



This is
Wärtsilä
2019

This is Wärtsilä

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.

In 2018, Wärtsilä's net sales totalled EUR 5.2 billion with approximately 19,000 employees. The company has operations in over 200 locations in more than 80 countries around the world. Wärtsilä is listed on Nasdaq Helsinki.

PURPOSE

Enabling sustainable societies
with smart technology

VALUES

Energy, Excellence,
Excitement

“The marine and energy industries are being transformed through increasing connectivity, new business models, and a stronger focus on environmental compliance. We are committed to supporting our customers by taking a leading role in this transition.”

JAAKKO ESKOLA,
PRESIDENT & CEO



NET SALES

5,174

EUR MILLION

PERSONNEL

19,294

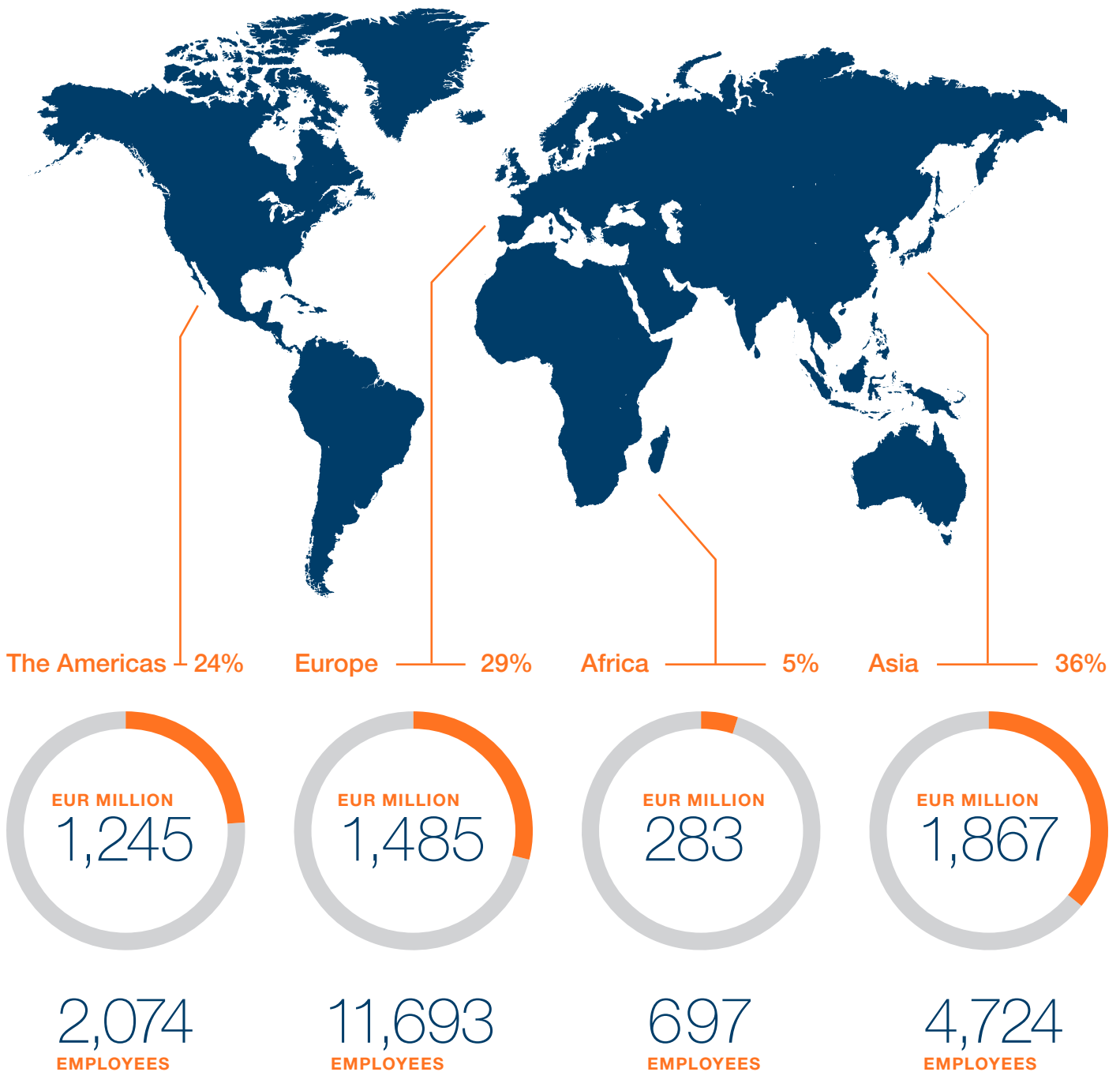
EMPLOYEES

INSTALLED BASE

180

GW

Net sales by market area, % of Wärtsilä's total net sales



In other areas, net sales totalled EUR 294 million and the number of employees was 106.

Business areas

Wärtsilä Energy Business

Wärtsilä Energy is leading the transition towards a 100% renewable energy future. As an energy system integrator, we understand, design, build and serve optimal power systems for future generations. Wärtsilä's solutions provide the needed flexibility to integrate renewables and secure power system reliability. Our offering comprises engine-based flexible power plants – including liquid gas systems – hybrid solar power plants, energy management systems and storage and integration solutions. We support our customers over the lifecycle of their installations with services that enable increased efficiency and guaranteed performance.



Wärtsilä Marine Business

In the marine and oil & gas industries, no other company has a broader offering of technologically advanced, environmentally sustainable, and economically sound solutions. We are leading the industry's transformation towards a Smart Marine Ecosystem, whereby real-time communication and the digitalisation of all aspects of shipping and port operations, including the entire logistics chain, are utilised to create long-term value for our customers and partners. With an integrated product portfolio comprising full lifecycle solutions that are supported by the market's most extensive service network, we are able to optimise performance and achieve the safest, smartest, most ecological and efficient operating profiles possible.

Market drivers

Economic growth, improving standards of living, and consequential electrification are jointly resulting in increased electricity consumption in non-OECD countries. The development of a more sustainable energy infrastructure is being driven by climate policies, energy security, and economics. Tightening emissions legislation is forcing the closure of ageing capacity, with carbon-intensive energy sources being replaced by low carbon fuels, such as natural gas and renewable source solutions. Investments in renewable generation are growing as solar and wind become increasingly cost competitive. This, in turn, is decreasing the running hours of conventional thermal capacity and creating a substantial need to add flexibility into power systems through energy storage and flexible capacity. Gas as a fuel is seen as having a key role in providing flexibility to the system, and in the future gas will be more and more carbon neutral. New data and platform-based business models and solutions enable system level integration and asset base optimisation.

Wärtsilä's strengths

- Competitive capital cost and engineering, procurement and construction (EPC) capability
- Unique operational and fuel flexibility
- Value adding hybrid solutions for existing and new customers
- The most proven software platform for integrating renewable energy sources
- Systems integration offering with lifecycle support
- Global technical support capabilities and know-how
- Strong track-record in operations & maintenance, optimising operating costs, and increasing plant availability and efficiency

The demand for new vessels in the shipbuilding and shipping industries is mainly driven by developments within the global economy, and the resulting impact on trade and transportation capacity requirements. The global economy also influences fuel prices, which in turn have both a direct and an indirect impact on the marine and oil & gas industries. Price, availability, and demand are the driving factors in the oil & gas industry, while in the general shipping industry, high fuel costs increase the demand for equipment upgrades, the rethinking of operational profiles, and for more efficient vessel designs. Another important driver is the increasing stringency of environmental regulations and their impact on the demand for optimised vessel efficiency, environmental solutions, and gas as a marine fuel. Technological developments and innovations act as an enabler for the marine industry to become more efficient, sustainable, and safe by advancing fleet design, system solutions and operations.

Wärtsilä's strengths

- Strong presence in all major marine and offshore oil & gas segments
- The broadest portfolio of reliable and high performing products, systems, and solutions in the industry
- Fuel efficient solutions that are compliant with the strictest environmental requirements
- The ability to deliver cost efficiencies and to unlock new revenue streams through integration, digitalisation and interconnectivity
- A complete lifecycle service offering supported by an unmatched global service network and technical support
- The capability to deliver operational and asset performance optimisation globally



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 our Smart Marine and Smart Energy visions. With an integrated portfolio of services, systems, and products that covers customer needs across the full lifecycle, we are well positioned to respond to the demand for energy efficient and innovative solutions. Strong emphasis is given to optimising installation performance, using data analytics and artificial intelligence to support customer business decisions. Wärtsilä's digital transformation will provide enhanced customer value through an increased focus on collaboration and knowledge sharing. A strong presence in key markets and a superior global service network support our profitable growth ambitions.

