



# Wärtsilä

Shaping the decarbonisation of marine and energy  
Roadshow presentation

September 2024



# Wärtsilä – Shaping the decarbonisation of marine and energy

Wärtsilä simplified the Group structure from 1st January 2024 onwards with two main businesses:

## Marine

Our offering of engines, propulsion systems, hybrid technologies and integrated power transmission systems and related services support our customers in moving towards carbon neutrality.

## Energy

We support the change towards a future where electricity is produced with 100% renewable energy by offering grid-balancing power plants, hybrid solutions, energy storage and optimisation technology.

## Committed to financial targets

### Net sales

5% annual organic growth

### Profitability

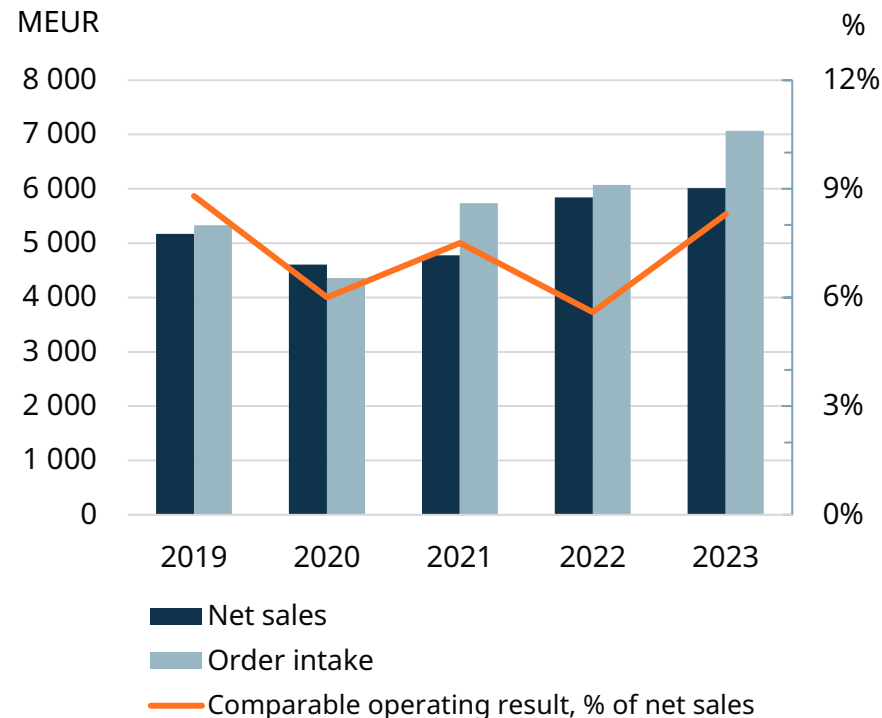
12% operating margin

### Capital structure

Gearing below 0.50

### Dividend

Distribute a dividend of at least 50% of earnings



## Key growth opportunities

- ⊕ ⊕ ⊕ **Energy Storage & Optimisation:** Fast growing demand for power system optimisation solutions
- ⊕ ⊕ **Marine newbuild driven by decarbonisation:** Uptake of solutions ready for sustainable fuels and recovery in passenger and offshore segments
- ⊕ **Moving up the service value ladder in Marine and Energy:** Continuous growth in agreement coverage
- ⊕ **Energy Engine Power Plants new build driven by balancing and baseload:** Gradual shift to renewables
- ⊖ ⊖ **Portfolio Business divestments**

## Strong track record in innovations

**Investing ~4% of net sales on R&D yearly**

**Today:** engines run on biofuels, methanol, pure hydrogen fuel engine concept, pure ammonia fuel engine concept

# Market fundamentals



## Marine will move with unprecedented speed towards decarbonisation

### Policies & regulations

- IMO target/ EU Regulations
- Access to capital
- Cost of carbon
- Demand for green sea transport

### Technology

- Carbon neutral and zero carbon fuels
- Carbon fuels for many years, still
- Abatement technologies
- Battery systems, hybrids & energy saving devices
- Fuel efficiency & flexibility

### Connectivity & data

- Vessels as data pools
- Optimisation solutions
- Performance-based agreements
- Cyber security



## Energy is moving towards a 100% renewables future

### Policies & regulations

- EU: Carbon neutral by 2050
- USA: carbon free electricity production by 2035, net zero emissions by 2050
- China: Carbon neutral by 2060
- RePower EU, Inflation Reduction Act

### Technology

- Wind and solar growing rapidly
- Intermittent sources requiring balancing power
- Sustainable fuels for thermal balancing
- Digitalisation and cyber security

### Growing demand

- By 2050, electricity generation needs to grow by 3X, renewables by 8X to reach Net Zero targets <sup>1)</sup>
- Gradual replacement of coal
- Renewables expected to become the largest source of global electricity by early 2025 <sup>2)</sup>
- Power systems becoming increasingly complex

# Our value creation potential is based on two strategic themes

**Transform** – attractive growth opportunities at the center of the decarbonisation transformation

**Perform** – clear path for operational improvements and increased profitability

# Significant milestones reached in strategy execution

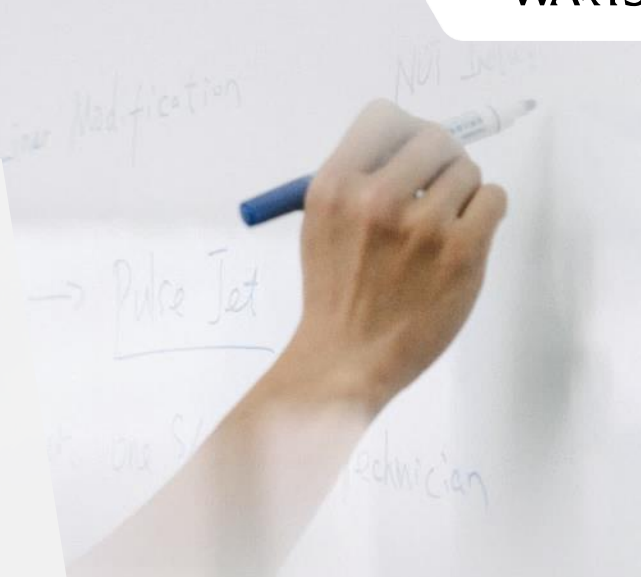
1) 2023 vs. 2021 net sales

## Transform

- **Market leader in:**
  - 4-stroke medium speed main engines
  - Engine power plants
  - Marine hybrid solutions
- **Technology leader** in green fuels
- **Pioneer** in marine carbon capture & storage
- **Significant growth** since 2021:
  - +26%<sup>1)</sup> in services
  - +17% in thermal balancing installed base
  - 3X<sup>1)</sup> in Energy Storage & Optimisation

## Perform

- **Good growth in service agreements** by leveraging digital solutions
- **Improved quality of new build order book margins**
- **Turned Energy Storage & Optimisation to profit**
- **Divested businesses and optimised footprint**
- **Revitalised team and organisation**



**Clear path to 12% operating margin**

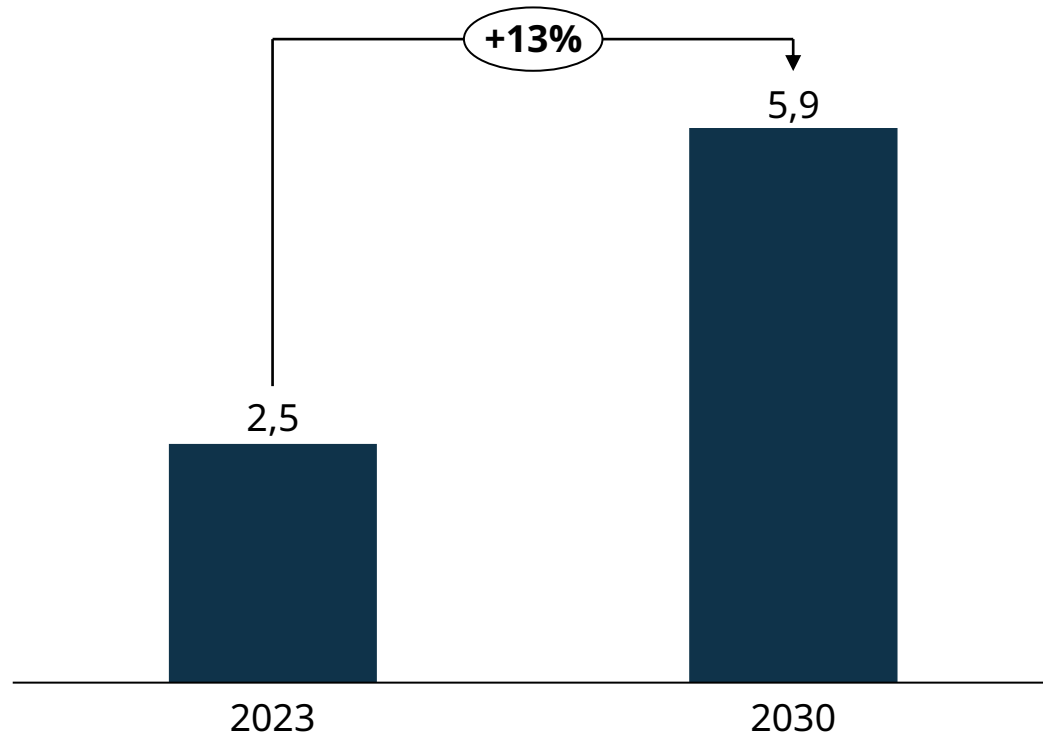


**Transform –  
attractive growth opportunities at the center of the decarbonisation transformation**

# Strong market fundamentals and the decarbonisation transformation will support profitable growth in Marine business

## Key target segments

Annual newbuild contracting of 4-stroke medium speed main engine-powered units (GW)<sup>1)</sup>; CAGR



- **IMO MEPC 80** has adopted a **revised strategy** to reduce GHG emissions by 20% by 2030, 70% by 2040 and to net-zero by 2050
- **In the EU**, regulatory landscape will **double fuel costs** up to 2030<sup>2)</sup>
- **Small but growing market for green transport** driven by corporate carbon reduction pledges
- Switch to **carbon neutral and zero carbon** fuels will be **progressive**
- **Drop-in fuels, hybrid solutions and abatement technologies** will be **key** to reach short-term reduction targets
- Long-term reduction targets will require a **fundamental shift towards sustainable fuels and abatement solutions**

1) Source: Clarksons March 2024 forecasts; 2) Fishing, dredgers, support units, yachts, tugs, etc.; 2) assuming 5,000 tons/year VLSFO consumption subject to Fit for 55, VLSFO at 550 EUR/ton; EU allowances from 100 EUR/ton today to 230 EUR/ton in 2050

# Wärtsilä is a global technology and service leader in shaping the decarbonisation of marine

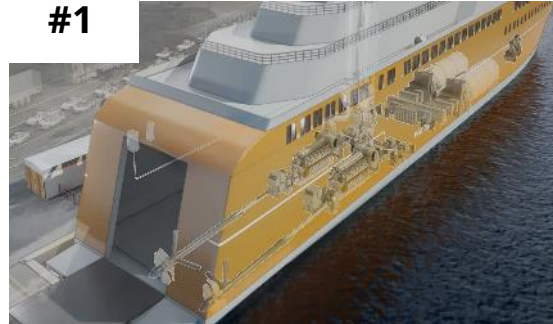
#1



## Industry leading medium speed engine offering

- Biofuels and methanol available already today
- Product industrialisation for ammonia ongoing
- Fuel conversion packages for both 4-stroke and 2-stroke engines available already today

#1



## Industry leading hybrid solutions

- Hybrid-electric to challenge 2-stroke engines as prime-mover for LNG carriers
- 6% more cargo space, 10% lower fuel consumption<sup>1)</sup>
- Lower maintenance costs compared to 2-stroke

Pioneer



## Pioneer in carbon capture & storage

- Complementary technology to engines
- EUR ~10bn market opportunity in the next 10 years<sup>2)</sup>
- Commercial release in 2025, CCS-ready scrubbers available already today

+60%  
of net sales<sup>3)</sup>



## Global services network to ensure maximum uptime & fuel efficiency

- Transactional: spare parts & field services
- Enhanced support & technical management agreements
- Optimised maintenance & guaranteed asset performance leveraging digital solutions

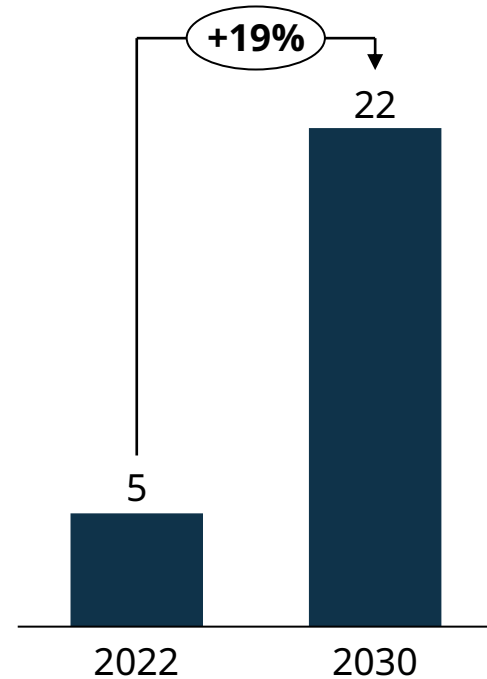
1) example on 174,000 cbm LNG carrier 2) estimated market size for newbuild and retrofit 3) 2023 (Marine)



# The increasing share of renewables and need for balancing power will support profitable growth in Energy business

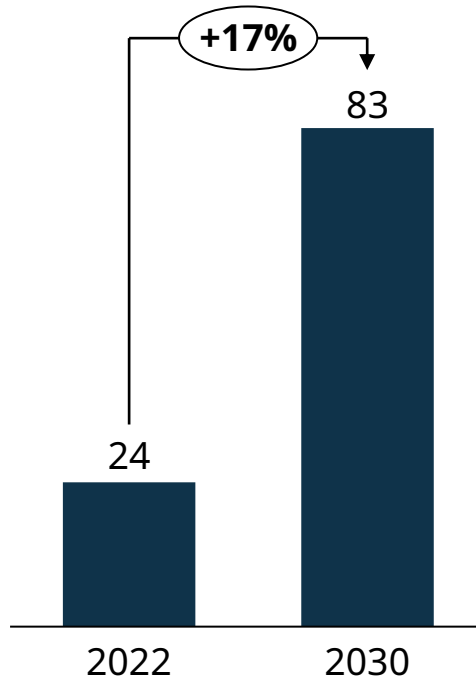
## Thermal balancing

Addressable market  
GW; CAGR



## Energy storage

Addressable market  
GWh; CAGR



- **Thermal balancing** market is **expected to grow +4X by 2030** driven by accelerating intermittent baseload. US is an important market for thermal balancing
- Power generation related **regulatory changes support uptake of thermal balancing** (US Federal and State bills, EU electricity market reform and China market reform)
- **Sustainable fuels together with flexible engine power plants balance grids in an affordable and sustainable way**, also for longer shortages in intermittent renewable generation
- **Energy storage incentives in the US** (IRA<sup>1</sup> investment and production tax credits) **support** the energy storage market **growth**. Local regulatory changes in general support the uptake of energy storage

# Wärtsilä is a global leader in engine power plants. Energy Storage & Optimisation has grown ~3X since 2021 and is now profitable

#1



## Industry leading engine power plants<sup>1)</sup>

- Superior operational flexibility through fast ramp-up/ramp-down compared to gas turbines
- Fuel conversion packages available already today
- Hydrogen 25 vol% blend available already, full hydrogen technology launched in Q2 2024, available for orders in 2025

