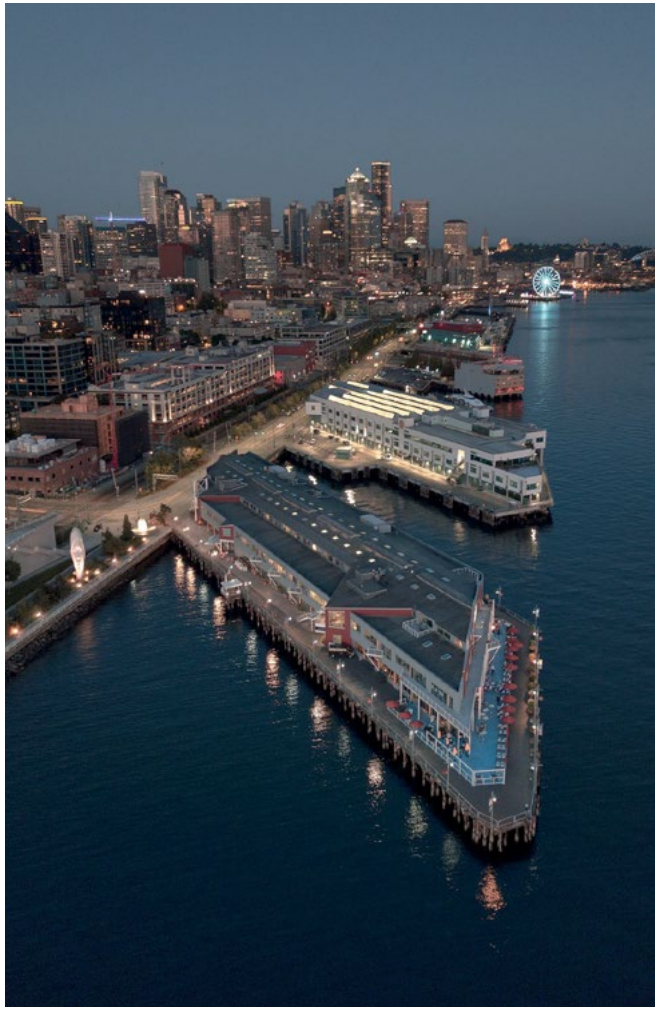
Significant leaps in energy efficiency are also possible through the application of innovative technologies, both in newbuild and retrofit projects. These include hybrid systems, hull air lubrication, rotor sails, as well as advanced rudder and propeller designs. The drivers for the implementation of new solutions are balanced between the common effort to reduce emissions and the potential for lowering operating costs.

In the context of digitalisation, fleet optimisation solutions are increasingly being acknowledged as central to the global requirement for reducing operating costs, while complying with environmental ambitions. New digital applications and cloud-based remote solutions are gaining traction, while ship-to-port communications, as well as document and data exchange, are increasingly being handled electronically rather than via personal interaction. In parallel, different degrees of autonomous shipping are being explored as a key means for boosting fleet efficiency, safety, environmental sustainability, and overall operational performance.

Market drivers

The global demand for new vessels is mainly driven by:

- Developments within the global economy and the resulting impact on seaborne trade
- The energy mix and its resulting impact on the offshore industry, as well as on the trading of oil, coal, and gas
- Demand for cruise and passenger transportation
- The move towards decarbonisation and greater energy efficiency, as well as the introduction of new regulations to improve safety and sustainability
- Shipyard capacity and newbuild prices
- Decommissioning and scrapping
- Fuel prices and availability
- Interest and freight rates



The main drivers for Wärtsilä's marine service business are:
- The size and age profile of the installed base
- Equipment running hours
- Customer specific spending priorities

Competitive landscape

As a result of our broad product and solution portfolio and global market presence, our field of competitors is extensive. It comprises several original equipment manufacturers (OEMs), including engine companies such as MAN Energy Solutions, Caterpillar, Rolls-Royce Power Systems, and HiMSEN, propulsion system manufacturers such as Schottel and Brunvoll, and environmental and auxiliary equipment providers like Alfa Laval. Competitors also include electrical and automation system suppliers, notably Siemens, GE, and ABB, fuel gas system providers, such as TGE Marine, navigation and communication system and fleet optimisation solution providers like Furuno and JRC, as well as companies with extensive offerings, such as Kongsberg. We hold a leading position in many of these areas, including also ship traffic control solutions and maritime simulators.

The main competition in maintenance services comes from independent service companies operating globally, and local players with a limited scope of offering, such as spare part traders, repair yards, local workshops, component suppliers for spare parts (non-OEM), and field service businesses.

We have earned broad recognition throughout the maritime industry as a proven supplier of innovative and sustainable technologies and software solutions. This, together with our extensive portfolio, gives us a unique opportunity to comprehensively address the environmental challenges of the maritime industry by providing a financially attractive path towards decarbonisation.

Marine markets in 2020

The economic fallout of COVID-19 has had a notable impact on seaborne trade and passenger transportation, affecting both the appetite for newbuild investments and demand for spare parts and maintenance activities across all segments.

Cruise has inevitably been one of the most severely challenged sectors, with global travel restrictions and 'no-sail orders' causing the majority of the fleet to be left idle for most of the year. The sharp decline in domestic and international travel also affected ferry services, although some recovery was seen towards the latter part of the year.

The negative impact of the pandemic on the energy markets has resulted in further cuts in offshore oil and gas exploration and production, as well as in a slowdown in the recent LNG sector expansion. The offshore wind farm industry, on the other hand, saw record investments and capacity start-ups in 2020.

The tanker market had an extraordinary second quarter of the year, driven by unprecedented demand for floating storage, but the subsequent downturn in oil trade and an easing of floating storage demand led to a winding down of earnings. The bulk carrier sector had a very challenging first half of the year due to weak Brazilian iron ore exports and a sharp fall in coal trade, but improvements began to filter through by mid-year. Container trade was initially severely hit by the COVID-19 crisis, on the back of widespread lockdowns disrupting the world economy, consumer activity, and supply chains, but later rebounded with average volumes returning to 2019 levels.

The appetite for scrubber retrofits or installations on newbuilds was limited by the narrow price spread between high- and low-sulphur fuels, which was caused by the turmoil in the global oil markets, and uncertainties related to the COVID-19 pandemic.

On the other hand, the decarbonisation of the shipping industry continued to accelerate, and the IMO's 2030 and 2050 targets for reducing GHG emissions remain high on the agenda. At the same time, restrictions on physical travel have further accelerated the adoption of digital technology, which enables secure remote monitoring and training during the pandemic. Furthermore, the uncertainty and economic squeeze set off by the pandemic have increased interest in fleet optimisation and performance management technologies that enable fuel and operating cost savings.

ENERGY

Focus on energy transition and flexibility

Wärtsilä's operating environment is influenced by the ongoing energy transition. A more sustainable energy infrastructure is emerging, driven by economics and climate policies. The past decade has witnessed growing investments in solar and wind energy, as these technologies have become the cheapest source for new bulk electricity in two thirds of the world. By 2030, solar and wind technologies are expected to become cheaper than existing baseload generation almost everywhere. The cost of energy storage technology has also plummeted. The storage market is expected to grow rapidly in the coming years, driven by economies of scale and technology development. In parallel, climate policies, such as tightening emissions legislation, are forcing the closure of ageing carbon-intensive energy sources, thus further encouraging the deployment of renewable energy.

Change in vessel contracting

-29%

Change in renewable electricity generation

7% (source: IEA estimate)

The intermittent nature of solar and wind generation is gradually beginning to impact the running hours of conventional thermal capacity designed typically for baseload operation. The role of power system flexibility has thus become a topic of growing importance, as it will be a key enabler of sustainable power systems in the future. Flexible gas-based generation and energy storage are the key solutions for meeting future power system reliability and flexibility needs. Power-to-X solutions will further support reaching the 100% share of renewables in power systems.

In emerging markets, electricity demand is increasing, along with economic growth and improving standards of living. Interest in renewable energy sources is also increasing rapidly as a result of lowering costs, but conventional thermal technology still plays a key role in power production in emerging countries. Demand is the highest for flexible technologies that can adapt to an increasing share of renewables in the future, thus enabling the most sustainable and affordable power systems.

Natural gas continues to be considered as a transition fuel towards more sustainable energy systems. In the developing world, the gas infrastructure is improving and replacing more carbon-intensive energy sources in baseload generation. On a global scale, the role of gas will change, as renewable energy sources will impact the running hours of baseload generation, and more system flexibility will be required. Flexible gas technology will have a key role to play in countries where the energy transition is more advanced, as well as in developing countries seeking future-proof baseload technology.

Hydrogen and synthetic fuels offer interesting possibilities for decarbonised power generation in the future. In a power system that incorporates renewables and battery storage, some of the excess renewable energy could be used in the production of green hydrogen to fuel power plants that balance the power system when cloudy or calm weather reduces the output of solar and wind power plants. Green hydrogen produced via electrolysis could be used as a fuel as such, or could be synthesised to facilitate its handling and use. Hydrogen and synthetic fuels are especially valuable in providing medium- and long-term flexibility, as they can be stored and transported when needed.

In addition to technology development, wider adoption of hydrogen in power or other sectors, such as industry or transportation, would require extensive investments in infrastructure.

Technological progress, along with increasing power system complexity with intermittent renewable energy sources, is paving ways to use new digital technologies. Remote monitoring, as well as recommendations and forecasting enhanced by artificial intelligence, are becoming more common in power plant operations. New data, along with platform-based business models and solutions, enable system-level integration and asset base optimisation throughout the entire lifecycle of the assets.

Market drivers

The global demand for energy solutions is mainly driven by:

- Economic growth, electrification, and improving standards of living
- Rapidly increasing use of intermittent renewables combined with the phase-out of inflexible thermal capacity
- The global decarbonisation agenda by governments and companies, and a tightening regulatory environment
- Gas supply infrastructure and gas availability, and emergence of carbon-neutral fuels
- Increasing use of data and digitalisation

The main drivers for Wärtsilä's energy service business are:

- The size and age profile of the installed base
- Equipment running hours

Competitive landscape

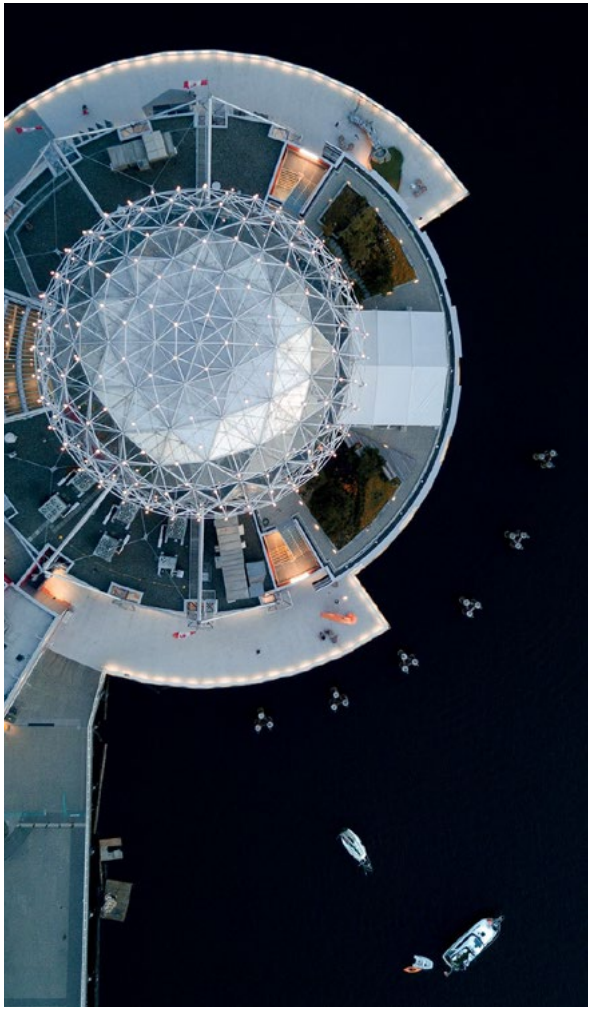
Wärtsilä's competitors in power generation comprise equipment manufacturers of internal combustion engine and gas turbine technologies. Wärtsilä is a market leader in medium-sized power plants with competitive technology, project management capabilities, and global service support. Some key competitors include MAN Energy Solutions, GE Power, and Siemens Energy.

As regards energy storage systems and optimisation, competition comes from other system integrator companies. Wärtsilä is an experienced provider of balancing power with advanced energy management systems and unique engineering, procurement, and construction (EPC) capabilities. Competitiveness in this domain is determined by the ability to source storage technology cost competitively, the ability to provide energy system management solutions for the optimal integration of assets, and project management capabilities. Notable competitors in this market include Fluence and Tesla.

Competition within service activities is fragmented in nature. It mainly consists of customers conducting operations and maintenance themselves and local third-party service companies with a more limited scope of offering. In lifecycle solutions, competition comes from a few regional players capable of offering plant operational services. In asset performance management services, there are both new and more established competitors that provide software and analytics across industries, while some utilities are establishing these skills and knowledge in-house. Wärtsilä has the capabilities to ensure reliable and efficient operations of the installed base throughout the entire lifecycle of the assets, thanks to its global service network and extensive know-how and experience.

Energy markets in 2020

The COVID-19 pandemic and the resulting slowdown of economic activity and decline in energy demand negatively impacted the power sector. Inflexible baseload generation saw the biggest decline, but also the running hours of liquid and gas fuelled power plants came down. Uncertainty regarding the duration, development, and economic impacts of the pandemic caused customers to postpone investments in new power plant capacity. Site access constraints affected project deliveries and field service activities. The energy transition is expected to slow temporarily as a result of delays in project deliveries and investment decisions, cheaper fossil fuels, and the focus on containing the virus spread and mitigating its business impacts. Nevertheless, activity in the energy storage markets improved towards the latter part of the year, driven by the increasing need for short-term flexible capacity in power systems with a higher share of renewables. The allocation of financial stimulus packages by governments and monetary institutions to the energy sector should further support investments in green energy.



ANSWERING TO THE GROWING DEMAND FOR REMOTE SUPPORT

In 2020, we saw digital transformation take another step forward as the need for remote and virtual services accelerated due to the global COVID-19 pandemic. In response to restrictions related to travel and physical interaction, we expanded manned operations in Expertise Centres, launched the Assured Operations and Smart Support Centre services, and moved our simulator training to the cloud.

