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This pdf is composed of selected elements from the Wärtsilä Corporation Annual report and may deviate from other generated documents.
Message to the shareholders

Dear shareholders,

For Wärtsilä, 2013 was a year of varying activity within our different end markets. While the improvement in global vessel contracting was significant, power generation markets declined for the second consecutive year.

Unfavourable exchange rates and some delayed deliveries at the end of the year led to a slightly weaker than expected net sales development. Profitability on the other hand developed well, reaching 11.2% for the full year. I am pleased with the resilience we have shown in reaching our profitability targets, despite the lower level of sales. Cash flow from operating activities development was strong, increasing to EUR 578 million during the year.

Global economic policies and fluctuations in emerging market currencies delayed customer decision-making in the power generation markets. Our Power Plants order intake developed accordingly, decreasing by 15%. 82% of the orders received were for gas based power plants, showing that there is continued demand for our fuel flexible solutions. Major orders were received for a 274 MW dual-fuel power plant from Jordan and a 220 MW natural gas fuelled power plant from Oregon, USA.

In the shipbuilding industry, competitive new building prices combined with the increased fuel efficiency of modern vessels attracted investments in the merchant segment. Furthermore, oil price levels supported activity in the offshore markets, including operations in harsh and deep water areas. This resulted in stronger vessel contracting and a more balanced order mix compared to recent years. In line with overall market activity, Ship Power’s order intake developed well, increasing by 14% in 2013. Several notable orders were received in the offshore industry and the demand for dual-fuel engines and gas handling systems continued to be active. In the latter part of 2013, we launched our 2-stroke, low pressure, dual-fuel engine. The first order for this technology was received shortly thereafter, and we feel that this technology could very well be a game changer for merchant shipping.

Overcapacity in the marine market continued to impact global fleet utilisation and our customers’ remained focused on reducing operating expenses. The continued good demand for power plant related services compensated for this development and contributed to the overall stability of the service market. I am pleased to note that our concentration on long-term service agreements has proven successful in 2013. The share of contracts in Services net sales increased during the year, and several important agreements were signed with both power plant and marine customers.

As certain emerging countries, such as China and Brazil, gain a stronger foothold in the shipbuilding industry, we must adapt our operations accordingly. During 2013, Wärtsilä announced the set up of a new, fully-owned manufacturing facility in Brazil to meet the local content requirement and the increasing demand, particularly in the offshore market. We also began to construct production facilities for Wärtsilä Yuchai Engine Co. Ltd, our latest joint venture in China. These initiatives will enable us to better serve our customers locally, thus strengthening our competitiveness in these key markets.

In 2012, we took the first steps towards restructuring our organisation so as to increase the flexibility and speed of our operations. In this way we can better address the changing market environment. The success of this realignment resulted in the decision to take the next step and combine the PowerTech and Ship Power 4-stroke organisations into one single business unit. In this new set up, all activities, from R&D and manufacturing to sales, are combined into one organisation. This change will further enhance transparency and accountability within Wärtsilä; factors which will enable us to better support our customers and increase the efficiency of our operations. I believe these changes are essential in order to be able to capture the growth opportunities that we have identified in the market.
As a global leader in complete lifecycle solutions for the marine and energy markets, Wärtsilä has a key role to play in providing sustainable solutions for the shipping and power generation sectors. A strong emphasis on research and development is necessary for maintaining our competitiveness going forward. Efficiency improvement, fuel flexibility, and environmental performance are the key focus areas of our R&D investments, which in 2013 represented 4.0% of net sales. Responsible business conduct and the safety of our personnel is our priority. The positive trend in lost time injury frequency continued, reaching an all-time low in 2013. We remain committed to supporting the UN Global Compact and its principles with respect to human rights, labour, the environment and anti-corruption.

Our strategic priorities are well in line with the fundamental changes occurring in our end markets. The world’s need for sustainable and reliable power has not vanished and we see growth opportunities in gas power plants as part of our Smart Power Generation concept. The regulatory environment is also driving interest in gas in the marine markets, and it is expected that the share of gas-fuelled vessels will increase significantly in the coming years. Today, gas availability represents one of the main barriers for its wider scale use. Infrastructure expansion is partly planned to take place through investments in midsized LNG distribution, which represents an interesting opportunity for Wärtsilä. By combining our experience in engineering, procurement and construction project execution with our LNG handling expertise, we can offer turnkey LNG terminal solutions, thus positioning us well in this up and coming market. The new emission regulations are becoming imminent, and vessel owners are preparing themselves to comply with the new requirements. The progress we have made in environmental solutions, both in terms of receiving type approvals for our ballast water systems and in strengthening our extensive reference list of exhaust gas cleaning systems, supports our growth ambition in this field.

Wärtsilä is well positioned to pursue growth even in today’s challenging market environment. However, only by increasing the efficiency and flexibility of our organisation globally can we secure profitability and maintain competitiveness going forward. This is the basis for the Group-wide efficiency programme announced at the beginning of 2014. Our market outlook remains cautious, although a slight improvement may be seen in certain areas. In 2014, we anticipate some growth in net sales and expect operating margins to be around 11%.

I would like to take this opportunity to thank our customers who have entrusted their business to us during these challenging times and our personnel for their continuous efforts in serving our customers globally. I am also very thankful to our shareholders for all the interest expressed in Wärtsilä, and for the trust placed in our future potential.

Björn Rosengren
President & CEO
Key figures

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<td>882</td>
<td>4 725</td>
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<td>Power Plants</td>
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<td>421</td>
<td>369</td>
<td>202</td>
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<td>Ship Power</td>
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<td>Operating result¹</td>
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<td>138</td>
<td>111</td>
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<td>517</td>
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<td>Operating result¹, %</td>
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<td>14.2</td>
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<td>Profit before taxes</td>
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<td>Earnings per share, EUR</td>
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<td>Balance sheet total</td>
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<td>Interest-bearing liabilities, gross</td>
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<td>Cash and cash equivalents</td>
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<td>ROI, %</td>
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<td>Gearing</td>
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<td>Order book, end of period</td>
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<td>Order intake</td>
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<td>1 097</td>
<td>1 071</td>
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<td>4 940</td>
<td>4 516</td>
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<td>Year-end market capitalisation</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>6 454</td>
<td>4 402</td>
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<tr>
<td>Personnel, number at end of period</td>
<td>18 663</td>
<td>18 663</td>
<td>18 776</td>
<td>18 820</td>
<td>18 674</td>
<td>18 887</td>
<td>17 913</td>
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</table>

¹ Figures exclude non-recurring items.
² The 2011 figures have not been restated according to the revised IAS 19.

Wärtsilä in brief

Wärtsilä is a global leader in complete lifecycle power solutions for the marine and energy markets. By emphasising technological innovation and total efficiency, Wärtsilä maximises the environmental and economic performance of the vessels and power plants of its customers.

In 2013, Wärtsilä’s net sales totalled EUR 4.7 billion with approximately 18,700 employees. The company has operations in over 200 locations in nearly 70 countries around the world. Wärtsilä is listed on the NASDAQ OMX Helsinki, Finland.

Power Plants

Wärtsilä is a leading supplier of modern, environmentally advanced, highly efficient, and dynamic power plants that allow the maximum integration of intermittent renewable power generation. We offer multi-fuel power plants, including baseload generation, peaking and load following operation, as well as dynamic system balancing and ultra-fast grid reserve. We serve both the current and future capacity markets. In addition to the technical advantages, our fast track deliveries of complete power plants, together with long-
term operation and maintenance agreements, provide our customers with complete solutions – in urban areas as well as in the most demanding remote environments.

**Ship Power**

Wärtsilä enhances the business of its marine and oil & gas industry customers by providing innovative products and integrated solutions that are safe, environmentally sustainable, efficient, flexible, and economically sound. Our solutions are developed based on our customers’ needs and include products, systems and services. Being a technology leader, and through the experience, know-how and dedication of our personnel, we are able to customise optimised solutions for the benefit of our clients around the world.

**Services**

Wärtsilä supports its customers throughout the lifecycle of their installations by optimising efficiency and performance. We provide the most comprehensive portfolio of services and the broadest service network in the industry, for both the energy and marine markets. We are committed to providing high quality, expert support and the availability of services in the most environmentally sound way possible, wherever our customers are located.