With our flexible production and supply chain management, we constantly seek new ways to maintain high quality and cost efficiency - often in co-operation with customers and leading industrial partners. The investments in R&D and the focus on digitalisation create a strong foundation for securing and strengthening the company's position at the forefront of market innovation. 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 implementation of operational excellence ensures that we are easy to do business with, and drives increased productivity and efficiencies for our customers.

Sustainability

Economic

Wärtsilä aims to meet shareholder 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 customers' 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.



Smart Energy

Wärtsilä creates optimal paths towards 100% renewable energy systems. Our objective is for customers to recognise the company as the leading energy systems integrator, providing all the essential technologies, services, and solutions for sustainable and reliable power systems.

The energy market landscape is in transition and is moving towards more flexible energy systems with a rapidly increasing share of renewable energy, declining inflexible baseload generation, and wider applications of storage technology. The declining cost of renewables has begun to reduce new investments in coal and other inflexible baseload technologies, and this transition will eventually enable renewables to become the new baseload, which will require flexibility and storage to ensure reliable generation.

Our solutions are at the very core of the energy systems of the future. We understand the role that different technologies play in our customers' power systems, and enhance the assets of the customer through software, EPC offerings, and global service capabilities. Wärtsilä's engine power plants act as a stepping stone for the ongoing energy industry transition, and provide a unique combination of energy efficiency, and fuel and operational flexibility throughout all its phases. Our energy storage and integration solutions handle second and daily level variations in supply, which is the key for renewables penetration.

Wärtsilä provides asset and lifecycle management services that optimise the performance of our customers' installations through upgrades, modernisations, fuel conversions, and safety solutions. Asset Management targets energy supply reliability and optimisation. With connectivity, we optimise asset performance throughout the lifecycle and provide strategic input to customers in order to enhance their business growth through smart technologies. Asset management will drive future growth in lifecycle solutions and enable new "as-a-service" business models. To secure future growth and profitability, the main focus will be on optimising the current business and building a solid foundation for developing future business models.

Smart Marine

Wärtsilä's aim is to lead the 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, we aim to unlock new customer values through connectivity, digitalisation, and smart technology.

The marine industry is moving towards a future that is increasingly connected. The opportunities offered through smart technology will foster a new era of collaboration and knowledge sharing with customers, suppliers, and partners. Industry players are faced with major sources of inefficiency that impose a significantly negative impact on business operations and profitability, the three most notable of these being overcapacity, inadequate port-to-port fuel efficiency, and time wasted waiting when entering ports and other high traffic areas. Eliminating these inefficiencies forms the basis of Wärtsilä's marine strategy towards ecosystem thinking. We have identified four primary forces that will re-shape the industry. Shared capacity will improve fill rates and reduce unit costs; big data analytics will optimise both operations and energy management; intelligent vessels will enable automated and optimised processes; and smart ports will result in smoother and faster port operations.

Wärtsilä is ideally positioned, together with its customers and partners, for positive disruptive development and to lead the transformation into a new era of shipping. Building on our extensive offering portfolio, and our vast installed base and industry know-how, we will continue to develop the smart technologies, business models, and competences needed to create a Smart Marine Ecosystem.

By applying smart technology and performance optimisation services, Wärtsilä aims to deliver greater efficiencies, 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. The ultimate goal is to enable sustainable societies with smart technologies.

Sustainability

As a global leader in complete lifecycle solutions for the marine and energy markets, Wärtsilä plays a key role in providing environmentally sound solutions and services that enable our customers to develop their businesses in a sustainable way. This forms the basis of our offering and sustainability approach, and is supported by a strong commitment to responsible business conduct.

Wärtsilä's sustainability approach

Our commitment to sustainability and responsible business is based on our purpose and strategy, which along with the sustainable development objectives create the framework for developing our activities and products. Wärtsilä's strategy is based on three key areas, energy efficient solutions, lifecycle optimisation, and innovative solutions, all of which contribute to a more sustainable future in both the energy and the marine industry.

Our strength is our technological leadership and therefore technology plays a central role in our sustainability work. Wärtsilä Energy Business and Wärtsilä Marine Business focus on developing and providing sustainable solutions and services for the industries in which they operate. The utilisation of lifecycle data analytics will enhance our efforts on enabling sustainable societies with smart technology.

Wärtsilä identifies and assesses sustainability risks on an annual basis. Based on the current assessment, the sustainability risks are considered to be at a moderate level, and sustainability forms an opportunity for Wärtsilä.

Innovating for sustainability

To secure a leading position at the forefront of sustainable innovation, Wärtsilä continuously invests in developing technologies that benefit the entire power system and marine ecosystem. Innovation and product development, plus the willingness to explore new technologies, are essential for meeting current customer needs, future requirements, and for remaining an industrial frontrunner.

We develop smart and sustainable solutions across a broad front, including technologies related to efficiency improvement, the reduction of gaseous and liquid emissions, waste reduction, noise abatement, as well as effluent and ballast water treatment. Our proactive approach to meeting future demand has resulted in the development of both primary and secondary abatement technologies, and has broadened the range of usable fuels. We actively seek to utilise opportunities provided by the digital transformation taking place in the maritime and energy sectors. Our commitment to investing in research and product development benefits customers as well as the environment, both in the short term and over a longer time span.

The key features of Wärtsilä's environmentally sound solutions include:

- Reliability, safety, and long lifespan
- Low emission levels
- Renewable energy integration with engines and storage systems
- Fuel flexibility
- Efficiency improvement with lower lifecycle costs
- Low water consumption
- Design and operational optimisation of vessels

Emphasising social responsibility

Our aim is to provide the best value and service to customers by continuously developing our competences and way of working. The strategic goal of Wärtsilä's social responsibility and people strategy is to bring the business strategy alive by developing the organisation and competences to meet the evolving business needs.

The objective is to have energetic, competent, and motivated personnel with exciting and meaningful jobs and career opportunities led by excellent leaders. Good performance is recognised and diversity respected. By applying high standards of occupational health and safety, we strive to offer a hazard-free workplace to our employees, contractors, and others working in different parts of the corporation.

Good corporate citizenship is accomplished through active co-operation, open communication, and good relationships with stakeholders. Our operations and relations with stakeholders are based on our Code of Conduct, with which each Wärtsilä company and individual is required to comply.

Sustainability highlights in 2018

23.1. Wärtsilä listed among the “2018 Global 100” Most Sustainable Corporations in the World. The recognition took place in Davos as an aside to the World Economic Forum. Selected from a pool of 5,994 publicly listed companies, the Global 100 companies represent 22 countries and encompass all sectors of the economy.

19.3. Wärtsilä acquires Transas to accelerate its Smart Marine Ecosystem vision. Wärtsilä’s Smart Marine Ecosystem is a vision whereby smart vessels connect with smart ports and beyond to deliver efficiency, minimised environmental impact, and safety and security.

20.3. Wärtsilä delivers the world’s largest solar hybrid power plant to Burkina Faso, reducing annual CO₂ emissions by as much as 18,500 tons. By hybridising an existing 57 MW diesel power plant with the new solar PV plant and related hybrid plant controls, the plant’s performance has been significantly enhanced.

26.3. Wärtsilä contracted to supply VOC recovery systems for two new shuttle tankers, saving tons of fuel each year. The ships will operate on liquefied natural gas (LNG) as the primary fuel, but VOC – the gas evaporating from the oil cargo tanks – will also be utilised as fuel by mixing it with the LNG.

25.4. Wärtsilä contracted to supply a 130 MW flexicycle power plant to Senegal, enabling lower energy costs and the integration of more renewable energy. The Malicounda power project will provide the flexibility needed to facilitate the integration of intermittent renewable energy into the country’s network.

22.5. Wärtsilä LNGPac passes 100th order milestone. First introduced in 2009, the Wärtsilä LNGPac has played an important role in establishing the viability of LNG as a marine fuel. The system comprises a bunkering station, the LNG fuel tank and related process equipment, as well as the control and monitoring system.

22.5. Wärtsilä joins the Climate Leadership Coalition (CLC), a network of leading Finnish companies, research organisations and cities, aiming for the mitigation of climate change. The CLC believes that business solutions are central in tackling climate change, which is in line with Wärtsilä’s purpose and strategy.