When the COVID-19 pandemic hit the world this past spring, our Expertise Centres in the Middle East and Asia were the first to respond by expanding to 24/7 manned operations. Wärtsilä's global network of Expertise Centres provides various support functions, including operational support, asset diagnostics, and condition-based maintenance planning for those marine and energy customers that have lifecycle solution agreements with Wärtsilä.

Answering to challenges brought on by the global state of emergency, digitally enabled remote expertise services support our customers in keeping their energy and marine installations running safely and smoothly. The aim is to improve customer satisfaction by diagnosing problems faster and more accurately, and by running more efficient service operations.

"For example, instead of arranging for an engineer to travel to a power plant site for troubleshooting, we can review power plant performance parameters from our Expertise Centres and provide instant support and enable fast case resolution," says **Markus Ljungkvist**, Vice President of Energy Services at Wärtsilä.

He adds that Expertise Centres optimise the performance of power plant assets by taking a holistic view of operations. Using a broad spectrum of data collected by sensors on-site, Wärtsilä can even evaluate the condition of certain installations in real time.

"Having the ability to support our customers remotely brings availability and reliability as well as a cost advantage. This is especially important for supporting plant operations in these times," Ljungkvist says.

Reducing costs with remote support

In another attempt to react swiftly to the restricted access to normal field service expertise due to the pandemic, we launched the Assured Operations remote support service for Wärtsilä 4-stroke and 2-stroke engine customers in June. A similar range of services has previously been on offer to our Energy customers, available around-the-clock and ready to be mobilised in less than 24 hours. Support is delivered by the Expertise Centres via chat, video, and audio collaboration tools, and can be provided using a smartphone, tablet, or computer with a remote support application.

Similarly, our portfolio of Voyage products and solutions was further enhanced in 2020 with the launch of the global Wärtsilä Smart Support Centre, which offers fast remote service response. Faster response times lead to reduced costs when losses from downtime

are minimised and costly on-site visits are no longer necessary, as operational support is delivered via virtual service engineers.

Smart Support is designed to maintain all Wärtsilä Voyage equipment, including ship handling solutions, such as the Electronic Chart Display and Information System (ECDIS), simulation and training systems, and ship traffic control solutions. Support is available on remote troubleshooting, issue and emergency notifications, and software and license updates.

"The Wärtsilä Smart Support Centre connects our equipment and systems, for example ECDIS, simulators, and our Vessel Traffic System, allowing significant enhancement to our remote service capabilities. It gives an opportunity to really establish the status of the systems, to carry out remote software updating, and to enable the customer and Wärtsilä to work closely together on the systems," says **Torsten Büssow**, Director, Wärtsilä Transas.

The Smart Support service was piloted together with the Danish shipping company J. Lauritzen AS, where the first experiences were positive:

"Firstly, the crew is aware that 95% of all errors can be rectified remotely, and they don't need to arrange for a service engineer in the next port to solve the issue. This means that we have the equipment up and running at all times. Secondly, the number of e-mails to solve a technical or user-related problem goes down from 100 to 5, avoiding excessive communication," says **Hans Elker Hansen**, Marine QA, Vetting & Nautical Manager at Lauritzen.

Training anytime, anywhere

Adding to Wärtsilä's already extensive offering of remote and virtual services in other areas, 2020 saw the launch of a new cloud simulation platform to help seafarer schools and shipping companies continue training despite travel restrictions and social distancing measures during the pandemic. Instructors and students are offered remote access without geographical limitations to Wärtsilä's existing simulator products.

"For both training institutions and shipping companies, remote learning is a growing trend that is especially valuable in times like these. It is important that the training can continue with or without classroom attendance, the only difference being the delivery method," says **Neil Bennett**, Director of Global Simulation Sales at Wärtsilä Voyage.

Bennett adds that considering the overall adaption of digital solutions, the Wärtsilä Voyage Cloud Simulation has already been successful in pushing the maritime industry into doing things differently and seeing real benefit in new ways of working.

"We don't foresee e-training becoming the default way of operating in shipping, as assessments will still need to be undertaken at a physical location so that verifications are legitimate. However, with the evolution of cloud-based simulations, we are moving towards blended learning strategies, where training is carried out using a combination of services provided both remotely and on-site," Bennett points out.

Enhancing efficiency and safety of maritime operations

During autumn 2020, several customers selected Wärtsilä's Cloud Simulation solution as their online training platform. The first application of the technology in the US was supplied to the Massachusetts Maritime Academy (MMA), allowing cadets to continue receiving safe and effective navigational training despite restrictions imposed because of the COVID-19 pandemic.

"Wärtsilä's Cloud Simulation solution solves our immediate needs to offer expanded online content due to COVID-19. It also gives us a long-term platform for simulation in blended learning that will allow MMA to continue leading the industry with innovative technologies for our students," comments **John Belle**, Associate Professor at the Academy.

Digital learning is set to be a key training asset also for future-oriented shipping companies. Anglo-Eastern leads the way as the first global ship management company to implement the Wärtsilä Cloud Simulation Solution. With over 600 ships under management, Anglo-Eastern will use the cloud-based simulators for navigation, engineering, and liquid cargo handling training. The company aims to transform its ship management systems from separate analogue applications into smart, integrated enterprise platforms for the future.

"Cloud simulation represents an additional, complementary tool that fits well into our overall training strategy for our crew pool of more than 29,000 seafarers. Future officers will be working on more sophisticated navigation equipment, and regular training on simulators will become the norm, similar to the airline industry," says Capt. **Pradeep Chawla**, Managing Director of QHSE and Training, Anglo-Eastern.

"By making remote training via cloud services both feasible and highly efficient, Wärtsilä is providing a valuable tool that can support training organisations in their development of blended learning strategies. The cloud system is a further example of our strength in applying smart technologies to deliver greater efficiencies for our customers," Neil Bennett concludes.

STRATEGY

Wärtsilä's purpose is to enable sustainable societies with smart technology. The demand for clean and flexible energy, and the need for efficient and safe transportation are increasingly affecting the way that customers operate. This forms the basis for Wärtsilä's Smart Marine and Smart Energy visions.

Wärtsilä's profitable growth ambitions are supported by its strong presence in key markets and a superior global service network. An integrated portfolio of services, systems, and products that covers customer needs throughout the full lifecycle positions Wärtsilä well to respond to the demand for energy efficient and innovative solutions. Emphasis is given to optimising performance through upgrades, modernisations, fuel conversions, and safety solutions, and to using data analytics and artificial intelligence to support customer business decisions. Connectivity and smart technology play a key role in the optimisation of assets, and in providing strategic input to customers in order to enhance their business growth. Asset management will drive future growth in lifecycle solutions and enable new "as-a-service" business models.

With its flexible production and supply chain management, Wärtsilä constantly seeks new ways to maintain high quality and cost efficiency – often in cooperation with customers and leading industrial partners. Investments in research and development, specifically in digitalisation, create a strong foundation for securing and strengthening the company's position at the forefront of market innovation. Customer value creation through collaboration and knowledge sharing are also key components in Wärtsilä's innovation activities.

This innovative culture, together with a constant emphasis on safety, diversity, and high ethical standards, attracts skilled and committed people and creates the basis for a high performing organisation. The focus on operational excellence identifies Wärtsilä as being easy to do business with, and drives increased productivity and efficiencies for its customers.

SMART MARINE

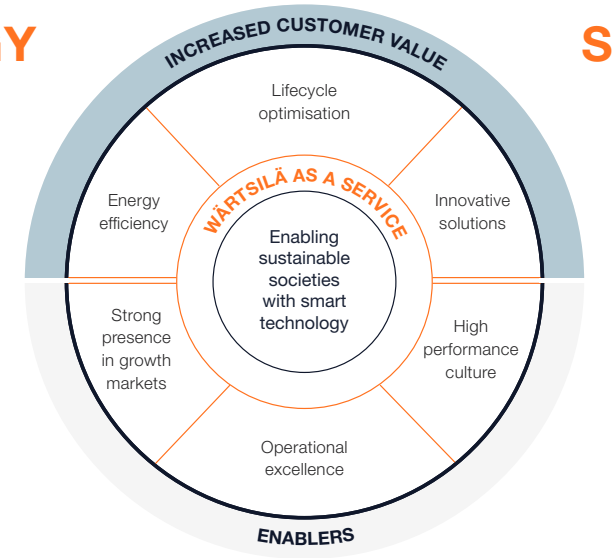
Wärtsilä's aim is to lead the maritime industry's transformation towards a Smart Marine Ecosystem. Building on the sound foundation of being a leading provider of innovative products, integrated solutions, and lifecycle services to the marine and oil & gas industries, Wärtsilä delivers new sources of value to customers through connectivity, digitalisation, and the use of smart technologies.

The maritime industry has ambitious environmental targets and is increasingly aware of the necessity of this transformation. Wärtsilä and other players across the industry are collaborating on introducing new technologies and cleaner fuels to accelerate the path towards decarbonisation. Further opportunities arise from eliminating major sources of inefficiencies, such as overcapacity, inadequate port-to-port fuel efficiency, and the time wasted waiting to enter ports and other high traffic areas.

WÄRTSILÄ'S STRATEGY

SMART ENERGY

Leading the path towards a 100% renewable energy future



SMART MARINE

Leading the industry transformation towards a Smart Marine Ecosystem

Wärtsilä's three marine businesses, along with their customers and partners, are ideally positioned to achieve positive disruptive development:

- Marine Power creates a commercially viable path towards decarbonisation by providing fuel efficient power systems that can be upgraded throughout the assets' lifecycle to run on low-carbon and/or carbon-neutral fuels.
- Marine Systems develops technologies, products, and solutions related to the gas value chain, exhaust treatment, shaft line services, and marine electrical integrations. The aim is to enhance safety and energy efficiency, while lowering emission levels.
- Voyage provides the technology to optimise fleet performance and enhance the safety of operations through real-time ship-to-shore communication, connected navigation, and the provision of automation and smart autonomy solutions.

By applying smart technology and performance optimisation services, Wärtsilä delivers greater efficiencies, a minimised climate impact, and a higher level of safety to the shipping industry. This will result in more sustainable, safe, and profitable operations for ship owners and operators around the world.

SMART ENERGY

The energy landscape is in transition towards more flexible and sustainable energy systems, driven by the decreasing cost of new technologies. Wärtsilä's objective is to be its customers' most trusted partner in unlocking the value of an optimised energy transition by providing essential technologies, services, and solutions for sustainable, reliable, and affordable power systems.

Integrating renewables within power systems is increasing the demand for flexible power solutions, with flexible gas generation and energy storage at the forefront. Digitalisation throughout the industry brings new opportunities for predicting consumption and maintenance needs, and can improve competitiveness.

Wärtsilä is at the very core of future energy systems. Its flexible power generation solutions provide a unique combination of energy efficiency, fuel and operational flexibility, high reliability from peaking to baseload applications, and a readiness to adopt future synthetic and renewable fuels. The energy storage and advanced optimisation software offering provides further growth opportunities. With its broad range of high-quality energy services, Wärtsilä enhances the business performance of power generation companies by optimising power plant performance across the lifecycle. The goal is to secure customer investments with guaranteed power plant availability and reliability.

Wärtsilä aims to continuously develop optimal, environmentally sound, and commercially viable solutions for customers by focusing on its core competences: market understanding and modelling, system optimisation, technological leadership, engineering, procurement, and construction capabilities, and lifecycle support.

SUSTAINABILITY

Economic

Wärtsilä aims to meet shareholder and customer expectations, and contribute towards the well-being of society. This requires efficient, profitable, and competitive company operations. Good economic performance establishes a platform for the other aspects of sustainability – environmental and social responsibility.

Environment

Wärtsilä's aim is to be a forerunner in sustainable innovation and furthermore reduce emissions in our customer's operations and in societies overall. Wärtsilä supplies smart technologies and services that help to mitigate climate change and protect our oceans and seas. We continuously work on achieving high environmental standards in our operations, and improving the environmental performance and efficiency of our products and solutions through R&D, collaboration, partnerships, and active engagement in ecosystems. In doing this, we help our customers and society at large to meet the goals of the tightening global environmental regulations and guidelines.

Social

We have high ethical standards and we care about the communities in which we operate. Our business operations and relations with our stakeholders are governed by our Code of Conduct. Wärtsilä is a responsible employer, and we seek to offer our employees an interesting and exciting workplace where openness, respect, trust, equal opportunities, and scope for personal development prevail. A further aim is to offer a hazard-free working environment to our employees and contractors, and to minimise the health and safety risks associated with the use of our products and services. Through effective supply chain management and continuous development, we strive to ensure that our values expressed in the Code of Conduct are promoted in our whole value chain.

CONNECTIVITY AND SMART TECHNOLOGY PLAY A KEY ROLE IN THE OPTIMISATION OF ASSETS.