**Wärtsilä's operating environment**

During 2013, uncertainty over the global economic development continued. Compared to 2012, global GDP growth decreased from 3.2% to 2.9%. GDP growth was highest in the emerging markets and developing economies, which are expected to continue to account for the bulk of global growth going forward. The emerging markets are highly important for Wärtsilä. Over 50% of the Group net sales came from non-OECD countries in 2013. The majority of Power Plants’ orders came from emerging markets, and Asia was the largest single region. The shipbuilding market continues to be dominated by Asian yards in South Korea and China. The lower GDP growth, coupled with global economic policies and significant exchange rate fluctuations in emerging markets, resulted in decreased investments in liquid and gas fuelled power plants. In the Ship Power markets, overcapacity is still one of the main obstacles to a full recovery. Stronger global GDP growth would be required for this overcapacity to be absorbed. Also the Services business would benefit from an improved global economic outlook, as the current conditions in the marine markets have resulted in customers spending less on discretionary maintenance and investments.

**Corporate strategy**

Wärtsilä aims to be the leader in complete lifecycle power solutions for the global marine markets and selected energy markets worldwide. We see growth opportunities in gas power plants as part of our Smart Power Generation concept, in gas-fuelled engines and related systems for the marine market, as well as in medium-scale LNG infrastructure development. We also seek growth in environmental solutions, including exhaust gas cleaning systems for SOx removal and ballast water management systems. Our strengths are our technological leadership, an integrated product and service offering, our close and long-standing customer relationships, and our unparalleled global presence. With our production and supply chain management we constantly seek ways to maintain cost efficiency and high quality – often in co-operation
with leading industrial partners in our key growth markets. Our strong focus on R&D allows us to stay at the forefront of technology and innovation in our industry.

We are determined to capture growth opportunities within our end markets, while maintaining a solid profitability.

**Sustainability**

Wärtsilä’s aim is to meet shareholder expectations and contribute toward the well-being of the 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.

Wärtsilä’s overriding promise is to supply power solutions that offer high efficiency with low environmental load. Our objective is to continuously improve the environmental performance of our products and services, as well as to maintain technological leadership by utilising new technologies and collaborating with our customers and other stakeholder groups. In doing this, we help our customers and society at large to meet the goals of the tightening global environmental regulations and guidelines.

Wärtsilä acts as a good corporate citizen wherever we are active. 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. Supply chain management and development are integral elements of our operations.

**Values**

**VALUES**

**ENERGY**
Capture opportunities and make things happen.

**EXCELLENCE**
Do things better than anyone else in our industry.

**EXCITEMENT**
Foster openness, respect and trust to create excitement.

**MISSION**
We provide lifecycle power solutions to enhance our customers’ business, whilst creating better technologies that benefit both the customer and the environment.

**VISION**
We will be each of our customers’ most valued business partner.
## Financial targets

<table>
<thead>
<tr>
<th>Target</th>
<th>Development</th>
<th>Graph</th>
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<tbody>
<tr>
<td><strong>Net sales</strong></td>
<td>Our target is to grow faster than global GDP.</td>
<td></td>
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<tr>
<td></td>
<td>In 2013, Wärtsilä's net sales decreased by 1% to EUR 4,654 million. Wärtsilä's CAGR 2003-2013 was 8%.</td>
<td>Growth over the cycle&lt;br&gt;<img src="image" alt="Net sales growth graph" /></td>
</tr>
<tr>
<td><strong>Profitability</strong></td>
<td>In 2013, our operating profit was EUR 520 million, 11.2% of net sales.</td>
<td>Profitability&lt;br&gt;<img src="image" alt="Operating profit graph" /></td>
</tr>
<tr>
<td></td>
<td>Our operating profit margin (EBIT%) target is 14% at the peak of the cycle. At the trough of the cycle, our target is to keep the operating profit margin above 10%.</td>
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</table>
## Capital structure

<table>
<thead>
<tr>
<th>Our target is to maintain gearing below 0.50.</th>
<th>In 2013, our gearing was 0.15.</th>
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### Gearing

<table>
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<th>2009</th>
<th>2010</th>
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<tr>
<td>0.5</td>
<td>0.3</td>
<td>0.1</td>
<td>0.3</td>
<td>0.5</td>
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## Dividend

<table>
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<tr>
<th>Our target is to pay a dividend equivalent to 50% of earnings.</th>
<th>The Board of Directors proposes that a dividend of 1.05 euro per share be paid for the financial year 2013, which represents 53% of operational earnings.</th>
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### Earnings/share, dividend/share

<table>
<thead>
<tr>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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<tr>
<td>1.0</td>
<td>2.0</td>
<td>2.5</td>
<td>2.0</td>
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*Proposed by the Board 2013.*

## Wärtsilä Power Plants

Wärtsilä Power Plants provides superior value to its customers by offering decentralised, flexible, efficient, and environmentally advanced energy solutions. We offer dependable power plants that can be constructed in multiple parallel generation units, and on a fast track basis.
An offering based on flexibility

We offer our customers solutions ranging from power generation equipment only deliveries to full turnkey power plants. Our tried and tested power plants are modularised so as to enable them to be located close to the end-user customers. This also allows construction to be carried out in phases according to the customer’s needs. The fuel flexibility of our solutions supports the transition from oil to gas as the markets increasingly embrace natural gas. Through operation and maintenance agreements we support our customers throughout the lifecycle of their installations. We operate mainly in emerging markets; however, there is demand for our power plant projects also in the developed markets.

Our business is divided into three segments

We have three main customer segments: utilities, Independent Power Producers (IPP’s) and industrial customers. Utilities supply electricity to residential, commercial, and industrial end users, whereas IPP’s are financial investors investing in power plants and selling the generated power to utilities. Customer needs in these segments vary according to the application for which the plant is used. In traditional baseload power generation, customers require competitive lifecycle costs, reliability, world-class product quality, and fuel and operational flexibility. In balancing and peaking applications, customer needs typically include rapid start and ramp up, the ability to operate at varying loads, as well as competitive electricity generation and capacity costs. Industrial customers are mainly private companies in industries, such as mining, cement and oil & gas, investing in captive power plants. Reliability, reduced energy costs, and independence from the grid are among the key factors in their decision-making.

Smart Power Generation

Wärtsilä’s Smart Power Generation concept enables an existing power system to operate at its maximum efficiency by most effectively absorbing current and future system load variations, hence providing dramatic savings. The concept’s main cornerstones are very high energy efficiency, outstanding operational flexibility, and multi-fuel operation. For current and future low-carbon power systems, it balances the large input fluctuations from wind and solar power. It also provides high efficiency baseload, peaking, and load-following power, as well as super-fast grid reserves at the national power system level.

Further information on Smart Power Generation can be found by visiting www.smartpowergeneration.com.
Power Plants operating environment

Wärtsilä’s power plants are used in wide variety of applications. These include traditional baseload energy generation for national grids, providing dynamic grid power balancing services in order to integrate larger share of renewable energy, and island mode applications which operate independently.

As a global supplier of power plant solutions, we recognise that there are significant differences in the energy infrastructure models between regions and countries. Wärtsilä’s Smart Power Generation concept is ideal for matching the solutions to meet the specific needs of each infrastructure. We serve primarily four types of energy infrastructure:

• Liquid fuel based energy infrastructure with heavy fuel oil power plants
• Energy infrastructure transitioning to gas through LNG with dual-fuel power plants
• Natural gas based energy infrastructure with pure gas flexible baseload power plants
• Energy infrastructures with high levels of intermittent renewable energy requiring fast responding, dynamic balancing power plants

The main customer segments within these markets are utilities, Independent Power Producers (IPP’s), industrial manufacturers in industries such as the cement, mining and textile industries as well as oil & gas industry customers. The commercial drivers for power plant investments vary between the different customer segments. Generating and selling power is the core business for utilities, and power generation facilities are therefore strategic assets. IPP’s are typically financial investments in order to gain returns. Industrial customers need power supply for their process facilities or factories. The common factor in each of these customer segments is that the power plant projects are often significant investments.

Wärtsilä’s power plants are funded in many geographical markets. Funding sources are typically a mix of international, commercial, governmental, export credit agency and multilateral financing. Wärtsilä does not provide its customers with funding, but provides support in finding funding solutions for them.