20.6. Wärtsilä introduces its new hybrid solar PV and storage solution. The Wärtsilä Hybrid Solar integrates solar PV generation and storage to deliver a true “renewables as baseload” solution that is climate-friendly, increases resilience and efficiencies, and which can be supported by a power producer’s existing grid infrastructure.

3.9. Wärtsilä’s Aquarius EC Ballast Water Management System endorsed with the United States Coastguard (USCG) Type Approval. This approval verifies that the product has met the specified regulatory, technical, and safety requirements, and represents an endorsement of its design and efficiency principles.

5.9. Wärtsilä announces ‘An Oceanic Awakening’ – a global initiative focused on the radical transformation of the world’s marine and energy industries into one supremely efficient, ecologically sound, and digitally connected ecosystem.

13.9. Wärtsilä once again included in the Dow Jones Sustainability Indices.

25.9. Greensmith Energy, a Wärtsilä company, releases GridSol, the company’s first standardised energy storage solution. This innovative and standardised architecture supports both standalone energy storage deployments, as well as integrated hybrids with thermal or renewable generation assets.

17.10. Wärtsilä inaugurates its new Hybrid Centre, the first of its kind in the world, to boost sustainable shipping. The facility in Trieste, Italy, enables further development and deployment of the Wärtsilä HY hybrid power module, and also provides customers with the possibility to experience the benefits of the Wärtsilä HY.

13.11. Wärtsilä, Finland’s Lappeenranta University of Technology (LUT), and Nebraska Public Power District (NPPD), sign a Memorandum of Understanding (MoU) for the study of the development of a business case for the use of alternative fuels, aiming towards a future with energy produced from 100% renewable carbon free sources.

28.11. Wärtsilä achieves notable advances in automated shipping through testing its automated dock-to-dock solution. In the presence of the Norwegian Maritime Authority (NMA), the autonomously operated ferry ‘Folgefonn’ successfully visited all three ports serviced by the ship.

4.12. Wärtsilä introduces a lifeboat for buildings, a product that should never exist, at Slush Helsinki 2018. This hypothetical lifeboat, conceptualised and designed by Wärtsilä Ship Design, is a way for Wärtsilä to amplify the critical need to move climate change discourse to action.



The journey's next step

A long history of innovation – as well as flexibility in the face of industrial and social transformation – has given rise to the Wärtsilä we know today. The decision to build a next-generation innovation and production centre in Vaasa is the next crucial development in this story.

During its history, Wärtsilä has undergone several transformations and managed to conquer new market areas with innovative products and services. Having built itself into a global business with ground-breaking products such as the Wärtsilä Vasa engine series, the company has advanced with both sea and land based solutions, to deliver complete lifecycle services for customers around the world. The power plant business changed Wärtsilä's business model, and the company went on to successfully reposition its offering – moving from selling only products to profiling itself as a comprehensive solutions partner.

“With regards to innovation milestones, we have always been a front runner, leading the technology transformation towards LNG and dual-fuel engines in the marine industry. From the customer's point of view, Wärtsilä was seen as an engine manufacturer just over a decade ago, and now we have successfully transformed into a technology services company, offering complete lifecycle solutions for the marine and energy markets,” says Hannu Mäntymaa, Director, R&D and Engineering at Wärtsilä.

Today, Wärtsilä sees itself as enabling sustainable societies with smart technology. The company aims to lead the marine and power generation industries' evolution and positive disruptive development towards a connected marine ecosystem, and a future that utilises 100% renewable energy.

In order to make this possible and to answer global challenges, experts from various fields of business and research need to be brought together. Announced in August 2018, the state-of-the-art Smart Technology Hub in Vaasa will gather all this expertise into a whole new realm.

Enabling co-creation

By the end of 2020, all Wärtsilä functions and personnel in central Vaasa will be transferred to the new hub, along with the logistics and maintenance workshop operations from Runsar.



Mäntymaa says that the new centre for research, product development and production in Vaskiluoto represents a huge leap forward for Wärtsilä compared to the current Vaasa facility. Since the 1960s, the production site's focus has been on the manufacturing and development of four-stroke engines. The new hub will now connect this know-how with a future-oriented approach, looking to create comprehensive integrated solutions instead of individual products.

"The centre will offer a framework for the development and co-creation of the next generation of smart solutions. It will be a platform for deepening partnerships beyond separate projects, working together with our customers, suppliers, and universities towards a shared vision. No single company is able to come up with all the innovations necessary to make such a profound change on its own. Together, we will utilise the opportunities presented by digitalisation and big data to tie together production, planning, services, and customer needs," Mäntymaa explains.

By making use of, for example, automation, robotics, advanced product and system testing, and simulation, Wärtsilä is looking to broaden its role as an industry-shaping entity. This will require the development of hybrid solutions and new types of fuels and energy storage technologies, optimising the lifecycles of energy installations. And while shipping is already the most environmentally sound solution for transporting goods, much can still be done to minimise its inefficiencies.

"The expectation is that the new hub will enable us to better analyse the data available directly from our installations and utilise it in creating superior, faster, and more efficient solutions for our customers," Mäntymaa adds.

Connecting expertise

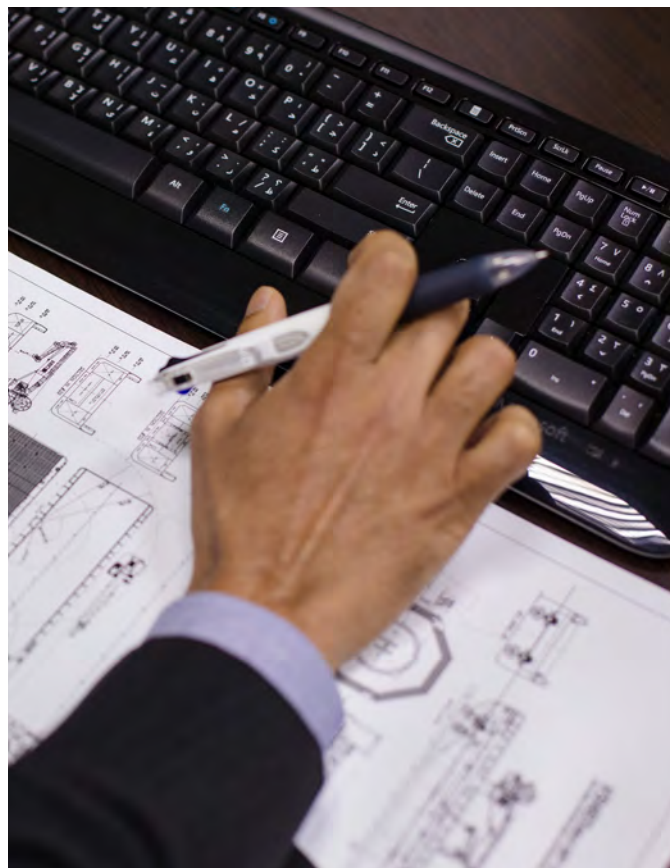
Mäntymaa says that while there are players whose innovation efforts concentrate on either the energy or marine market, the Smart Technology Hub is unique in the sense that it brings together both, combined with lifecycle solutions and services. This allows the development of entire integrated systems.

"Another unique feature of the centre will be its Smart Partner Campus, where we invite all our customers and suppliers – as well as start-ups and academia – to take part in various innovation events and programmes, in the spirit of true co-creation."

The hub will also be connected to Wärtsilä's worldwide network of centres of expertise, such as its Acceleration Centres in Europe, Asia and North America. This will facilitate the efficient transfer of data and connecting competences also across various operations within the company.

"We have been investing in setting up Wärtsilä Experience Centres where, for example, a customer in Helsinki or Hamburg can be virtually present at the Smart Technology Hub. A trial run for an engine or system can be carried out without the need to physically travel to Vaasa."

The hub will also advance the model of working with digital twins of physical installations, making development work more flexible. Optional solutions can first be simulated and tested, comparing their benefits, after which the preferred option can be taken into production.



An inspiring environment

"Vaasa is an excellent site for the hub as the region has the leading energy technology cluster in the Nordic region, with a university and various companies whose combined know-how and global connections offer significant synergies for us," Mäntymaa says, adding that the ambition is to create an inspiring environment for experts to join forces.

Wärtsilä will invest EUR 83 million in modern testing and production technology for the Smart Technology Hub. The total investment will be in the region of EUR 200 million, consisting of office and factory buildings, logistics and infrastructure.