#1-5



## Top 5 in energy storage

- Focus on profitable growth
- Reliable partner with high bankability
- Highest safety standards (recent milestone in passing UL 9540A requirements)
- Leading software (GEMS) for power system optimisation



## Global services network to ensure maximum uptime & fuel efficiency

- Transactional: spare parts & field services
- Maintenance & operational support
- Guaranteed performance services
- Outcome-based agreements, including decarbonisation services, leveraging digital solutions

# To support accelerated profitable growth of Energy Storage & Optimisation, we have launched a strategic review of the business

- Energy storage market is expected to grow rapidly, **addressable market to grow +3X from 2022 to 2030**
- Wärtsilä Energy Storage & Optimisation has **grown +30X<sup>1)</sup> since the acquisition of the business and is now profitable**
- Strategic review has been launched to **accelerate profitable growth of the business in a way that benefits customers and creates value for Wärtsilä shareholders**
- **All potential alternatives will be considered.** Such alternatives could include different ownership options of the business from continued full ownership to potential full or partial divestment of the business or other possible strategic alternatives
- **No commitment to a particular timeline** is given. Wärtsilä will disclose the progress and conclusions of the review according to applicable disclosure laws and regulations
- **Wärtsilä continues to develop and invest** in Energy Storage & Optimisation and **remains fully committed to its customers** throughout the strategic review

1) LTM Q3/2023 vs. 2016 net sales





**Perform –**  
clear path for operational improvements and increased profitability

Services is ~50% of our net sales with good future growth potential

**EUR ~3bn**

2023 net sales

**26%**

Growth in net sales since 2021

**~90%**

Renewal rate of service agreements

# We continue to execute our services strategy on all steps of the service value ladder



- Our installed base of medium speed engines is increasing (~5% increase since 2021)
- 26% growth in transactional services since 2021
- ~30% of installed base<sup>2)</sup> is under service agreements with further growth potential
- Moving up the service value ladder – agreements and performance-based agreements have 2-5X spend ratio (EUR/kW) relative to transactional services
- Retrofits and upgrades have the potential to grow +2X by 2030

1) customer spend ratio EUR/kW 2) 4-stroke engine MW

# Going forward we will benefit from the implemented operational improvements and structural changes

## Quality of revenues

- **Improved quality of new build margins** in current order book
- Energy order book has **higher share of equipment and lower share of EPC deliveries**
- **Energy Storage & Optimisation is now profitable**
- **Voyage losses** have **significantly reduced**

## Footprint & divestments

- **Centralisation of the European engine manufacturing footprint** will gradually lead to **EUR ~35m yearly savings by 2025**
- **Divesting business units** in Portfolio Business which are **diluting Group profitability**



# Strong commitment and a clear path to reach our financial targets

**12%**

Operating margin

**5%**

Annual organic growth

**<0.5**

Gearing

**≥50%**

Dividend of earnings



# Energy transition and decarbonisation driving our >5% organic growth target

LTM Q3/2023 net sales EUR 6.1bn

## Drivers of net sales growth<sup>1)</sup>

### ▪ Energy Storage & Optimisation

- Fast growing demand for energy storage and power system optimisation solutions

⊕ ⊕ ⊕

### ▪ Marine newbuild driven by decarbonisation

- Uptake of solutions ready for sustainable fuels, and recovery in passenger and offshore segments

⊕ ⊕

### ▪ Moving up the service value ladder in Marine and Energy

- Continuous growth in agreement coverage
- Decarbonisation-driven retrofits

⊕

### ▪ Energy Engine Power Plants new build driven by balancing and baseload

- Gradual shift to renewables
- The focus on offering equipment rather than EPC decreases revenue expectations but improves our risk profile

⊕

### ▪ Portfolio Business divestments

- Gas Solutions, ANCS, Water & Waste, and Marine Electrical Systems

⊖ ⊖

Share of  
absolute growth

1) drivers' consideration includes the transfer of Shaft Line Solutions and Exhaust Treatment to Marine and Gas Solutions to Portfolio Business

# Services and decarbonisation key drivers towards 12% operating margin

LTM Q3/2023 operating margin 6.0%<sup>1)</sup>

## Drivers of improved profitability<sup>2)</sup>

Share of absolute improvements

- Moving up the service value ladder in Marine and Energy ⊕ ⊕ ⊕
- Marine new build driven by decarbonisation ⊕ ⊕
- Energy Engine Power Plants new build driven by balancing and baseload ⊕ ⊕
- Energy Storage & Optimisation ⊕
- Portfolio Business divestments ⊕
- Continuous improvement }
- Cost inflation & related price adjustments } >0

1) excluding EUR 40m provision related to Olkiluoto 1 and 2 nuclear projects taken in Q4/2022 (discontinued nuclear business) as well as EUR 19m provision taken for a single sizeable turnkey project in Gas Solutions in Q2/2023 (discontinued turnkey business) 2) drivers' consideration includes the transfer of Shaft Line Solutions and Exhaust Treatment to Marine and Gas Solutions to Portfolio Business

# We continue to actively manage our business portfolio

## Marine Systems discontinued

Effective 1<sup>st</sup> of January 2024

- Further simplification of Group structure
- Gas Solutions has limited synergies with Wärtsilä's marine product portfolio, planned to be moved to Portfolio Business
- Exhaust Treatment and Shaft Line Solutions planned to be moved to Marine Power
- Improving quality of revenues

## Portfolio Business

Plan to divest. Timeline subject to internal separation & turnaround

- Water & Waste
- Marine Electrical Systems
- Automation, Navigation & Control Systems
- Gas Solutions

<b>LTM Q3/2023</b>	<b>Group total</b>	<b>Group total excl. Portfolio Business</b>
Net sales, EURm	6,142	5,480
Comparable operating margin <sup>1)</sup>	7.7%	8.7%
Operating margin <sup>1)</sup>	6.0%	8.2%

<sup>1)</sup> excluding EUR 40m provision related to Olkiluoto 1 and 2 nuclear projects taken in Q4/2022 (discontinued nuclear business) as well as EUR 19m provision taken for a single sizeable turnkey project in Gas Solutions in Q2/2023 (discontinued turnkey business)

# Profitability drivers

## + Supporting drivers

- Continued decarbonisation in both the energy and marine markets
- Good service performance
- Strong order book both in new equipment and services
- Profitability improvements in Energy Storage and former Voyage Business
- Improved capacity utilisation
- Continued cost optimisation

## + / - Uncertainties

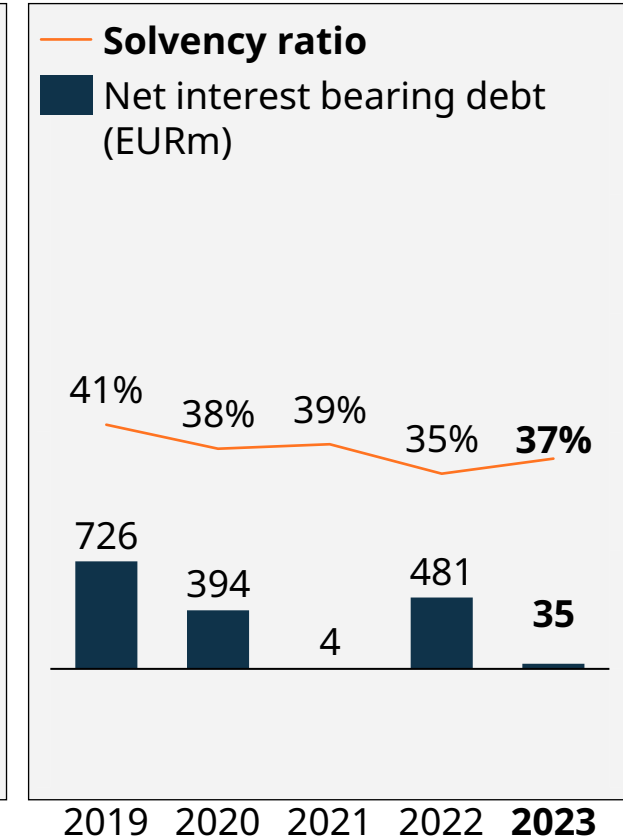
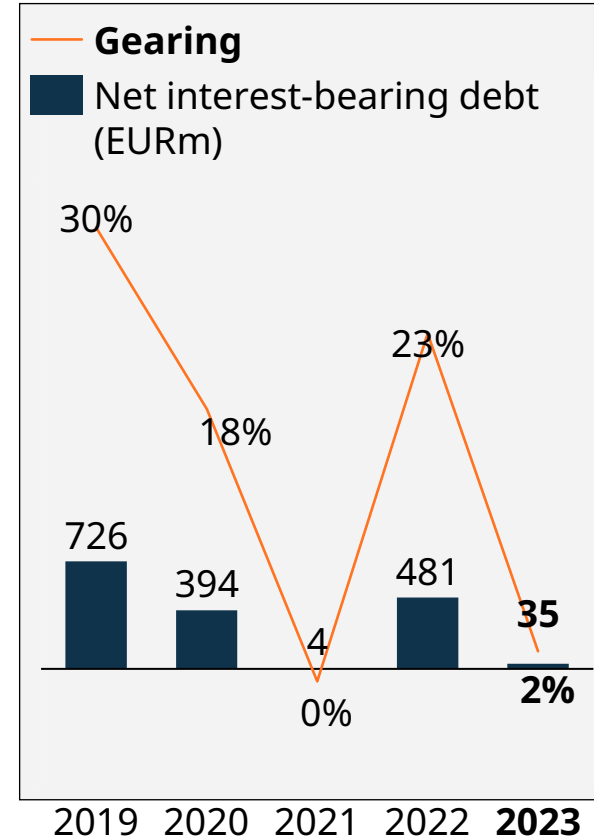
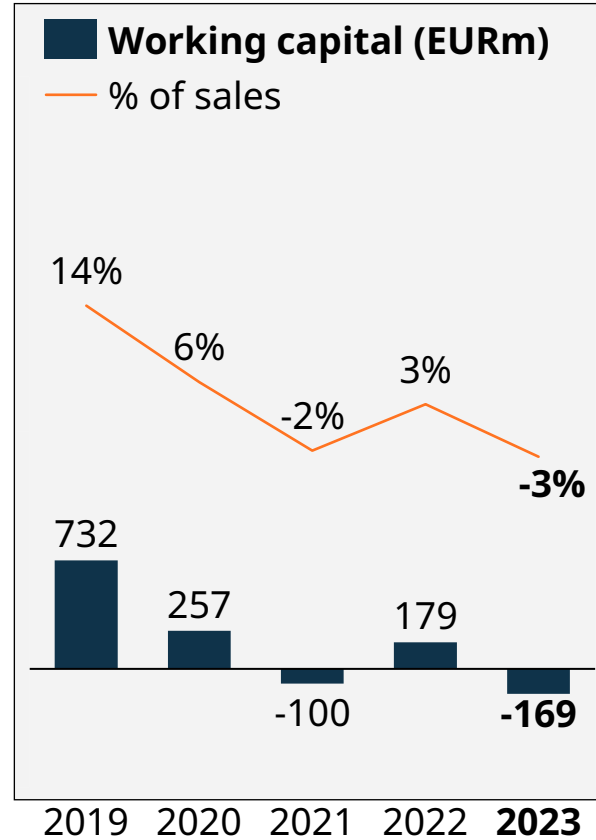
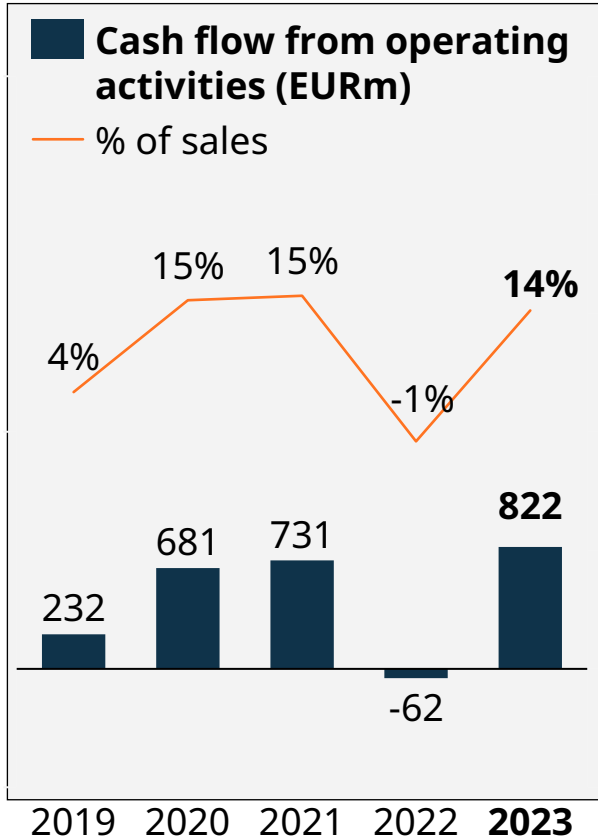
- Geopolitical tensions
- Potential trade restrictions / trade wars
- Recession risk

## - Negative factors

- Wage inflation



# Strong balance sheet and financial position to support strategy execution



Strong cash flow development from 2022 level



Continued good working capital development



Strength to make strategic investments

The Wärtsilä Way sets the scene for profitable growth. We reconfirm our financial targets

# THE WÄRTSILÄ WAY

## ◎ Purpose

Enabling sustainable societies through innovation in technology and services

## ◎ Target position

Shaping the decarbonisation of marine and energy

- 5% annual growth
- 12% operating margin
- To become carbon neutral in own operations and to provide a product portfolio which will be ready for zero carbon fuels by 2030

## ◎ Strategic priorities

Roadmap to improve performance and reach Target position

## ◎ Execution plan

What to do – tactics & operations, updates yearly

## ◎ Values, leadership and continuous improvement

Customer success, Passion, Performance

# The strategic priorities are the key levers to improve our performance and reach our 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

# Marine highlights



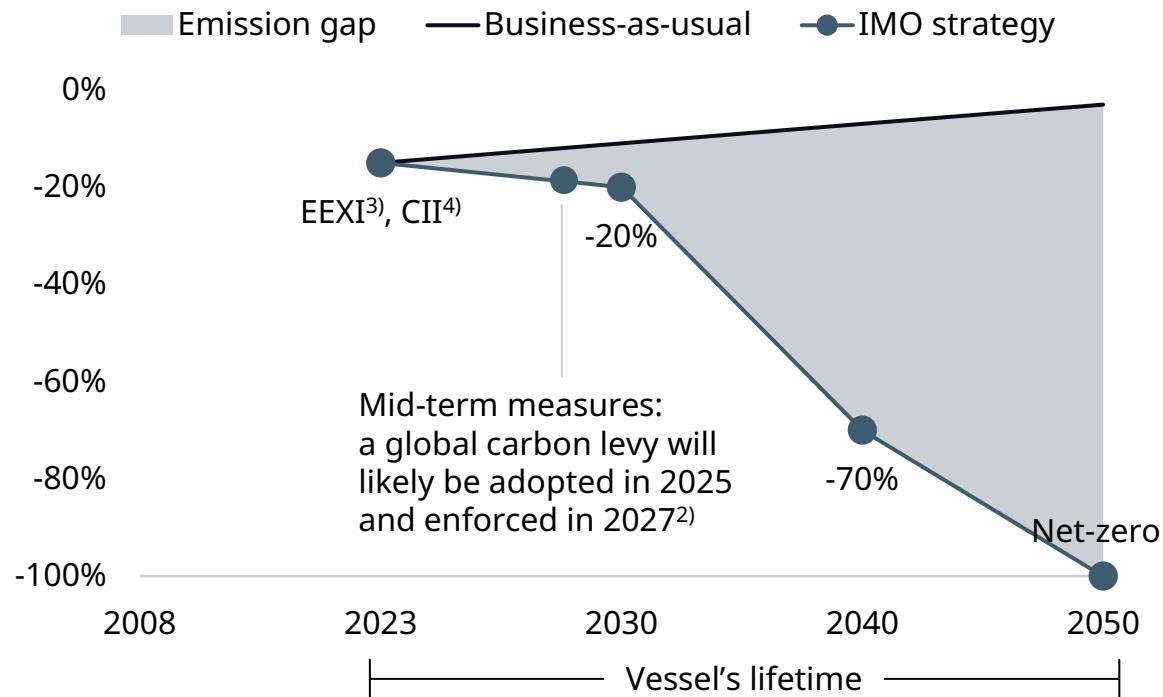


# After IMO net-zero commitment last year, the regulatory focus has moved to “mid-term measures”

For vessels operating in EU waters, fuel cost may double due to emission fees up to 2030, compared to 2023