General market drivers in the Power Plants business

The demand for power generation is driven primarily by population growth and economic development. As electricity consumption grows, the demand for both new power generation equipment and replacement equipment for older capacity increases correspondingly. Looking ahead, growth is expected to be higher in non-OECD countries, due to increasing industrialisation and improving living standards. The majority of Wärtsilä Power Plants’ orders come from the emerging markets. In emerging markets and remote areas, the demand for flexible baseload power plants, as well as for industrial self-generation, is driven by growth in electricity consumption and by developments in the commodity prices. The demand for gas and dual-fuel driven plants increases along with the introduction of gas networks to the emerging markets.
While economic development is a less important driver in the OECD countries, the ageing installed capacity will drive demand for new investments. The important drivers include stricter environmental regulations and the aim for low carbon power systems, which are spurring investments in renewable energy. Solutions, such as wind power, lead to unforeseen grid stability challenges, which require additional backup and balancing power. The large scale use of renewable power increases the need for the flexible, reliable, and efficient power that Wärtsilä’s solutions provide.
The demand for gas is expected to grow, as it enables system balancing with minimal emissions compared to other fossil fuels. This is further supported by the increasing availability of gas resulting from growing investments in LNG infrastructure, as well as from unconventional sources such as shale gas becoming economical. The gas power plant capacity is expected to grow by 2.4% per year, and 65% of this growth is expected to occur in non-OECD countries. Wärtsilä is well positioned in these markets. In regions where the gas infrastructure is being built, a key feature of our power plants is the capability to utilise available liquid fuels until the availability of gas is fully reliable.

In larger gas-fired projects, Wärtsilä often competes against gas turbine technology. In smaller gas based projects and in the heavy fuel oil based power plant market, Wärtsilä’s competitors are mainly other engine suppliers. We hold a leading position in engine technology with the largest and most efficient gas and dual-fuel engines. Our competitive strengths include the ability to provide complete turnkey power plants combined with operation & maintenance agreements as well as fuel flexibility. Our main advantages over gas turbine technology are higher efficiency in varying loads, the capability to achieve faster starts without increased costs, and the ability to offer dual-fuel solutions for markets transitioning to natural gas.
Gas turbine and engine manufacturers

Total market H1 18.8 GW
- Wärtsilä 5.9% (4.9)
- GE 26.1% (32.2)
- Siemens 34.6% (28.1)
- MHI 12.0% (26.3)
- Ansaldo 5.9% (3.5)
- Alstom 6.4% (1.9)
- Other GTs 8.0% (3.1)

Includes all Wärtsilä power plants and other manufacturers’ gas and liquid fuelled power plants with prime movers above 5 MW, as well as estimated output of steam turbines for combined cycles. The data is gathered from the McCoy Power Report. Other combustion engines not included. In engine technology Wärtsilä has a leading position.

Main drivers for Wärtsilä’s Power Plants business

- Economic development and growth in electricity consumption
- Growth in the use of gas as fuel in power plants
- Need for fuel flexibility due to uncertainty in gas availability
- Environmental concerns and renewable energy investments
- Ageing generation capacity

Power Plants strategy

Our aim is to be a globally recognised leader in liquid fuel and gas power plants. We will promote the Smart Power Generation concept to the increasingly dynamic and environmentally conscious global energy market to enable more sustainable, affordable and reliable power systems. Our strategy is to:

- Maintain our leading position in heavy fuel oil & dual-fuel power plants by enhancing our value proposition as well as by influencing and actively developing selected target markets
- Grow strongly in large utility gas power plants by capturing market share from combustion turbines
- Grow in biofuel power plants by enabling a wide fuel range
- Grow in special applications - nuclear emergency power, combined heat and power, oil & gas and LNG infrastructure - by introducing our value proposition to the selected customer segments

Our value proposition is based on providing solutions with guaranteed performance, high energy efficiency, and unique fuel and operational flexibility, which make them ideal for many types of energy infrastructures in varying applications. Our products are based on tried and tested concepts, and modularity is a key enabler for ensuring cost competitive solutions in both equipment and turnkey deliveries.

Demonstrating the superiority of our value proposition will enable us to achieve our strategic goals of growing in the large gas power plant market for utilities and maintaining our leading position in heavy fuel oil fired and dual-fuel power plants. We will also seek growth in special applications, such as LNG terminal deliveries, combined heat and power solutions, oil & gas field power, and emergency power applications for nuclear power plants. The capability of our engines to run on a wide range of fuels makes it possible for us to further
grow in the market for power plants using renewable fuels. Our focus is on products and projects that provide unquestionable environmental benefits and that make economic sense.

**Power Plants strengths**

- Unique operational and fuel flexibility
- Energy efficiency and emissions compliance
- Competitive capital cost and EPC capability
- Global service organisation

**Power Plants and sustainability**

Wärtsilä Power Plants contributes to the development of a sustainable power system with proven optimised solutions for various market needs.

The development of a more sustainable energy infrastructure is driven by climate policies, energy security, and economics. Carbon-intensive energy sources are being replaced by low carbon fuels, such as natural gas and renewable solutions. Energy savings and efficiency improvements are encouraged, and even legally enforced, at every level. This development is evident on a global scale, even though short-term actions can vary in different regions.

As a part of its commitment to sustainability and responsible business conduct, Wärtsilä has taken an active role in market and solution development, advising national decision makers on changes in the power markets, and on relevant technical and commercial norms. In this way, Wärtsilä is helping to speed the transition to more sustainable power systems. Wärtsilä strives to maintain a deep understanding of the market requirements, and to develop its solutions in a way that enables them to contribute effectively to improved energy system performance in various regions of the world. Wärtsilä’s energy solutions offer a unique combination of flexibility, high efficiency, and low emissions. Many different fuels, including bio-fuels, can be used efficiently, which helps reduce greenhouse gas emissions. Wärtsilä’s Smart Power Generation technology enables the development of a reliable energy infrastructure, wherein most of the sustainable characteristics are already known.

**Towards sustainable power systems**

The effects of climate change require a dramatic decrease in coal based power generation and a major increase in low carbon power generation, including wind, solar and natural gas fired plants. In modern power systems, the majority of electricity will be generated by wind and solar power, while thermal power generation will be increasingly used for system balancing and back-up. The variability of renewable energy generation requires the balancing and back-up power to be flexible and dynamic. Current and earlier power systems were not designed for this purpose. In order to meet the required capacity, new flexible power generation assets need to be added to the system. Such flexible capacity is based on three elements: operational flexibility, energy efficiency, and fuel flexibility.

**Operational flexibility** is needed for reacting to the rapid changes in wind and solar output. Power plant requirements include the following capabilities:

- Frequent and fast plant starts and stops without negative wear and tear consequences
- Cyclic operation with high up and down ramp rates
High full and part load efficiency
- A broad load range
- Minimal CO₂ emissions

**Energy efficiency** means that less fuel is needed to generate electricity. Lower fuel consumption results in lower CO₂ levels in power generation.

**Fuel flexibility** enables the transition to more sustainable fuels when they become available. This feature becomes increasingly important when investing in new power capacity, because the plant is not fixed to a certain fuel where more sustainable fuels may be available in the future. Smart Power Generation meets all of these requirements, thus allowing the maximal utilisation of valuable renewable power, and the smooth operation of inelastic baseload thermal power plants.

According to the results of future power system modelling, Smart Power Generation, together with increased wind and solar capacity, enables dramatic reductions in system level CO₂ emissions. Wärtsilä’s Smart Power Generation concept allows true operational optimisation of the entire energy system in a cost-efficient, reliable and sustainable way:

- Enables extremely low carbon levels from the total system
  - Enables the highest penetration of wind and solar power capacity without balancing problems
  - Enables baseload plants to operate on high output and efficiency, thereby enabling the lowest CO₂ levels
  - Minimises wind curtailment and helps to avoid negative prices
  - Reduces the amount of spinning reserve
  - Enables the efficient use of bio gas- and liquid bio-fuel resources
- Allows the entire system to operate in the most cost effective way
  - Removes the abusive cyclic load from plants that are not designed for it, enabling them to operate in their most cost-effective way
  - High efficiency over a wide load range enables flexible power plants to operate in the most cost effective way
- Ensures system reliability, even during extreme conditions, such as
  - Wind variations
  - Contingency situations
- Enables decentralisation of the intermediate and peak load capacity
  - Flexible plant sizing facilitates later expansion to match local needs
  - Installing generation capacity in load pockets reduces grid losses and helps to avoid investments in new high voltage grid expansions
  - Fast track delivery enables local capacity deficits to be rapidly overcome

**Power Plants development in 2013**

Activity in the overall power generation markets declined during 2013, as macro-economic volatility continued to cause delays in investment decisions throughout the year. Customer decision-making was further impacted by the significant exchange rate fluctuations seen in multiple emerging market currencies during the...
second and third quarters. Still, economic growth in the emerging markets continued to support demand for new power generation capacity. Wärtsilä’s power plant quotation activity was higher in 2013 than during the previous year. Activity remained focused on natural gas based generation. Wärtsilä’s share of global orders for natural gas and liquid fuel based power generation (including all prime mover units of over five MW) increased to 5.8% during the first half of 2013 from 4.9% during the corresponding period in the previous year. The total market was 18.8 GW during the same time period.