CREATING VALUE

WÄRTSILÄ'S ASSETS IN VALUE CREATION

R&D and innovation
- R&D expenditure EUR 153 million
- Approx. 2,600 patents and patent applications
- Data assets and analytics
- Data-driven co-creation

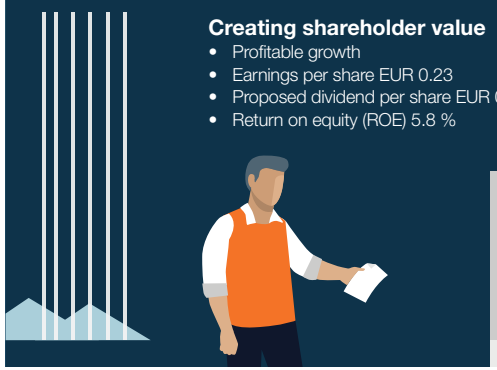
Global presence
- 258 sales and service units
- 9 sizeable manufacturing sites (incl. joint ventures)
- Approx. 1,200 global direct suppliers

People & Culture
- A global workforce of approx. 18,000 employees in over 70 countries
- Driving our purpose and values – purpose and values index* 80%
- Committed to our customers – customer orientation index* 70%
- Fostering continuous learning and development
  - Development discussion completion rate 91%
  - 19,741 employee training days
  - 414 leadership training days

Towards a 100% renewable energy future
- 180 countries and power systems modelled worldwide
- 25% of engine MWs ordered in 2020 backing up renewables
- Approx. 800 MWs of energy storage and optimisation systems installed globally
- 7 Power-to-X cooperation projects

Contributing to sustainable shipping
- Over 2,600 dual-fuel engines in operation
- 6 hybrid upgrade projects sold in 2020
- Over 50 energy saving devices for propulsion machinery sold in 2020
- 100% growth in vessels connected to Wärtsilä Voyage's digital solutions
- 158,000 tons of CO_2 emissions reduced with Eniram solutions in 2020
- 10 future marine fuels cooperation projects

Creating shareholder value
- Profitable growth
- Earnings per share EUR 0.23
- Proposed dividend per share EUR 0.20
- Return on equity (ROE) 5.8 %



Enhancing wellbeing & safety
- Employee engagement index* 73%
- Leadership index* 73%
- Wages, salaries, and other employment expenses EUR 1,192 million
- Equal and competitive remuneration
- LTIF 2.03

Contributing to society
- Expanding the access to sustainable and reliable electricity
- Decarbonising transportation
- Collaboration with over 20 universities
- Donations EUR 563 thousand

* Based on an internal employee survey

PROGRESS AND INNOVATION AROUND FUTURE FUELS

In October, Wärtsilä was selected as one of the Top 10 Innovation winners for 2020 by the Innovation for Cool Earth Forum (ICEF), hosted by the Government of Japan. The award was given for Wärtsilä's development work in assessing future fuel capabilities, and in particular for its combustion tests using ammonia as fuel. By leveraging the company's unique experience in developing flexible engine solutions, Wärtsilä aims to answer the pressing needs in its customers' industries by accelerating development in the area of future fuels. In 2020, substantial steps have been made.

Building on existing know-how

Ammonia can be created with green energy and contains no carbon, so it doesn't release carbon dioxide when combusted. It can be produced and used with no carbon emissions whatsoever: a huge advantage in the journey towards a cleaner and sustainable world.

About 175 million tonnes of ammonia is currently produced annually. Its main use is in fertilisers, but you probably have ammonia in your house, as it is a common agent in cleaning products. Generally speaking, we already have the know-how to use ammonia; the challenge is to apply this knowledge in innovative ways.

"If we modify the fuel, we can use it in our current engines," says **Kaj Portin**, General Manager, Sustainable Fuels. "For instance, maybe we can mix ammonia with liquefied natural gas (LNG) or diesel to get it to ignite."

Wärtsilä is testing the use of ammonia with dual-fuel and spark-ignited gas engines, and in 2022, will begin working with ship owners on field tests.

In addition to using ammonia in regular combustion engines, there is also another option: fuel cells, electrochemical cells that convert the chemical energy of a fuel and an oxidising agent into electricity. Using hydrogen in a fuel cell is a common idea, but ammonia can also be used in one, which is already happening on one Norwegian vessel.

"One major advantage of ammonia is that the infrastructure to use it already exists," explains **Cato Esperø**, Sales Director, Wärtsilä Norway. "It is already shipped around the world in huge quantities."

Wärtsilä is involved in a number of other ammonia-related projects. Carnival is studying the use of ammonia on their huge fleet of cruise ships. Repsol wants clean energy produced by ammonia on their offshore rigs.

"We are really excited about the opportunity ammonia as a fuel provides," Esperø says. "In the near future engines will be running with zero carbon emissions. It will happen fast: we are doing something good for the future, and this will be great news for the whole world."

Power-to-X in action

Methane represents another viable alternative fuel, thanks to agents so small we can't even see them: microorganisms. Microbes can help us create synthetic fuel using excess renewable energy in a process called biomethanation. This is an example of the Power-to-X process, where excess renewable energy, along with carbon dioxide and hydrogen, is converted into a form which can be stored for later use. In this case, power is ultimately transformed into synthetic methane gas. The Power-to-X process is a key to accelerating the transition

to a sustainable future, where there will be an excess of renewable energy available.

There are other ways to create methane, such as catalyst technologies, but currently some of these methods need high pressure and high temperatures. Q Power – one of Wärtsilä's partners in the development and commercialisation of renewable fuels – has a different approach.

"By using microorganisms in our unique bio-reactors we can perform the process using low temperatures and no pressure," their R&D Director **Anni Alitalo** says. "In addition, we don't need to mix or constantly pump fluid. Our technology solves the problem of needing lots of energy to create biomethane."

A major benefit of biomethane is that it doesn't require extensive new infrastructure. The world already uses methane and LNG for energy generation and transport, and bio-LNG, liquefied biomethane, and liquefied synthetic methane can replace LNG with no changes to existing systems.

Biomethane does, however, have issues that need to be addressed. First, it needs raw material, and biogas plants, such as the carbon-neutral synthetic biogas production, could be built close to major forestry, food, or agriculture centres where they could source biomass such as residues. The biggest challenge currently is cost, but as biogas plants scale up production, costs are expected to come down in the same way as wind and solar power. Even more importantly, if the costs of carbon emissions are included in the price of fossil fuels, then biomethane begins to look much more attractive.

Hydrogen also has strong potential as a future fuel, and Wärtsilä is keen to take a leading role in using it for flexible power generation. So far, the market for hydrogen engines has been limited, but the interest and need for them is likely to emerge in years to come as the use of fossil fuels is going to reduce.

"Wärtsilä is testing concepts for both blending hydrogen into natural gas as well as pure hydrogen operation," says **Jussi Heikkinen**, Director, Growth & Development, Americas Area, Wärtsilä Energy. "With the R&D process well underway, our engines can already use hydrogen as a blend, and we will be ready to bring hydrogen engines to the market when the demand emerges."

Hydrogen burns with air to produce water, without any carbon emissions, making it perfect for use in 100% clean energy portfolios. When hydrogen is produced using excess solar or wind electricity from water, it can be produced inexpensively almost anywhere. NO_x emissions from burning hydrogen may be a little higher than on natural gas, depending on combustion parameters, but particulate emissions should be minimal.

"There are, however, certain safety risks," Heikkinen explains. "Hydrogen is extremely flammable and burns very fast. Particular caution needs to be taken when engineering a product using more than 25% hydrogen. Special safety regulations for its use need to be in place before it becomes widely available. In some locations, these regulations are still under development."

A bigger issue is the lack of infrastructure globally to produce, store, and distribute hydrogen at scale. This infrastructure will require both time and significant investment.

The cornerstone is already here

To be fair, lack of infrastructure is a key challenge when considering any of these alternative fuels, and we have seen already from the example of LNG that it takes a long time to build up this infrastructure.

This is one reason why it may be wise to invest in LNG right now, as the only alternative fuel with an existing infrastructure. LNG can be used to make emissions-based improvements right away, while preserving the capacity to switch to bio- or synthetic LNG in the future.

"We see LNG as a cornerstone for meeting the IMO's 2030 targets," points out Wärtsilä's **Johnny Kackur**, General Manager, Merchant and Gas Carrier Segment Sales. "Fossil LNG alone lowers CO_2 emissions 7–15%, and when you use it together with improved technologies like smart propulsion machineries to increase efficiency, it's possible to reach the 2030 goals."

Bio-LNG may be an even more ecologically sound route to take, since it works on the principle of waste-to-energy using manure, forest residue and many other types of waste. However, the critical aspects to consider when selecting a fuel for a new vessel are availability and energy density. Today, the supply chain is unevenly developed, but the latest studies suggest that a sustainable energy supply could be in place by 2030.

Where availability exists, forerunner projects have begun, such as a plant for production of CO_2-neutral liquid transport fuels based in Cologne, Germany, with a capacity of approximately 100,000 tons per year.

It is estimated that biomass-based fuels extracted from forestry products and residues, agricultural residues, and crops grown for energy on surplus land could yield enough volume to supply the whole marine industry and most heavy road transportation with bio-LNG, assuming all vessels were converted.

Regardless of all the uncertainties, there will definitely be a future for internal combustion engines purely due to their unbeatable flexibility. Wärtsilä's engines can run on diesel or LNG and certain synthetic fuels such as carbon-neutral methane and methanol as well as hydrogen blends, and it will also be possible to run the same engines on alternative fuels when they are available. Regardless of one's choice of future fuel, the internal combustion engine is a proven technology, and a fuel agnostic one, well-suited to meet the coming challenges.

SUSTAINABILITY

SUSTAINABILITY AT WÄRTSILÄ

OUR SUSTAINABILITY APPROACH

Our commitment to sustainability is based on our purpose and strategy, which along with our values, principles, and sustainable development objectives create the framework for our product development and responsible business practices. Our sustainability strategy is based on three closely interrelated pillars: economic, environmental, and social performance. We aim to be a profitable company that contributes towards the well-being of society by being a forerunner in sustainable solutions while demonstrating high ethical standards.

Because of our strong emphasis on decarbonising the marine and energy markets, innovative and efficient solutions play a central role in our positive contribution towards sustainable societies. Wärtsilä businesses focus on developing and providing solutions and services that maximise the environmental and economic performance of vessels, power plants and entire systems. This is further enhanced by utilising lifecycle data, analytics and artificial intelligence.

"WITH AN URGENT NEED TO ADDRESS CLIMATE CHANGE, WE PROVIDE SOLUTIONS THAT HELP OUR CUSTOMERS AND SOCIETIES AT LARGE TO DECARBONISE."

Marko Vainikka, Director, Corporate Relations and Sustainability

SUSTAINABILITY MANAGEMENT AND MATERIALITY TOPICS

Wärtsilä's sustainability is systematically managed through group-level policies, management systems, and practices in place for material sustainability topics and impacts. The management approach covers procedures, processes, and systems to manage and monitor material topics.

Guiding principles	Management areas	Material topics
• Code of Conduct • QEHS Policy • Policy of human rights, equal opportunities and fair employment practices • Corporate Manual	• People and culture • Product design • Environmental management • Occupational health and safety management • Responsible business conduct • Supply chain management	• Emissions • Environmental compliance • Economic performance • Training and education • Occupational health and safety

The guiding principles lay the foundation for uniform management practices. Wärtsilä's Code of Conduct defines common rules for all employees, and provides guidance on our approach to responsible business practices. The Quality, Environmental, Health and Safety Policy sets principles for managing the environmental impacts of our products and services. The policy on human rights, equal opportunities and fair employment practices creates a common framework for employee practices in all group companies. It covers human and labour rights, equal opportunities, well-being at work, non-harassment, and remuneration. The Corporate Manual also includes other policies, such as anti-corruption, compliance reporting, and supply management policies. The purpose of the manual is to safeguard compliance with relevant legislation, and to provide further guidance concerning daily business conduct.

WÄRTSILÄ'S SUSTAINABILITY APPROACH

WÄRTSILÄ PURPOSE
Enabling Sustainable Societies with Smart Technology

Sustainability Strategy

VALUES	Economic	Environmental	Social	PRINCIPLES
Energy Excellence Excitement	Meeting customer and shareholder expectations Contributing to the well-being of society Efficient, profitable and competitive operations	Innovative solutions for a low-carbon economy Technology leadership through R&D High environmental performance and efficiency Active engagement in ecosystems	High ethical standards Responsible employer Interesting and exciting workplace Hazard-free working environment High product safety Supply chain development	Code of conduct Corporate policies Corporate manual

Sustainability targets
Corporate target setting

Management systems, tools and practices
Variety of tools for managing sustainability issues

Sustainability measuring and reporting
Systematic approach with global reporting tool and external assurance

Stakeholder dialogue and collaboration
Daily dialogue with various stakeholders

SUSTAINABILITY GOVERNANCE AND RISK MANAGEMENT

Sustainability is governed by the Board of Directors and the Board of Management. Wärtsilä's Board of Management has overall responsibility for sustainability performance and approves the guiding group-level policies. It also defines the corporate sustainability targets and monitors performance against these set targets. The Board of Directors reviews major sustainability issues on an annual basis.

Wärtsilä's sustainability function is responsible for providing the necessary information to management, identifying development needs, as well as for coordinating sustainability programmes and preparing instructions. The function cooperates closely with the Businesses and support functions, such as Human Resources, Legal Affairs and Compliance. It also collects and consolidates sustainability data from the subsidiaries. More information relating to sustainability governance can be found on our website.

Wärtsilä identifies and assesses its sustainability risks, including climate change risks, in both its strategic and operative risk assessments on an annual basis. Based on the current assessment, the sustainability risks are considered to be at a moderate level, while sustainability continues to create an opportunity for Wärtsilä.

COMMITMENTS AND PRINCIPLES

Wärtsilä has signed the United Nations Global Compact initiative and supports its ten principles with respect to human rights, labour, the environment, and anti-corruption. We are committed to aligning our strategy, culture, and day-to-day operations with these principles, and to engaging in collaborative projects that advance sustainable development. Our Code of Conduct and sustainability approach provide the main framework for promoting the principles within our sphere of influence.

Wärtsilä also contributes in a positive way to several of the United Nations Sustainable Development Goals (SDGs) through our purpose and strategy, targets, policies, initiatives, innovative solutions, and partnerships. We are committed to developing solutions, together with our stakeholders, that solve the societal challenges laid out in the SDGs, while also generating new business opportunities. In particular, we play a vital role in delivering innovative clean energy and smart marine technologies. We have reviewed all the SDGs and their targets, and have identified priority targets for our company. These are most notably SDG7 Affordable and clean energy, SDG8 Decent Work and Economic Growth, and SDG9 Industry, Innovation and Infrastructure.

We also participate in several voluntary initiatives, agreements, and commitments such as Finland's Society's Commitment to Sustainable Development, the Finnish Energy Efficiency Agreement, and sustainable business coalitions such as the Getting to Zero Coalition. This latter coalition is committed to getting deep sea vessels powered by commercially viable zero emission fuels into operation by 2030.

2020 ACCELERATES EUROPE'S ELECTRICITY TRANSITION BY A DECADE

An unprecedented year for our societies, due to the impact of the COVID-19 pandemic, 2020 also saw unforeseen development in the energy sector in response. A new tool developed by Wärtsilä to monitor the sector maps these effects across Europe in detail.

Annual coal-based power generation has fallen by around a fifth (17.9%) across the European Union (EU) and United Kingdom (UK) as of the end of November 2020, compared to 2019, as a result of the response to COVID-19, with renewable energy reaching a 40% share, according to the latest analysis by Wärtsilä.