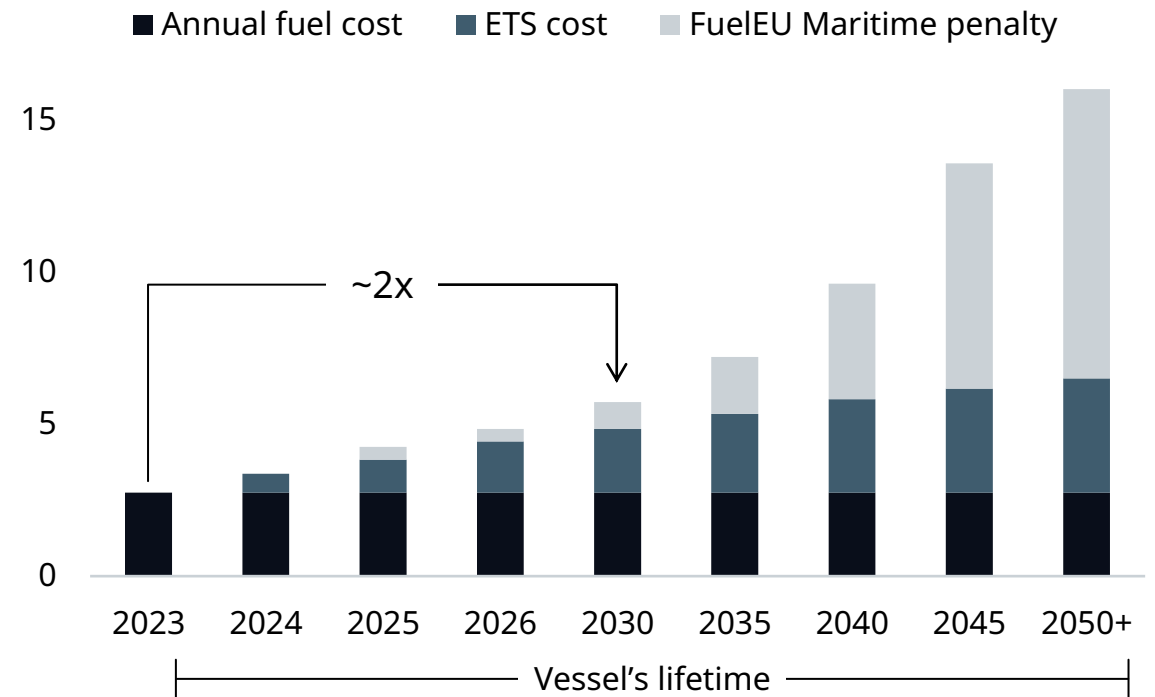
## IMO GHG Strategy<sup>1)</sup>

GHG emission reduction % vs 2008



## EU Fit-for-55

Fuel-related costs for Handymax bulker operating in EU, EURm<sup>3)</sup>



1) Source: IMO; data refers to well-to-wake Green House Gases (GHG) emissions; 2) E.g., goal-based marine fuel standard, GHG emissions pricing mechanism; 3) Assuming 5 000 tons/year VLSFO (Very Low Sulphur Fuel Oil) consumption subject to EU Fit-for-55, VLSFO at EUR 550/ton; EU ETS allowances from EUR 100/ton today to EUR 230/ton in 2050 (source: Transport & Environment NGO)

# Decarbonisation can be reached through different pathways; net-zero targets will require a fundamental shift towards sustainable fuels

## Decarbonisation pathways

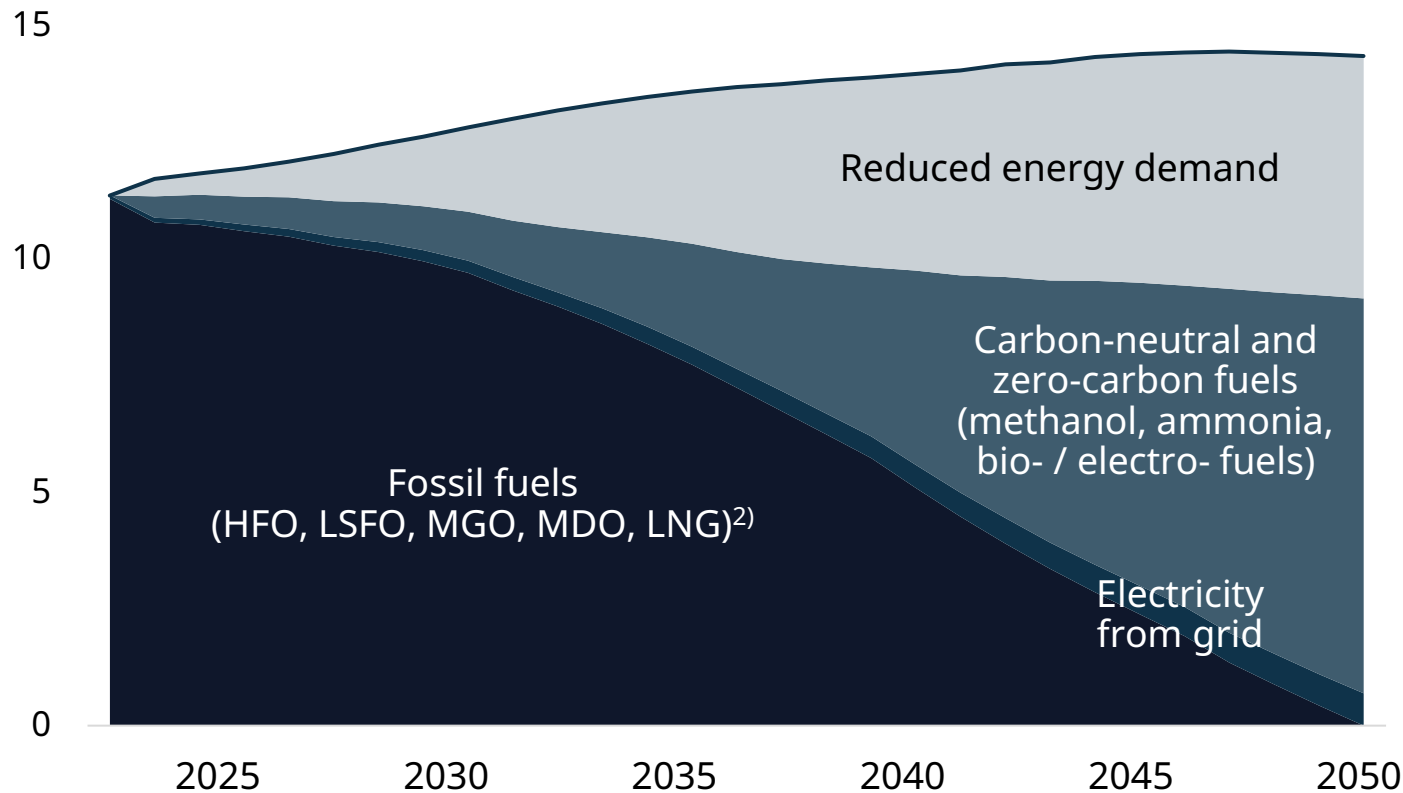
Burn less fuel <sup>1)</sup>		Clean up emissions <sup>1)</sup>	Use alternative energy sources	
Vessel efficiency	Operational efficiency	Emission abatement	Sustainable fuels	Electrification
<ul style="list-style-type: none"> <li>Reduction of GHG emissions and fuel cost</li> <li>E.g., energy efficiency improvement of engine, propulsion, hull, other systems</li> </ul>	<ul style="list-style-type: none"> <li>Reduction of GHG emissions and fuel cost</li> <li>E.g., speed reduction, route optimisation, onboard energy management</li> </ul>	<ul style="list-style-type: none"> <li>Significant reduction of GHG emissions through onboard carbon capture, regardless of the fuel</li> <li>CO2 offloading infrastructure, onboard storage and value chain needed</li> </ul>	<ul style="list-style-type: none"> <li>Significant / total reduction of GHG emissions</li> <li>Technology available; infrastructure and supply under development</li> </ul>	<ul style="list-style-type: none"> <li>Zero GHG emissions through battery-electric propulsion</li> <li>Viable on short ranges due to low energy density</li> </ul>
<b>Approximate greenhouse gas (GHG) emission reduction potential</b>				
<b>25%</b>	<b>25%</b>	<b>70%</b>	<b>100%</b>	<b>100%</b>

1) These pathways shall be combined with the utilisation of alternative fuels to support long term IMO targets

# A progressive switch to sustainable fuels is already under way

## Sustainable fuel uptake scenario for net-zero in 2050<sup>1)</sup>

Total energy consumption, EJ



- ✓ **Fuel transition is under way:** ~50% of tonnage on orderbook is set to use alternative fuels; long-term fuel mix is dependent on supply of different fuels
- ✓ **LNG is still #1 alternative fuel:** 25% of tonnage ordered in LTM Q3/2023 is LNG fuelled
- ✓ **Methanol is gaining share:** ~60% of containerships contracted in 2023–2024 YTD are set to run on methanol
- ✓ **Ammonia will pick up in the longer run**
- ✓ **Hybrids, batteries, ESTs<sup>3)</sup> are growing:**
  - 37% of the tonnage on orderbook is fitted with at least 1 EST<sup>3)</sup>
  - 129 hybrid / full-electric 2 000+ GT vessels were ordered in LTM (compared to 99 in 2022 and 55 in 2019)

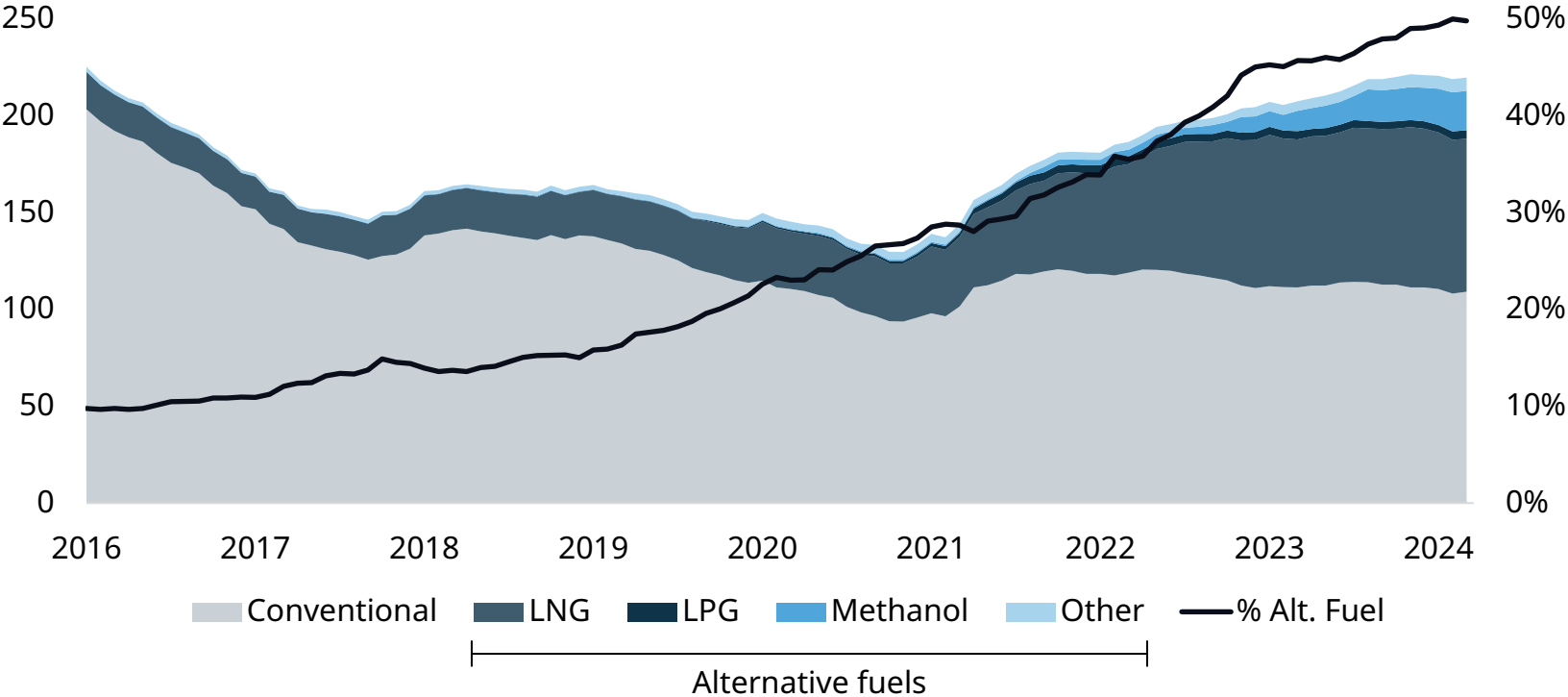
1) Source: DNV Maritime Forecast 2050; 2) HFO – Heavy Fuel Oil; LSFO – Low Sulphur Fuel Oil; MGO – Marine Gas Oil; MDO – Marine Diesel Oil; 3) Energy Saving Technology

# The regulatory changes impact maritime now: half of the total shipbuilding orderbook is set to run on alternative fuels

2023 saw the highest-ever alternative fuel capable vessel ordering, excluding gas carriers