In 2013, the Power Plants order intake decreased by 15% to EUR 1,292 million. This development is in line with the decline in the global power generation markets. 82% of the orders received, measured in MW, were for gas based power plants. In 2013, major orders were received for a 274 MW power plant from Jordan and a 220 MW power plant from Oregon, USA. Other important orders were received from Finland, Russia and Indonesia. Net sales for Power Plants decreased by 3% to EUR 1,459 million during 2013, which represents 31% of Wärtsilä’s total net sales.

Wärtsilä Ship Power

Wärtsilä Ship Power has a strong position in the marine industry, and we are a growing force in the oil & gas industry as well, where our name is well-known in the offshore sector. We provide optimised, environmentally sustainable, and economically sound solutions, which are developed according to our customers’ needs. Our in-depth understanding of our customers’ businesses, combined with our extensive network, broad product portfolio, and ability to be involved in the life of the vessel as early as the design process, enables us to support our customers throughout the lifecycle of their installations.

Ship Power is organised by product lines, with one shared sales organisation responsible for customer relations, clarifying customer needs, and for the sales network globally. This organisational structure enables end-to-end control of activities, including R&D, engineering and manufacturing. As of 2014, PowerTech will be integrated into the 4-stroke product line, with the aim of further strengthening competitiveness and serving customers more effectively through increased flexibility, faster decision-making, and optimal utilisation of resources.

We serve shipyards and ship owners

Ship Power customers comprise both shipyards and ship owners, and their needs and demands differ significantly. The decision-making process of shipyard customers is typically affected by product prices, delivery times and reliability, project management, ease of installation, and the supplier’s ability to manage large delivery scopes. Ship owners, on the other hand, require reliability and support, as well as the availability of services. Decision-making is further impacted by freight rates, interest rates, and the cost of the ship. Furthermore, both ship owners and operators are increasingly considering factors such as operational efficiency, including environmental compliance, in their decision-making.

We are committed to meeting the needs of all our customer groups, which we achieve through our in-depth understanding of their businesses, operating models and requirements. As a result, we are able to offer products and solutions that best further their business interests.

Our extensive offering covers all main vessel segments

Ship Power is active in all the main vessel segments, and understands the particular needs and requirements related to each of them – from the initial vessel design choices to everyday operations throughout the lifecycle. Our offering also covers gas systems for land-based installations, such as gas terminals. Our design
capabilities, extensive industry experience, and technological leadership form the basis of our reputation. Our offering is the broadest in the industry:

- Medium- and low-speed diesel and dual-fuel gas engines
- Propulsion systems and gears
- Seals and bearings
- Automation systems
- Communication and control systems
- Power distribution and management systems
- Environmental solutions, including exhaust gas cleaning, ballast water management and fresh water systems
- Pumps and valves
- Gas systems, including LNG handling, inert gas systems, compressors, liquefaction and regasification
- Ship design

Our in-depth expertise in optimising the efficiency of vessels makes it possible for our customers to achieve performance that specifically matches their operating profile, as well as cost efficiencies and improved environmental performance. Innovative and competitive products, delivered efficiently and with high quality, form the basis of our offering. The ability to combine the products we offer into larger systems and solutions supports our strategy of being the main ship power supplier to our customers. This strategy provides added value to both our yard and ship owner customers. Shipyard customers can focus on their areas of expertise and benefit from reduced risks of product interface problems, while ship owners can rely on benefits related to operations and maintenance.

<table>
<thead>
<tr>
<th>Segment</th>
<th>Vessel type</th>
<th>Main offering*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merchant</td>
<td>Tankers</td>
<td>2-st engines, auxiliary engines, fixed pitch propellers (FPP), tunnel thrusters, 4-st engines for smaller vessels</td>
</tr>
<tr>
<td></td>
<td>Containers</td>
<td>2-st engines, auxiliary engines, FPP, tunnel thrusters, ship design, 4-st engines for smaller vessels</td>
</tr>
<tr>
<td></td>
<td>LNG carriers</td>
<td>4-st main dual-fuel engines, controllable pitch propellers (CPP), gearboxes, tunnel thrusters</td>
</tr>
<tr>
<td></td>
<td>Bulkers</td>
<td>2-st engines, auxiliary engines, FPP, tunnel thrusters, 4-st engines for smaller vessels</td>
</tr>
<tr>
<td></td>
<td>Other: cargo, RoRo, car carriers, LPG carriers</td>
<td>All of the above</td>
</tr>
<tr>
<td>Offshore</td>
<td>Floating exploration: drillships, semi-submersibles, etc.</td>
<td>4-st engines, steerable thrusters, tunnel thrusters, vessel automation, electric power distribution, gearboxes</td>
</tr>
<tr>
<td></td>
<td>Floating production units: FPSO's, FSO, floating LNG, etc.</td>
<td>4-st engines, steerable thrusters, tunnel thrusters, CPP, vessel automation, electric power distribution, gearboxes</td>
</tr>
<tr>
<td></td>
<td>Service/Supply vessels: OSV's, PSV's, AHTS, AHS</td>
<td>4-st engines, steerable thrusters, tunnel thrusters, CPP, electrical propulsion, ship design, automation, gearboxes</td>
</tr>
<tr>
<td>Vessel Type</td>
<td>Engine Types</td>
<td>Additional Features</td>
</tr>
<tr>
<td>--------------------------------------</td>
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<td>----------------------------------------------------------</td>
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<tr>
<td><strong>Other: crane vessels, pipelayers, accommodation vessels</strong></td>
<td>All of the above</td>
<td></td>
</tr>
<tr>
<td><strong>Cruise and Ferry</strong></td>
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<td></td>
</tr>
<tr>
<td>Cruise vessels</td>
<td>4-st engines, FPP, tunnel thrusters</td>
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</tr>
<tr>
<td>Ferries</td>
<td>4-st engines, CPP, FPP, steerable thrusters, tunnel thrusters</td>
<td></td>
</tr>
<tr>
<td>Other: ro-pax, yachts</td>
<td>All of the above</td>
<td></td>
</tr>
<tr>
<td><strong>Special vessels</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tugs</td>
<td>4-st engines, FPP, steerable thrusters, tunnel thrusters, vessel automation, ship design</td>
<td></td>
</tr>
<tr>
<td>Dredgers</td>
<td>4-st engines, CPP, FPP, steerable thrusters, tunnel thrusters, vessel automation</td>
<td></td>
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<tr>
<td>Other: fishing vessels, ice breakers, research vessels, work boats, inland waterway vessels</td>
<td>All of the above</td>
<td></td>
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<tr>
<td><strong>Navy</strong></td>
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</tr>
<tr>
<td>Frigates, corvettes, patrol vessels, aircraft carriers, destroyers, support vessels</td>
<td>Waterjets, seals and bearings, tunnel thrusters, 4-st engines</td>
<td></td>
</tr>
</tbody>
</table>

* Excluding Wärtsilä Hamworthy’s offering, which can be installed in nearly all ship types.

**Growth through gas, environmental solutions and efficient vessels**

Within the industry, Ship Power is uniquely positioned for growth driven by the increasing availability and use of gas as a marine fuel, the introduction of new environmental regulations, and the increased demand for more efficient vessels as a result of rising fuel costs.

Stricter environmental regulations are driving the interest in gas as a marine fuel, as well as in emissions abatement technology, such as exhaust gas scrubbers and ballast water treatment systems. Ship Power offers its customers alternative solutions for meeting these requirements in a way that best meets the needs of their business and operating model, both as part of new build projects and as retrofits to vessels already in operation.

In order to comply with the upcoming IMO sulphur regulations, ship owners whose vessels operate in environmental control areas have the choice of either operating on lower sulphur fuels, such as light fuel oil and gas, or using exhaust gas cleaning technology. Our offering for the gas markets consists of gas fuelled engines, gas conversions, and gas handling systems including LNG handling, liquefaction, regasification, inert gas systems, and equipment for small-to-medium scale onshore gas installations. We are a market leader in on-board gas handling and dual-fuel engines, which have been supplied to more than one hundred LNG carriers, and increasingly to other segments of the marine and oil & gas industry, from cruise ferries to FPSO’s.