In total, demand for electricity across the continent is down by 4.7% due to measures taken to combat COVID-19. The result is

an unprecedented fall in carbon emissions from the power sector, with emissions intensity falling by 10% compared to the same period (January to December) last year.

The analysis comes from the Wärtsilä Energy Transition Lab, a free-to-use data platform developed by Wärtsilä to help the industry, policy makers and the public understand the impact of COVID-19 on European electricity markets and analyse what this means for the future design and operation of its energy systems. Launched in April, the platform's goal is to help accelerate the transition to 100% renewables.

A glimpse into Europe's renewable energy future

"The impact of the COVID-19 crisis on European energy systems is extraordinary. We are seeing levels of renewable electricity that some people believed would cause systems to collapse, yet they haven't – in fact they are coping well. The question is, what does this mean for the future?" says **Björn Ullbro**, Vice President for Europe & Africa at Wärtsilä Energy Business.

"What we can see today is how our energy systems cope with much more renewable power – knowledge that will be invaluable to accelerate the energy transition. We are making this new platform freely available to support the energy industry to adapt and use the momentum this tragic crisis has created to deliver a better, cleaner energy system, faster."

The figures mark a dramatic shift in Europe's energy mix – one that was not anticipated to occur until the end of the decade. The impact of the COVID-19 crisis has effectively accelerated the energy transition in the short-term, providing a unique opportunity to see how energy systems function with far higher levels of renewables.

"Electricity demand across Europe has fallen due to the lockdown measures applied by governments to stop the spread of the coronavirus. However, total renewable generation has remained at pre-crisis levels with low electricity prices, combined with renewables-friendly policy measures, squeezing out fossil fuel power generation, especially coal. This sets the scene for the next decade of the energy transition," Ullbro adds.

Winds of change in Ireland and Spain

Considering the shift to a high renewable energy future, Ireland is an interesting European country to examine. It has been successfully operating an isolated power system with an increasing share of variable renewables, mainly wind energy, over the past years. In February 2020, a windy month in Ireland, renewables covered 66% of the generation (+14.5% compared to the last year).

Increasing the amount of variable renewables in a system further highlights the need for flexibility to quickly respond to the impacts of solar and wind variability and uncertainty. Wärtsilä Energy Transition Lab data suggests that the existing thermal fleet in Ireland is currently struggling with a high share of renewables. Simultaneously, the data shows the need for flexible assets, such as energy storage and gas generation having technical characteristics suited for peaking and balancing operation.

Another example can be highlighted from Spain, where in late-April 2020, we witnessed a week when the electricity demand was significantly lower (-12%) compared to the same period in 2019. At the same time, renewable generation was extraordinarily high (+45%) due to favourable wind and solar conditions. This increased the daily share of renewable generation up to 65% over the whole week in question. The surge of low-cost renewable energy from wind resources forced the electricity price to plummet. The drop in electricity price meant that thermal assets had to either shut down or sell electricity at loss. Coal has been most affected.

Transition Lab data suggests that not only coal, but also the modern combined cycle gas turbine fleet, designed to provide baseload electricity, seems to be redundant in a system built around renewables. Spain's whole gas-fired capacity (30 GW) has had a capacity factor of 21% in 2020 (29% in 2019), making them struggle for profitability. This is the reality already now with the renewable-rich energy system we have seen in 2019 and 2020: gas is used for peaking and flexibility, not baseload.

An industry first, the Wärtsilä Energy Transition Lab was specifically developed as an open-data platform for the energy industry to understand the impact of COVID-19 and help accelerate the energy transition. The tool provides detailed data on electricity generation, demand and pricing for all 27 EU countries and the UK, combining Entso-E data in a single, easy to use platform. It will also allow users to model how systems could operate in future with higher renewables, helping pinpoint problem areas and highlight where to focus policy and investment.

The Wärtsilä Energy Transition Lab can be accessed at: www.wartsila.com/energy/transition-lab

FINANCIALS

BOARD OF DIRECTORS' REPORT

BUSINESS MODEL

Wärtsilä provides the marine and energy markets with smart technologies and optimised lifecycle services. In the energy industry, Wärtsilä offers flexible power plants as well as energy management and storage systems on an equipment only or turnkey delivery basis. The marine offering includes power systems, voyage solutions, as well as exhaust treatment applications, gas solutions, and shaft line solutions. Wärtsilä has the capabilities needed to combine its marine products into larger integrated systems and solutions. Wärtsilä's portfolio of services ranges from spare parts and technical expertise, to lifecycle solutions ensuring a maximised installation lifetime, increased efficiency, and guaranteed performance. The company aims at maximising environmental and economic performance by emphasising sustainable, data-driven innovation and total efficiency.

To support its geographically dispersed customer base, Wärtsilä's sales and service network covers 258 locations in 73 countries around the world. Wärtsilä operates primarily through its subsidiaries and strategic joint ventures. The company's manufacturing model is assembly based, thus emphasising the importance of developing long-term relationships with its global network of suppliers, which consists of approximately 1,200 global direct suppliers. Wärtsilä's personnel is made up of approximately 18,000 employees comprising 139 nationalities. By recruiting and retaining the best talent, Wärtsilä is able to be the most valued business partner to its customers, and the employer of choice for current and future employees. Wärtsilä is committed to conducting its business in a responsible manner, and promotes responsible practices throughout its value chain.

CEO APPOINTMENT

In September, Håkan Agnevall (b. 1966, M.Sc. (Tech), MBA) was appointed as the new President and CEO for Wärtsilä Corporation. Mr Agnevall assumed the role on 1 February 2021. He succeeds Jaakko Eskola, who will continue as a senior advisor to the Board and executive team until he retires on 30 June 2021.

Mr Agnevall has a proven record of developing organisations and businesses with a strong focus on customers, technology, and people. His experience in pioneering electrification and autonomous transportation will strengthen Wärtsilä's activities in corresponding areas.

STRATEGY

Strategy implementation in 2020

Despite the COVID-19 related disruptions to business operations, Wärtsilä's commitment to R&D activities has remained unchanged. The year saw progress in future-proofing engine technology in line with the global trend towards the decarbonisation of the energy and marine markets. This was demonstrated by the initiation of full-scale testing of ammonia as a fuel in Wärtsilä's four-stroke combustion engine, as well as with the announcement of efforts to develop the combustion process in gas engines to enable them over time to burn 100% hydrogen fuel. Several new concepts utilising connectivity and digitalisation to enhance efficiency, sustainability, and the safety of customer operations were also introduced. These included solutions for smart navigation, remote support services, as well as a cloud simulation platform enabling remote training. For the energy markets, Wärtsilä launched the Energy Transition Lab, an open-data platform for the energy industry to understand the impact of greater utilisation of renewable energy and the effects of COVID-19, and help accelerate the energy transition.

Wärtsilä's emphasis on developing solutions utilising the latest technology, in line with its Smart Marine and Smart Energy strategies, resulted a number of important orders during the year. In the marine markets, Wärtsilä received several orders for hybrid solutions, including a contract to supply a fully integrated Wärtsilä hybrid solution for Misje Rederi's three newbuild eco-friendly 5,000 DWT bulk carriers. Moreover, the order from UltraShip Denmark to install the cloud-based Wärtsilä Fleet Operations Solution (FOS) across their entire fleet demonstrates market development towards digital solutions to improve efficiency and lessen environmental impact. In the energy sector, the need for flexible power solutions to support the expansion of renewable energy and secure grid reliability was illustrated by the resilience of activity in the energy storage markets. Awarded contracts included the first order for the GridSolv Quantum energy storage system, a fully integrated modular and compact solution that enables the rapid deployment of cost-effective energy storage. Another order reflecting the benefits of flexibility was the contract received in Europe to deliver four natural gas driven power plants with a combined output of nearly 300 MW. The new fast-starting plants will provide flexible system balancing as more renewable power is incorporated into the power system.

Collaboration with industry stakeholders is an essential element in the development of technologies needed to meet changing market requirements. Joint efforts included agreements aimed at accelerating the marine industry's ongoing digital transformation, developing autonomous shipping, and exploring the use of new technologies and alternative fuels to promote decarbonisation efforts.

While the health and safety of personnel is a continuous priority for Wärtsilä, it reached a new level of importance in 2020 with the onset of the global COVID-19 pandemic. Wärtsilä maintains a diverse global workforce with thousands of employees performing tasks onsite, either in the field or at customer premises. By establishing a global crisis response team and local country incident management teams, it was possible to monitor and act upon the rapidly developing situation. Global mobility was secured whilst observing appropriate safety and precautionary measures. Numerous Wärtsilä employees resorted to

performing their work remotely. In order to accommodate this way of working, and to ensure that the change of routine functioned smoothly, Wärtsilä provided employees with digital collaboration tools and methods. Furthermore, guidelines and devices were provided to secure an appropriate working environment at their homes. Zero lost-time injuries continues to be the company's global target. During 2020, lost-time injury frequency was 2.03 (2.25), which represents a decrease of 10% compared to the previous year.

Financial targets and outcome in 2020

Wärtsilä's long-term financial target is to grow faster than global GDP, and to maintain its operating profit margin between 14% at the peak of the cycle and 10% at the trough. Furthermore, the target is to maintain gearing below 0.50, and to pay a dividend of at least 50% of earnings per share over the cycle.

Wärtsilä's financial performance in 2020 was below the long-term target, as a result of the effects of the COVID-19 pandemic on the company's demand environment and business operations. Net sales for 2020 declined by 11%, bringing Wärtsilä's five-year compound annual growth rate to -2%. The five-year compound annual growth rate of the global GDP was 2.3% (source: IMF estimate as of October 2020). Wärtsilä's comparable operating result amounted to EUR 275 million, which represents 6.0% of net sales. Gearing decreased to 0.18. The Board of Directors' proposed dividend of EUR 0.20 per share represents 88.2% of operational earnings.

THE YEAR 2020

Operating environment

Marine

The effects of the COVID-19 pandemic significantly affected the demand for equipment and services in the shipping and shipbuilding markets throughout 2020. The decline in seaborne trade and travel restrictions impacted the fleet utilisation rate, especially in the passenger sector, and limited the appetite for newbuild investments. As a result, only 815 vessels were contracted during the year (1,153 in 2019, excluding late contracting) and the demand for spare parts and maintenance activities softened. The news released in November regarding COVID-19 vaccine results improved confidence in a recovery in both newbuild and service activities across all vessel segments.

Cruise operations were heavily affected by the travel restrictions and no-sail orders. Despite a marginal uptick in cruise activity towards the end of the year, the vast majority of the fleet remains idled. After the initial disruptions following the first virus outbreak, the ferry fleet was gradually reactivated over the summer, but was increasingly idled again in the fourth quarter as, on top of the typical seasonal unwinding, a new wave of COVID-19 hit the European markets. The offshore sector continued to be under severe pressure due to low oil demand. Limited exploration activity led to a decline in utilisation of drilling rigs and support vessels to levels similar to the post-2014 market cycle. Conversely, the expected growth in offshore wind projects generated demand for specialised vessels, providing newbuild and service opportunities in wind farm related vessels. In the LNG shipping sector, a positive trend in spot rates began in the third quarter as a result of the rapid increase in Asian LNG demand. This was due to seasonal factors as well as constrained supply resulting from outages at several liquefaction terminals. The containership market recovered rapidly from the initial shock posed by COVID-19. This recovery was supported by continuous gains in freight volumes resulting in higher freight rates and less idle capacity. Crude oil and product tanker earnings remained under significant pressure during the latter part of the year, as oil supply cuts and the unwinding of floating storage lowered the demand for oil. Although earnings for bulk carriers increased in the second half, thanks to a higher demand for iron ore from China, the number of idled vessels continues to be above normal levels.

The HSFO/VLSFO price differential narrowed significantly as a result of both the sharp decline in oil prices and improved VLSFO availability, thus negatively impacting the pace of scrubber retrofits and installations on newbuilds. After the positive news regarding COVID-19 vaccine breakthroughs in November, oil prices surged and,

Target

	Development in 2020	Development in 2019
Net sales growth faster than global GDP	-11%	0%
Comparable operating result margin between 10% and 14%	6.0%	8.8%
Gearing below 0.50	0.18	0.30
Dividend payment at least 50% of earnings per share over the cycle	88.2%*	130.8%

* Proposal of the Board of Directors

consequently, the price spread between bunker fuel types increased to around 80 USD per tonne. Nevertheless, the market for scrubber contracting is still characterised by a high degree of uncertainty, mostly due to the limited visibility on future price spreads.

While the pandemic has led to a significant contraction in trade volumes, it has also accelerated the digital transformation through new technologies and digital applications being adopted as a matter of necessity. The use of cloud-based remote solutions has also accelerated in response to restrictions on physical travel. Ship-to-port communications, as well as document and data exchange, are increasingly being handled electronically rather than via personal interaction, both on ships and in port. Furthermore, fleet optimisation and performance management technologies are increasingly being accepted as central in order to secure profitability in a competitive market.

Meanwhile, the path towards the decarbonisation of the shipping industry continued to gain pace. The share of alternative-fuel capable vessels among the total newbuild contracting increased during the year. LNG has cemented its position as the most widely adopted alternative fuel, as it enables immediate GHG emission reductions. Moreover, the dual-fuel engine technology used to burn LNG is fuel flexible, thus mitigating business risks associated with future fuel related uncertainties. Zero-carbon fuels, such as biofuels, ammonia and hydrogen, are also gaining interest as are various energy saving technologies. The IMO released a plan in November to drive the shipping industry towards its ambitious decarbonisation targets, with a set of policies coming into force from 2022 onwards. At the same time, the European Parliament approved a proposal to include shipping in its emissions trading scheme (ETS). With new rules expected in the coming years that will require shipowners to reduce their emissions through technical or operational measures, there is a growing consensus that vessels should increasingly adopt interoperable network technology to link onboard machinery, navigation, cargo handling, and other systems. Such technology will reduce fuel consumption, while representing an important step towards decarbonisation and increased efficiency.

