Capital Markets Day

Shaping the decarbonisation of Marine and Energy

Håkan Agnevall, President & CEO

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As a technology leader in the decarbonisation transformation, Wärtsilä has significant value creation potential

**Decarbonisation will transform the world**

- **Electricity generation** will grow by 3X, renewables by 8X
- **By 2030 balancing power market** will grow by >10X
- **In Marine** there will be an unprecedented rate of change in new build and existing fleet
- **Regulations and demand for green transport** will accelerate the speed of change

**Pioneer and leading partner for decarbonisation**

<table>
<thead>
<tr>
<th>Leading</th>
<th>Leading position in</th>
<th>Pioneer and partner for</th>
<th>Pioneer in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future fuels technologies - Flexibility - Efficiency</td>
<td>Thermal balancing - Energy storage</td>
<td>Hybrids &amp; Full electric - Fuel cells - Energy saving devices</td>
<td>Marine carbon capture</td>
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<tr>
<td>Performance-based agreements</td>
<td>Power system optimisation</td>
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</table>

**Set for performance**

- Well-positioned to leverage market recovery and growth
- **Robust execution**
  - Well-aligned strategy – The Wärtsilä Way
  - Focus on performance culture
  - Clear capital allocation & portfolio management
- **Committed to targets**
  - 5% annual organic growth
  - 12% operating margin
- **Ambitious sustainability targets for 2030**
  - A product portfolio ready for zero carbon fuels
  - Carbon neutral in own operations
# A new phase in Wärtsilä’s development

<table>
<thead>
<tr>
<th>2002-2010</th>
<th>2011-2015</th>
<th>2016-2020</th>
<th>2021-</th>
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</thead>
<tbody>
<tr>
<td>LIFECYCLE POWER SOLUTIONS</td>
<td>BECOMING TOTAL SOLUTIONS PROVIDER</td>
<td>SMART MARINE AND 100% RENEWABLE ENERGY</td>
<td>SHAPING THE DECARBONISATION OF MARINE AND ENERGY</td>
</tr>
<tr>
<td>Expansion into propulsion, services acquisitions</td>
<td>Expansion into environmental solutions, acquisitions in Electrical &amp; Automation</td>
<td>Digital solutions, negative deviations, end-to-end value chains, divestments</td>
<td>Customer &amp; services focus, technology partnering, organic growth, continuous improvement</td>
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</tbody>
</table>
Our world
### Marine will move with an unprecedented speed towards decarbonisation

Shipping generates approx. 2% of GHG emissions ¹)

<table>
<thead>
<tr>
<th>Regulations &amp; Markets</th>
<th>Technology</th>
<th>Connectivity and Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ IMO target: 50% lower GHG in shipping by 2050</td>
<td>▪ Focus on carbon neutral and zero carbon fuels. Carbon fuels still used for many years</td>
<td>▪ Vessels as data pools - system complexity increasing</td>
</tr>
<tr>
<td>▪ Cost of compliance: IMO design requirements, EEXI &amp; CII</td>
<td>▪ Increase in hybrid and battery systems</td>
<td>▪ Optimisation solutions taking an holistic view of the entire transport system</td>
</tr>
<tr>
<td>▪ Access to capital: EU taxonomy, Poseidon principles and ESG</td>
<td>▪ Development of energy saving devices</td>
<td>▪ Performance-based agreements with focus on uptime, reliability and fuel efficiency</td>
</tr>
<tr>
<td>▪ Cost of carbon: carbon certificates e.g. EU Fit for 55, IMO carbon levy and local green policies</td>
<td>▪ Next steps in abatement technologies e.g. carbon capture and storage</td>
<td>▪ Cyber security growing in importance</td>
</tr>
<tr>
<td>▪ Green sea transport demand driven by companies’ green customer commitments and investors’ push for sustainability targets</td>
<td>▪ Focus on fuel efficiency</td>
<td>▪ Different degrees of autonomous operations</td>
</tr>
</tbody>
</table>

¹) Source: Climate Watch, total 49.4 GtCO2e
Energy is moving towards a 100% renewable future

Electricity and heat generate approx. 30% of GHG emissions ¹)

<table>
<thead>
<tr>
<th>Growing electricity demand</th>
<th>Policies &amp; Regulations</th>
<th>Technology disruption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity generation is expected to grow by 3X, renewables by 8X ²)</td>
<td>EU: Carbon neutral by 2050</td>
<td>Wind and solar growing rapidly for baseload generation</td>
</tr>
<tr>
<td>Gradual replacement of coal and other fossil fuelled energy generation</td>
<td>USA: carbon free electricity production by 2035, net zero emissions by 2050</td>
<td>Intermittent sources requiring balancing power</td>
</tr>
<tr>
<td>Power systems becoming increasingly complex with different generation assets</td>
<td>China: Carbon neutral by 2060</td>
<td>Green fuels for thermal balancing</td>
</tr>
<tr>
<td></td>
<td>Country climate pledges likely to become more progressive</td>
<td>Digitalisation will create opportunities for optimising energy costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cyber security growing in importance</td>
</tr>
</tbody>
</table>