"We are hoping that the hub will be seen as the place to be in terms of the technology of the future."



A year in the life of the Smart Marine vision

2018 was the first full year of Wärtsilä's Smart Marine vision in action, and progress unfolded more quickly and more intensively than any observer could have expected.

Andrea Morgante, Vice President Strategy and Business Development for Wärtsilä Marine Business, was always hopeful of such a result, however. "We believed the Smart Marine vision made sense," he says. "We didn't think of it as a gamble. We saw that this had to happen, and I'm so glad to see the way it has accelerated."

The team behind Smart Marine certainly understood the underlying needs in the industry to embrace digitalisation, realise synergies, and work towards more sustainable operations. Their main concerns in the beginning, however, related to how quickly they would be able to bring people on board with the idea; from internal stakeholders, such as management and personnel, all the way to the customers themselves.

In Morgante's view, the reason the thinking behind the vision has spread so widely is the commitment from Wärtsilä's management. He points to the close involvement of the President of Marine, Roger Holm, and Group CFO Arjen Berends as being particularly important; "With leaders of this caliber challenging your views, the result of that process is almost guaranteed to flourish. Those conversations really served to strengthen our approach."

Compounding the benefits

Foremost among the events of a busy year of Smart Marine related developments must surely be Wärtsilä's acquisition in March of Transas – a leader in marine navigation solutions, training and simulation services, and ship traffic control.

Investing in the vision and taking on the strategy has necessitated making such acquisitions. By bringing in companies like Transas and Guidance Marine, Wärtsilä has hastened the journey considerably, acquiring with them technologies that would have been extremely time-consuming, or perhaps even impossible, to develop organically.

"From a strategic perspective," Morgante explains, "the Transas acquisition brought us to a new level, as the first company able to cover the entire domain in terms of the technologies required for ocean transportation.

"Wärtsilä already held a strong position regarding everything related to the vessel – from power production and power delivery, to control automation and navigation. What we were lacking, for

example, was expertise in port operations, which Transas has. We also missed fleet-operation solutions, which Transas has as well. This combination simply makes us the first company that can provide a complete end-to-end solution, providing everything the customer needs to go from A to B with their vessel."

'In practice' makes perfect

"There are certain things you just need to acquire as opposed to develop," says Morgante, "and it's amazing to see these new elements working in combination with the existing offering. The latest auto-docking project we carried out in Norway in November is a perfect example of how combining the technologies we have in our portfolio with completely new solutions, provides a competitive advantage for Wärtsilä. To succeed in that, we also needed the acquired capabilities, bringing in colleagues from across the organisation along with their technologies."

The operation that resulted – using the Norled Folgefonn ferry – emerged as the first fully autonomous dock-to-dock operation ever demonstrated. But Morgante stresses that world firsts are not necessarily the priority, impressive as they might be:

"The fact that we are seeing 'world firsts' of this or that merely shows that we are on to something. It demonstrates that companies believe that new solutions need to be brought to the market and that there is interest from the market in those solutions."

Ultimately, Morgante strongly believes that the winner in this field will not be the player to bring the most novelty to the market, but rather the one with proven technology and a strong list of references. Nevertheless, he is pleased to note the increased pace at which such developments are coming to light, and that the support required from customers is already present.

"Co-creation can easily become a buzz word if there are no practical implications. For us, it means bringing companies together - each providing their own expertise, their technological accomplishments, and access to their assets – to do something new. And this is extremely important when you're developing completely new solutions.

“For a new engine,” he points out, “you can build on the extensive experience gained from previous ones. But if you aim to come up with something completely new, the technology itself is not enough. You need to have a customer with you so that you can demonstrate how the technology improves their business.”

Updates keenly awaited

Morgante is already looking forward to seeing how other elements of the Transas offering will shape the way Wärtsilä serves its customers.

“What excites me most is that I felt Transas truly understood that we need to bring to the maritime industry the concepts that had been around for some time already on the consumer side. Deploying applications on top of the equipment you have already provided, for example, without the necessity for additional hardware. If you think about your iPhone, every year an OS update brings new functionalities, allowing new apps to develop and so forth.”

“This is the super exciting part. And it’s one element we acquired with Transas and are now using and deploying with our products. This is a race to develop the potential which already



exists, in some ways. We’ve been working actively since the acquisition to connect the wealth of technology we have in our portfolio. This is one of the must-win battles for us – to connect the dots and find solutions that extract more benefits through the act of combining them: one plus one makes three, basically.”

And for such an ambitious series of actions, a similarly ambitious outlook is a must. Morgante makes his personal commitment to Wärtsilä’s purpose indelibly clear. “What we want to do is to change the world. Personally speaking, I want it tomorrow – not 30 years from now. It’s inspiring the whole organisation to think in these terms, and by providing solutions like these for the existing fleets already out there, we’re accelerating the process and bringing the future even closer.”

2018 in Smart Marine

JANUARY 2018

Wärtsilä integrated solutions on next-generation shuttle tankers

Four vessels are ordered by Teekay with fully integrated Wärtsilä solutions (DF engines, LNGPac, VOC recovery, pumps, inert gas generator, hybrid system, Eniram analytics); CO₂ will be reduced by up to 40%.

FEBRUARY 2018

Partnership with Concirrus for connected insurance

Wärtsilä launches Eniram SkyLight 3.0, to enable new data-driven business opportunities, including flexible insurance solutions, charter party compliance assessment, and vessel performance monitoring services.

Wärtsilä Global Customer Support Centre

Wärtsilä launches a Global Customer Support Centre to provide easily accessible, transparent, and high-quality online and phone support 24/7 for enquiries regarding all products and solutions in the portfolio.

MARCH 2018

Wärtsilä acquires Transas

Wärtsilä acquires Transas, a global leader in marine navigation, fleet operating solutions, simulators, and ship traffic control; Transas has a unified cloud-platform for managing operations across the ecosystem.

JULY 2018

Wärtsilä Seals & Bearings develops remote services

New smart glasses with WiFi, Bluetooth, camera and microphone enable real-time communication with a remotely located Wärtsilä expert who can advise and guide the repairs using images, manuals and video footage.

AUGUST 2018

Wärtsilä Smart Technology Hub

A next-generation centre of innovation and production is announced. It will also be a co-created state-of-the-art smart manufacturing campus, where the city, universities, suppliers, and customers can all co-exist and collaborate.

SEPTEMBER 2018

An Oceanic Awakening and SEA20 announced

Wärtsilä launches ‘An Oceanic Awakening’ and SEA20 at SMM. This global forum has the aim of connecting 20 marine cities to drive sustainability; Rotterdam, Hamburg and Helsinki have already joined.

OCTOBER 2018

Wärtsilä Hybrid Centre

Wärtsilä inaugurates the world’s first real-scale hybrid centre in Italy. The centre will simulate real operations through data collected from the field, and will be used for training, R&D, and to improve factory efficiencies.

Redesigning organisation to enhance customer value

Wärtsilä announces re-organisation from three businesses into two – Wärtsilä Marine Business and Wärtsilä Energy Business – covering both new sales and services for the respective markets to deliver increased value to customers by better serving their needs throughout the full lifecycle.

Maritime Cyber Centre of Excellence

Together with Templar Executives, Wärtsilä opens the world’s first International Maritime Cyber Centre of Excellence in Singapore, consisting of a Maritime Cyber Emergency Response Team and a cyber academy.

Acceleration Centre Singapore & IntelliTug

Wärtsilä, MPA, and PSA Marine will develop a harbour tug with autonomous navigation, technologies to dynamically maintain safe distances, prevent collisions, and allow tug operators to work with colleagues ashore via real time data connection.

NOVEMBER 2018

Wärtsilä Lock Entry Assist

Wärtsilä develops a lock entry assist system to facilitate sailing on the St Lawrence Seaway and Great Lakes; the system uses high performance GNSS and was tested on the CSL St Laurent, a 22,600 GT Trillium class bulk carrier.

Wärtsilä Automated Dock-to-dock System

The Norled Folgefonn, an 85m ferry, was able to leave the dock, manoeuvre out of the harbour, sail to the next port, manoeuvre through the harbour entrance, and dock alongside the terminal, all without human intervention.



Renewing the possibilities

In June 2018, Wärtsilä's Energy Business made a powerful statement of intent: the future of the industry is to be 100% renewable. But how will this be realised? And how close might we already be?