Energy

The COVID-19 pandemic and the resulting slowdown of economic activity had a negative impact on the global liquid and gas fuelled power plant markets throughout 2020. While the market situation has stabilised and is showing some improvement, the prevailing uncertainty regarding the duration, development, and economic impacts of the pandemic continues to result in customers postponing investments in new power plant capacity. Additionally, energy policies are being developed to drive ambitious decarbonisation targets, and utilities continue to update their investment strategies, which is causing uncertainty and delays in decision-making. However, activity in energy storage was at a good level, driven by the increasing need for short-term flexible capacity in power systems with a high share of renewables. While mobility restrictions affected the ability to perform service activities, the demand for services held up reasonably well, and customers continued to show interest in long-term service agreements.

Wärtsilä's market share in the up to 500 MW market segment was stable at 9% (9), while global orders for natural gas and liquid power plants increased by 3% to 16.6 GW during the twelve-month period ending in September 2020 (16.0 GW at the end of June). Global orders include gas turbine and Wärtsilä orders with prime movers over 5 MW in size. The data is gathered from the McCoy Power Report.

Order intake and order book

Wärtsilä's order intake in 2020 decreased by 18% to EUR 4,359 million (5,327) compared to the previous year. Uncertainty related to the COVID-19 pandemic and its long-term implications weakened demand across all businesses. Book-to-bill was 0.95 (1.03). Service order intake decreased by 16% to EUR 2,267 million (2,683), while equipment order intake decreased by 21% to EUR 2,091 million (2,644).

The order book at the end of the year decreased by 14% to EUR 5,057 million (5,878). Cancellations during the year were largely in line with normal low levels. Wärtsilä has implemented stricter requirements for the inclusion of new and existing projects in the order book. This resulted in orders amounting to approximately EUR 340 million being removed from the order book during the year, primarily due to lack of progress or milestone payments not being received, as well as some cancellations. Wärtsilä's current order book for 2021 deliveries is EUR 3,298 million (3,571).

Net sales and operating result

Wärtsilä's net sales in 2020 decreased by 11% to EUR 4,604 million (5,170) compared to the previous year. Service net sales decreased by 10% to EUR 2,255 million (2,505). Equipment net sales decreased by 12% to EUR 2,349 million (2,665). Of Wärtsilä's net sales, approximately 65% was EUR denominated and 20% USD denominated, with the remainder being split between several currencies.

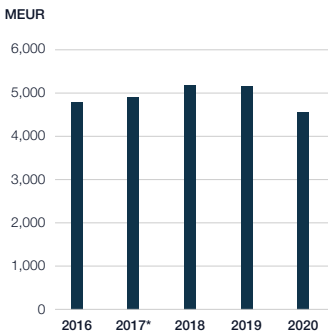
The operating result amounted to EUR 234 million (362) or 5.1% of net sales (7.0). The result was burdened by a decline in service volumes, COVID-19 driven cost inflation, and weaker fixed cost absorption. The comparable operating result totalled EUR 275 million (457) or 6.0% of net sales (8.8). Items affecting comparability comprised costs related to divestments and restructuring programmes of EUR 41 million (95). The comparable adjusted EBITA amounted to EUR 308 million (498) or 6.7% of net sales (9.6). Purchase price allocation amortisation amounted to EUR 33 million (41).

Financial items amounted to EUR -43 million (-47). Net interest totalled EUR -10 million (-12). Profit before taxes amounted to EUR 191 million (315). Taxes amounted to EUR 58 million (97), implying an effective tax rate of 30.3% (30.7). Profit for the financial year amounted to EUR 133 million (218). Earnings per share totalled 0.23 euro (0.37). Return on investment (ROI) was 7.1% (11.5), while return on equity (ROE) was 5.8% (9.0).

Megawatts delivered

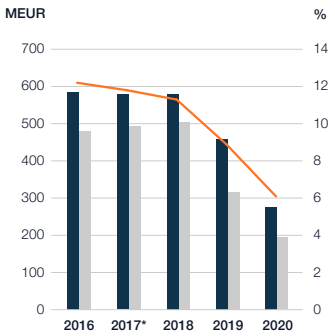
	2020	2019	Change
Marine Power	1,257	1,505	-16%
Energy	1,172	2,072	-43%
Wärtsilä total	2,429	3,577	-32%
By joint venture	274	432	-37%
Deliveries total	2,703	4,009	-33%

Group net sales development



* Restated due to IFRS 15

Result



Comparable operating result
Profit before taxes
Comparable operating result, %

* Restated due to IFRS 15

Financing and cash flow
Wärtsilä's cash flow from operating activities in 2020 increased to EUR 681 million (232), thanks to improved working capital. Working capital decreased to EUR 257 million at the end of the year (732), driven by lower inventories, as well as by efforts to reduce credit risk through strengthening the collection of receivables. Advances received totalled EUR 452 million (452). Additionally, EUR 38 million of advances pertained to assets held for sale.

Wärtsilä aims to ensure sufficient liquidity at all times through efficient cash management and by maintaining the availability of sufficient committed and uncommitted credit lines. Refinancing risk is managed by having a balanced and sufficiently long loan portfolio. Wärtsilä has focused on further strengthening its liquidity reserves during the year in response to the COVID-19 pandemic. Measures taken include the extension of revolving credit facilities and the negotiation of additional loan facilities.

Cash and cash equivalents amounted to EUR 919 million at the end of the year (358). Additionally, EUR 14 million of cash and cash equivalents pertained to assets held for sale (11). Unutilised committed credit facilities totalled EUR 660 million (640).

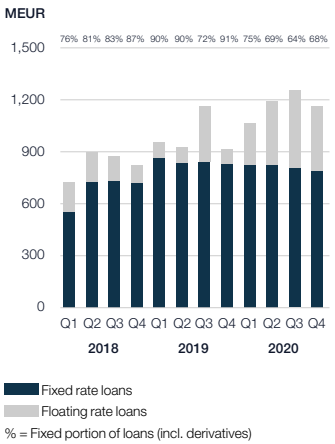
Wärtsilä had interest-bearing debt totalling EUR 1,327 million at the end of the year (1,096). The total amount of short-term debt maturing within the next 12 months was EUR 198 million. Long-term loans amounted to EUR 1,129 million.

Net interest-bearing debt totalled EUR 394 million (726). Gearing was 0.18 (0.30), while the solvency ratio was 38.1% (40.8). Equity per share was 3.68 euro (4.05).

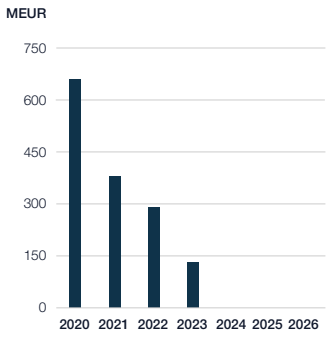
Capital expenditure
Capital expenditure related to intangible assets and property, plant, and equipment amounted to EUR 115 million (116) in 2020. Capital expenditure related to acquisitions and investments in securities totalled EUR 2 million (6). Depreciation, amortisation, and impairment amounted to EUR 174 million (180).

In 2021, capital expenditure related to intangible assets and property, plant, and equipment is expected to be below depreciation, amortisation, and impairment.

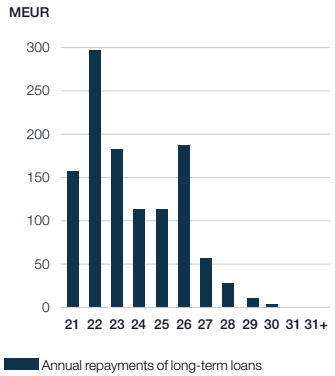
Loans



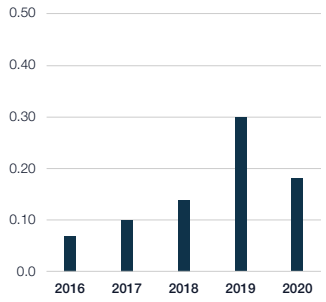
Committed revolving credit facilities (end of period)



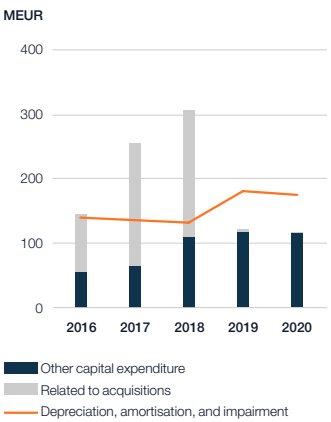
Maturity profiles of long-term loans



Gearing



Gross capital expenditure



Innovations, research and development
Wärtsilä is committed to helping minimise the environmental footprint of the maritime and energy industries. Investments in R&D are central to securing Wärtsilä's future positioning, and will continue despite the prevailing market uncertainty. Developing the use of alternative, commercially viable, and environmentally friendly fuels for the future is a key focus area of research and development, as is improving the connectivity, efficiency, sustainability, and safety of customer operations through the increased use of digital solutions. With its lifecycle solutions offering, Wärtsilä goes beyond mere maintenance and operation by delivering guaranteed performance based on mutually agreed target levels. Research and development expenditure totalled EUR 153 million (164) in 2020, which represents 3.3% of net sales (3.2).

Marine
In the development of viable future fuels Wärtsilä, in close cooperation with Knutsen OAS Shipping AS, Repsol, and Sustainable Energy Catapult Centre, initiated the world's first long-term, full-scale testing of ammonia as a fuel in a marine 4-stroke combustion engine in 2020. The testing is supported by a NOK 20 million grant from the Norwegian Research Council through the DEMO 2000 programme.

Key developments in the context of portfolio enhancements included the completion of full-scale testing of Wärtsilä's LPG fuel supply system with a full-sized 2-stroke marine engine burning liquid petroleum gas (LPG) as fuel. The tests were completed by retrofitting the system on four very large gas carriers (VLGC) owned by the Norwegian operator BW LPG. In addition, Wärtsilä launched its FuelFlex Injection Control Unit upgrade solution to meet the requirements of operating RT-flex type 2-stroke diesel engines with both residual and low-viscosity marine fuels. This is particularly relevant in view of the industry's increasing use of low-sulphur-content fuels in order to be compliant with sulphur emission regulations. Wärtsilä also introduced its Compact Reliq reliquefaction plant, designed to reliquefy boil-off gas (BOG) onboard gas carriers and LNG bunker vessels and keep the cargo cool under all operational conditions. Thanks to its compact design, the system can be installed on existing vessels without extensive modification work. During the year, Wärtsilä also upgraded the power output of the Wärtsilä 31DF dual-fuel engine, further heightening the engine's sustainability factor as a result of lower greenhouse gas emissions, while allowing a reduction in both installation and maintenance costs.

As the shipping industry enters a new era of innovation and unprecedented efficiency, Wärtsilä is using high levels of connectivity and digitalisation to bring value and optimisation to all marine applications, and to enhance the efficiency, sustainability, and safety of customer operations. Achievements in the field of smart navigation included the launch of Navi-Port, a new solution for the seamless exchange of data between ship and shore, enabling just-in-time arrival. This was implemented in collaboration with Carnival Maritime and the Hamburg Vessel Coordination Center (HVCC). Moreover, Wärtsilä Voyage and PSA Marine successfully completed initial sea trials for the 'IntelliTug' project in Singapore, thereby proving IntelliTug's capability to avoid a variety of obstacles, including virtual and real-life moving vessels. It was the first trial to use the Maritime and Port Authority of Singapore's (MPA) Maritime Autonomous Surface Ship (MASS) regulatory sandbox, which was established to facilitate the testing of MASS and other autonomous technologies in a safe and controlled environment within the Port of Singapore. Wärtsilä also successfully trialled the Wärtsilä SmartMove Suite, a unique pairing of sensor technology with navigation systems for semi-autonomous ship movement. The American Steamship Company became the first to install Wärtsilä SmartMove solutions, which will be used for hands-off transit along the Cuyahoga River in Ohio, USA.

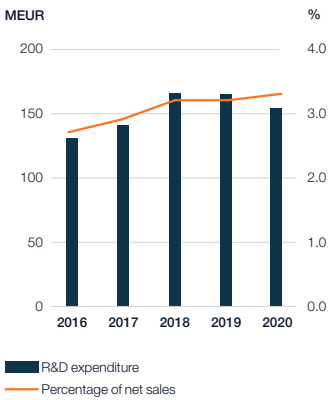
The year 2020 also saw the launch of a number of remote support services. These included the global Smart Support Centre service, which is designed to deliver operational support via virtual service engineers to all Wärtsilä Voyage equipment, and the Assured Operations remote support service for Wärtsilä 4-stroke and 2-stroke engine customers. This enables technical experts to assess and resolve operational issues via a remote connection between seagoing vessels and Wärtsilä's Expertise Centres. During the year, Wärtsilä also made the digital predictive maintenance product Expert Insight available for 2-stroke engines. The company simultaneously released a minimum viable product for remote monitoring of scrubbers to provide continuous fleet-wide insight into vessel compliance and scrubber utilisation. Moreover, Wärtsilä Voyage expedited the launch of Wärtsilä's new cloud simulation platform to enable maritime academies and seafarer schools to continue training despite the lockdowns and distancing imposed by the COVID-19 outbreak. The solution was selected by Anglo-Eastern, a leading ship management company, to provide online capacity for the company's training centres in India, the Philippines, and Ukraine. The cloud-based simulators are being used for navigation, engineering, and liquid cargo handling training.

Energy
In line with its aim to lead the transition towards a 100% renewable energy future, Wärtsilä launched the Energy Transition Lab, an open-data platform for the energy industry to understand the impact of greater utilisation of renewable energy and the effects of COVID-19, and help accelerate the energy transition. The tool provides detailed data on electricity generation, demand, and pricing for the EU countries and the UK. It allows users to model how systems could operate in the future with more renewables, helping to pinpoint problem areas and highlighting where to focus policies and investments.

Key achievements in the advancement of engine technology included Wärtsilä's highly efficient 12 MWe Wärtsilä 31SG gas-fuelled generating set being awarded type certification by the classification society DNV GL. This is globally the largest synchronous generating set of this technology to have been awarded the unit certificate after full-scale testing. The certification verifies the design and engineering standards as being in full compliance with Germany's grid code requirements, the first country in Europe to have implemented guidelines for grid code compliance, although other countries have already or are in the process of requiring similar compliance. Wärtsilä

also announced during the year that it is developing the combustion process in its gas engines to enable them over time to burn 100% hydrogen fuel. Wärtsilä has researched hydrogen as a fuel for 20 years, and has tested its engines with blends of up to 60% hydrogen and 40% natural gas. This development is part of the company's strategy to future-proof its engine technology in line with the global trend towards decarbonisation of the energy and marine markets. In addition to hydrogen, other potential renewable fuels are being studied for future applications. Wärtsilä engines are already capable of combusting 100% synthetic carbon-neutral methane and methanol.