Today, our portfolio of exhaust cleaning systems is the broadest in the industry, and our reference list the most extensive in the market. Our exhaust gas cleaning portfolio consists of closed loop systems for fresh water use, open loop systems for seawater use, and a combination of the two, i.e. the hybrid system. Proposed ballast water regulations will necessitate the installation of a ballast water management system to stop the spread of non-indigenous invasive species. We offer our customers systems based on the two most common technologies for ballast water treatment; ultraviolet treatment and electro-chlorination.
Increasing fuel prices has made efficiency one of the top concerns for ship owners and operators. We help our customers maximise the efficiency of their vessels on several levels: we design vessels which are as efficient as possible for their intended operating profile, we engineer integrated power, propulsion and equipment systems that ensure the best possible total efficiency, and of course also supply the efficient individual products required for the system. Once delivered, our comprehensive control and monitoring systems and lifecycle services enable efficient operation of the vessels throughout their lifecycle.

**Ship Power operating environment**

Ship Power serves the marine industry and the oil & gas industry. The main vessel segments covered in the marine industry are merchant, cruise & ferry, navy and special vessels. In the oil & gas industry we are active in offshore vessels, and in land-based gas installations. Ship Power’s customers include both shipyards and ship owners.

**General shipbuilding and shipping market drivers**

Demand 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 has both a direct and an indirect impact on the marine and oil & gas industries. High fuel prices drive the development in the oil & gas industry, while in the general shipping industry they increase the demand for efficient vessels. Other factors, such as shipyard capacity, new build prices, decommissioning and scrapping, interest and freight rates, and environmental regulations, also affect these industries. Global demand for new vessels drives Wärtsilä Ship Power’s business, in particular ships built for seaborne cargo transportation, offshore oil drilling, production and support, cruise and ferry services, and for naval use. Another important factor is the demand for environmental solutions and gas as a marine fuel that stems from environmental regulations. Moreover, the increasing demand for oil and gas, together with declining production from traditional fields, supports new offshore oil & gas investments in deepwater and remote locations.

**Main drivers for Wärtsilä's Ship Power business**

- Developments in the global economy
- Development of world trade and needed transportation capacity
- Development of oil and gas prices
- Environmental regulations
- Development of new offshore oil & gas fields

**Competitors and market position**

Wärtsilä Ship Power has continuously broadened its portfolio, which today ranges from engines and propulsion equipment to electrical equipment, automation, ship design, environmental solutions, gas systems, and pumps and valves. This is backed by the capability to build environmentally sound solutions, and by the best service support throughout the lifecycle of the product. Our competitive advantage lies in having the industry’s broadest marine focused offering of leading, innovative products, and insightful integrated systems and engineering, which is supported by a unique sales and service network in touch with our customers globally.
Our field of competitors is broad. It includes engine companies like MAN, Caterpillar and Chinese license manufacturers, propeller makers such as Schottel and Thrustmaster, and environmental and auxiliary equipment providers like Alfa Laval. It also includes electrical and automation houses like Siemens or Kongsberg, pump and gas system providers such as Colfax and Cryostar, and companies with broad offerings like Rolls-Royce or Hyundai Heavy Industries.

Wärtsilä is recognised as a proven supplier of innovative, sustainable technology in the marine and oil & gas markets ranging across our portfolio. In the medium-speed dual-fuel engines we are recognised as the market leader with the most extensive references in the industry.

<table>
<thead>
<tr>
<th>Wärtsilä offering</th>
<th>Main application*</th>
<th>Main competition**</th>
<th>Wärtsilä's market position</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-stroke medium speed main engines</td>
<td>Small merchant vessels, offshore, special vessels</td>
<td>MAN D&amp;T, MAK (CAT), Rolls-Royce, HiMSEN.</td>
<td>Approximately half of the market (in kW) is controlled by Wärtsilä.</td>
</tr>
<tr>
<td>4-stroke auxiliary generating sets</td>
<td>All vessel types</td>
<td>Market is highly fragmented, price sensitive and with heavy competition. Main competitors are MAN D&amp;T and its local license manufacturers, Yanmar and HiMSEN. High-speed engines also compete in the auxiliary engine market.</td>
<td>Wärtsilä is a market challenger, having around 4% of the total market.</td>
</tr>
<tr>
<td>2-stroke engines (built under license)</td>
<td>Large and medium size merchant vessels</td>
<td>MAN D&amp;T, Mitsubishi Heavy Industries</td>
<td>Market challenger, approximately 10% of the market (in kW) is controlled by Wärtsilä</td>
</tr>
</tbody>
</table>

Propulsion
- Controllable Pitch Propellers (CPP)
- Fixed Pitch Propellers (FPP)
- Steerable thrusters
- Tunnel thrusters

Rolls-Royce, Schottel, Hyundai Heavy Industries, Mecklenburger Metallguss, Thrustmaster, Brunvoll, Kawasaki, Caterpillar (Berg Propulsion)

CPP & FPP: Market is fragmented with several players competing, Wärtsilä among the top players. Steerable thrusters: Wärtsilä among the top players. Tunnel thrusters: Market is highly fragmented, Wärtsilä is a market challenger.
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Vendors</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical &amp; Automation</td>
<td>Offshore, special vessels</td>
<td>ABB, Siemens, Kongsberg, Rolls-Royce, General Electrics</td>
<td>Established position in offshore, otherwise market challenger.</td>
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<tr>
<td></td>
<td>Low loss concept (LLC)</td>
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<td>LV &amp; MV switchboards</td>
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<td>Variable speed drive</td>
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<td>Flowline heating</td>
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<td></td>
<td>Ship automation systems</td>
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<td></td>
<td>Power management systems</td>
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<td></td>
<td>Integrated bridge solutions</td>
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<tr>
<td>Ship design</td>
<td>OSVs, merchant vessels, specialized vessels, fishing vessels</td>
<td>Skipsteknik, Marinteknik, MMC, Rolls-Royce, Ulstein</td>
<td>Amongst the leading independent ship design houses.</td>
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<tr>
<td>Oil &amp; Gas systems</td>
<td>Offshore gas processing &amp; storage vessels, LNG/LEG/LPG carriers, floating production systems, industry applications, fuel gas systems for all vessel types</td>
<td>TGE Marine, Cryostar, Linde GAS - AGA, Kobelco, Moss Maritime, Daewoo Shipbuilding &amp; Marine Engineering, Weir LGE, Cryonorm, John Zink, Black &amp; Veatch, Air Liquid, Aker Solutions, FMC/CDS, Cameron/Concept</td>
<td>Wärtsilä Hamworthy among the top players.</td>
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<tr>
<td></td>
<td>Gas liquefaction systems</td>
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<tr>
<td></td>
<td>Onshore gas liquefaction systems</td>
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<td>Gas recovery systems</td>
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<td>Oil separation systems</td>
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<td></td>
<td>Fuel gas systems</td>
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<tr>
<td>Pumps and valves</td>
<td>All vessel types, on- and offshore oil &amp; gas facilities</td>
<td>Niigata, Marflex, Framo, Hyundai Heavy Industries, Shinko, Colfax, Ellehammer</td>
<td>Wärtsilä Hamworthy among the top players.</td>
</tr>
<tr>
<td></td>
<td>Deepwell cargo pumps</td>
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<td></td>
<td>Pump room systems</td>
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<td></td>
<td>Engine room pumps</td>
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<td>Fire-fighting systems</td>
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<td></td>
<td>Valves</td>
<td></td>
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<tr>
<td>Environmental solutions</td>
<td>All vessel types</td>
<td>Alfa Laval, Green Tech Marine, Techcross, Panasia, Evac, Scanship GEA Westfalia, Marinfloc</td>
<td>Wärtsilä among the top players.</td>
</tr>
<tr>
<td></td>
<td>Exhaust gas cleaning</td>
<td></td>
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<tr>
<td></td>
<td>Ballast water management systems</td>
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</tr>
</tbody>
</table>
• Inert gas systems
• Water production systems
• Water treatment systems

* Only main applications mentioned.
** Only main competitors mentioned.

Market position of medium-speed main engines

- Wärtsilä 52% (49)
- MAN Diesel 25% (21)
- Caterpillar (MAK) 4% (12)
- Others 19% (18)

Wartsila’s market shares are calculated on a 12 months rolling basis, numbers in brackets are from the end of the previous quarter. The calculation is based on Wärtsilä’s own data portal.