Director of Sales and Marketing for Wärtsilä Energy Business Matti Rautkivi is developing something of a reputation for his perspectives on renewable energy, having contributed to Time Magazine twice on the subject. In one such article, he even points to U.S. President Donald Trump as a potential climate hero – albeit an unwitting one perhaps.

No stranger to the bold statement, then. But Rautkivi is adamant that Wärtsilä's vision for the future is certain to have a huge impact, both on the company's solution offering, and the markets in which they are employed.

"With the technologies existing today, we can cost effectively reach a level of 90% renewables in electricity systems, but our ambitions go further beyond that. As a modern technology company, we need to focus on how we will go on to develop solutions for the gap that remains, in a world that now understands the necessity of pushing that last 10% of fossil fuels out of the system."

It is evident that this long-awaited widespread understanding has finally arrived. According to Rautkivi, the crucial enabler of this sea change has been the massive drop in prices energy producers have seen in renewable energy production. In recent years, cost effectivity could even be said to have supplanted sustainability priorities in the decision-making processes, leading to orders for renewables-based plants.

Rautkivi explains the fundamental shift he has seen take place among Wärtsilä's customer base. "Across the globe, it is really being seen that renewable energy makes sense," he explains. "I've been meeting with customers on almost every continent during the last couple of months, and everybody understands that renewable energy is cheap."

But of course, the rise in public awareness of climate change continues to be a factor: "At the same time, the importance of cutting emissions is always there in these conversations, and more strongly than ever. It's very widely understood that this is the only way forward, but the fact that renewables actually lead to lower costs and a different kind of operating model is beginning to become clear too."

The utilisation of Wärtsilä's flexible-fuel engines to accommodate for the inherent variability in renewable energy production is not a new story, but this methodology now takes centre stage in the company's Energy business. As Rautkivi details in several recent project cases, the approach has been refined to the extent that both the emissions and cost-related reductions enabled by a modern renewables-based power plant, have reached something of a peak.

The gap between what is currently achievable and 100% renewables must be closed by innovations still as yet in their early

stages of development. One strong move towards this was initiated at the close of 2018 by Wärtsilä in cooperation with Finland's Lappeenranta University of Technology (LUT) and Nebraska Public Power District (NPPD).

"Everybody knows that 100% is a challenging target," says Rautkivi, "but that's ultimately where we need to be, not just as an industry, but as humankind in the broadest sense. So we're looking to build the optimal pathways to help our customers play a role in achieving it. Replacing fossil-fuel generation with more renewables and more flexibility is the first step, and with the confidence and productive discussions that stem from this, we can begin the research and innovation work – and co-creation processes – needed to solve the rest of the equation."

Denton Municipal Electric

Wärtsilä recently supplied a 225 MW Smart Power Generation plant to Denton Municipal Electric, the locally-owned utility for the City of Denton, Texas. The plant includes twelve eighteen-cylinder Wärtsilä 50SG engines operating on natural gas, representing an order of approximately EUR 100 million.

The community was already committed to progressing towards a green, low-emissions power system, and the role of Wärtsilä's technology has been that of enabling the utility to achieve its initial goal of reaching 70% renewable energy production by early 2019.

Matti Rautkivi: "In Texas, the wind and solar conditions are excellent, and as a result, renewable energy is very inexpensive. The new plant replaces a coal facility with renewables and the supporting addition of Wärtsilä's flexible gas engines."

"Having achieved 70% renewables, the cost reduction for customers in Denton was 35% and the reduction in emissions reached 80% – although the utility is already targeting 88%. Costs are still going down and the flexibility the system enables is proving to be of enormous benefit."

"All in all, Denton is a perfect example of how new renewable power production is taking shape: the utility has the vision, understands the business case, and makes the correct decision. As a side note, having come online in the summer of 2018, this coincided with a hot summer in Texas – and therefore a very profitable one for the company. Naturally, both the City of Denton and Denton Municipal Electric now have their sights on a level beyond 70% renewables, and we're more than happy to help them get there."

AGL Energy Limited

As one can readily imagine, operating conditions for solar energy production in Australia are exceptionally good. With cheap solar power coming to the market, energy providers are investing heavily in renewables, and coal plants are on the way out. One such example is AGL Energy Limited, one of the country's leading integrated energy companies, with a large portfolio of renewable sources – including the nation's largest wind and solar farms.

The new 211 MW Smart Power Generation plant they have recently ordered from Wärtsilä comprises twelve Wärtsilä 50DF dual-fuel engines, and will provide the fast-starting capability required to respond rapidly to the fluctuations inherent to renewable generation. This project represents the first utility-scale reciprocating engine power plant in Australia's National Electricity Market (NEM).

The new plant, to be known as the Barker Inlet Power Station, will be capable of reaching full output within minutes, and will provide reliability in all conditions. The Wärtsilä engines will run primarily on natural gas, but can be switched to liquid fuel if necessary.

Matti Rautkivi: "It's important to note that cases like this one are not the result of carbon tax schemes or other incentives – what we are seeing is the profound impact of all the cost barriers to the adoption of renewables completely disappearing, and energy providers responding quickly to reap the benefits.

"Large renewable-energy investments in similar cases in Australia were compared, side by side with the relatively low-cost and straightforward project of extending the life of coal-based plants. Thanks largely to the cheap availability of solar power, it was established beyond any doubt, that renewables were the only sensible direction. Calculations showed that the customer will make savings of 20 to 24% with the current solution."



Nebraska Public Power District (NPPD)

Finally, after the prior examples of projects that have made the first momentous steps on the journey, a look at one means by which the remaining distance to 100% renewables may be completed; a collaborative project between Wärtsilä, Finland's Lappeenranta University of Technology (LUT) and Nebraska Public Power District (NPPD), the largest electricity utility in the state of Nebraska, USA.

In late 2018, the three organisations signed a Memorandum of Understanding to study the development of a business case for the use of alternative fuels using Wärtsilä generating sets. The aim is to achieve a technically and commercially viable solution that will allow NPPD to proceed with an industrial-scale pilot project producing energy from 100% renewable carbon-free sources. The fuels in question will include methanol, dimethyl ether (DME) and ammonia, synthesised from hydrogen, CO₂ and nitrogen.

Matti Rautkivi: "This project is all about developing the future building blocks for the 100% renewables path. The idea of taking CO₂ from the air and using it to produce fuel for your vessel, or for your power plant – or even for cars – it sounds like science fiction, but the possibility is closer than you might think.

"We are going to Nebraska to develop the industrial-scale production of synthetic fuels, simply because the conditions there are so good for it. There is hydrogen available, there is CO₂ available, and – most importantly – we have a customer looking to exploit the as-yet unexplored potential. It is exciting that we are able to convince very established customers of the value of projects such as this. This clearly indicates that utilities now understand the urgency of the change that is currently needed, and that they are eager to collaborate.

"By demonstrating the results with test engines, we will establish the viability of converting hydrogen to methanol using CO₂, and then burning that methanol as fuel to produce electricity. Solutions like this should have a major impact on future fuel choices for the global energy market, not to mention helping us to realise our strong ambitions regarding 100% renewables."



Safety Day drives home the road traffic safety message

The fourth annual Global Safety Day took place on 15 March 2018 at Wärtsilä locations all around the world. Employees spent the day learning about road traffic safety, the importance of being aware of the risks, and helping others to make safe choices when travelling by road.

Whether people are on the move by car, bicycle, public transport or otherwise, road traffic safety is something that touches everyone. While commuting to work, going to the grocery store, or even taking a leisurely stroll, moving from one location to another is an activity with hazards and risks.

Road traffic safety was selected as the theme because of the relatively high number of transport-related accidents that have occurred in Wärtsilä operations. Two life-saving rules at Wärtsilä relate to traffic safety, namely using seatbelts at all times and complying with road safety rules. This theme concerns everyone at Wärtsilä, regardless of where they are located – road traffic safety is something that employees must be aware of every day.

Celebrating safety

Global guidelines were provided from Wärtsilä headquarters with alternatives proposed for different activities that could be executed locally. These included, for example, driving simulators, bicycle obstacle courses, or giving awards to safe drivers. Naturally, cake and candies with Safety Day branding were also made available to staff for their local events.

The main objective for Safety Day was to raise awareness regarding road traffic safety, and to promote safe travel on roads and highways at all Wärtsilä locations. The campaign was made personal by recalling accidents that had happened to Wärtsilä employees, as told by survivors via video interviews and field stories. This helped to make the day powerful for everyone involved.