¹) Source: Climate Watch, total 49.4 GtCO2e ²) IEA World Energy Outlook 2021 (Net Zero Emissions Scenario), until 2050 with electrification of transport, buildings and industrial sectors

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Transform – Decarbonisation creates new business opportunities
Decarbonisation of Marine and Energy is accelerating. Large regional variances in speed of change

**Share of carbon neutral and zero carbon fuels in maritime**

- Decarbonisation 2050 (1.5°C scenario)
- IMO baseline

**Share of renewables in global electricity generation**

- Total electricity generation (TWh) from 2020 to 2050, IEA World Energy Outlook 2021 (Net Zero Emissions Scenario)

**Owners will decide on technology partners now:**
- Vessel life is 25-30 years
- Critical decision criteria:
  i) Multifuel capabilities for blending with green fuels
  ii) Conversion capabilities for future fuels

Source: DNV Maritime Forecast 2050 model, Wärtsilä Internal estimates 1) Total electricity generation (TWh) from 2020 to 2050, IEA World Energy Outlook 2021 (Net Zero Emissions Scenario)
There is no silver bullet – entering an era with numerous technologies and fuels

### Future technologies …

- **Fuels:**
  - Biofuels
  - Methanol Carbon neutral
  - Ammonia
  - Hydrogen Carbon free ¹)

- **Fossil fuels will be around for a long time.**
  - Gradual conversion from fossil to green fuels

- **Transition accelerated by blending green and carbon fuels**

- **Growth in performance-based agreements leveraging digital solutions**

### … In Marine

- **Battery technologies:**
  - Hybrids / plug-in hybrids
  - Full electric

- **Energy saving technologies:**
  - Air lubrication
  - Flettner rotors
  - Solar PV
  - Hydrodynamic devices

- **Optimisation solutions:**
  - Route optimisation
  - Predictive maintenance
  - Vessel analytics

- **Autonomous solutions:**
  - Situational awareness and safety

### … In Energy

- **Rapid growth in intermittent renewables drives growth in balancing power**

- **Energy storage will grow significantly**

- **Thermal balancing growing – reciprocating ICEs have leading flexibility and energy efficiency**

- **Thermal balancing and energy storage are complementary**

- **Power system optimisation operating different generation assets**

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¹) When generated with green electricity
Wärtsilä is very well-positioned for the decarbonisation transformation

Leader in

- **Carbon neutral & zero carbon fuels**
  - Available today: biofuels, methanol, up to 25% hydrogen blends
  - 2023: ammonia concept
  - 2025: 100% hydrogen concept

- **Energy efficient fossil fuels**

- **Power system optimisation**
  - Energy storage
  - Thermal balancing power

Pioneer in

- **Marine electric drivetrain**

- **Marine carbon capture**

- **Marine optimisation and autonomous solutions**

- **Partnering for complementary technologies**
  - Fuel cells
  - Air lubrication
  - Flettner rotors
Leading the decarbonisation journey with a strong commitment to R&D and through partnering for a broad solution offering

Proactive dialogue on customers’ specific technology roadmap

Competence & experience to engage in a credible customer dialogue on ”all” technologies

Solution offering for ”most” technologies

Leveraging leadership in core technologies and partnering for complementary technologies

Key takeaways

- Working with many of the new technologies for decades
- Conversion to new fuels requires only a limited number of new engine parts
- Large technology synergies between Marine and Energy
- Transformation manageable with a stable R&D allocation of ~3% of net sales
Perform – Leverage market recovery and growth
Wärtsilä well-positioned as #1-3 in global markets – focus on organic growth driven by decarbonisation and services. Complement with potential partnerships and bolt-on acquisitions.

<table>
<thead>
<tr>
<th>Non-core businesses</th>
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<tbody>
<tr>
<td>Continue active portfolio management based on:</td>
</tr>
<tr>
<td>- Market attractiveness</td>
</tr>
<tr>
<td>- Value creation</td>
</tr>
<tr>
<td>- Strategic fit</td>
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<table>
<thead>
<tr>
<th>Marine Power</th>
<th>Voyage (60-70% hardware)</th>
<th>Marine Systems</th>
<th>Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topline growth potential</td>
<td>▶️</td>
<td>▶️</td>
<td>▶️</td>
</tr>
<tr>
<td>Key focus</td>
<td>▪ Services ▪ Fuel flexibility &amp; efficiency ▪ Hybrids, full electric, energy saving devices</td>
<td>▪ Business turnaround and profitability ▪ Marine optimisation solutions</td>
<td>▪ Exhaust gas cleaning ▪ Carbon capture ▪ Shaft line solutions</td>
</tr>
<tr>
<td>Current addressable market EUR</td>
<td>+5bn</td>
<td>+1bn</td>
<td>+2bn</td>
</tr>
<tr>
<td>Share of Group Q321 LTM revenue 1)</td>
<td>~40%</td>
<td>~6%</td>
<td>~14%</td>
</tr>
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1) Excluding Portfolio Businesses