Market position of low-speed main engines

- Wärtsilä 10% (10)
- MAN Diesel 88% (88)
- Mitsubishi 2% (2)

Wartsila’s market shares are calculated on a 12 months rolling basis, numbers in brackets are from the end of the previous quarter. The calculation is based on Wärtsilä’s own data portal.
Market position of auxiliary engines

Wärtsilä’s market shares are calculated on a 12 months rolling basis, numbers in brackets are from the end of the previous quarter. The calculation is based on Wärtsilä’s own data portal.

Ship Power strategy

Wärtsilä Ship Power’s strategic goal is to be the leading provider of innovative products and integrated solutions to the marine and oil & gas industries.

To achieve this we will build on our deep customer understanding and:

• Solidify our clear leading position in solutions for gas fuelled vessels, environmental compliance and efficiency optimisation
• Further develop our position as the shipbuilding industry’s leading systems integrator
• Provide a competitive offering of products for the growing needs of the marine and oil & gas markets
• Seek further growth through the ability to offer the most efficient lifecycle solutions for our customers

As a solutions provider, we are ready to deliver everything from a single product to complete lifecycle support of complex systems for powering ships; from concept development to operational use. Wärtsilä Ship Power is uniquely positioned in being the industry’s only true provider of a total marine offering. This offering includes engines, generating sets, reduction gears, propulsion equipment, automation and power distribution systems, sealing solutions, emission control and abatement systems, gas containment and handling systems, control and communications, and the world’s strongest service network serving the shipping and offshore industries. Our wide range of products is supported by world class ship design, engineering, and project delivery capabilities, allowing us to provide solutions capable of optimising the lifecycle value of our customers’ installations.

We see important mid-term growth opportunities in solutions for gas fuelled vessels, environmental compliance and efficiency optimisation. Wärtsilä is already well positioned in these areas, having the most extensive experience and track record in running gas engines, a unique portfolio of products for emissions control and abatement (including exhaust gas cleaning systems, ballast water treatment systems, selective catalytic reduction etc.), and a holistic approach to ship-level efficiency optimisation through our engineering and ship design capabilities.

Wärtsilä Ship Power seeks organic growth that will be supported by acquisitions and partnerships. We develop and deliver our offering of innovative and competitive products based on the requirements of our customer segments and the operating profiles of their vessels. We further offer ship owners and operators...
integrated lifecycle solutions, whereby performance and availability are guaranteed. This integrated offering will be crafted hand in hand with Wärtsilä’s Services business.

We maintain our position as the shipbuilding industry’s leading systems integrator, and will establish a similarly strong foothold in the oil & gas business. Finally, we will invest further in strengthening our presence and maximising the efficiency of our supply chain, engineering and sales, especially in the key shipbuilding areas, notably China, South Korea and Brazil.

Ship Power strengths

• The broadest portfolio of reliable and high performing products and solutions in the marine and offshore oil & gas industries, supported by the industry’s strongest global services network
• An unmatched track record in providing gas fuelled vessels with our dual-fuel technology and gas systems
• The most comprehensive selection of options for meeting our customers’ needs concerning fuel flexibility, efficiency and environmental requirements
• A unique synergy between ship design and engineering capabilities that allows us to maximise a vessel’s efficiency throughout its lifecycle
• A strong presence in all major segments in the industry, allowing us to navigate ship building cycles

Ship Power and sustainability

The marine and oil & gas industries are at the very center of converging megatrends, namely a move towards a more diverse and cleaner energy mix, increased transparency and accountability with regards to environmental performance, and a need to improve economic performance despite possible uncertainties in the global economy. For Wärtsilä it is clear that improved sustainability is central to addressing all these trends.

<table>
<thead>
<tr>
<th>Shift to natural gas</th>
<th>Stricter regulatory environment</th>
<th>Focus on energy efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>The global energy landscape is shifting towards a more diverse and sustainable energy mix, and natural gas - the cleanest fossil fuel - has a key role to play in this transition. The oil &amp; gas industry has, during recent years, seen a dramatic rise in the demand for natural gas as supply is increasing. The marine industry is also affected by this transition with interest in the use of gas as a marine fuel rising sharply.</td>
<td>The marine industry is implementing changes to comply with existing environmental regulations, while evaluating the possibilities for complying with upcoming regulations. Emissions to air (CO&lt;sub&gt;2&lt;/sub&gt;, NO&lt;sub&gt;x&lt;/sub&gt;, SO&lt;sub&gt;x&lt;/sub&gt;, PM, VOC, and others) and water are under scrutiny. Similarly, regulations relating to safe and clean operations are becoming stricter, especially for the oil &amp; gas industry.</td>
<td>The global economic downturn has put enormous pressure on the cost structure of especially the marine, but also the oil &amp; gas industry. In the marine industry in particular, the high cost of fuel is a key driver for upgrading equipment, rethinking operational profiles, and new vessel designs. Investments in improved energy efficiency have both economic as well as improved environmental performance benefits.</td>
</tr>
</tbody>
</table>

Wärtsilä is committed to becoming the most valued business partner of all of its customers. This means that it is essential for Ship Power to have sustainability at the very core of its product and solutions development.
Our R&D and business development activities are based on a deep understanding of how these megatrends affect our customers. The expansion and development of Wärtsilä’s offering to the marine and oil & gas industries over the years demonstrates our response to our customers’ needs. Gas, environmental compliance, and efficiency are the three pillars on which Ship Power builds its offering.

Gas

Gas is an increasingly available, cost-efficient and clean fuel. Wärtsilä develops products and services that enable the safe use, handling and distribution of natural gas for the marine and oil & gas industries.

Wärtsilä is the marine industry’s undisputed leader when it comes to gas-fuelled propulsion. Today our dual-fuel medium speed engines power more than 150 vessels (primarily LNG carriers) and have accumulated over 7 million running hours in both land-based and marine applications. These milestones represent achievements that cannot be matched today by any other engine manufacturer. Thanks to a strong and safe track record in the use of gas as a marine fuel for LNG carriers the industry is increasingly keen on expanding the use of LNG to other vessel types.

During 2013, Wärtsilä announced the expansion of its dual-fuel portfolio to cover 2-stroke low speed engines. The launch of the Wärtsilä RT-flex50DF, and the expansion of the entire 2-stroke portfolio to dual-fuel versions, will help catalyze this change towards gas in the marine industry. These new engines are IMO Tier III compliant in gas mode.

The benefits of using Wärtsilä’s well proven low-pressure dual-fuel technology are many:

• Emission reductions (when operating in gas mode): -85% NO\textsubscript{x}, -99% SO\textsubscript{x}, up to 99% reduction of particulates (PM), 20-30% less CO\textsubscript{2} emissions, no smoke
• Fuel flexibility to enhance operational security and competitiveness. Operation on HFO, MDO, bio fuels and crude oil is possible
• Capital expenditure reductions of 15-20%, since the use of low pressure technology means simpler (lower cost) gas handling systems, and no need for further exhaust gas cleaning systems
• Reduced waste streams (liquid waste)
• No need to use secondary emission reduction systems (and hence no consumption of reagents)
• Redundancy and safety
• Stable operation on gas across the entire load range with no need to switch to diesel fuel at low loads
• Lower consumption of pilot fuel (just 1% of total fuel used)

Enabling the use of gas as a marine fuel means much more than supplying a proven technology on gas engines. For Wärtsilä it means also maintaining its leading position in the design of gas fuelled vessels, and offering reliable and competitive gas storage and handling systems.

Wärtsilä also supports the development of the broader gas value chain in the oil and gas industry with, for instance, its liquefaction and regasification solutions.

Environmental compliance

Wärtsilä offers a wide set of options for compliance with environmental regulations. All include working technologies, fast installation, and support throughout our global network. We are committed to providing our customers and the society at large with reliable and safe technologies for environmental compliance, which will be available for use as new regulations come into force. We can also assist our customers in the process of evaluating the best options for compliance so as to adopt a solution that meets their specific operational needs.
In the marine industry our offering for environmental compliance covers the following:

- For SOx and NOx compliance: gas propulsion, conversions to gas propulsion, exhaust gas cleaning systems (NOR, hybrid scrubber system, open loop scrubber system)
- For ballast water compliance: UV and EC technologies
- For EEDI compliance: improved efficiency of individual products, ship design
- For emissions to water compliance: sealing systems

In addition to these, Wärtsilä’s offering to the oil & gas industry includes the following solutions to facilitate safe and clean operations:

- VOC recovery
- Waste and fresh water management systems
- Oil separation
- Flare gas recovery

**Efficiency**

At Wärtsilä, we strive to optimise the lifecycle cost of installations. We do this because it makes economic sense to our customers, since we understand the pressure for reducing costs and investing in developing products and solutions that will help achieve significant savings. Furthermore, improved efficiency results in better environmental performance.