Research and development expenditure



Developments in the area of Power-to-X included funding granted by Business Finland for the X-Ahead project, as well as an agreement with Vantaa Energy Ltd. regarding a joint concept feasibility study for a power-to-gas facility at Vantaa Energy's waste-to-energy plant in the city of Vantaa. The X-Ahead project aims at developing deep expertise in both the technical and business potential of Power-to-X, which will be used to promote a carbon-neutral economy in Finland. It will also act as a base for defining Wärtsilä's role in this field as part of the global transition to carbon-neutral solutions. Vantaa Energy's power-to-gas facility would produce carbon-neutral synthetic biogas using carbon dioxide emissions and electricity generated at the waste-to-energy plant. The purpose of the joint study is to confirm the optimal size of the project and the cost of synthetic biogas for district heating, as well as to understand the boundary conditions for project feasibility.

Strategic projects

In February, Wärtsilä and DNV GL agreed to work together to contribute to the marine industry's ongoing digital transformation. In particular, the two companies wish to further explore the potential use of digital technologies, collaborative data sharing, and standardisation to enhance the performance of existing products and services, and to develop new ones. The project will examine the application of digital technologies in areas such as autonomous ships, advanced remote services, new bridge technologies, and data sharing. Cyber security will be another natural area of cooperation.

In March, Wärtsilä together with a consortium of six other industry and academic partners, was awarded EU funding for a major project named SeaTech. The project is aimed at reducing fuel consumption and lowering emission levels for shipping by developing ship engine and propulsion systems to enable precise control of the engine and capturing wave energy to produce extra thrust. Wärtsilä also signed a licence and cooperation agreement covering the future development, sales, and servicing of gate rudders with Kuribayashi Steamship in Japan. As an authorised licence holder and partner, Wärtsilä intends to fully integrate gate rudders within its propulsion product designs and will focus on global markets outside Japan. Gate rudder technology lowers fuel consumption and reduces emissions, while improving manoeuvrability and course stability in both calm and rough seas.

In June, Wärtsilä joined a global consortium to develop the Mayflower Autonomous ship project, which will enable the world's first fully autonomous, unmanned vessel to cross the Atlantic. Wärtsilä Voyage will equip the ship with the Wärtsilä RS24 system, a ground-breaking high-speed, high-resolution FMCW K-Band radar designed to provide optimised levels of situational awareness, especially in densely populated marine environments. Wärtsilä also joined ING Bank, Engie, and the Port of Rotterdam Authority to form Zero Emission Services B.V. (ZES), an enterprise aimed at making inland waterway shipping more sustainable. The concept is based on the use of replaceable battery containers charged with renewable energy. It will be utilised, among others, by the Heineken beer company and is supported by the Dutch Ministry of Infrastructure and Water Management.

In July, Wärtsilä joined a global coalition dedicated to accelerating the energy transition in the transport and logistics industries, together with a cluster of market-leading companies representing a broad spectrum of industry stakeholders. The aim of the coalition is to drive the development of energy sources and technologies in order to curb global warming, reduce air pollution, and protect biodiversity. The members will pool their R&D efforts in pursuit of three key goals: unlocking a more extensive portfolio of clean energy sources, lowering energy consumption per kilometre-equivalent for transported goods, and eliminating a substantial proportion of the harmful emissions being released into the atmosphere.

In October, Wärtsilä signed a Memorandum of Understanding (MoU) tied to a licence and cooperation agreement with the UK-based Anemoi Marine Technologies for the future sales and servicing of rotor sail solutions to the shipping industry. Rotor sails are comprised of vertical cylinders which, when driven to rotate, harness the renewable power of the wind to propel ships. These highly efficient mechanical sails will provide additional thrust to vessels and deliver significant fuel and emission savings. Wärtsilä will fully integrate Anemoi Marine Technologies' rotor sails within its propulsion business and promote the solution for both newbuild projects and for retrofitting to existing ships.

In December, Wärtsilä joined the CHEK project which aims to achieve zero emissions shipping. The project will develop and demonstrate a wind energy optimised bulk carrier, and a hydrogen powered cruise ship equipped with a combination of innovative technologies to reduce greenhouse gas emissions by 99%, achieve at least 50% energy savings, and reduce black carbon emissions by over 95%. The CHEK partners are the University of Vaasa (coordinator), Wärtsilä, Cargill International, MSC Cruises, Lloyd's Register, the World Maritime University, Silverstream Technologies, HASYTEC Electronics, Deltamarin, Climeon, and BAR Technologies.

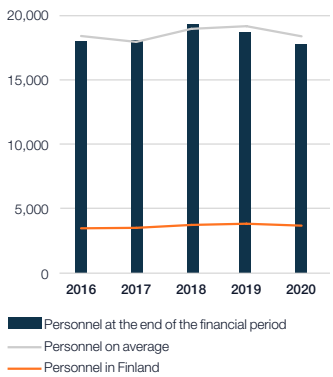
Capacity adjustments
In March, Wärtsilä announced that proactive steps would be taken to minimise the negative business impact of the COVID-19 pandemic and the measures initiated to contain it. These included reducing working hours and initiating temporary layoffs, as well as streamlining hiring and minimising the use of external personnel and consultants. Discretionary spending was also reduced and non-critical development projects postponed. Decisions on temporary cost reduction actions were taken in key countries where such measures were deemed necessary. The actions taken resulted in temporary cost savings of approximately EUR 100 million being recognised during the year, which was in line with initial expectations. The market situation is continuously monitored, and further actions will be taken as needed.

Changes in organisational structure
Wärtsilä's new organisational structure became operational on 1 July 2020. With the new structure, Wärtsilä aims to accelerate strategy execution and drive long-term performance. Marine Power, Marine Systems, and Energy will focus on delivering profitable growth by strengthening their offering of solutions and lifecycle value propositions. Established through the combination of acquisitions during the past few years, notably Eniram and more recently Transas, Voyage positions Wärtsilä as a market leader in digital solutions for the commercial marine industry. Voyage's focus will be on scaling and developing the business, with the support of continued investments in R&D, sales and marketing, in order to create a basis for sustainable, profitable growth over the long-term. Portfolio Business is run as an independent entity, with the objective of unlocking the value of business units that are not central to Wärtsilä's strategy.

Personnel
Wärtsilä had 17,792 (18,795) employees at the end of the year. On average, the number of personnel totalled 18,307 (19,110) in the year of 2020.

Of Wärtsilä's total number of employees, 21% (20) were located in Finland and 41% (42) elsewhere in Europe. Personnel employed in Asia represented 22% (23) of the total, personnel in the Americas 11% (11), and personnel in other countries 5% (4).

Personnel



Changes in management
In addition to the appointment of a new President and CEO, the below changes in Wärtsilä's Board of Management took place during 2020:

Following the announcement that Wärtsilä's Marine Business would be reorganised into three independent businesses, Roger Holm (b. 1972, M.Sc. Economics), previously the President of Wärtsilä Marine Business and Executive Vice President, was appointed President of Wärtsilä Marine Power and Executive Vice President as of 5 March 2020, Tamara de Gruyter (b. 1972, B.Sc. Shipbuilding Engineering) was appointed President of Wärtsilä Marine Systems and Executive Vice President as of 5 March 2020, and Sean Fernback (b. 1963, Dipl. Electronics Engineering) was appointed President of Wärtsilä Voyage and Executive Vice President as of 4 May 2020.

In July, Sushil Purohit (b. 1972, B.Sc. (Eng.), MBA) was appointed President of Wärtsilä Energy and Executive Vice President as of 3 August 2020. He replaced Marco Wirén, who left Wärtsilä on 31 August 2020 for a position outside the Group.

Non-financial report
Increasing environmental awareness is resulting in fundamental changes in both the marine and energy industries. Thanks to its various technologies and specialised services, Wärtsilä is well positioned to reduce exhaust emissions and the use of natural resources, as well as to support its customers in preparing for new regulatory requirements. Wärtsilä's R&D efforts continue to focus on the development of advanced environmental technologies and solutions. The company is committed to supporting the UN Global Compact and its principles with respect to human rights, labour, the environment, and anti-corruption. Wärtsilä is also committed to supporting the UN Sustainable Development Goals that deal with issues to which Wärtsilä contributes in a positive way. Such goals include those related to clean energy, a low-carbon marine ecosystem, and responsible business conduct.

Responsible business conduct
The Wärtsilä Code of Conduct defines common rules for all employees, and provides guidance on Wärtsilä's approach to responsible business practices. The Code of Conduct is complemented by group-wide policies, including the quality, environmental, health and safety policy, the corporate policy on equal opportunities and fair employment practices, as well as policies related to anti-corruption, compliance reporting, and sourcing and purchasing.

Wärtsilä takes an active approach to the application of the Code of Conduct and promotes its implementation through the effective communication of its contents to its employees. Wärtsilä monitors the application of the Code internally to ensure understanding and commitment throughout the organisation. At the end of 2020, 17,039 employees, covering 96% of the total number of employees, had participated in the Code of Conduct training programme.

Suppliers and business partners are an integral part of the total value chain of the products and services of Wärtsilä. They are expected to conduct their businesses in compliance with the same high legal and ethical standards and business practices as Wärtsilä. Information on Wärtsilä's requirements is included in supplier agreement templates.

Environmental performance
Wärtsilä's main contribution to improved environmental performance lies in providing its customers with reliable and safe technologies and services, which, in addition to enabling environmental compliance, support the sustainable development of the marine and energy industries. Wärtsilä's products and solutions are designed to operate for up to 30 years. Therefore, focusing R&D efforts on improving the product or system level performance is crucial, as is adopting a lifecycle approach to performance optimisation. In addition to improving the environmental performance of its products and solutions, Wärtsilä also continuously monitors the impact caused by its own activities and targets reduced energy consumption in its facilities.

Wärtsilä's quality, environmental, health and safety policy sets principles for managing the environmental impacts of Wärtsilä's products and services. The potential risks related to environmental matters and climate change are in the areas of regulatory emission restrictions and changes in customer attitudes to using combustion engines and fossil fuels. Risks are managed by focusing on product efficiency improvement and emission reduction in R&D activities, as well as by developing a wide product offering, including technologies related to waste reduction, noise abatement, and effluent and ballast water treatment. During 2020, R&D investments totalled EUR 153 million, which represents 3.3% of net sales. The majority of these investments targeted improved environmental performance. Significant achievements related to sustainable innovation included the progress made in developing engine technology to burn zero-carbon fuels. For the marine markets, Wärtsilä launched several solutions in support of its Smart Marine Ecosystem vision, including solutions for smart navigation, a number of remote support services, as well as a cloud simulation platform enabling remote training. In the energy sector, Wärtsilä introduced the GridSolv Quantum energy storage system, a fully integrated modular and compact solution that enables the rapid deployment of cost-effective energy storage, as well as data-based solutions to better understand the impact of the energy transition.

Social and employee matters
Wärtsilä is a responsible employer, offering employees a workplace where openness, respect, trust, equal opportunities, and scope for personal development prevail. Wärtsilä is a signatory of the UN Global Compact initiative and supports the work-related rights defined by the International Labour Organization (ILO). Wärtsilä's corporate policy on equal opportunities and fair employment practices creates a common framework for employee practices in all Wärtsilä companies. People management processes, tools, and ways of working are developed to ensure consistency across national and organisational boundaries. Wärtsilä has a global job grading system and rewarding principles to ensure transparency and fairness for all employees, which are followed by all the entities in Wärtsilä globally.

The objective of Wärtsilä's people management strategy is to ensure that the businesses have the required resources, and skilled and motivated people at their disposal. In order to develop their competences, employees are offered a wide variety of internal training courses, including topics like technology, health and safety, language and culture, project management, environment, security, and leadership. The average number of learning days was 1.1 per employee in 2020.

Wärtsilä aims at offering its employees and contractors a hazard-free working environment, and at minimising the health and safety risks associated with the use of its products and services. The company's occupational health and safety principles are defined in the Code of Conduct, the quality, environmental, health and safety (QEHS) policy, and in the directive on environment, health, and safety (EHS). Wärtsilä's units are required to have a management system in place that conforms to the QEHS Policy and the EHS directive. In addition to the management system, Wärtsilä companies apply occupational health and safety programmes as required by local legislation. Wärtsilä's aim is to reach a long-term goal of zero injuries. In 2020, the corporate lost-time injury frequency rate was 2.03 (2.25).

Respect for human rights
Wärtsilä supports and respects basic human values as outlined in the UN's universal declaration of human rights. Wärtsilä is also a signatory of the UN Global Compact and is thereby committed to its principles with respect to human rights, labour, the environment, and anti-corruption. No employee is allowed to take any action that violates these human rights principles, either directly or indirectly. Wärtsilä does not accept the use of forced labour or child labour in any form. Human and labour rights are a part of the Code of Conduct training material, and are included in Wärtsilä's policy on equal opportunities and fair employment practices as well as in the company's supplier handbook.

Anti-corruption and bribery matters
Wärtsilä's Code of Conduct, anti-corruption policy, and broker directive expressly prohibit the company and its employees from offering or

accepting any kind of benefit considered a bribe and from taking actions that could give rise to a conflict of interest or breach of loyalty. The instructions make it compulsory to comply with anti-corruption laws of all the countries in which Wärtsilä does or intends to do business and urge the reporting of any cases of corruption and bribery.

Wärtsilä is aware of the risk of being subject to fraud by external business parties, and that the risk of corruption and fraud is heightened in many markets where the company operates. Therefore, full compliance with a stringent anti-corruption regime is required of all employees. An extensive training programme is in place for personnel on anti-corruption principles and applicable legislation as well as the relevant company policies and procedures. By the end of 2020, 93% of Wärtsilä's employees had participated in anti-corruption trainings. Employees are encouraged to provide feedback and communicate suspected misconduct to line management or directly to the Compliance, Legal Affairs, or Internal Audit function. Wärtsilä also has a dedicated tool through which employees can report infringements.