Alongside the videos, information packages were provided to inspire discussions on Safety Day. These focused on wide-ranging topics, from raising awareness about the dangers of driving under the influence, speeding and the removal of distractions (such as mobile phones), to the importance of using seatbelts and obeying traffic laws.

Around the world, Wärtsilä employees were given the freedom to decide locally how to spend the day. Staff were encour-

aged to capture the event in pictures, and with hundreds of images coming in, it was clear the day had been a success.

By reserving time to focus on the importance of road traffic safety, and in truly driving the safety messages home, careless accidents can be avoided. Now in its fourth year, Safety Day proved once again that there has been a general decrease in the number of accidents and incidents following these local events held with employees.

Wärtsilä is working throughout the year to improve the working conditions in all its operations, and to ensure that its employees are safe. Safety requires continuous effort; and every day should be considered as being a Safety Day.

Read more Wärtsilä stories

- An oceanic awakening
- A sustainable alternative to chromium plating
- Scrubber sales boom as sulphur limits tighten
- Wärtsilä joins Climate Leadership Coalition
- Realising the value of Smart Power Generation

Discover the year's important events and initiatives at WWW.WARTSILA.COM/AR2018

WÄRTSILÄ ACCELERATION CENTRE / SINGAPORE



Transforming the maritime market

Wärtsilä's new Acceleration Centre in Singapore is utilising one of the world's busiest harbour areas to develop autonomous navigation technologies. Bringing various industry operators and partners together, the innovation hub helps make Wärtsilä's Smart Marine Ecosystem vision a reality.

The Singapore Acceleration Centre was launched in October 2018. It promotes innovation and collaboration with industry, academia and local partners, with the goal of developing the local maritime ecosystem into a global hub.

In April 2018, Wärtsilä signed an agreement with the Maritime and Port Authority of Singapore (MPA) to collaborate in the areas of intelligent vessels, connected smart port operations, cyber-physical security, and digital acceleration with start-ups. In conjunction with the launch of the Acceleration Centre, Wärtsilä opened the world's first International Maritime Cyber Centre of Excellence (IMCCE), with the aim of driving the cyber awareness of an industry that is becoming increasingly connected.

Chris Chung, Director of Digital Innovation & Strategic Projects at Wärtsilä, says the location provides a suitable hotspot for taking the first steps in industry transformation. The IntelliTug project to develop a harbour tug with autonomous navigation, will lead the way for further co-creation with partners. The aim is to improve tug safety and efficiencies, while reducing operator workload and pressures.

"Singapore is one of the world's most demanding harbour environments. The sea area is limited and highly utilised and there is, therefore, a strong focus on continuously improving navigational safety. By using smart technologies, we can enhance safety and productivity, and develop future-ready skills and jobs in the region," Chung explains.

Enhancing situational awareness

Developed in collaboration with MPA and PSA Marine, a leading marine services provider, the IntelliTug concept is being tested on an existing tugboat in Singapore's actual operational port. The companies have gathered a considerable amount of data on the movement of vessels in the real environment for developing, for example, collision avoidance systems.

"Our focus is on using technology to make things simpler. As the working conditions on vessels are getting more complex with increasing traffic, the last thing the crew needs is more gadgets and buttons. Before we can even consider fully autonomous vessels, we need to solve these issues first," says Jan

Grothusen, Director for Agile Business Development in Wärtsilä's Voyage Solutions business line.

The IntelliTug solution allows the crew to focus on critical operations, offering additional decision-making support and the ability to work with colleagues ashore via a real-time data connection. The project involves a combination of technologies, innovations and capabilities within Wärtsilä's portfolio. These include a new-to-market near-field wideband radar and real-time video analytics, integrated with a lightweight human-centric mission control system. This will enable supervision of the close quarters and will alert users on collision avoidance using adaptive, dynamic route planning capabilities.

"Our aim is to offer an integrated and unified approach, breaking free from our current model of concentrating on innovation within our business and product lines," Grothusen adds.

Building new connections

Chung emphasises that the IntelliTug project represents the start of an exciting journey, not only with regard to technological development, but also to new ways of working, both internally and externally. By meeting the needs of multiple stakeholders, the Acceleration Centre embodies Wärtsilä's Smart Marine Ecosystem vision.

"This is truly a One Wärtsilä project and a great showcase of how our entire business is coming together to solve real customer challenges. It's very much about considering different business models and the way we collaborate with strategic partners to unlock economic value, for example through advanced sensing, big data and analytics," Chung says.

Grothusen adds that the discussions around some of the new technologies involved in the IntelliTug project have already raised interest also with companies that wouldn't necessarily think of Wärtsilä as their principal partner.

"There may well be opportunities, for example, in applying the technology to risk management, offering automated risk level assessment. This fits well with our strategy of digital transformation and is a good example of incubating something completely new in the space provided by the Acceleration Centre."

Financials 2018

The year 2018 was marked by positive momentum in ordering activity in our marine related businesses, and growth in net sales. The latter was primarily due to increased newbuild marine and energy deliveries, which, in combination with slower than anticipated development in transactional service volumes and higher costs related to research, development, and digitalisation, burdened profitability.

Environmental considerations emerged as a key theme in the marine markets, as customers sought to prepare themselves for compliance with the IMO 2020 global sulphur cap. For Wärtsilä, this trend was reflected in a significant growth in demand for exhaust gas cleaning systems. Another contributor to the increase in order intake was the high level of activity in the cruise and ferry markets, as well as our customers' interest in long-term service agreements. Energy Solutions' order intake was, on the other hand, lower than for the previous year, mainly due to slower decision-making among customers. However, the long-term trends of growth in the emerging markets, and the shift towards flexible capacity to accommodate renewables, remain supportive of demand going forward.

We enter the year 2019 with a new organisation formed around two business areas that incorporate both newbuild activities and services. With this structure our primary focus is to better meet customer needs throughout the full lifecycle, and thus enhance the value we deliver. In so doing, we are supporting the progression towards our long-term target of profitable growth.

GROWTH IN NET SALES

5%

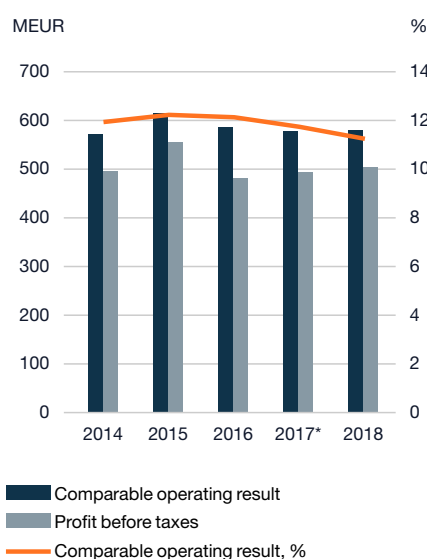
PROFITABILITY

11.2%

GROWTH IN ORDER INTAKE

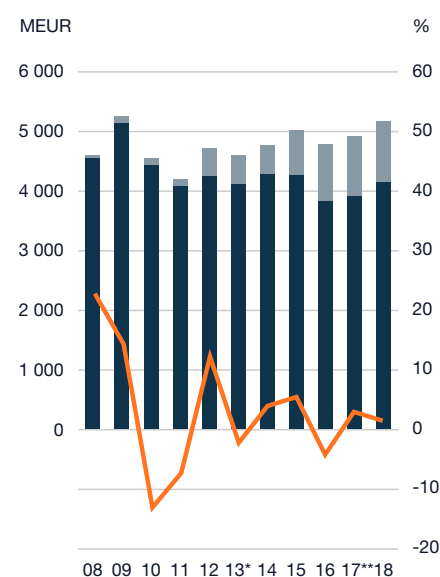
12%

Result



* Restated due to IFRS 15.

Growth over the cycle



■ Net sales
■ Cumulative new acquisitions
— Growth, % (incl. acquisitions)

World nominal GDP growth 2008-2018 averages 2.9% USD denominated (source: IMF).

* Restated, figures include continuing operations.