For us, one way of improving efficiency is to invest in renewing our product portfolio. During 2013, Wärtsilä announced the introduction of a new efficient thruster portfolio, and has continued to introduce its new X series 2-stroke engines to the market. In both cases, significant improvements in efficiency have been achieved. Currently, Wärtsilä is also developing a new generation of 4-stroke engines where efficiency improvement will be a key feature.

Wärtsilä has also developed individual products that improve efficiency, such as the Energopac Rudder and the Low Loss Concept (LLC). Furthermore, Wärtsilä is uniquely positioned to improve overall vessel efficiency and the efficiency of operations, thanks to our deep know-how in all relevant disciplines, including automation, machinery, propulsion and ship design. By combining this know-how with a deep understanding of our customers operations, we are able to achieve major efficiency improvements.

**Ship Power development in 2013**

During 2013, the total number of new registered vessel contracts was 2,201. Market activity improved significantly compared to 2012, when the volume for known contracts was 1,090 vessels. Ordering was active in all major vessel segments, resulting in a more evenly spread contracting mix compared to the previous year. Competitive new building prices and the increased fuel efficiency of modern vessels attracted investments in merchant vessels. Furthermore, oil price levels supported activity in the offshore markets, including operations in harsh and deep water areas. China and South Korea captured respectively 41% and 33% of the contracts confirmed during 2013 in terms of compensated gross tonnage, while Japan secured 15%. Wärtsilä’s share of the medium-speed main engine market increased to 52% (49% at the end of the third quarter). The market share in low-speed engines remained at 10%, while in auxiliary engines the market share decreased slightly to 4% (10% and 5% respectively at the end of the third quarter).
Ship Power’s order intake increased by 14% to EUR 1,662 million during 2013, reflecting the improvement in the marine market. Ordering was active in the offshore and special tonnage segments, as well as in the merchant segment. The interest in gas as a marine fuel continued throughout the year, and Ship Power received many orders for dual-fuel engines and gas related systems. The ordering of environmental solutions picked up somewhat and Wärtsilä was awarded an order for its AQUARIUS®UV ballast water management system by Carboflotta Group, as well as several orders for exhaust gas cleaning system. Net sales for Ship Power increased by 2% to EUR 1,325 million during 2013, which represents 28% of Wärtsilä’s total net sales.

**Wärtsilä Services**

Wärtsilä Services supports its customers by offering the most comprehensive portfolio of services in the industry, thereby optimising their operations and the lifecycle performance of their installations. Our service network is the broadest in the industry, consisting of approximately 11,000 service professionals in more than 160 locations in nearly 70 countries. We offer expertise, local availability, responsiveness, and the most environmentally sound solutions for all customers, regardless of the manufacturer of their equipment.

*We focus on three key elements for optimal lifecycle efficiency:*

- **Performance Optimisation**
  - Longer term strategies are aimed at improving the efficiency of our customers’ businesses. Our wide service offering facilitates the performance optimisation of our customers’ systems, thereby enabling a reduction in both fuel costs and emissions, while also extending maintenance intervals.

- **Environmental Efficiency**
  - Environmental legislation and energy efficiency are currently major concerns for our customers. We offer several sustainable solution options that enable a reduced environmental impact and improved operational efficiency.

- **Preventing the Unexpected**
  - Reliable, continuous performance is essential for our customers. We strive, therefore, to secure the operational reliability of our customers’ installations and offer them access to the highest quality of services. Our flexible solutions minimise downtime and optimise availability in a cost-efficient way.
Our services offering

We aim to develop close relationships with our customers, thus enabling us to gain an in-depth understanding of their business, and to extend our offering accordingly. Our Services business provides full and complete support for both Ship Power and Power Plants’ installations, and is based primarily on the equipment sold and designed by Wärtsilä, including engines, propulsion systems, electrical and automation systems. However, Wärtsilä Services has the capability to retrofit and service other brands as well.

We are continuously developing our existing competences while also building new competences in strategic growth areas, such as gas engines, the offshore oil & gas industry, asset optimisation systems and environmental solutions. Expanding our offering by developing our portfolio through innovations will continue to be our focus in the future. Further growth is sought by strengthening our service offering in response to our customers’ increased interest in partnerships, thereby providing them with both lower costs and improved operational efficiency.

Our areas of expertise include:

Engine services

We provide a full range of services for medium- and low-speed gas, dual-fuel and diesel engines and other related systems. Our offering comprises everything from standard engine overhauls to optimisation retrofits that improve the performance of older engine designs.

Propulsion services

We offer a complete range of services for propulsion systems throughout the lifecycle of an installation. Propulsion improvements enable optimal fuel efficiency for vessels and offshore rig reliability.

Seals & bearings services

We provide a wide range of sealing, bearing and sterntube solutions in the form of integrated systems, packages and products. These services provide marine and industrial customers with increased efficiency, reduced running costs, and operational longevity.

Electrical & automation services

Electrical and automation services include the maintenance and upgrade of all types of control and automation systems for power plants, marine applications, and oil & gas installations, as well as for power plant and vessel safety systems. We provide a wide offering of services from instrumentation to turnkey engineering packages, as well as modernisation and conversion projects.

Boiler services

We provide a comprehensive range of boiler services, including inspection services, condition based services, and spare parts for all types of boiler plants, economisers, and their control systems.

Environmental services

We offer land based power plants and ship installations an extensive set of services aimed at improving efficiency and minimising emissions. These solutions include fuel conversions, low NOx solutions, and propulsion efficiency services. Furthermore, our field service organisation supports Ship Power’s environmental retrofit market in the installation and commissioning of environmental solutions.
Service agreements

We tailor our service agreements to the customers’ needs, letting them choose from different levels of partnership, thus allowing them to concentrate on their core business. Technical management agreements include regular inspections, monthly reporting, and exchange programmes for spare parts. In our maintenance agreements, we provide fixed prices for inspections, technical support, spare parts, training, and maintenance work. Our operations and maintenance agreements can cover full operational, management and maintenance services, as well as installation performance guarantees.

Service projects

Our project management capabilities enable us to optimise the performance of our customers’ installations through upgrades, modernisations, fuel conversions and safety solutions.

Training services

Our training services cover all aspects of management, operational, maintenance, and safety issues, and range from traditional hands-on training to advanced remote training systems and e-learning opportunities.

Services operating environment

Wärtsilä Services supports the company’s marine and power plant customers. Of the company’s existing installed engine base, measured in MW, approximately one quarter is power plant related and the remainder marine industry installations. In terms of Services’ revenues, around 40% comes from power plant customers and 60% from marine customers. The service portfolio includes everything from spare parts and field service work, to more advanced lifecycle solutions aimed at reducing operational costs and improving efficiency. Roughly half of the Services revenue comes from spare parts, one quarter from field service, and one quarter from service solutions, such as maintenance agreements and service projects.

Installed base by business

![Pie chart showing installed base by business]

- Total 182,000 MW
- Power Plants
- Ship Power
General market drivers for Services

The main market driver in the service business is the size and development of the active engine base. The market conditions faced by end customers have a direct impact on the utilisation rate and the estimated lifetime of installations in operation. In the marine service business, the activity level of the vessel fleet is impacted by the number of anchored, idled, and scrapped vessels, as well as by the speed at which vessels operate. The lifecycle phase of an engine also affects maintenance requirements, and thereby the service needs for both marine and power plant installations.

Lifecycle solutions are offered through long-term service agreements and retrofit projects. The need for such solutions is driven by changes in, for instance, the cost or availability of different fuels, the cost or availability of crew, and/or the level of technical expertise needed to operate the vessels or power plants. Changes in environmental regulations, as well as improved safety aspects, also influence the need for lifecycle solutions.

The outsourcing of operations and management is today an important trend in the power plants service market. In the future, this may also become a more important driver for marine customers whereby partnerships can improve clarity concerning future costs and improve operational efficiency.

Competition and market position

Wärtsilä has a strong position in the service market. Only a few smaller players are able to provide such a broad services offering globally, and thus competition is mainly local. Local competition consists mainly of parts traders, repair yards, local workshops, and component suppliers for spare parts and the field service business. The number of local players is quite large and competition is rather fragmented since each product has its own set of competitors.