Reporting segments

Wärtsilä Marine Power

Marine Power's order intake in 2020 decreased by 23% to EUR 1,737 million (2,247) compared to the previous year. Book-to-bill was 0.99 (1.17). Service order intake decreased by 19% to EUR 1,070 million (1,315), with the largest decline seen in the cruise segment where vessel utilisation remained low throughout the year. Equipment order intake decreased by 28% to EUR 667 million (931). Demand was the highest in the merchant segment which, including both traditional merchant vessels and gas carriers, represented 35% and 42% of the order intake of equipment and services, respectively. Orders received from this segment included a sizeable order to supply dual-fuel engines to six new LNG vessels and a contract to supply a fully integrated Wärtsilä hybrid solution for Misje Rederi's three newbuild eco-friendly 5,000 DWT bulk carriers. Other noteworthy orders included a contract to supply the engines and a range of electric solutions for two new ferries under construction for Finnlines, as well as a contract to supply Wärtsilä 14 EUR Stage V compliant engines and related emissions control after-treatment systems for two new passenger ferries being built for operation between Switzerland and France. The order book at the end of the year decreased by 9% to EUR 1,839 million (2,019).

Net sales decreased by 9% to EUR 1,748 million (1,923) compared to the previous year. Service net sales decreased by 14% to EUR 1,096 million (1,279), while equipment net sales increased by 1% to EUR 652 million (643). The comparable operating result amounted to EUR 137 million (273) or 7.8% of net sales (14.2). The result was burdened by the COVID-19 related decline in the service business, as well as by weaker absorption of fixed costs and lower utilisation.

Wärtsilä Marine Systems

Marine Systems' order intake in 2020 decreased by 28% to EUR 539 million (754) compared to the previous year, as reduced fuel spreads scaled back scrubber investments. Book-to-bill was 0.67 (0.79). Service order intake decreased by 11% to EUR 205 million (230). Equipment order intake decreased by 36% to EUR 334 million (523). Noteworthy orders received during the year included the first order for the Compact Reliq reliquefaction plant, a system designed to reliquefy boil-off gas (BOG) onboard gas carriers and LNG bunker vessels and keep the cargo cool under all operational conditions. Wärtsilä also received a major contract to supply and construct a plant for the production of CO_2-neutral liquid transport fuels, with a capacity of approximately 100,000 tons per year to be located in Cologne, Germany. The order book at the end of the year decreased by 31% to EUR 857 million (1,232) due to the shortage of scrubber orders.

Net sales decreased by 15% to EUR 808 million (952) compared to the previous year. Service net sales increased by 8% to EUR 219 million (202), while equipment net sales decreased by 22% to EUR 588 million (750). The comparable operating result amounted to EUR 83 million (60) or 10.3% of net sales (6.3). The operating result for the comparison period was weakened by charges for cost overruns in certain gas solution projects.

Wärtsilä Voyage

Voyage's order intake in 2020 decreased by 16% to EUR 262 million (310) compared to the previous year. Book-to-bill was 1.06 (1.11). Service order intake decreased by 22% to EUR 92 million (117), while equipment order intake decreased by 12% to EUR 170 million (193). While COVID-19 put pressure on orders received from the cruise industry, order intake for fleet optimisation solutions developed well and Wärtsilä also received contracts for major newbuild projects in other segments. Highlights of the year included a contract with UltraShip Denmark to install the cloud-based Wärtsilä Fleet Operations Solution (FOS) across their entire fleet in a move that will enable direct and real-time connection between shore and vessel systems for collaborative voyage planning and execution. The order book at the end of the year was stable at EUR 275 million (274).

Net sales decreased by 12% to EUR 248 million (280) compared to the previous year. The decline was primarily due to the COVID-19 pandemic, which has resulted in project postponements and lower transactional service business. Service net sales decreased by 18% to EUR 85 million (103), while equipment net sales decreased by 8% to EUR 163 million (177). The comparable operating result amounted to EUR -41 million (-31) or -16.5% of net sales (-11.2). The result was negatively impacted by lower sales volumes and a less favourable service mix. In addition, investments in digital competences have been increased to further accelerate the execution of Wärtsilä's Smart Marine strategy. In both the reporting and the comparison period, the operating result was burdened by amortisation resulting from various acquisitions.

Wärtsilä Energy

Energy's order intake in 2020 decreased by 7% to EUR 1,653 million (1,769) compared to the previous year. Book-to-bill was 1.02 (0.99). Service order intake decreased by 9% to EUR 840 million (920), while equipment order intake decreased by 4% to EUR 813 million (849). Demand for equipment was evenly split across geographical areas. Noteworthy equipment orders received during the year included a 200 MW flexible baseload plant in South America to support the integration of renewables. Activity in the energy storage market was resilient, with

orders including a 90 MW/90 MWh storage system to provide flexibility and grid stability in South East Asia, an order for a 123 MW/185 MWh storage system to support a major renewable project in the USA, as well as the first-ever GridSolv Quantum storage system in the USA. Received service orders included a 5-year maintenance agreement to support the availability, performance, and reliability of a 200 MW power plant in Cambodia, as well as a gas conversion project in Brazil along with a related 10-year operations and maintenance agreement renewal. The order book at the end of the year decreased by 9% to EUR 1,830 million (2,014).

Net sales decreased by 9% to EUR 1,620 million (1,779) compared to the previous year. Service net sales decreased by 2% to EUR 782 million (802), while equipment net sales decreased by 14% to EUR 838 million (977). The comparable operating result amounted to EUR 101 million (155) or 6.3% of net sales (8.7). The result was burdened by COVID-19 impacts in the form of delivery delays, weaker absorption of fixed costs, and increased costs for project execution, as well as by the delivery of projects communicated in 2019 to be affected by cost overruns.

Other business activities

Wärtsilä Portfolio Business

Portfolio Business' order intake in 2020 decreased by 32% to EUR 168 million (248) compared to the previous year. Activity was the highest in American Hydro, where orders received during the year included a contract to perform rehabilitation services and to complete the upgrade and refurbishment of two units at the Keokuk hydroelectric plant in Iowa, USA. Water & Waste and Entertainment Systems continued to work closely with the Italian shipbuilder Fincantieri for a number of ships, resulting in orders for complete waste treatment systems and fresh water generators for two vessels, as well as entertainment systems for two new series of ships comprising eight vessels. The order book at the end of the year decreased by 24% to EUR 257 million (338).

Net sales decreased by 24% to EUR 181 million (236) compared to the previous year. COVID-19 lowered activity, particularly in the Water & Waste and Entertainment Systems business units, where especially the cruise segment was heavily affected. The comparable operating result amounted to EUR -6 million (0) or -3.1% of net sales (0.1). Items affecting comparability amounting to EUR 24 million were recognised during the year largely as a result of the divestments of Wärtsilä JOVYATLAS GmbH and Wärtsilä Valves Ltd.

Divestments

In September, Wärtsilä announced the divestment of 100% of the shares in Wärtsilä JOVYATLAS GmbH to Jacob Waitz Industrie GmbH, a German based industry holding. The Wärtsilä JOVYATLAS offering consists of UPS systems, rectifiers, power inverters, frequency transformers, and resistors with related services. The company, which became part of Wärtsilä as a result of the acquisition of L-3 Communications MSI in 2015, is located in Jemgum in Germany and currently has some 125 employees. In 2019, its annual revenues were EUR 20 million. The divestment is driving Wärtsilä's focus on creating a stronger and simpler core business.

In October, Wärtsilä announced the divestment of 100% of the shares in Wärtsilä Valves Ltd to an affiliate of Evergreen Capital L.P., based in New York, USA. Its activities include engineering, assembly, testing, sales, and delivery of nickel aluminium bronze (NAB) and duplex valves for the marine, oil and gas, and energy markets. Additionally, it offers applications for Valves' products, including FPSO, petrochemical facilities, power generation, LNG, naval marine, marine services, waste water treatment plants, and pipelines. Wärtsilä Valves became part of Wärtsilä as a result of the Hamworthy acquisition in 2012. The company is located in Brough, UK and currently has approximately 65 employees. The annual revenues were approximately EUR 15 million in 2019.

In December, Wärtsilä closed the divestment of Wärtsilä ELAC Nautik GmbH (ELAC Nautik) to Cohort plc, a UK listed company, specialising in defence, security and related market sectors. ELAC Nautik became part of Wärtsilä as a result of the acquisition of L-3 Communications MSI in 2015. Its main market focus is on hydroacoustic products, including sonars, underwater communication and echo systems for small and medium sized military submarines. The company is located in Kiel, Germany and employs 125 people. The annual revenues were approximately EUR 20 million in 2019.

Risks and business uncertainties

The COVID-19 pandemic and the measures taken to contain its spread represent the main short-term risk to business operations and the demand environment, impacting global energy consumption, seaborne trade, as well as consumer confidence in cruise and ferry transportation. Mobility restrictions continue to affect business activities, project delivery schedules, and the ability to perform service activities. Disruptions to global supply chains resulting from new waves of COVID-19 infections are a risk for both factory activity and the delivery of spare parts and services. Although vaccinations against COVID-19 have started in many countries, there is still significant uncertainty over the duration of the pandemic and how quickly country level vaccination programmes will be implemented on a global scale.

In the marine markets, the risk of a prolonged period of weak demand affects the investment decisions of shipowners and operators, who are forced to re-evaluate their strategies related to both vessel newbuilding and existing fleets, and to cut capital and operational expenditures. The prevailing market conditions may result in continued price pressure and an elevated risk of order cancellations or slippage. Surplus capacity can drive further consolidation among shipyards, ship owners, and operators in certain segments, which may result in lower capture rates in services and equipment sales due to changed customer relationships. Extensions of no-sail orders, the limited ability or desire of people to travel, and the escalation of COVID-19 cases are a risk for recovery in the cruise and ferry markets. In the offshore industry, crude oil price volatility is pushing the oil majors to reduce their spending, exploration activity, and operational costs, leading to an increasing number of laid-up drilling units and support vessels. The average price spread between high- and low-sulphur fuels is projected to remain narrow in the near term, negatively impacting the scrubber investment case for both the existing fleet and newbuilds. At the same time, the low oil price is widening the price differential between existing fuels and green alternatives. This, combined with the market challenges shipowners are facing, further raises the importance of a

clear and foreseeable development of the regulatory environment as a fundamental condition to the decarbonisation of shipping.

In the energy markets, the slowdown in economic activity, currency fluctuations, and potential financing constraints are likely to postpone investment decisions on new power generation capacity. The energy transition may temporarily slow down, as the focus is on containing the virus spread and mitigating its impacts. Agreed and proposed stimulus packages to accelerate renewable energy investments still include uncertainties about the allocation of funding. However, once stimulus measures are executed, the need for flexibility in power systems will be emphasised. Changes in climate policies and regulations cause uncertainty in the markets, as they may impact customers' technology choices. Geopolitical tensions and trade barrier implications are also notable challenges to the demand environment. Price pressure resulting from the prevailing competitive environment remains a risk.

The Group is a defendant in a number of legal cases that have arisen out of, or are incidental to, the ordinary course of its business. These lawsuits mainly concern issues such as contractual and other liability, labour relations, property damage, and regulatory matters. From time to time, the Group receives claims of different amounts and with varying degrees of substantiation. There is currently one unusually sizeable claim. It is the Group's policy to provide for amounts related to the claims as well as for litigation and arbitration matters when an unfavourable outcome is probable and the amount of loss can be reasonably estimated.

The Risks and risk management section of the annual report contains a more detailed description of Wärtsilä's risks and risk management.

Shares and shareholders

In 2020, the number of shares traded on Nasdaq Helsinki was 635,449,872, equivalent to a turnover of EUR 4,865 million. Wärtsilä's shares are also traded on alternative exchanges, such as Turquoise, BATS CXE, and BATS BXE. The total trading volume on these alternative exchanges was 199,394,959 shares.

Wärtsilä shares on Nasdaq Helsinki

31.12.2020	Number of shares and votes	Number of shares traded 1-12/2020
WRT1V	591,723,390	635,449,872

1.1.-31.12.2020	High	Low	Average*	Close
Share price	12.00	5.01	7.66	8.15

*Trade-weighted average price

Market capitalisation	31.12.2020	31.12.2019
MEUR	4,823	5,828

Foreign shareholders	31.12.2020	31.12.2019
%	50.7	52.8

Flagging notifications
Wärtsilä was informed of the following changes in ownership during 2020:

Transaction date	Shareholder	Threshold	Direct holding, %	Total holding, %
24.3.2020	BlackRock, Inc.	Above 5%	4.85	5.11
31.3.2020	BlackRock, Inc.	Below 5%	4.30	4.82
1.4.2020	BlackRock, Inc.	Above 5%	4.48	5.00
2.4.2020	BlackRock, Inc.	Below 5%	4.37	4.94
25.5.2020	BlackRock, Inc.	Above 5%	4.48	5.00
26.5.2020	BlackRock, Inc.	Below 5%	Below 5%	Below 5%
18.6.2020	BlackRock, Inc.	Above 5%	4.69	5.13
15.7.2020	BlackRock, Inc.	Above 5%	5.02	5.80
23.7.2020	BlackRock, Inc.	Below 5%	4.88	5.33
24.7.2020	BlackRock, Inc.	Above 5%	5.12	5.54
27.7.2020	BlackRock, Inc.	Below 5%	4.98	5.44
28.7.2020	BlackRock, Inc.	Above 5%	5.01	5.47
29.7.2020	BlackRock, Inc.	Below 5%	4.95	5.40
31.7.2020	BlackRock, Inc.	Above 5%	5.04	5.48
5.8.2020	BlackRock, Inc.	Below 5%	4.99	5.43
6.8.2020	BlackRock, Inc.	Above 5%	5.08	5.47
11.8.2020	BlackRock, Inc.	Below 5%	4.96	5.31
11.9.2020	BlackRock, Inc.	Above 5%	5.03	5.58
18.9.2020	BlackRock, Inc.	Below 5%	4.78	5.57
21.10.2020	BlackRock, Inc.	Below 5%	Below 5%	Below 5%
14.12.2020	BlackRock, Inc.	Above 5%	4.89	5.00
15.12.2020	BlackRock, Inc.	Below 5%	Below 5%	Below 5%

Decisions taken by the Annual General Meeting
Wärtsilä's Annual General Meeting, held on 5 March 2020, approved the financial statements and discharged the members of the Board of Directors and the company's President & CEO from liability for the financial year 2019.