** Restated due to IFRS 15.

Key figures

MEUR	2018	10-12/2018	7-9/2018	4-6/2018	1-3/2018	Restated 2017 ³	2016
Net sales	5 174	1 532	1 330	1 246	1 066	4 911	4 801
Services	2 426	737	572	582	535	2 407	2 190
Energy Solutions	1 517	431	451	368	267	1 401	943
Marine Solutions	1 232	364	307	296	264	1 104	1 667
Depreciation, amortisation and impairment	-130	-37	-31	-31	-30	-134	-138
Comparable operating result ¹	577	226	141	123	88	576	583
Comparable operating result ¹ , %	11.2	14.7	10.6	9.8	8.3	11.7	12.1
Profit before taxes	502	194	130	102	76	491	479
Earnings per share, EUR ²	0.65	0.25	0.17	0.13	0.10	0.63	0.60
Order intake	6 307	1 874	1 372	1 553	1 507	5 644	4 927

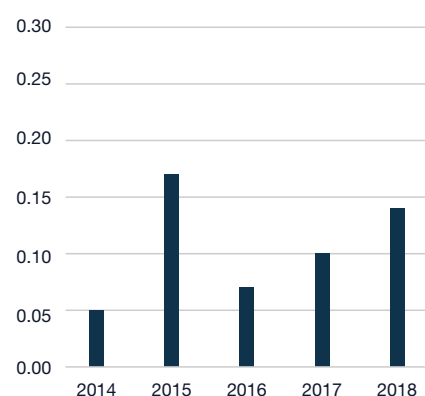
MEUR	2018	31.12.2018	30.9.2018	30.6.2018	31.3.2018	Restated 2017 ³	2016
Balance sheet total	6 059	6 059	5 880	5 906	5 632	5 648	5 391
Interest-bearing liabilities, gross	823	823	874	893	726	619	629
Cash and cash equivalents	487	487	221	245	282	379	472
ROI, continuing operations, %	18.1	18.1	18.6	18.9	19.7	18.5	17.1
Gearing	0.14	0.14	0.28	0.29	0.21	0.10	0.07
Order book, end of period	6 166	6 166	5 918	5 904	5 490	5 100	4 696
Year-end market capitalisation	8 222	8 222	9 935	9 959	10 621	10 375	8 418
Personnel, number at end of period	19 294	19 294	19 420	19 231	18 182	18 065	18 011

¹ Figures exclude items affecting comparability.

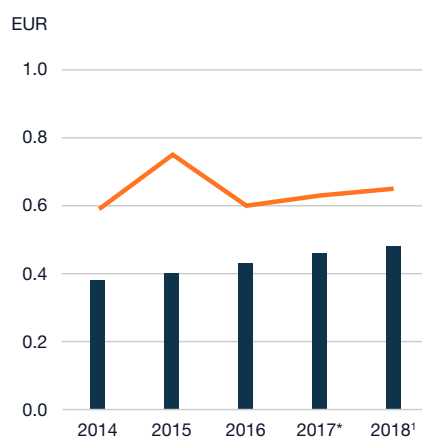
² The share issue without payment (share split) approved by Wärtsilä Corporation's Annual General Meeting on 8 March 2018 increased the total number of Wärtsilä shares to 591,723,390. Share related figures in the comparison periods have been restated accordingly.

³ Figures for comparison period 2017 have been restated due to the adoption of IFRS 15 and an internal transfer of service activities.

Gearing



Dividend/share, earnings/share



■ Dividend/share

— Earnings/share

* Restated due to IFRS 15.

¹ Proposal of the Board

Dividend/share and earnings/share for comparison periods have been restated to reflect the increased number of shares.

Consolidated statement of income

MEUR	2018	Restated 2017
Net sales	5 174	4 911
Change in inventories of finished goods & work in progress	64	28
Work performed by the Group and capitalised	14	12
Other operating income	80	60
Material and services	-2 852	-2 561
Employee benefit expenses	-1 175	-1 214
Depreciation, amortisation and impairment	-130	-134
Other operating expenses	-648	-577
Share of result of associates and joint ventures	13	13
Operating result	543	538
as a percentage of net sales	10.5	11.0
Financial income	24	12
Financial expenses	-65	-59
Profit before taxes	502	491
Income taxes	-116	-117
Profit for the financial period	386	375
Attributable to:		
equity holders of the parent company	386	375
non-controlling interests	1	-1
	386	375
Earnings per share attributable to equity holders of the parent company (basic and diluted):		
Earnings per share (EPS), basic and diluted, EUR	0.65	0.63

Earnings per share for the comparison period has been restated to reflect the increased number of shares.

Figures for comparison period 2017 have been restated due to the adoption of IFRS 15.

Consolidated statement of comprehensive income

MEUR	2018	Restated 2017
Profit for the financial period	386	375
Other comprehensive income, net of taxes:		
Items that will not be reclassified to the statement of income		
Remeasurements of defined benefit liabilities	-3	7
Total items that will not be reclassified to the statement of income	-4	7
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	-23	-73
for non-controlling interests	-1	-2
Associates and joint ventures, share of other comprehensive income	-1	-1
Cash flow hedges		
measured at fair value	-17	1
transferred to the statement of income	-8	36
Tax on items that may be reclassified to the statement of income		
Cash flow hedges		
measured at fair value	3	-1
transferred to the statement of income	2	-8
Total items that may be reclassified to the statement of income	-45	-48
Other comprehensive income for the financial period, net of taxes	-48	-41
Total comprehensive income for the financial period	338	334
Total comprehensive income attributable to:		
equity holders of the parent company	338	337
non-controlling interests		-3
	338	334

Figures for comparison period 2017 have been restated due to the adoption of IFRS 15.

Consolidated statement of financial position

ASSETS

MEUR	31.12.2018	Restated 31.12.2017
Non-current assets		
Goodwill	1 355	1 237
Intangible assets	392	339
Property, plant and equipment	324	349
Investments in associates and joint ventures	66	83
Other investments	16	13
Interest-bearing investments	3	5
Deferred tax assets	129	131
Trade receivables	49	109
Other receivables	34	18
Total non-current assets	2 369	2 285
Current assets		
Inventories	1 165	1 051
Trade receivables	1 222	1 307
Current tax receivables	31	53
Contract assets	557	351
Other receivables	228	221
Cash and cash equivalents	487	379
Total current assets	3 690	3 363
Total assets	6 059	5 648

EQUITY AND LIABILITIES

MEUR	31.12.2018	Restated 31.12.2017
Equity		
Share capital	336	336
Share premium	61	61
Translation differences	-155	-132
Fair value reserve	-31	-10
Remeasurements of defined benefit liabilities	-39	-38
Retained earnings	2 245	2 135
Total equity attributable to equity holders of the parent company	2 418	2 352
Non-controlling interests	14	24
Total equity	2 432	2 376
Liabilities		
Non-current liabilities		
Interest-bearing debt	748	517
Deferred tax liabilities	99	102
Pension obligations	149	154
Provisions	54	52
Contract liabilities	41	64
Other liabilities	1	1
Total non-current liabilities	1 092	889
Current liabilities		
Interest-bearing debt	74	102
Provisions	251	209
Trade payables	596	539
Current tax liabilities	81	83
Contract liabilities	888	724
Other liabilities	645	726
Total current liabilities	2 535	2 383
Total liabilities	3 627	3 272
Total equity and liabilities	6 059	5 648

Figures for comparison period 2017 have been restated due to the adoption of IFRS 15.

Consolidated statement of cash flows

MEUR	2018	2017
Cash flow from operating activities:		
Profit for the financial period	386	375
Adjustments for:		
Depreciation, amortisation and impairment	130	134
Financial income and expenses	39	47
Gains and losses on sale of intangible assets and property, plant and equipment and other changes	-26	-17
Share of result of associates and joint ventures	-13	-13
Income taxes	116	117
Other non-cash flow adjustments	-7	
Cash flow before changes in working capital	625	643
Changes in working capital:		
Receivables, non-interest-bearing, increase (-) / decrease (+)	-22	-284
Inventories, increase (-) / decrease (+)	-130	-27
Liabilities, non-interest-bearing, increase (+) / decrease (-)	117	223
Changes in working capital	-35	-87
Cash flow from operating activities before financial items and taxes	589	555
Financial items and taxes:		
Interest income	6	1
Interest expenses	-14	-6
Other financial income and expenses	-7	-2
Income taxes paid	-104	-119
Financial items and taxes	-119	-126
Cash flow from operating activities	470	430
Cash flow from investing activities:		
Acquisitions	-191	-191
Investments in associates and joint ventures	-1	
Other investments	-3	
Investments in property, plant and equipment and intangible assets	-110	-64
Reduction of share capital in associates and joint ventures	13	
Proceeds from sale of property, plant and equipment and intangible assets	11	17
Proceeds from sale of shares in subsidiaries	41	
Proceeds from sale of other investments		2
Loan receivables, increase (-) / decrease (+), and other changes	1	1
Cash flow from investing activities	-240	-235
Cash flow after investing activities	230	195
Cash flow from financing activities:		
Proceeds from non-current debt	279	90
Repayments and other changes in non-current debt	-84	-101
Loan receivables, increase (-) / decrease (+)	-4	2
Current loans, increase (+) / decrease (-)	-35	-5
Dividends paid	-274	-264
Cash flow from financing activities	-118	-278
Change in cash and cash equivalents, increase (+) / decrease (-)	112	-83
Cash and cash equivalents at the beginning of the financial period	379	472
Exchange rate changes	-5	-10
Cash and cash equivalents at the end of the financial period	487	379

Why invest in Wärtsilä

Wärtsilä's strengths lie in our integrated services and solutions offering, data-driven innovations, close and long-standing customer relationships, and an unparalleled global presence.