6 Divestments in 2020-2021
Growing Marine Power’s transactional services business. Leveraging our installed base and capturing the needs of customers with smaller transaction amounts

Categorisation per customer type
Spend ratio EUR/kW

- 1X 1)
- 0.65X

% of installed base

- <70% 2)
- >30% 2)

Customers with larger transaction amounts
Customers with smaller transaction amounts

Enablers for growth

- Leveraging digital solutions
  - Customer intelligence
  - Automated lead management

- Redefining our offering

- Effective global logistics

1) 1X refers to average EUR/kW for all transactional business customers
2) % of installed base in GW excluding QuantiParts
Performance-based agreements have significant growth potential, both in Marine and Energy

Enablers for growth

- Optimised asset performance for our customers
- Leveraging connectivity, big data, machine learning and extensive service network
- Successful experience from several projects in Marine and Energy

Moving up the service value ladder

25% of installed base
2-5X
Baseline 1X

- Transactional
  - Spare parts
  - Field services

Spend ratio EUR/kW
Green transition is expected to provide a notable opportunity for retrofits and conversions

- 4S/2S Marine HFO to LNG/green fuels ¹)
- 4S Energy HFO to gas

Estimated total market size of EUR ~2.5bn ²)

Future potential for conversions to green fuels ¹)

1) depends on fuel availability 2) estimated total market size over 5-10 years
Demand for electricity will grow by 3X with renewables being the way forward, thus accelerating the demand for balancing power

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<th>Baseload</th>
<th>Thermal balancing</th>
<th>Energy storage</th>
</tr>
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<tbody>
<tr>
<td><strong>Addressable annual market (GW)</strong></td>
<td><strong>Addressable annual market (GW)</strong></td>
<td><strong>Addressable annual market (GWh)</strong></td>
</tr>
<tr>
<td>2020: 12</td>
<td>2020: 2</td>
<td>2020: 5</td>
</tr>
<tr>
<td>-</td>
<td>+30% p.a.</td>
<td>+30% p.a.</td>
</tr>
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</table>

- Baselload market moving towards thermal balancing as share of renewables increases
- Reciprocating engines are the most suitable technology for thermal balancing with leading capabilities in quick ramping, flexibility, and energy efficiency
- Significant growth expected in front-of-meter energy storage
- Complementary to thermal balancing due to long- and short-term balancing needs

Source: Bloomberg New Energy Outlook 2020, Wärtsilä estimates 1) Key markets 10-15 GW
Wärtsilä’s energy storage business is growing rapidly and is expected to become profitable within a few years.

**Power system optimisation for the lowest energy cost, highest uptime and reliability**

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**Our value proposition**

**Power system optimisation offering**

- Complete balancing power offering
- Strong capabilities in optimising different generation assets
- Leading software platform, GEMS, to scale and optimise performance

**Strong execution skills**

- Sector proven partner with strong energy track record
- Competitive supply chain

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**Energy storage key facts**

Global #1-3

2021 order intake
> EUR 700m

>6X growth from 2020 ¹)

~70% long term service agreements

Proven power system optimisation

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¹) Order intake
Perform – Robust execution
The Wärtsilä Way sets the scene for profitable growth

Purpose
Enabling sustainable societies through innovation in technology and services

Target position
Shaping the decarbonisation of Marine and Energy
- New financial targets
- New decarbonisation targets

Strategic priorities
Roadmap to improve performance and reach Target Position

Values
Customer Success, Passion, Performance
Strategic priorities to improve performance and reach Target Position

1. Excel in creating customer value
   We continuously evolve our understanding of and responsiveness to our customers to make them successful.

2. Develop high performing teams that make a difference
   We attract high performing people and excite diverse teams that excel in continuous learning and collaboration. Our leaders provide direction and support, empowering people to act.

3. Drive decarbonisation in Marine and Energy
   We accelerate decarbonisation in Marine and Energy through innovation, focused investments and selective partnerships, while also decarbonising our own operations. We provide optimisation solutions and are a thought leader in our industries.

4. Capture growth in services
   We excel in transactional and retrofit business. We move up the service value ladder by growing in performance-based agreements.

5. Continuously improve our end-to-end value chain
   We continuously improve our end-to-end business to meet customer expectations on quality, lead time and delivery accuracy, while reducing complexity and improving competitiveness. We leverage digitalisation throughout our value chain.

- Improve performance in existing businesses
- Generate profit and cash to fund
  - Business and technology transformation
  - Good shareholder returns
- Clear capital allocation principles and active portfolio management
Developing a performance culture

- **Being successful by making our customers successful**
- **Clear leadership and delegated profit & loss responsibilities**
- **Caring for people and professional development**
- **Discipline in risk management** for capturing and executing projects
- **Improve speed and make decisions close to where customer value is created**
- **Mindset of continuous improvement**
Ambitious sustainability targets for 2030

To provide a product portfolio which will be ready for zero carbon fuels

To become carbon neutral in our own operations
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