The competition for long-term service agreements for operating power plants comes from a few regional players capable of offering plant operational services, including those with different technologies. In the marine market, although some customers handle service and maintenance themselves, a similar scope of service agreements is also offered by ship management companies. Wärtsilä Services co-operates with several companies in this area, offering a variety of options to ensure the best solution for the end user.
Services strategy

Our customers recognise Wärtsilä as being a reliable service partner; competitive, trusted, and easy to deal with.

- We focus on customer needs in order to constantly develop our offering proposition with value-enhancing products
- We support our customers locally through our qualified global field service network
- We grow by providing more service agreements with new Ship Power and Power Plants deliveries
- We support our customers in minimising their environmental footprint and foster a customer-focused quality attitude and a safe way of working

The size and scope of the Services business provides a platform for further growth. Our objective is to maximise our market share in the marine and power plant service markets. We will develop our service offering and delivery process to cost-efficiently provide better value for our customers. Together with our customers, we create lifecycle-optimising solutions that improve the operational efficiency and profitability of our customers’ installations. We use our advanced expertise to offer them global 24/7 support in the fields of logistics, maintenance, plant-operating services, asset monitoring systems and technical support, as well as high-quality real-time information and analyses through effective online services. This offering includes an advanced portfolio of long-term agreements, allowing customers to focus on their core business. Moreover, we are able to deliver service projects that match the changing needs of our customers’ businesses. We combine our service solutions with new equipment sales to create value-adding lifecycle solutions. In the environmental solutions retrofit market, we support Ship Power with our unparalleled sales network and field service organisation. Furthermore, we offer environmental upgrade solutions, such as fuel conversions, that improve the efficiency of installations and minimise emissions.

Services' strengths

- Long-term relationships with customers and an in-depth understanding of their needs
- A complete lifecycle offering
- The broadest services offering in the industry
- A global service network

Services and sustainability

Environmental legislation and the need for energy efficiency are currently the main drivers for our customers’ actions towards developing their businesses in a more sustainable way. Wärtsilä Services strives to be a leader in supporting its customers’ efforts to meet and exceed current and future business and sustainability demands. Through continuous innovation, we will continue to provide shipping companies and energy providers with environmentally sound solutions well into the future.

Wärtsilä Services conducts its business in a responsible way, and creates added value by providing services from locations in close proximity to its customers, and through offering employment opportunities in local communities.
Solutions for the marine and power industries

The essential role for Wärtsilä Services as regards sustainability is to provide a range of services that ensure reliable and optimised operational, environmental, and safety performance. The availability of liquid fuels and gas, together with stricter environmental requirements, creates opportunities for the Services business.

Our solutions enable the application of the latest technologies in power plants and ships that are already in operation, thereby allowing them to comply with new legislative requirements. A lifecycle optimised approach guides the creation of our solutions, which are developed in co-operation with the customer. The aim is to improve the economic and environmental performance of existing installations, and to ensure their safety and reliability throughout their operational life.

Energy efficiency and maintenance

We develop and provide services, such as upgrades, reconditioning, fuel conversions and retrofit solutions, that improve environmental performance, comply with stringent environmental legislation, and extend the operational lifetime of the application.

The good maintenance of equipment is a key factor in material effectiveness and energy efficiency. Wärtsilä’s proactive Dynamic Maintenance Planning (DMP) programme includes the planning and scheduling of engine maintenance based on online monitoring of the mechanical condition, performance, system efficiency data, and other indicators from each engine. The data is collected and monitored daily, which enables fault sources to be identified before failure occurs.

For existing installations, a set of primary upgrading solutions are available, such as:

• Engine, propulsion, or electrical & automation system efficiency upgrade packages that reduce fuel and/or lube-oil consumption, thereby contributing to lower emissions and to the generation of economic benefits

• Low NO\textsubscript{x} solutions that combine various engine modifications designed to find the ideal combination of compression ratio, injection timing and injection rate. The concept has been developed so as to achieve the best possible trade-off between NO\textsubscript{x} reduction and fuel consumption

• The conversion of propeller shaft sealing systems to an anti-pollution version that eliminates the risk of water pollution

• Diesel to gas conversions that considerably reduce emissions from the installation. The conversion of heavy fuel oil (HFO) or marine diesel oil (MDO) installations to operate on natural gas offers many benefits, and is becoming an increasingly attractive option throughout the industry

For new and existing installations, secondary methods that integrate additional equipment, and which contribute to emissions abatement are available. Wärtsilä Services provides an unparalleled sales channel for such environmental solutions, as well as the field experts needed for their installation and commissioning.

Services development in 2013

The overall service market development was stable during 2013. The demand for power plant related services remained at a good level throughout the year, and activity was healthy especially in Africa. The overall marine
service activity was satisfactory. At the end of 2013, Wärtsilä’s installed base totalled 182,000 MW. The marine installed base decreased slightly due to the scrapping of merchant vessels with 2-stroke engines. This development was compensated for by the continued increase in the 4-stroke installed base, particularly in power plant installations.

In 2013, net sales from the Services business decreased by 3% to EUR 1,842 million, which represents 40% of Wärtsilä’s total net sales. The Services’ sales mix saw an increase in revenues from maintenance service and long-term contracts. Services’ order intake decreased by 4% to EUR 1,885 million. The interest in service agreements continued during 2013. Wärtsilä signed important long-term operations and maintenance agreements with power plant customers in Africa, Australia and the USA. Wärtsilä was also awarded a service agreement by Viking Line for maintaining and servicing the gas-fuelled passenger ferry Viking Grace.

PowerTech

PowerTech serves both the Ship Power and Power Plants market areas, and comprises R&D and manufacturing for medium-speed engines, supply management and quality, as well as operational excellence. Manufacturing is focused mainly on the assembly, test running, and finishing of products. Our business model, which is strongly connected to a broad network of suppliers, guarantees flexibility in capacity. Being close to the customer is important, as is our focus on quality and the continuous emphasis we place on technology leadership in our R&D activities.

The focus on gas, environmental solutions, and Smart Power Generation drives the development of our operations. Our product portfolio consists of medium-speed engines, catalytic systems, and emission monitoring products. Other products sold to the marine markets are a part of Ship Power’s product portfolio. We provide products that are reliable, cost efficient, functional, environmentally compatible, technologically leading, and able to be integrated into solutions or delivered as stand-alone equipment.

In the latter part of 2013 Wärtsilä initiated steps to integrate PowerTech into Ship Power’s 4-stroke organisation. The aim is to further strengthen competitiveness and to serve customers more effectively through increased flexibility, faster decision making and the optimal utilisation of resources. The new set up became effective in the beginning of 2014.

Wärtsilä’s global supplier network supports flexibility in manufacturing

Through close co-operation, excellent relations, and the sharing of information with our suppliers, the supply of components and market-conform lead times are secured. Wärtsilä has around 1,200 suppliers globally, and our network is being continuously further developed. Our sourcing strategy is to focus on carefully selected suppliers, with a strong emphasis on performance, innovation, and a presence close to our manufacturing units and joint ventures. Our aim is to continuously develop and strengthen our global supply chain with a strong emphasis on quality and cost competitiveness.

PowerTech footprint

Wärtsilä’s manufacturing model follows market demand to ensure flexible global capacity. The manufacturing of our medium-speed main engines is concentrated at the delivery centres in Vaasa, Finland and Trieste, Italy. As structural changes continue in our end markets, we remain focused on strengthening our presence in key markets, such as China, Russia and Brazil. This enables us to better serve our customers locally, thus
strengthening our position in these emerging markets. Furthermore, local manufacturing allows savings to be achieved in both production and transportation costs.

PowerTech currently has four joint ventures globally. In China, the Wärtsilä Qiyao Diesel Company Ltd joint venture produces medium-speed auxiliary engines for local markets. We are also in the process of setting up a new production facility in Zhuhai, China with Yuchai Marine Power Co. The joint venture will focus on assembling medium-speed main engines in order to further strengthen our ability to serve the Chinese markets. In Korea, we manufacture dual-fuel engines for the LNG carrier markets in partnership with Hyundai Heavy Industries Co. In Russia our joint venture with Transmashholding manufacturing multipurpose diesel engines is in the ramp up phase. PowerTech has also initiated the construction of a fully owned manufacturing facility in Brazil to meet increasing market demand, particularly in the offshore segment. This modern multi-purpose diesel generating set packaging and propulsion equipment factory is located in Açu, Brazil, and is scheduled to start operations mid 2014.