## Alternative fuels uptake

Orderbook by fuel type, mGT<sup>1)</sup>



~50%

vessel GT ordered since 2022 is set to run on alternative fuels

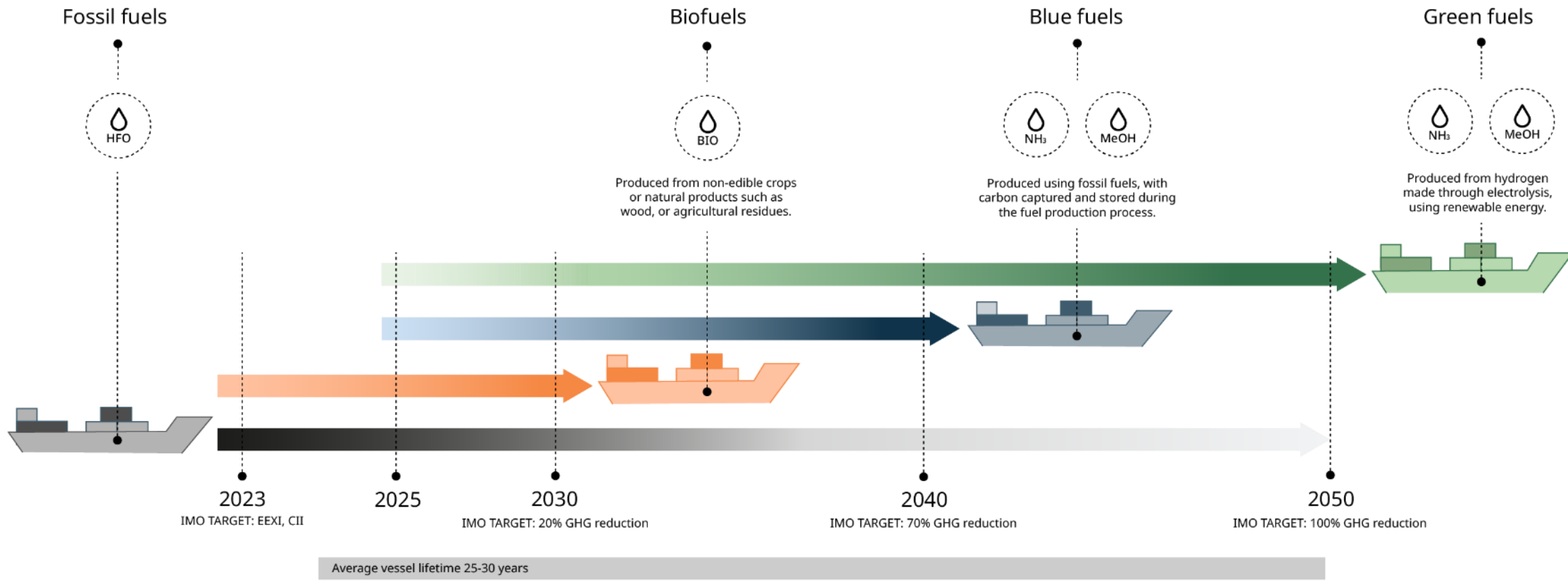
~60%

containerships contracted in 2023 - 2024 YTD are set to run on methanol

1) Source: Clarksons Research, March 2024; other includes ammonia, nuclear, ethane, hydrogen, biofuels, and battery/hybrid

# Sustainable fuels roadmap to 2050

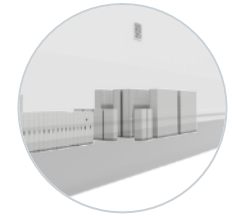
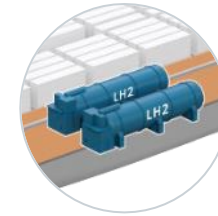
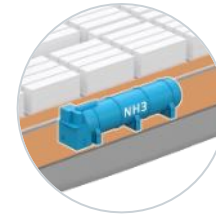
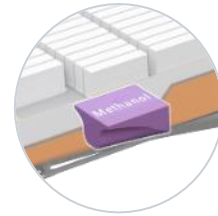
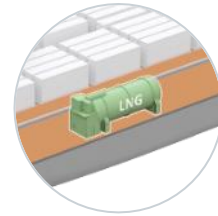
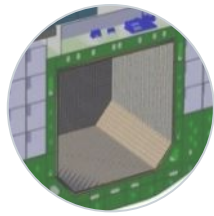
In Wärtsilä, alternative fuel-capable engines account for >60% MW ordered in 2023



Targets based on latest MEPC80 regulation (referring to Well-to-Wake emissions)

HFO: Heavy fuel oil. NH<sub>3</sub>: Ammonia. MeOH: Methanol

# Cost of emissions will close the price gap between fossil and sustainable fuels; fuel selection impacts the vessel structure



Fuel type	Low Sulphur Fuel Oil @ 20°C	Liquefied Natural Gas @ -162°C	Methanol @ 20°C	Ammonia @ -33°C	Liquid Hydrogen @ -253°C	Compressed Hydrogen @ 350bar	Marine Battery Rack
<b>Fuel price factor (per GJ)<sup>1)</sup></b>	1x	1.1x – 4.6x <sup>2)</sup>	2.6x – 5.5x <sup>3)</sup>	2.4x – 4.3x <sup>4)</sup>	3.6x – 4.6x <sup>4)</sup>	2.1x – 3.1x <sup>4)</sup>	2.0x – 5.3x <sup>8)</sup>
<b>Fuel price factor in 2035, incl. carbon tax<sup>1) 5)</sup></b>	1x	0.8x – 1.4 <sup>2)</sup>	0.8x – 1.6x <sup>3)</sup>	0.7x – 1.2x <sup>4)</sup>	1.2x – 1.5x <sup>4)</sup>	0.6x – 1.0x <sup>4)</sup>	0.8x – 2.0x <sup>8)</sup>
<b>Gross tank size factor<sup>6)</sup></b>	1x	1.7x – 2.4x <sup>7)</sup>	1.7x	3.9x	7.3x	19.5x	~40x (~20x potential)

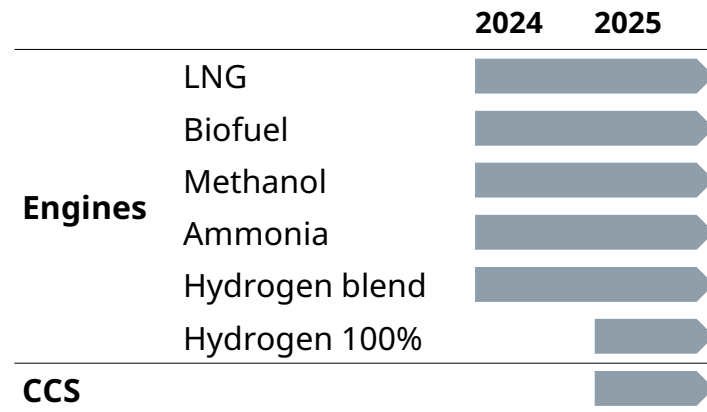
1) Fuel production cost estimate for 2025 and 2035; source: Maersk Mc-Kinney Møller Center for Zero Carbon Shipping – NavigaTE 2023; 2) Price range spans between fossil & electro- methane; 3) Price range spans between bio- & electro- methanol; 4) Price range spans between blue- & electro- ammonia/hydrogen; 5) Assuming 100% consumption subject to EU Fit-for-55, EU allowances at EUR 159/ton (source: Transport & Environment NGO); 6) Gross tank estimations based on Wärtsilä data; 7) 1.7x membrane tanks, 2.4x type C tanks; 8) Shore energy price EUR 0.1-0.27/kWh

# The alternative fuel ecosystem must continue to develop further to support the maritime green transition

## Engine technology

- Technology is readily available, with ~50% of the current vessel orderbook set to run on alternative fuels
- Wärtsilä leads in fuel flexibility and efficiency, having the industry's most comprehensive offering:

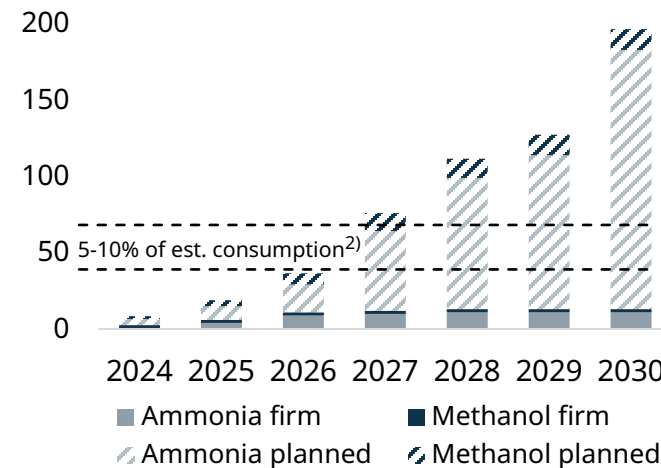
### Wärtsilä's alternative fuel roadmap



## Availability of fuels

- Alternative fuels are not yet available at the required scale
- Production is estimated to pick up, with planned capacity of sustainable methanol and ammonia reaching ~190 Mt by 2030<sup>1)</sup>:

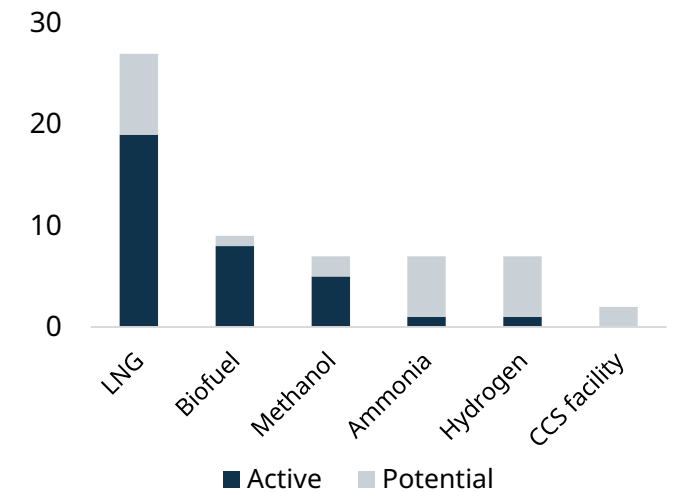
### Production of sust. methanol and ammonia, Mt



## Port infrastructure

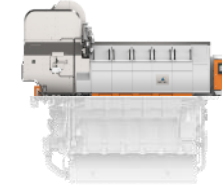
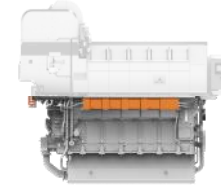
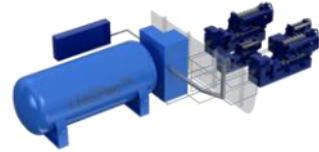
- Bunkering infrastructure is limited but developing rapidly; carbon capture and storage infrastructure is still lacking
- ~60% of the top 50 ports worldwide are planning to build alternative fuel bunkering<sup>3)</sup>:

### Alternative fuels bunkering in top 50 ports, no. ports



1) Source: DNV AFI, 2) global fleet would require an estimated ~600Mt of fuel to run solely on ammonia and methanol due to their lower energy content, 3) Source: Clarksons

# Our engines have built-in upgradability to future fuels, with significant part commonality between different fuel versions and a modular design



## LNG DF<sup>1)</sup> engine to run on:

### Fuel System

### Engine base

### Engine top

<ul style="list-style-type: none"> <li>▪ Bio/Synthetic diesel</li> </ul>	<ul style="list-style-type: none"> <li>▪ No changes</li> </ul>	<ul style="list-style-type: none"> <li>▪ No changes</li> </ul>	<ul style="list-style-type: none"> <li>▪ No changes</li> </ul>
<ul style="list-style-type: none"> <li>▪ Bio/Blue/Green methane</li> </ul>	<ul style="list-style-type: none"> <li>▪ No changes</li> </ul>	<ul style="list-style-type: none"> <li>▪ No changes</li> </ul>	<ul style="list-style-type: none"> <li>▪ No changes</li> </ul>
<ul style="list-style-type: none"> <li>▪ Ammonia</li> </ul>	<ul style="list-style-type: none"> <li>▪ Replace with AmmoniaPac</li> </ul>	<ul style="list-style-type: none"> <li>▪ No changes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Change fuel injection system and power pack<sup>2)</sup></li> </ul>
<ul style="list-style-type: none"> <li>▪ Methanol</li> </ul>	<ul style="list-style-type: none"> <li>▪ Replace with MethanolPac</li> </ul>	<ul style="list-style-type: none"> <li>▪ No changes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Change fuel injection system and power pack<sup>2)</sup></li> </ul>
<ul style="list-style-type: none"> <li>▪ Hydrogen blend<sup>3)</sup></li> </ul>	<ul style="list-style-type: none"> <li>▪ Move to alternative fuel handling system</li> </ul>	<ul style="list-style-type: none"> <li>▪ No changes</li> </ul>	<ul style="list-style-type: none"> <li>▪ No changes</li> </ul>

↓

Replacement of fuel handling and storage system has bigger impact in terms of CapEx, cargo space and vessel range

↓

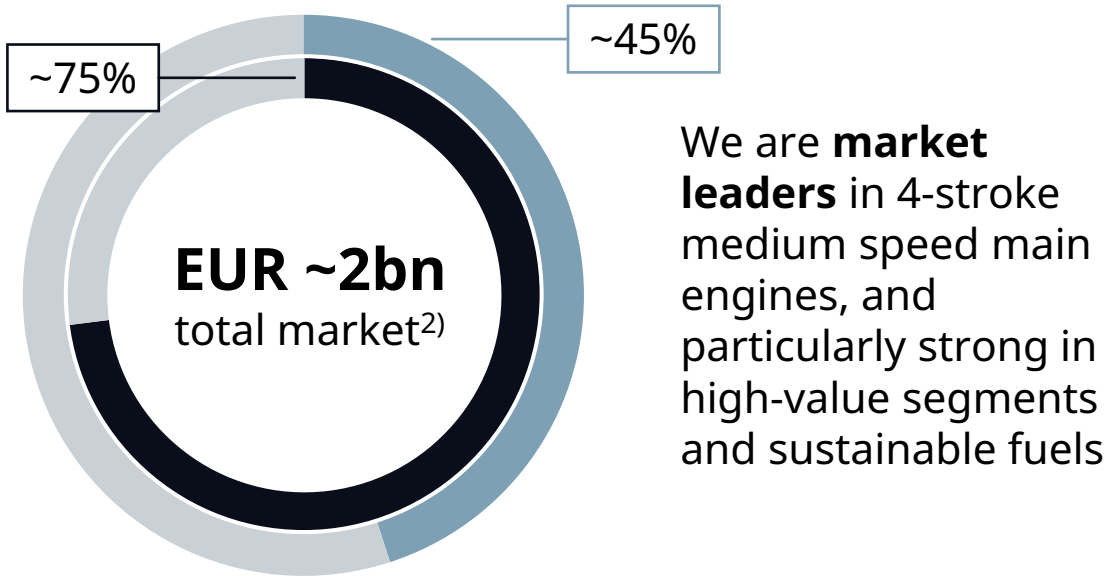
Upgrading a multi-fuel engine to a new fuel requires limited investment thanks to high modularity and part commonality

1) DF – Dual Fuel; 2) I.e., piston, cylinder liner, connecting rod; 3) Up to 15% on fuel volume

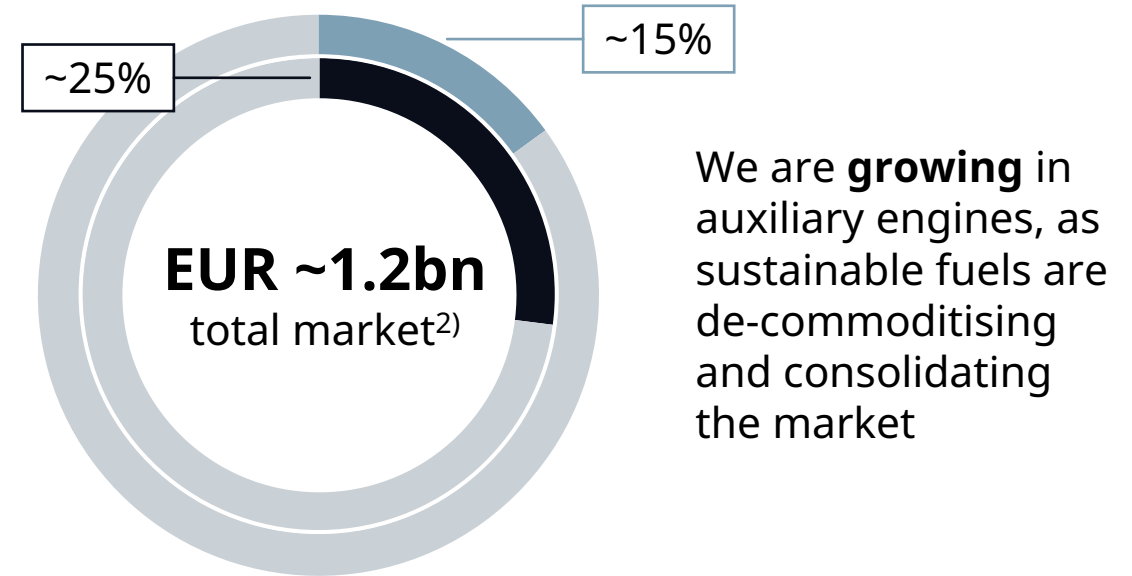


# Our market share is stronger on alternative fuel capable engines compared to diesel engines

4-stroke medium speed main engines market share<sup>1)</sup>



Auxiliary engines market share<sup>1)</sup>










● Outer circle: Wärtsilä total market share    ● Inner circle: Wärtsilä market share on alternative fuel engines