The Annual General Meeting decided that the Board of Directors shall have eight members. The following were elected to the Board: Maarit Aarni-Sirviö, Karen Bomba, Karin Falk, Johan Forssell, Tom Johnstone, Risto Murto, Mats Rahmström and Markus Rauramo.

The audit firm PricewaterhouseCoopers Oy was elected as the company's auditor for the year 2020.

Dividend distribution
The Annual General Meeting approved the Board of Directors' proposal to pay a dividend of EUR 0.48 per share in two instalments. The first instalment of EUR 0.24 per share was paid on 16 March 2020 and the second instalment of EUR 0.24 per share on 17 September 2020.

Shareholders' Nomination Board
The Annual General Meeting decided to establish a Shareholders' Nomination Board to prepare matters pertaining to the appointment and remuneration of the Board of Directors. It also adopted the proposed Charter of the Shareholders' Nomination Board. The Charter is available on Wärtsilä Corporation's website.

The Nomination Board consists of five members. Four representatives are nominated by the company's four largest shareholders, with the fifth member being the Chairman of Wärtsilä's Board of Directors. The four largest shareholders are determined on the basis of the shareholders' register maintained by Euroclear Finland Oy as of 1 June preceding the Annual General Meeting of shareholders.

The following members were appointed to Wärtsilä's Shareholders' Nomination Board:

- Petra Hedengran (General Counsel, Investor AB), appointed by Invaw Invest AB
- Reima Rytsölä (Deputy CEO, Investments, Varma Mutual Pension Insurance Company), appointed by Varma Mutual Pension Insurance Company
- Mikko Mursula (Deputy CEO, Chief Investment Officer, Ilmarinen Mutual Pension Insurance Company), appointed by Ilmarinen Mutual Pension Insurance Company
- Satu Huber (CEO, Elo Mutual Pension Insurance Company), appointed by Elo Mutual Pension Insurance Company
- Tom Johnstone (Chairman of the Board of Directors of Wärtsilä)

Authorisation to repurchase the company's own shares
The Board of Directors was authorised to resolve to repurchase a maximum of 57,000,000 of the company's own shares. The authorisation to repurchase the company's own shares shall be valid until the close of the next Annual General Meeting, however no longer than for 18 months from the authorisation of the shareholders' meeting.

Authorisation to issue shares
The Board of Directors was authorised to resolve to issue new shares or transfer shares held by the company. The maximum number of shares to be so issued shall not exceed 57,000,000. The shares can be issued for consideration or without consideration. They can also be issued in deviation from the shareholders' pre-emptive rights by way of a directed issue if there is a weighty financial reason for the company to do so. The authorisation for the Board of Directors to issue shares shall be valid for three years from the authorisation of the shareholders' meeting and it cancels the authorisation given by the General Meeting on 7 March 2019 to distribute the company's own shares.

Organisation of the Board of Directors
Convening after the Annual General Meeting, the Board of Directors elected Tom Johnstone as its chairman and Markus Rauramo as the deputy chairman. The Board decided to establish an Audit Committee and a People Committee. The Board appointed from among its members the following members to the Committees:

Audit Committee: Chair Markus Rauramo, Maarit Aarni-Sirviö, Risto Murto

People Committee: Chair Maarit Aarni-Sirviö, Johan Forssell, Tom Johnstone

WÄRTSILÄ'S PROSPECTS FOR 2021

Wärtsilä expects the near-term demand environment to be similar to that of the corresponding period in the previous year. However, visibility remains limited, and the prevailing market conditions make the outlook uncertain.

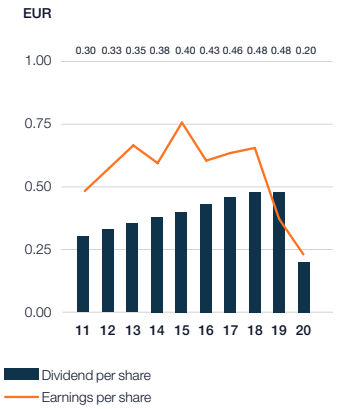
BOARD OF DIRECTORS' DIVIDEND PROPOSAL

The Board of Directors proposes that a dividend of EUR 0.20 per share be paid for the financial year 2020. The parent company's distributable funds total EUR 974,008,736.28, which includes EUR 264,838,387.72 in net profit for the year. There are 591,723,390 shares with dividend rights. The dividend shall be paid in two instalments.

The first instalment of EUR 0.10 per share shall be paid to the shareholders who are registered in the list of shareholders maintained by Euroclear Finland Oy on the dividend record date of 8 March 2021. The payment day proposed by the Board for this instalment is 15 March 2021.

The second instalment of EUR 0.10 per share shall be paid in September 2021. The second instalment of the dividend shall be paid to shareholders who are registered in the list of shareholders maintained by Euroclear Finland Oy on the dividend record day, which, together with the payment day, shall be decided by the Board of Directors in its meeting scheduled for 9 September 2021. The dividend record day for the second instalment as per the current rules of the Finnish book-entry system would be 13 September 2021 and the dividend payment day 20 September 2021.

Dividend



The free share issue approved by Wärtsilä Corporation's Annual General Meeting on 8 March 2018 increased the total number of Wärtsilä shares to 591,723,390. Figures for the comparison periods 2011–2017 have been adjusted to reflect the increased number of shares.

EVENTS AFTER THE REVIEW PERIOD

In January 2021, Wärtsilä announced the divestment of 100% of the shares in its Entertainment business, Wärtsilä Funa GmbH, to Videlio SA, a French public limited company. Wärtsilä Entertainment is engaged in the field of design, fabrication, engineering and integration of entertainment systems, illumination, light control, cabin control, broadcast and digital audio distribution and announcement systems for cruise vessels and entertainment parks. The company became part of Wärtsilä as a result of the acquisition of L-3 Communications MSI in 2015 and has 172 employees in five countries, with the majority being based in Emden, Germany. The annual revenues were approximately EUR 50 million in 2020.

PRIMARY FINANCIAL STATEMENTS

CONSOLIDATED STATEMENT OF INCOME

MEUR	2020	2019
Net sales	**4,604**	5,170
Change in inventories of finished goods & work in progress	**-104**	137
Work performed by the Group and capitalised	**19**	18
Other operating income	**61**	67
Material and services	**-2,551**	-3,003
Employee benefit expenses	**-1,192**	-1,260
Result from net position hedges	**-1**	
Depreciation, amortisation and impairment	**-174**	-180
Other operating expenses	**-431**	-578
Share of result of associates and joint ventures	**3**	-9
Operating result	**234**	362
as a percentage of net sales	**5.1**	7.0
Financial income	**16**	27
Financial expenses	**-59**	-74
Profit before taxes	**191**	315
Income taxes	**-58**	-97
Profit for the financial period	**133**	218

Attributable to:		
equity holders of the parent company	**134**	217
non-controlling interests	**-1**	1
	133	218
Earnings per share attributable to equity holders of the parent company (basic and diluted):		
Earnings per share (EPS) basic and diluted EUR	**0.23**	0.37

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

MEUR	2020	2019
Profit for the financial period	**133**	218
Other comprehensive income, net of taxes:		
Items that will not be reclassified to the statement of income		
Remeasurements of defined benefit liabilities	**6**	-20
Tax on items that will not be reclassified to the statement of income	**-1**	5
Total items that will not be reclassified to the statement of income	**5**	-16
Items that may be reclassified subsequently to the statement of income		
Exchange rate differences on translating foreign operations		
for equity holders of the parent company	**-74**	42
for non-controlling interests	**-1**	
transferred to the statement of income	**-6**	
Associates and joint ventures, share of other comprehensive income	**-2**	-1
Cash flow hedges		
measured at fair value	**-3**	4
transferred to the statement of income	**6**	19
Tax on items that may be reclassified to the statement of income		
Cash flow hedges		
transferred to the statement of income	**-1**	-4
Total items that may be reclassified to the statement of income	**-81**	60
Other comprehensive income for the financial period, net of taxes	**-76**	45
Total comprehensive income for the financial period	**57**	263

Total comprehensive income attributable to:		
equity holders of the parent company	**59**	262
non-controlling interests	**-1**	1
	57	263

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

MEUR	31.12.2020	31.12.2019
Assets		
Non-current assets		
Goodwill	**1,325**	1,380
Intangible assets	**391**	397
Property, plant and equipment	**282**	307
Right-of-use assets	**162**	185
Investments in associates and joint ventures	**23**	42
Other investments	**19**	18
Interest-bearing investments	**1**	1
Deferred tax assets	**183**	155
Trade receivables	**30**	19
Other receivables	**11**	15
Total non-current assets	**2,427**	2,518
Current assets		
Inventories	**1,192**	1,365
Trade receivables	**922**	1,237
Current tax receivables	**27**	42
Contract assets	**389**	515
Other receivables	**258**	281
Cash and cash equivalents	**919**	358
Total current assets	**3,706**	3,797
Assets held for sale	**99**	82
Total assets	**6,232**	6,398
Equity and liabilities		
Equity		
Share capital	**336**	336
Share premium	**61**	61
Translation differences	**-197**	-114
Fair value reserve	**-9**	-11
Remeasurements of defined benefit liabilities	**-45**	-55
Retained earnings	**2,030**	2,178
Total equity attributable to equity holders of the parent company	**2,177**	2,396
Non-controlling interests	**11**	14
Total equity	**2,188**	2,410
Liabilities		
Non-current liabilities		
Interest-bearing debt	**1,129**	997
Deferred tax liabilities	**76**	83
Pension obligations	**139**	155
Provisions	**55**	45
Contract liabilities	**51**	38
Other liabilities	**1**	1
Total non-current liabilities	**1,451**	1,317
Current liabilities		
Interest-bearing debt	**198**	99
Provisions	**269**	278
Trade payables	**411**	624
Current tax liabilities	**56**	100
Contract liabilities	**926**	880
Other liabilities	**664**	622
Total current liabilities	**2,524**	2,603
Total liabilities	**3,975**	3,920
Liabilities directly attributable to assets held for sale	**68**	68
Total equity and liabilities	**6,232**	6,398

CONSOLIDATED STATEMENT OF CASH FLOWS

MEUR	2020	2019
Cash flow from operating activities:		
Profit for the financial period	**133**	218
Adjustments for:		
Depreciation, amortisation and impairment	**174**	180
Financial income and expenses	**43**	47
Gains and losses on sale of intangible assets and property, plant and equipment and other changes	**-9**	-15
Share of result of associates and joint ventures	**-3**	9
Income taxes	**58**	97
Other non-cash flow adjustments	**7**	3
Cash flow before changes in working capital	**403**	540
Changes in working capital:		
Receivables, non-interest-bearing, increase (-) / decrease (+)	**338**	9
Inventories, increase (-) / decrease (+)	**122**	-213
Liabilities, non-interest-bearing, increase (+) / decrease (-)	**-32**	74
Changes in working capital	**428**	-130
Cash flow from operating activities before financial items and taxes	**832**	410
Financial items and taxes:		
Interest income	**4**	4
Interest expenses	**-14**	-13
Other financial income and expenses	**-19**	-27
Income taxes paid	**-122**	-141
Financial items and paid taxes	**-150**	-178
Cash flow from operating activities	**681**	232
Cash flow from investing activities:		
Acquisitions	**-1**	-4
Other investments	**-1**	-2
Investments in property, plant and equipment and intangible assets	**-115**	-116
Proceeds from sale of property, plant and equipment and intangible assets	**13**	25
Proceeds from sale of shares in subsidiaries	**22**	1
Proceeds from sale of shares in associates and joint ventures	**27**	
Cash flow from investing activities	**-55**	-95
Cash flow after investing activities	**627**	137
Cash flow from financing activities:		
Proceeds from non-current debt	**317**	150
Repayments and other changes in non-current debt	**-76**	-105
Loan receivables, increase (-) / decrease (+)	**1**	2
Current loans, increase (+) / decrease (-)		-18
Dividends paid	**-286**	-284
Cash flow from financing activities	**-44**	-256
Change in cash and cash equivalents, increase (+) / decrease (-)	**582**	-119
Cash and cash equivalents at the beginning of the financial period*	**369**	487
Exchange rate changes	**-19**	
Cash and cash equivalents at the end of the financial period*	**932**	369

* Cash and cash equivalents on 31 December 2020 and 31 December 2019 include the cash and cash equivalents pertaining to assets held for sale.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

	Total equity attributable to equity holders of the parent company							Non-controlling interests	Total equity
MEUR	Share capital	Share premium	Translation difference	Fair value reserve	Remeasurements of defined benefit liabilities	Retained earnings	Total		
Equity on 1 January 2019	336	61	-155	-31	-39	2,245	2,418	14	2,432
Translation differences			41				41		41
Cash flow hedges									
net change in fair value, net of taxes				4			4		4
transferred to the statement of income, net of taxes				16			16		16
Defined benefit plans					-16		-16		-16
Other comprehensive income			41	20	-16		45		45
Profit for the financial period						217	217	1	218
Total comprehensive income for the financial period			41	20	-16	217	262	1	263
Dividends paid						-284	-284	-1	-285
Equity on 31 December 2019	336	61	-114	-11	-55	2,178	2,396	14	2,410

	Total equity attributable to equity holders of the parent company							Non-controlling interests	Total equity
MEUR	Share capital	Share premium	Translation difference	Fair value reserve	Remeas-urements of defined benefit liabilities	Retained earnings	Total		
Equity on 1 January 2020	336	61	-114	-11	-55	2,178	2,396	14	2,410
Translation differences			-76				-76	-1	-77
Translation differences, transferred to statement of income			-6				-6		-6
Cash flow hedges									
net change in fair value, net of taxes				-3			-3		-3
transferred to the statement of income, net of taxes				5			5		5
Defined benefit plans					5		5		5
Other changes					5	-5			
Other comprehensive income			-82	2	10	-5	-75	-1	-76
Profit for the financial period						134	134	-1	133
Total comprehensive income for the financial period			-82	2	10	129	59	-1	57
Dividends paid						-284	-284	-2	-286
Other changes						7	7		7
Equity on 31 December 2020	336	61	-197	-9	-45	2,030	2,177	11	2,188

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