Supporting our customers with lifecycle solutions

Our business model is based on providing the marine and energy markets with smart technologies and optimised lifecycle services. Our service activities represent nearly 50% of total net sales, which provides a good foundation for achieving the long-term target of profitable growth.

The demand for Wärtsilä's services is supported by the increasing technological sophistication of the installed equipment base. Digitalisation provides further opportunities to develop a value-adding customer offering. It also enables the leveraging of new technologies to build capabilities that will create a future offering with equipment-as-a-service.

A leader in smart technology for the marine and energy markets

The shift towards clean and flexible energy production, and the need for efficient and safe transportation, form the basis of our offering of smart solutions. As an industry frontrunner, we are well positioned to respond to the need for innovative and energy efficient solutions. Our digital transformation will provide increased customer value through an increased focus on collaboration and knowledge sharing. Continuously investing in research and development is vital for ensuring the competitiveness of our product portfolio, and for securing a leading position in sustainable innovation.

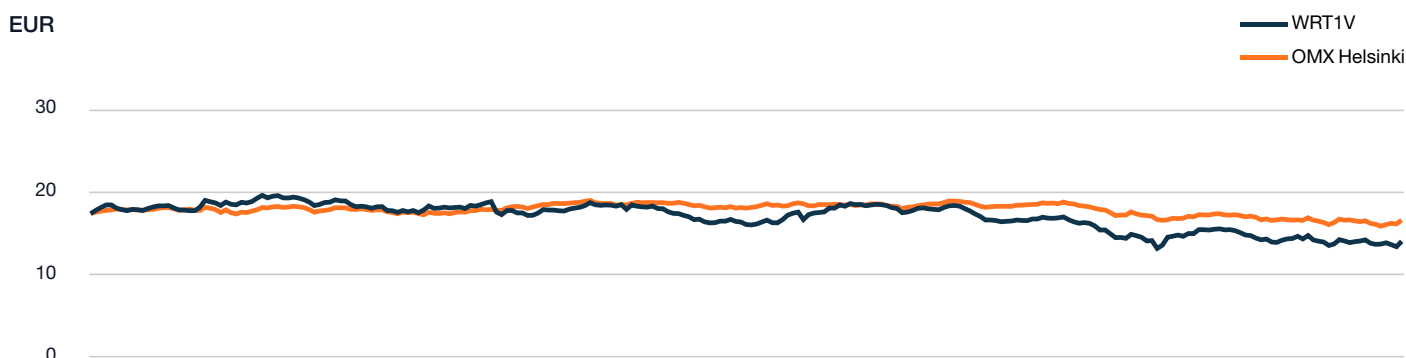
A capital-light business model emphasising increasing efficiency

Our manufacturing model is assembly-based, with shared production and R&D facilities. This creates flexibility in aligning operations to market conditions, and synergies in innovation processes. Achieving operational excellence by focusing on continuous process improvement throughout the organisation is a central pillar for reaching our financial targets.

Investing in technological leadership and providing shareholder returns

Our financial position enables investments in research and development activities and developing the business through acquisitions, thereby securing our future competitiveness. It also enables us to offer solid dividends to our shareholders.

Wärtsilä's share price development in 2018



Q1

Order intake and net sales developed well in the equipment businesses.

23.1.

Wärtsilä listed among the "2018 Global 100" Most Sustainable Corporations in the World.

6.3.

Wärtsilä signs EPC contract in Australia with AGL Energy Limited for Smart Power Generation plant.

8.3.

The Annual General Meeting held in Helsinki approved Board proposal of a free share issue (share split).

12.3.

394,482,260 new shares entered in the trade register, bringing Wärtsilä's total number of shares to 591,723,390.

19.3.

First dividend instalment of EUR 0.69 per share paid.

19.3.

Wärtsilä acquires Transas to accelerate its Smart Marine Ecosystem vision.

Q2

Good development in orders received.

26.4.

Wärtsilä establishes a world-class cyber academy in Singapore together with Templar Executives.

26.4.

World's first autodocking installation tested by Wärtsilä.

31.5.

Wärtsilä's CMD, held in Helsinki, Finland, focuses on the Smart Marine and Smart Energy visions.

20.6.

Wärtsilä introduces new hybrid solar PV and storage solution.

26.6.

Wärtsilä and Hyundai Motor Group announce energy storage partnership maximising second-life electric vehicle batteries.

Q3

Good development in net sales.

13.7.

Wärtsilä announces a EUR 170 million scrubber deal.

20.8.

Marco Wirén appointed head of Energy Solutions and Arjen Berends CFO as of 1.10.2018.

21.8.

Wärtsilä announces its plans of building a Smart Technology Hub in Vaasa.

23.8.

Wärtsilä delivers its first engine plus storage hybrid installation.

3.9.

Wärtsilä's Aquarius EC Ballast Water Management System granted Type Approval by the United States Coastguard authorities.

27.9.

Second dividend instalment paid. In accordance with the share split, the second instalment was divided between one old and two new shares so that EUR 0.23 was paid on each share.

Q4

Growth in order intake and net sales.

1.10.

Wärtsilä announces decision to reorganise into two business areas, Wärtsilä Marine Business and Wärtsilä Energy Business, as of 1.1.2019. With this change, Wärtsilä aims to deliver increased value to its customers by better serving their needs across the full lifecycle.

4.10.

Wärtsilä and Royal Caribbean strengthen their long-term cooperation by extending their service agreement to the year 2028.

16.10.

Wärtsilä launches new Acceleration Centre and an International Maritime Cyber Centre of Excellence in Singapore.

31.10.

Wärtsilä acquires Spanish Burriel Navarro, S.L to support the growth of its underwater services and expands the company's local presence in the European market.

31.10.

Wärtsilä divests its pumps business to a Scandinavian investment company, Solix Group. The divestment will enable Wärtsilä to devote greater focus to its Smart Marine vision.

28.11.

Wärtsilä broadens its Smart Marine portfolio with addition of a high-speed, compact engine: the Wärtsilä 14.



Highlights 2018



SMART ENERGY VISION LAUNCHED

Maximising renewable generation is essential in ensuring a sustainable and profitable future for the energy industry. Our ambition is to lead the energy industry's transformation towards a future that utilises 100% renewables, with flexible capacity as the enabler.



TRANSAS ACQUIRED TO STRENGTHEN SMART SOLUTIONS OFFERING

By connecting Wartsila's offering with that of Transas, a leader in marine navigation solutions, we can further improve the way a vessel sails in the most cost efficient and environmentally sound way.

DIGITALISING WÄRTSILÄ'S CUSTOMER OFFERING

Wartsila opened an Acceleration Centre in Singapore with the aim of promoting innovation and collaboration with industry, academia, and local partners to strengthen and develop Singapore's maritime ecosystem.



COMMITTED TO RESEARCH & DEVELOPMENT

The aim of Wärtsilä's R&D activities is to continuously strengthen our technology leadership position, and to further improve our competitive edge in the global marine and energy markets. In 2018, R&D investments amounted to EUR 165 million or 3.2% of net sales.



ENHANCING CYBER SECURITY

Wärtsilä announced a partnership with the cyber security company Templar Executives to establish a cyber academy offering courses designed to support and enhance the collective cyber maturity of the wider shipping community.



THE SMART TECHNOLOGY HUB, A NEXT-GENERATION INNOVATION AND PRODUCTION CENTRE

Wärtsilä's investment to build a Smart Technology Hub in Vaasa, Finland will enable more agile and efficient testing, development, and production of solutions for the maritime, oil & gas, and energy industries.

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