1) Wärtsilä estimates, MW; 2) Average 2024-2028, based on Clarksons March 2024 forecasts and internal models

# We focus on the most high-value, performance-driven segments

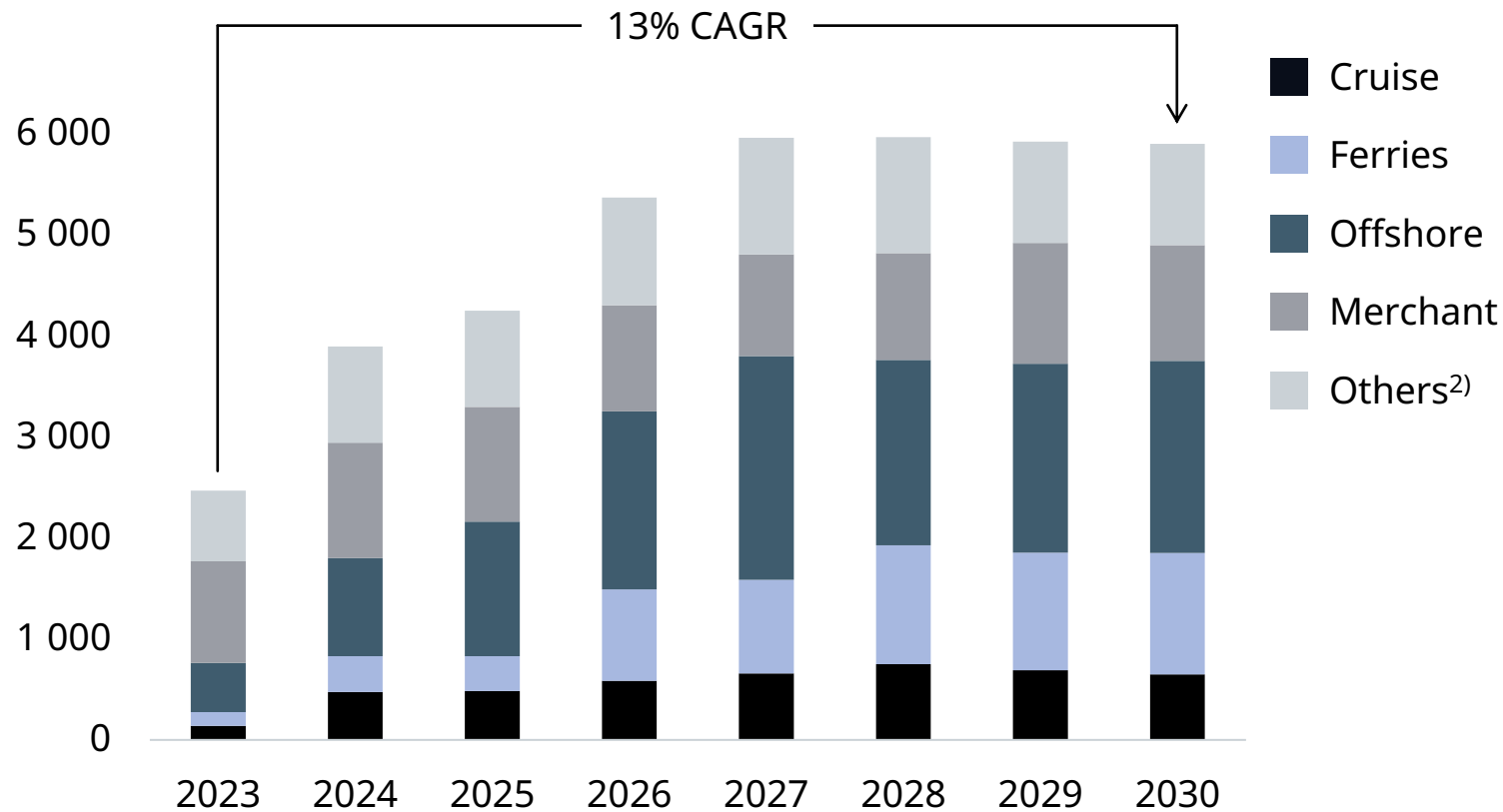
## Typical Wärtsilä Marine offering per vessel<sup>1)</sup>

	Cruise	Ferries	Offshore	Navy	Specials	Merchant	Hy-El merchant
							
<b>Engines / Hybrid<sup>1)</sup></b>	Diesel-Electric	Main Engines Aux Engines Hybrid System	Hybrid-Electric	Aux Engines	Main Engines	Aux Engines Main Engines <sup>5)</sup>	Hybrid-Electric
<b>Propulsion<sup>2)</sup></b>	Tunnel Thrusters	CPP or Waterjets	Steerable Thrusters Tunnel Thrusters	CPP, FPP or Waterjets	CPP or Steerable Thrusters Tunnel Thrusters	CPP Tunnel Thrusters EST	CPP Tunnel Thrusters EST
<b>Potential<sup>3)</sup></b>	EUR 15-40m	EUR 10-25m	EUR 5-15m	EUR 5-15m	EUR 5-15m	EUR 2-15m	EUR 25-30m
<b>% of Order Intake<sup>4)</sup></b>	~25%		~5%	~10%	~5%	~50%	-

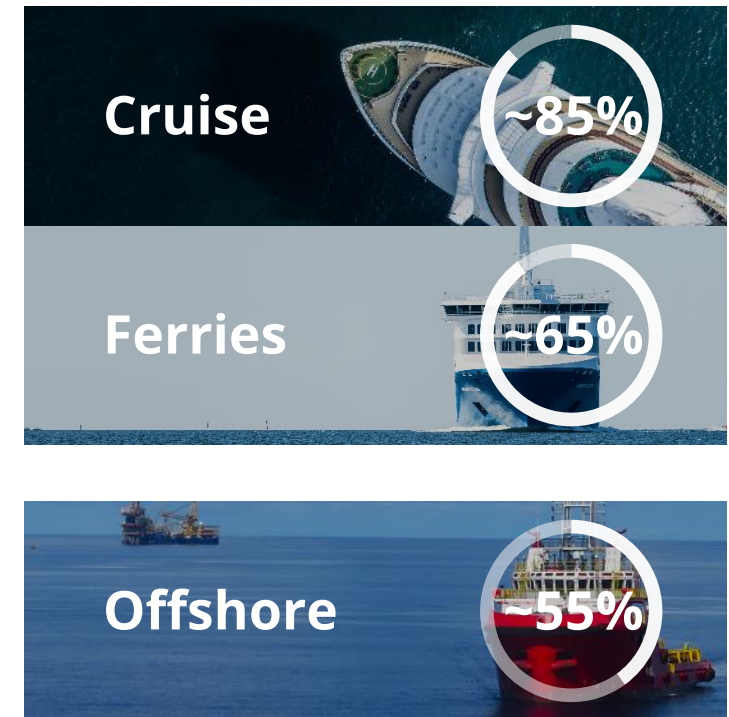
1) Non-exhaustive list; offering depends on vessel specific configuration and may vary substantially. 2) CPP/FPP = Controllable/Fixed Pitch Propeller; EST = Energy Saving Technology, e.g., gate rudder, EnergoProFin, EnergoFlow, EnergoPac; 3) Potential per shipset; it includes catalyst systems and electrical systems; carbon capture is not included, and could unlock additional EUR 2-8m potential; 4) Marine equipment order intake, 2023; ~5% in non-vessel markets, mainly simulation and ports; 2-stroke cargo order intake mainly from LNG carriers and containerships; 5) Predominantly 2-stroke main engines, 4-stroke main engines only on small vessels and coastal vessels

# Recovery in our key target segments will double the 4-stroke medium speed main engine addressable market by 2030 compared to 2023

Newbuild ordering of 4-stroke medium speed main engines, MW<sup>1)</sup>



Wärtsilä market share, MW<sup>3)</sup>

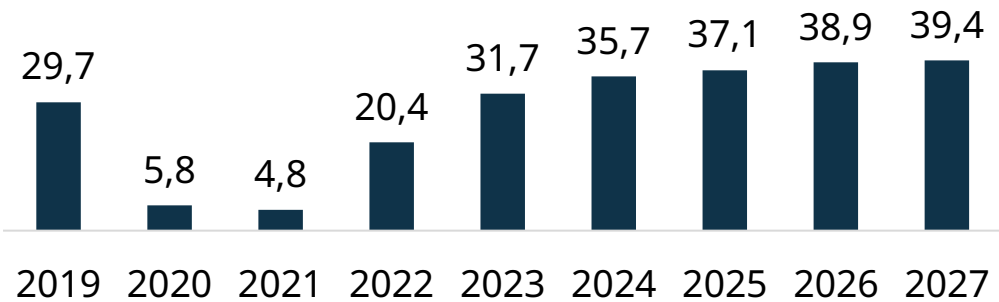


1) Source: Clarksons March 2024 forecasts; 2) Fishing, dredgers, support units, yachts, tugs, etc.; 3) Market share on 4-stroke main and auxiliary engines as per Q4 2023, Wärtsilä estimates, MW

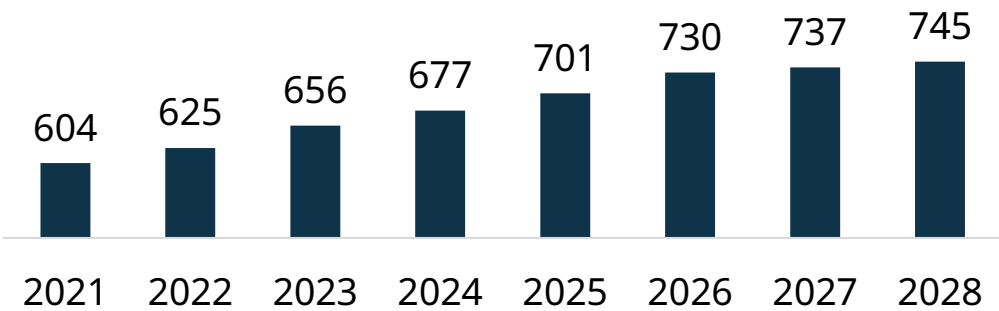
# Global cruise capacity is forecast to grow over 10% from 2024 to 2028



## Cruise passengers, million passengers



## Cruise capacity, 1000x lower berths<sup>1)</sup>



- ✓ Cruise travel reached 107% of 2019 levels in 2023, with 31.7 million passengers sailing; this compares to overall international tourism arrivals, which are 12% lower than 2019
- ✓ By 2027, cruise is forecast to grow to nearly 40 million passengers (+24% vs 2023)
- ✓ 60% of ships with delivery between 2023 and 2028 are set to run on LNG fuel
- ✓ Methanol is gaining traction, e.g., Celebrity Cruises new Edge Series ship will be equipped with Wärtsilä 46F methanol-ready engines

Source: CLIA, the state of the cruise industry 2024; 1) Lower berths indicate cruise capacity, assuming two passengers per stateroom

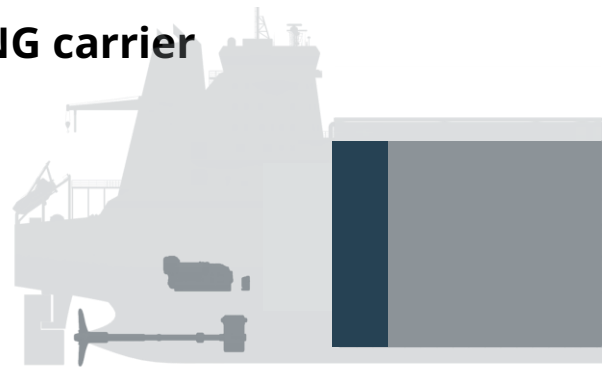
# Hybrid-Electric will challenge 2-stroke as prime-mover for LNG carriers, enabling higher efficiency and increased cargo capacity

**Wärtsilä Hybrid-Electric LNG carrier**

~185k cbm capacity

3x 4-stroke spark-gas gensets  
2x 4-stroke dual fuel gensets  
2 MWh batteries

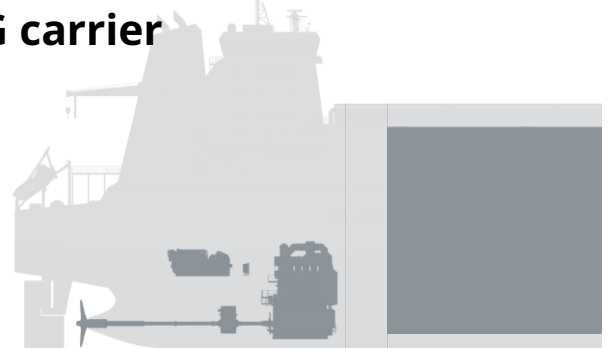
■ Extra cargo capacity



**Conventional 2-stroke LNG carrier**

174k cbm capacity

2x 2-stroke main engines  
4x 4-stroke aux engines

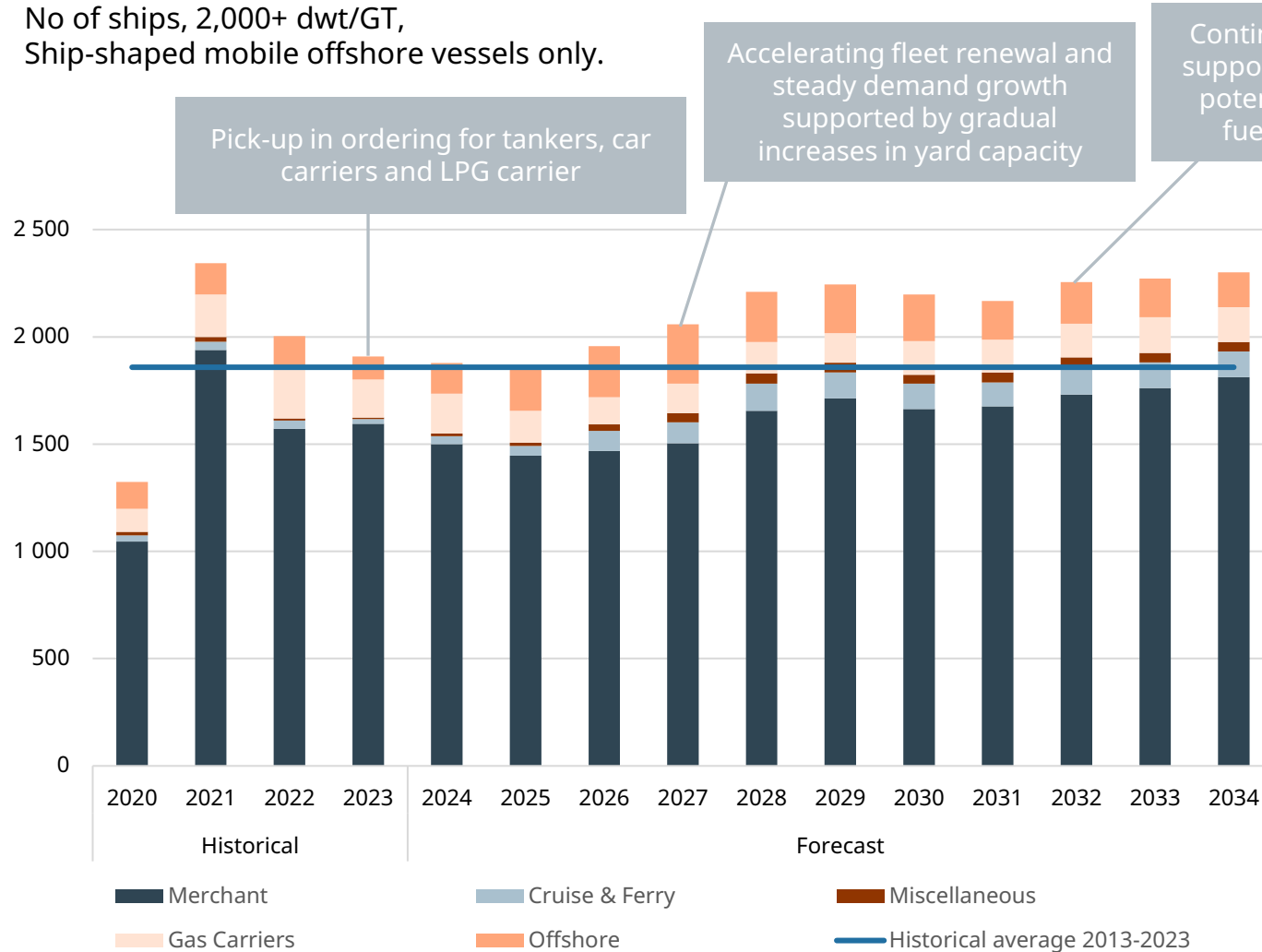


- ✓ **Launched at Gastech in 2023**  
with Shell and Hudong-Zhonghua Shipbuilding
- ✓ **6% extra cargo capacity**  
with same ship dimensions
- ✓ **>10% lower fuel consumption and emissions**  
with optimal efficiency across all speeds
- ✓ **20% lower maintenance costs**  
with fewer engine running hours
- ✓ **Superior redundancy, uptime, flexibility**  
as it can operate with fewer engines
- ✓ **Future proof**  
as it can integrate alternative power sources

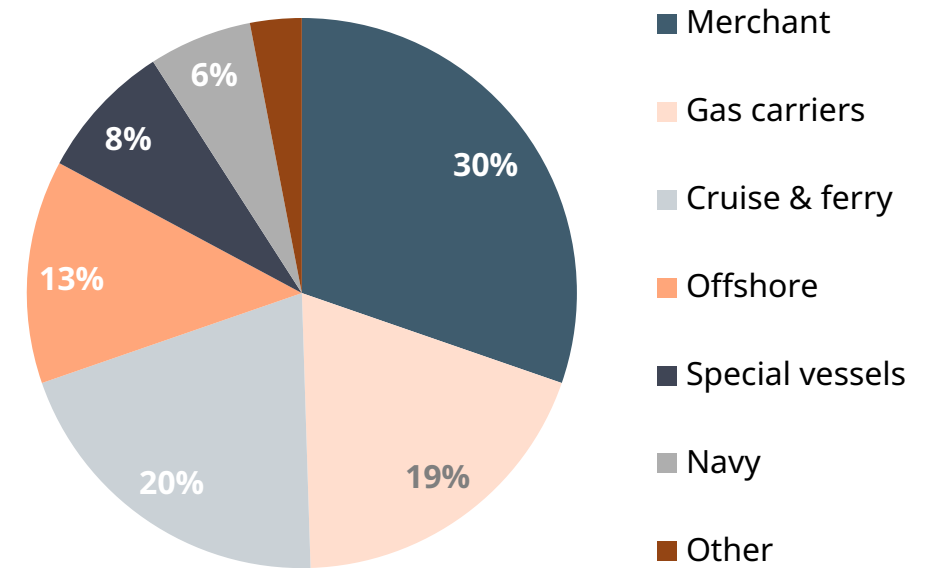
Values refer to a comparison with a conventional 174k cbm LNGC (2x 2-stroke low pressure DF main engines, 4x 34DF 4-stroke aux engines), calculated on full year cycle real operating profile with average speed of 15 knots in laden and 13.5 knots in ballast; cargo increase confirmed by Hanwa Ocean and Hudong-Zhonghua shipyards in their general arrangements and outline specifications

# Vessel contracting forecast

No of ships, 2,000+ dwt/GT,  
Ship-shaped mobile offshore vessels only.






## Wärtsilä's order intake in Marine businesses by customer segment in 2023



Includes both orders for equipment and services. The vessel types included in Merchant segment are bulk carriers, cargo-, container-, and RoRo vessels as well as tankers. The vessel types included in Special vessel segment are dredgers, fishing-, inland-, and service vessels as well as tugs.

# Services is more than 60% of Marine sales

## We have 3 distinct revenue streams covering customer maintenance

	Transactional	Agreements	Retrofit Projects
% services sales <sup>1)</sup>	 <p>~60%</p>	 <p>~30%</p>	 <p>~10%</p>
Growth drivers	<p>Installed base growth</p>	<p>Increasing ship complexity Increasing cost of emissions Increasing cost of fuel</p>	<p>New regulations Increasing cost of emissions Increasing cost of fuel</p>
Focus areas	<p>Customer service Service offering Long-tail customers</p>	<p>New outcome-based models Service level differentiation Digital tools and services</p>	<p>New retrofit solutions Consultative sales through Decarbonisation Services</p>

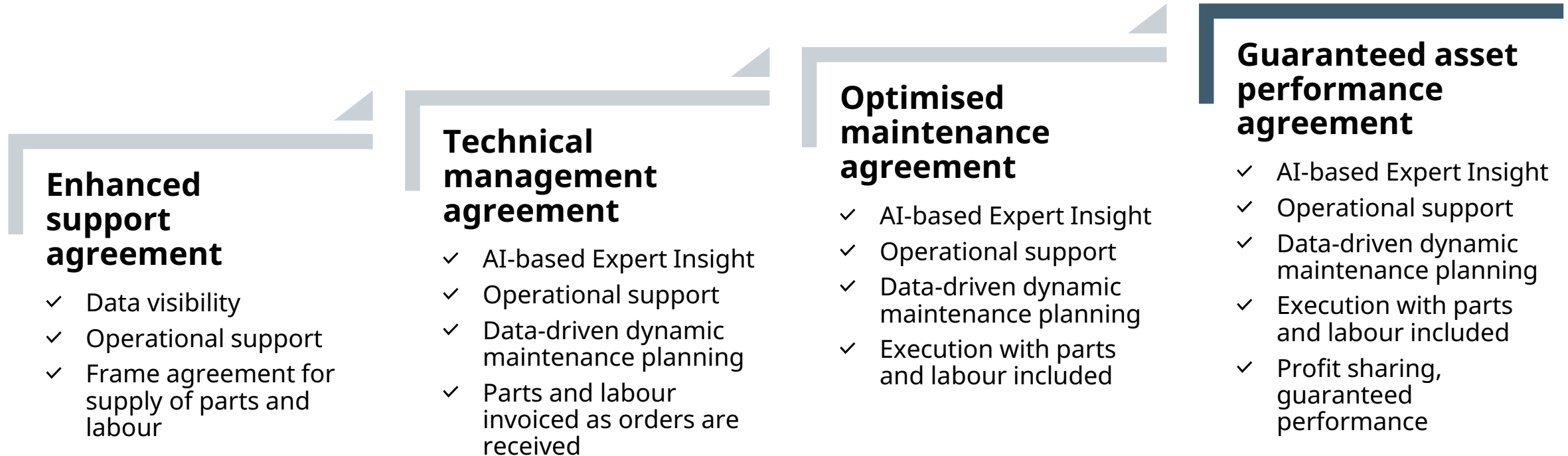


1) LTM Q3/2023; split between Transactional and Agreements based on services net sales to vessels not covered / covered by agreement

# We increase sales and profits by moving up our service value ladder

From 1x<sup>1)</sup>

Up to 2-3x<sup>1)</sup>

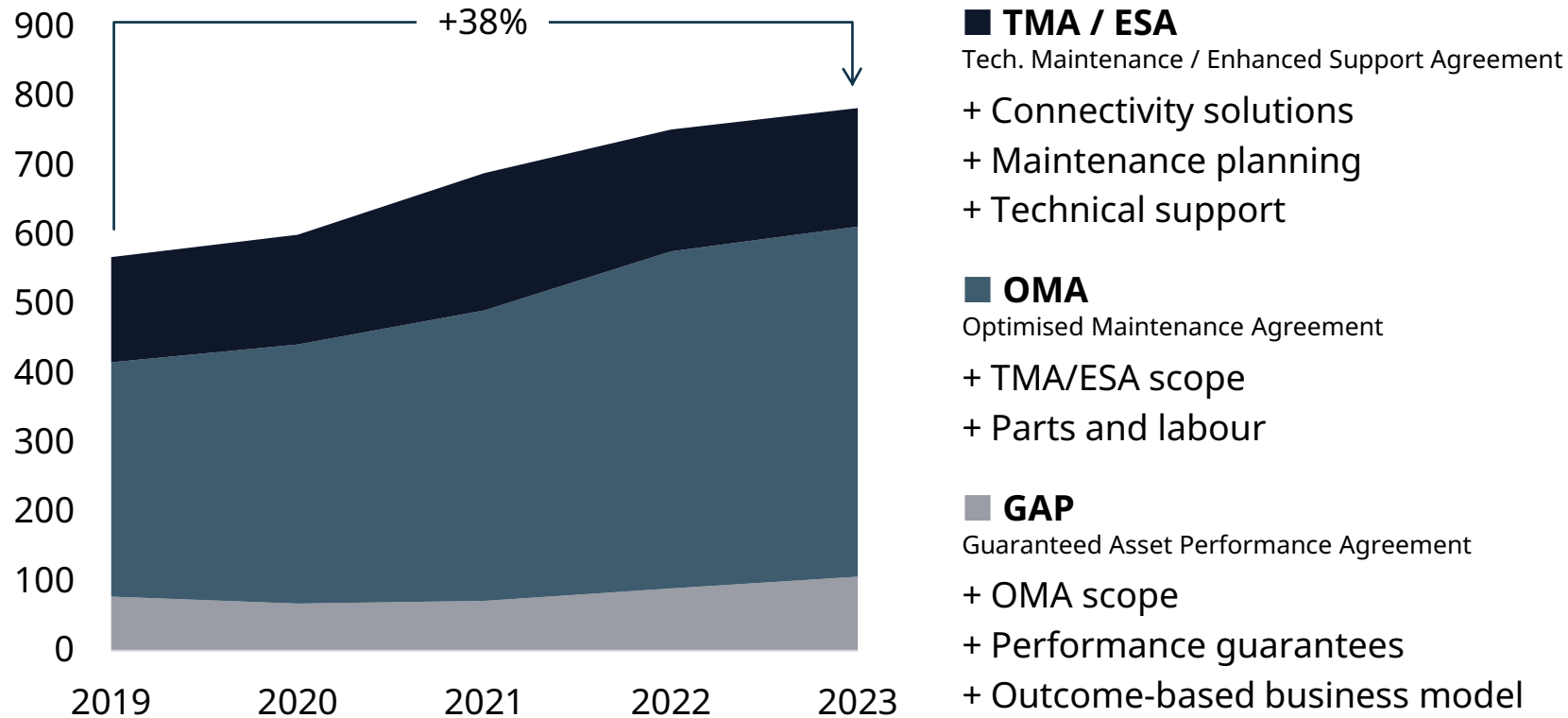


1) Sales EUR/kW relative to transactional



# Installations under agreement grew by 38% since 2019; healthy 90% renewal rate

Number of vessels under agreement, by agreement scope<sup>1)</sup>



**26%**

growth in sales to agreement vessels vs pre-Covid

**29%**

of our engine installed base is under agreement<sup>3)</sup>

**EUR >60m**

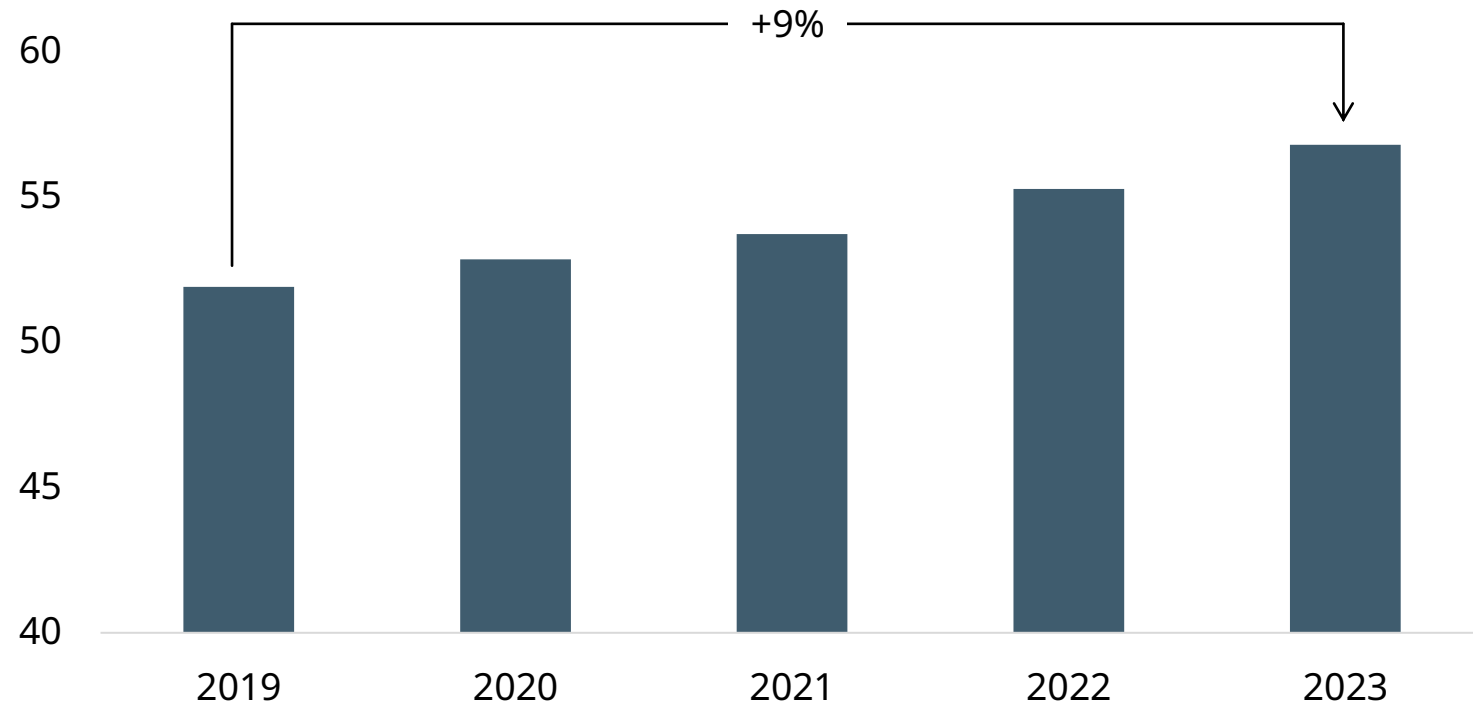
fuel savings on a cruise fleet over a 6-year contract period

1) Including vessels with 4-strokes, 2-strokes or exhaust treatment under active agreement; 3) Excluding QuantiParts

# Our installed base generates revenues during over 30 years; it grew by 9% over 2019-23

## Marine 4-stroke installed base development

Marine 4-stroke installed base, GW<sup>1)</sup>



1) Based on 4-stroke lifecycle sales in 2019-2023, excluding Quantiparts

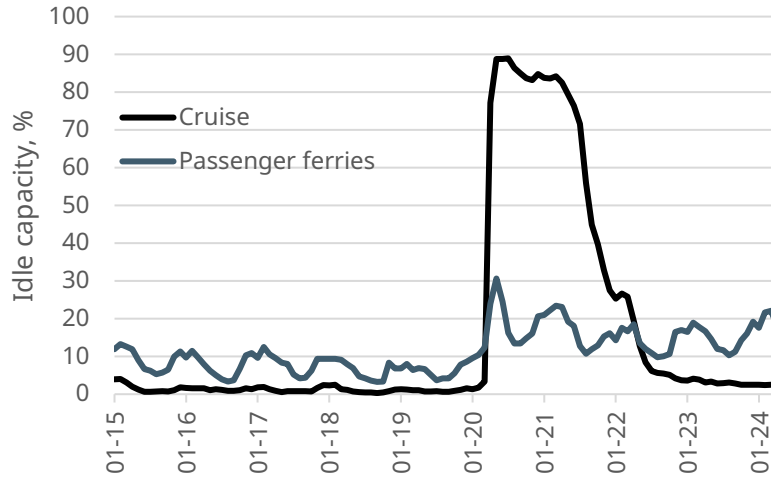
**>3,000**  
customers groups buy from us at least once a year

**+9%**  
4-stroke engine installed base growth since 2019

**+7%**  
number of buying customer growth since 2019

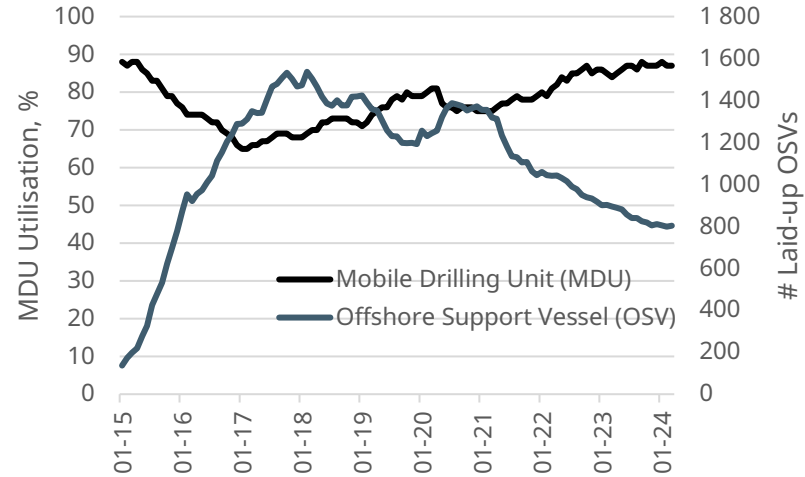
# Vessel utilisation rates driving Wärtsilä's service business

## Cruise and passenger ferries



- Growth in the cruise fleet capacity continues to support cruise lines' long-term growth ambitions, while strong demand for cruises have led to onboard load factors and idle capacity recovering to pre-Covid levels.
- Active ferry capacity is following seasonal utilisation patterns, while key ferry operators have reported of improved earnings and recovering passenger volumes.

## Offshore



- Mobile Drilling Unit (MDU) utilisation rates are expected to reach 91% by the end of 2024, up from current 87% with utilisation supported by continued demand and limited supply of assets.
- The pool of laid-up OSVs is expected to decline by 9% in 2024 as demand for OSVs continues to improve.


Using slow steaming to manage active fleet capacity and/or to limit emissions will require more active capacity on the water, driving up the utilisation rate of existing fleet and eventually lead to demand for further vessel capacity, leading to higher demand for services

# Tightening regulations and increasing fuel and emission cost will boost demand for retrofits

Total investments in retrofits are estimated to be EUR 15-20bn over the next decade<sup>1)</sup>

<b>Propulsion efficiency upgrades</b>	<b>Alternative fuel conversions</b>	<b>Radical power derating</b>	<b>Electrification projects</b>
Propulsion efficiency improvements, e.g., OptiDesign, EnergoFlow, EnergyProFin <sup>3)</sup>	Engine retrofits to run on alternative fuels on top of conventional diesel	2-stroke power output reduction to optimise efficiency, fuel consumption and emissions at lower speeds	Electrical system <sup>4)</sup> upgrade, including hybrids and shaft generators to improve OpEx, emissions, safety
<b>700+</b> vessels contracted	<b>10+</b> vessels contracted	<b>30+</b> vessels contracted	<b>30+</b> vessels delivered <sup>5)</sup>
<b>EUR 20k-1m</b> per shipset	<b>EUR 3-8m</b> per shipset	<b>EUR 5-8m</b> per shipset	<b>EUR 3-8m</b> per shipset

1) Source: Clarksons, incl. ESTs and engines, excl. hybrids and offshore; 2) CII (Carbon Intensity Indicator) applies to cargo, RoPax, cruise ships >5 000 GT (with some exceptions); source: Wärtsilä CII tool, correction factors excluded, ships with D or E rating considered as non-compliant; 3) OptiDesign: optimised propeller for actual operating profile; EnergoFlow: pre-swirl stator; EnergyProFin: propeller cap; OptiDesign, EnergoFlow, EnergyProFin can be sold both combined and as stand-alone; 4) E.g., Energy storage system, power distribution, energy management system; 5) Hybrid upgrades



**53%**  
of the fleet is not CII compliant in 2024<sup>2)</sup>

**79%**  
of the existing fleet will not be CII compliant in 2028 if no action is taken<sup>2)</sup>

# Onboard Carbon Capture and Storage (CCS) allows to capture >70% of the CO<sub>2</sub> generated onboard

Onboard CCS can unlock EUR ~10bn business in the next 10 years<sup>1)</sup>

- ✓ Applicable to all carbon-based fuels, vessels types and sizes
- ✓ Captured CO<sub>2</sub> is stored onboard for discharge at port reception facility
- ✓ At our research centre and test facility in Moss, Norway, we simulate vessel installations of onboard carbon capture:
  - Operated for >2 years
  - CO<sub>2</sub> capture capacity: 10 tons/day
  - CO<sub>2</sub> capture rate: ~70%
- ✓ First full-scale system operational on LPG carrier “Clipper Eris” in Q4 2024
- ✓ Commercial release in 2025



1) Newbuild and retrofits, mainly merchant 2-stroke, dependent on speed of regulation, CO<sub>2</sub> tax incentives, development of carbon capture and storage infrastructure, price spread development between fossil and green fuels

# Strong growth opportunities in marine based on technology leadership, moving up the service value ladder, and favorable vessel contracting mix

	Equipment		Services	
<b>Addressable market</b>	⊕ ⊕ ⊕	Favorable vessel contracting mix	⊕ ⊕ ⊕	Decarbonisation-driven retrofits  ⊕ Growing installed base
<b>Market share</b>	⊕ ⊕	Decarbonisation: uptake of alternative fuels and emission reduction technology	⊕ ⊕	Moving up the service value ladder

# Energy highlights



# Significant value creation opportunity – improving performance and capturing growth

## Perform – on track to deliver our targets

- Driving performance in new build through **improved risk / reward**
- Continued **strong profitability in services** with a solid foundation for growth – Moving up the service value ladder
- Driving profitability in Energy Storage & Optimisation through **increasing value add in our products**
- Achieving **positive comparable operating result in Energy Storage & Optimisation**

## Transform – growth opportunity in Engine Power Plants

- **Thermal balancing** addressable market is expected to **grow 19% p.a.** between 2022-2030
- Wärtsilä is the **global market leader in engine power plants** with superior balancing capabilities vs. gas turbines
- **Capability to convert to future fuels** key for customers to avoid risk of stranded assets

## Transform – growth opportunity in Energy Storage & Optimisation

- **Energy storage addressable market** is expected to **grow 17% p.a.** between 2022-2030
- Wärtsilä is a **top 5 global leader** in energy storage
- **Differentiated** by project execution excellence, safety, reliability, and a fully integrated design
- **Strategic review** now started



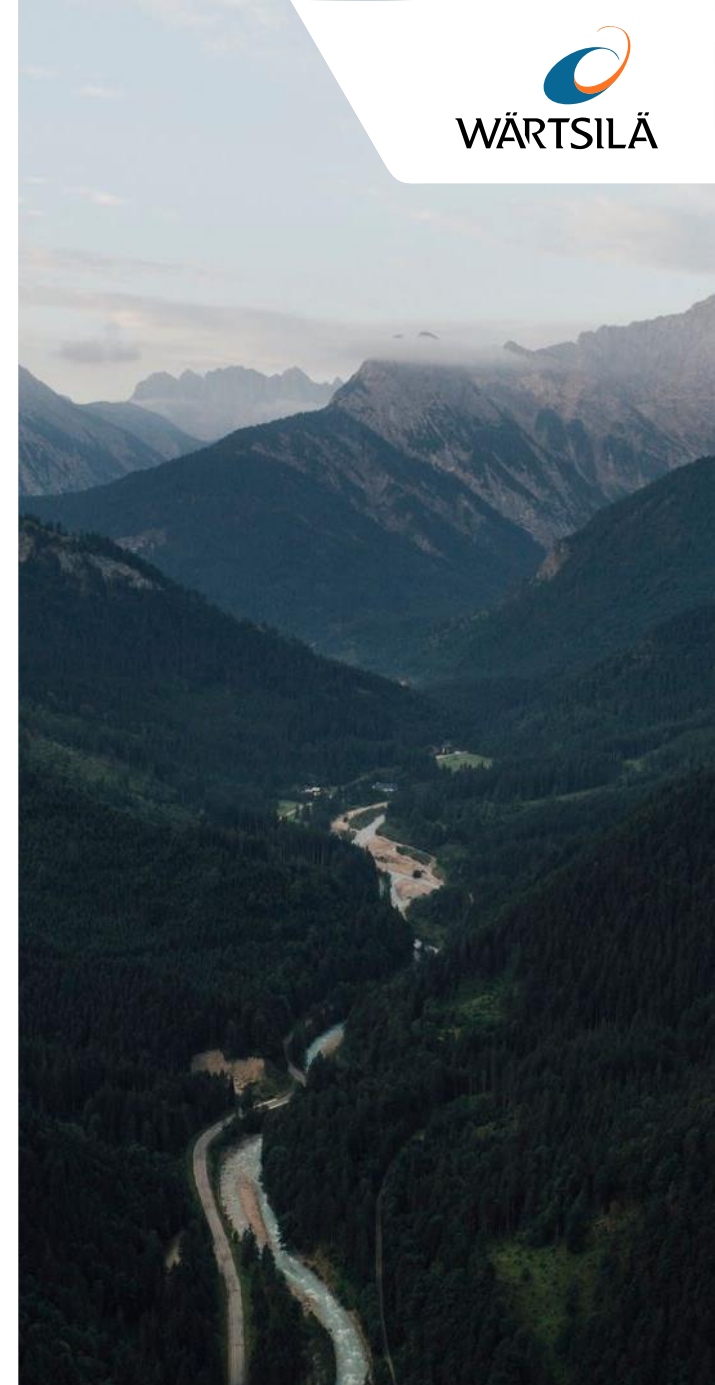
# Actions taken to improve new build profitability and achieve better risk / reward

## Organisation, team & governance

- **New organisation structure** with three global Business Units with P&L responsibility
- Significant changes in **Energy management & leadership**
- Energy has implemented **new governance**:
  - Updated sales-to-order processes to focus on **profitability** and a less volatile business
  - **Sales and operations planning** is regularly executed to improve productivity

## Offering & risk management

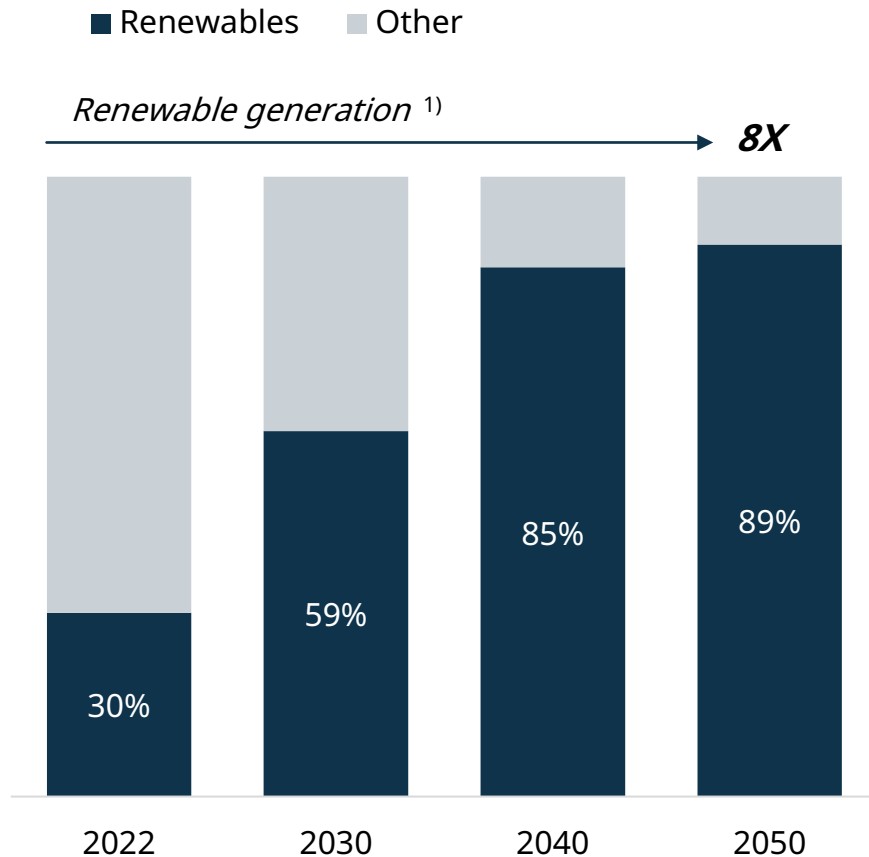
- Energy has **EEQ** (extended equipment supply) as **the preferred offering**, EPC (engineering, procurement and construction) is only considered in selected markets
- Going into 2024 **more than 80% of the order book is equipment orders**, compared to 40% going into 2022
- Rebalance in risk appetite leads to **stronger order book risk/reward profile for 2024 and onwards**



# As the renewable energy transition accelerates, balancing solutions are key enablers for the transition

## Share of renewables in global energy generation

## Technology disruption in the energy sector



**Renewables becoming main source of power**



**Gradual replacement of coal**



**Increased need for balancing solutions**



**Development and increasing use of sustainable fuels – Being enabled for future fuels avoids stranded assets**



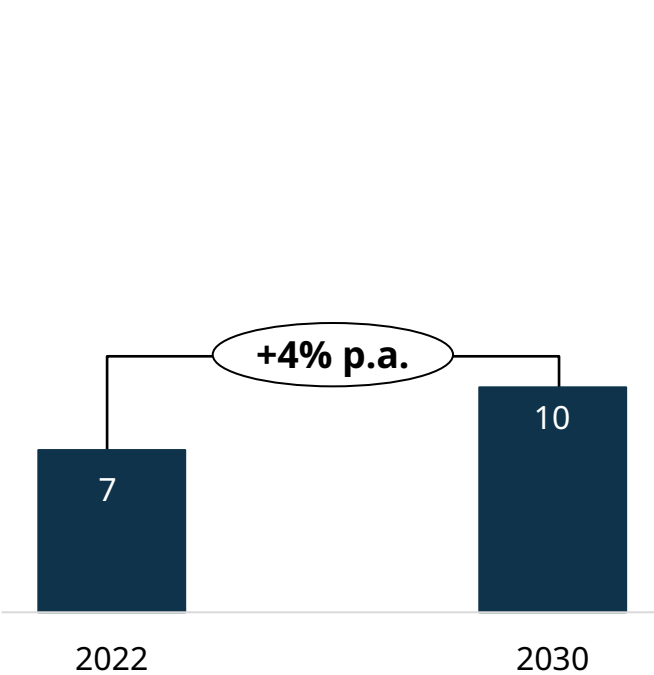
**Power systems becoming increasingly more complex**

1) IEA World Energy Outlook 2023 (Net Zero Emissions scenario)

# Thermal balancer market expected to grow ~20% per year – the baseload market outlook remains stable

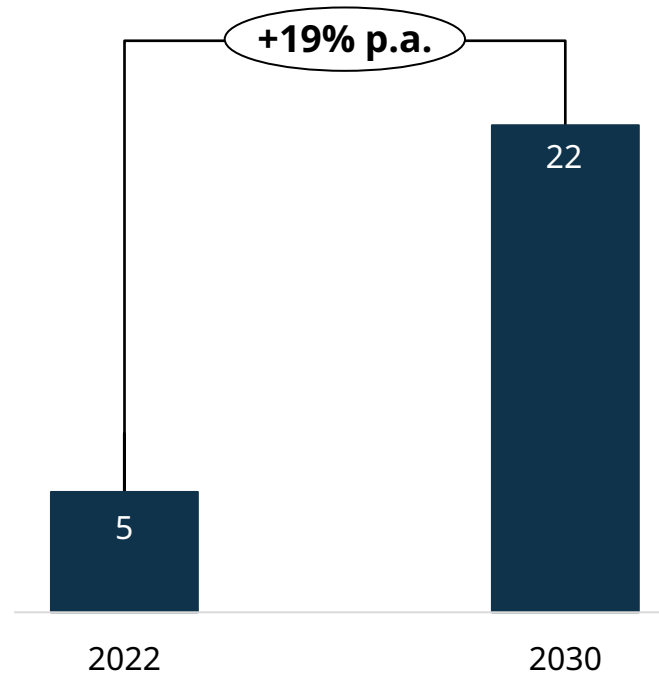
## Engine power plant - baseload

Addressable annual market (GW)



## Engine power plant - balancers

Addressable annual market (GW) <sup>1)</sup>



## Outlook

- The transition towards renewables is the driving force behind demand for thermal balancing
- We see large balancing market potential e.g. in North America and Europe
- The role of gas as a transition fuel is essential for a secure transition, as highlighted by the IEA
- Future fuels will play an important role, a credible roadmap is essential

1) Forecast based on BloombergNEF forecast on wind and solar capacity additions, and estimated share of balancing capacity compared to renewables growth

# Engine power plants are in a strong position as the balancing market grows. Power system knowledge makes Wärtsilä the go-to partner for capacity planning

## Engines superior to Gas Turbines for balancing

- **Faster start up** and continuous **ramping** for renewables
- **Cycling** several times per day with **no cost impact**
- **High efficiency** due to multiple modular units
- **Catching price spikes** and avoiding negative prices

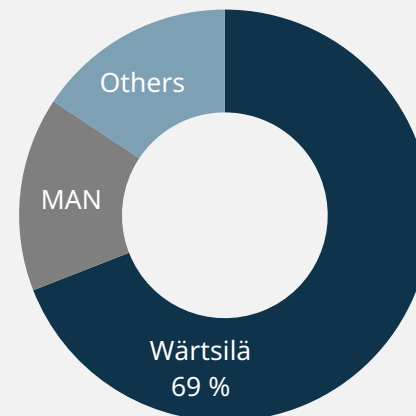
## Modelling supports Wärtsilä go to market approach

- We have modelled >190 countries and systems worldwide
- Transparent modelling shows value of balancing with engines
- Shift to net zero energy feasible with existing technology

## Wärtsilä is clear market leader in engine power plants

- Clear market lead in engine power plants with 50-70% market share
- **Technology leader** in new green fuels and performance-based services
- **Proactively develops** new engine markets, competing with gas turbines

Engine market shares <sup>1)</sup>



1) >5MW units, LTM Q2/2023. Based on public and Wärtsilä data

## Wärtsilä in strong position as thermal balancing market grows

- Balancing market expected to grow in key regions <sup>2)</sup>

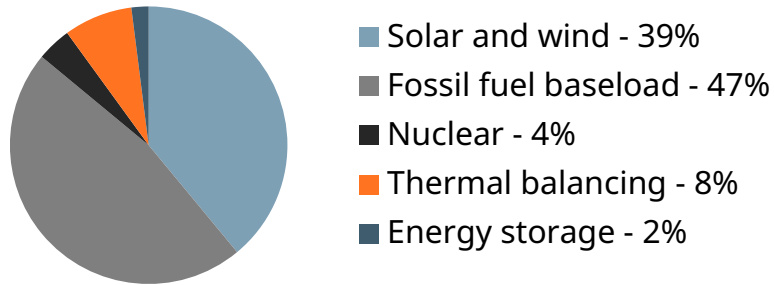
	2027 (GW)	5-year CAGR
US	3.6	19%
Australia	0.7	
Europe	5.0	
India	1.7	

- Additional potential in markets like Brazil, Argentina, China, Japan and Vietnam

2) Based on BloombergNEF ETS and Wärtsilä data

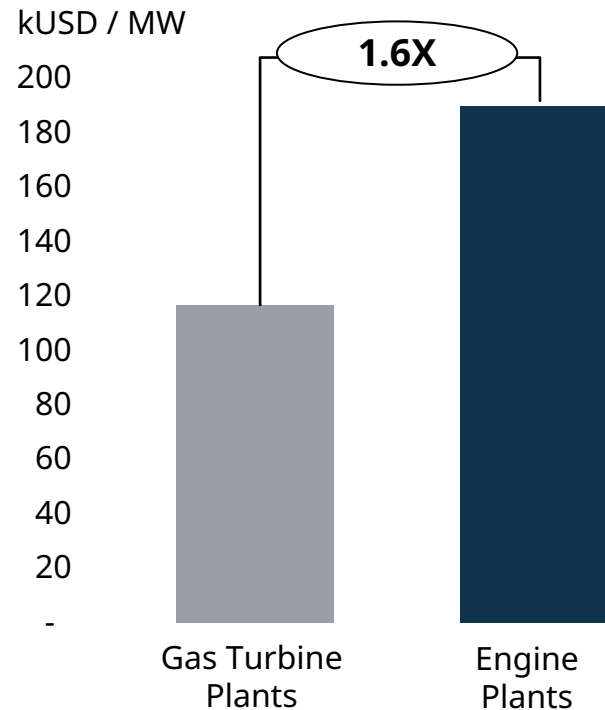
# Case Texas shows future trends. Increasing renewables creates need for balancing with engines outperforming competing technologies

30 million population with 133 GW of installed power (system size equal to France)



- 7% in annual growth of thermal balancing the last 5 years with expected continued growth
- Growing regulatory support for balancing in Texas
- Wärtsilä installed based (and growing):
  - 1 GW of thermal balancing
  - 1.2 GWh of energy storage

1.6X higher<sup>1</sup> real time market revenue potential for engines vs. gas turbines



## Texas as a proofpoint for thermal balancing

- High amount of renewables
- Granular price signals
- Policy support for balancing

Similar conditions forming in:

- Midwestern USA (SPP and MISO)\*,
- Australia
- Europe

Source: S&P Capital IQ Pro, ERCOT (September 2023 data), 1) ERCOT's Security Constrained Economic Dispatch (SCED) data – Wärtsilä study. Data based on average of 2 Aeroderivative gas turbine plants and 2 Wärtsilä engine plants for the full year 2022

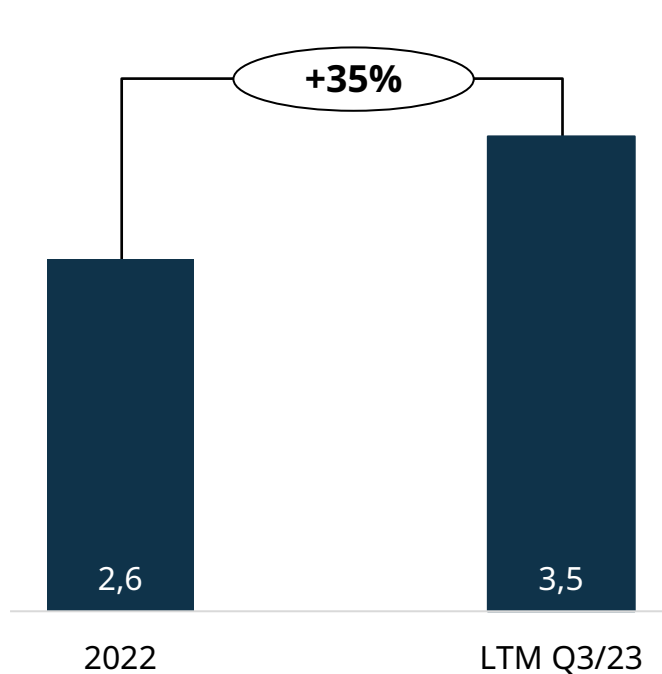
\*SPP = Southwest Power Pool

\*MISO = Midcontinent Independent System Operator

# Energy storage growth outlook remains strong

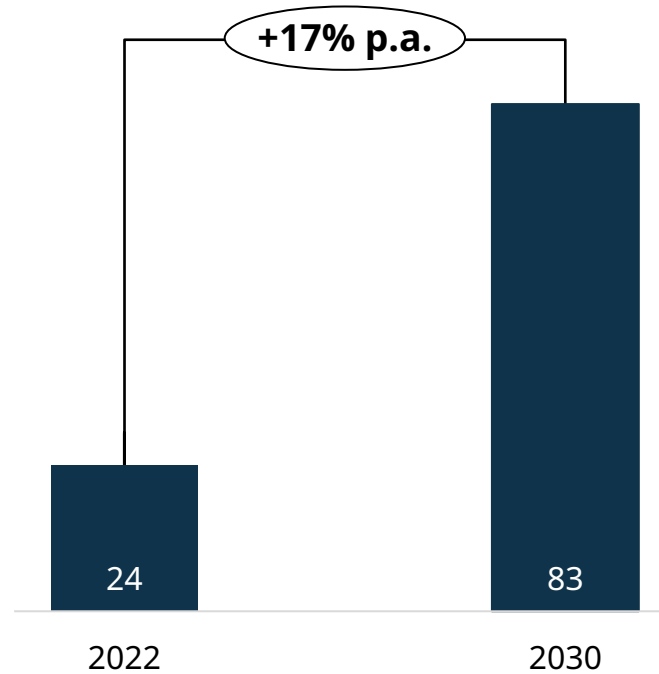
## Order intake

Order intake (GWh)



## Market outlook

Addressable annual market (GWh) <sup>1)</sup>



## Outlook

- Focus on profitable growth. Maintain **top 5** market position
- **Strong new build sales growth** expected, driven by market demand
- **>11 GWh** energy storage capacity delivered, awarded, contracted or in deployment
- **Complexity drives demand** for advanced energy management systems

1) Adapted from BloombergNEF Energy storage market outlook 1H2023. Addressable market excluding certain geographical markets and residential and commercial storage

# Energy Storage has grown 3X<sup>1)</sup> since 2021 and is now profitable – key focus on commercial approach and differentiated offering

## Selective commercial approach

- Focusing on growth of utility scale storage in selected geographies
- Systematic project selection to drive profitability

## Differentiated offering & approach

- Excellence in project execution, a reliable and leading storage player globally
- Industry leading design and safety record with outstanding performance in fire safety
- Fully integrated energy storage solution with modular and scalable design
- Leading GEMS energy management system with optimisation and grid integration capabilities

## Cost competitiveness

- Hardware and software development for competitive product cost
- Multi-sourcing and active supply chain management to meet regional requirements

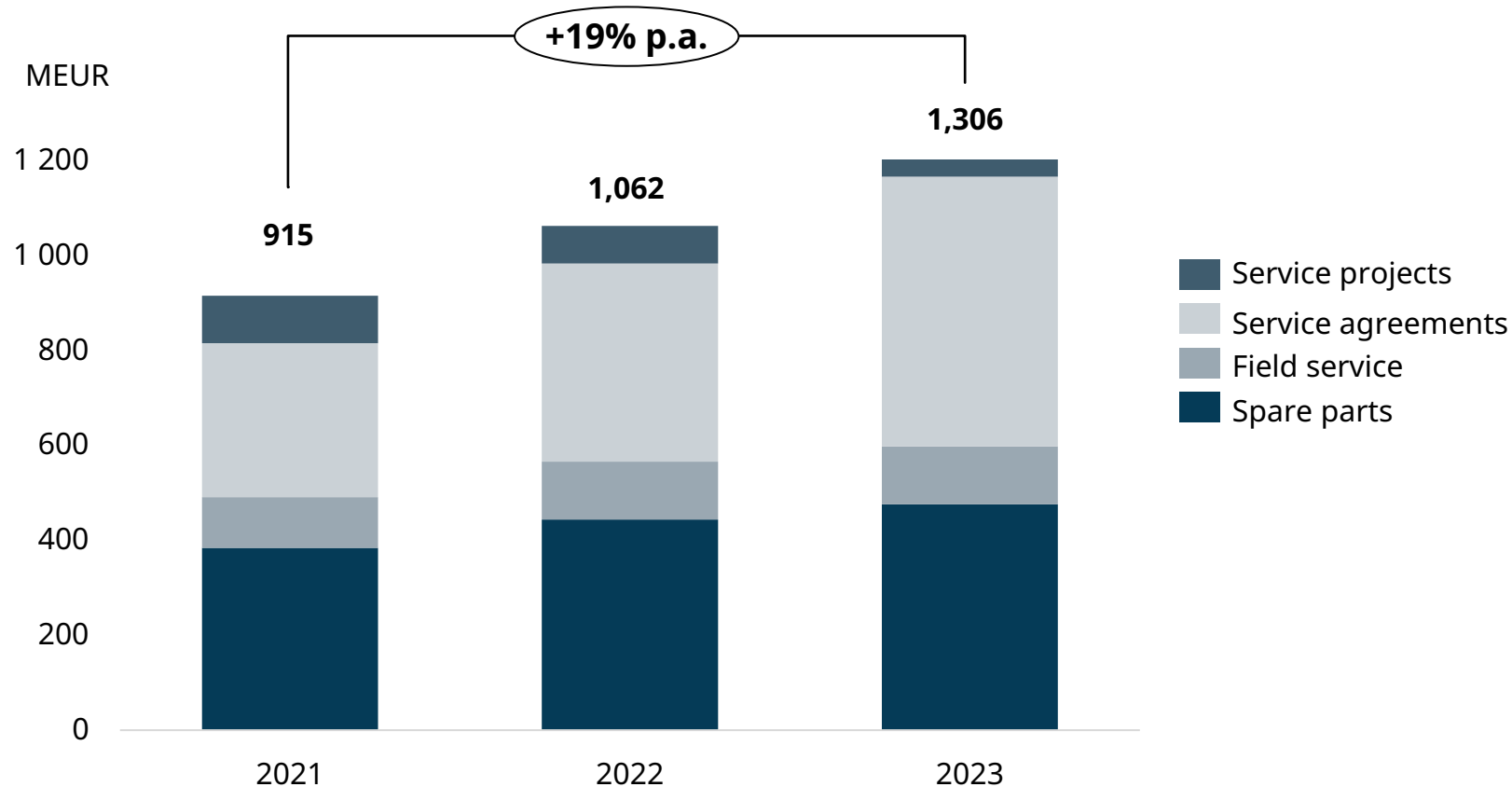
1) Net Sales LTM Q3 2023 vs. 2021



Source: CMD 2023

# Continued good profitability in services with a solid foundation for future growth

## Service order intake, MEUR



## Energy services – growth drivers

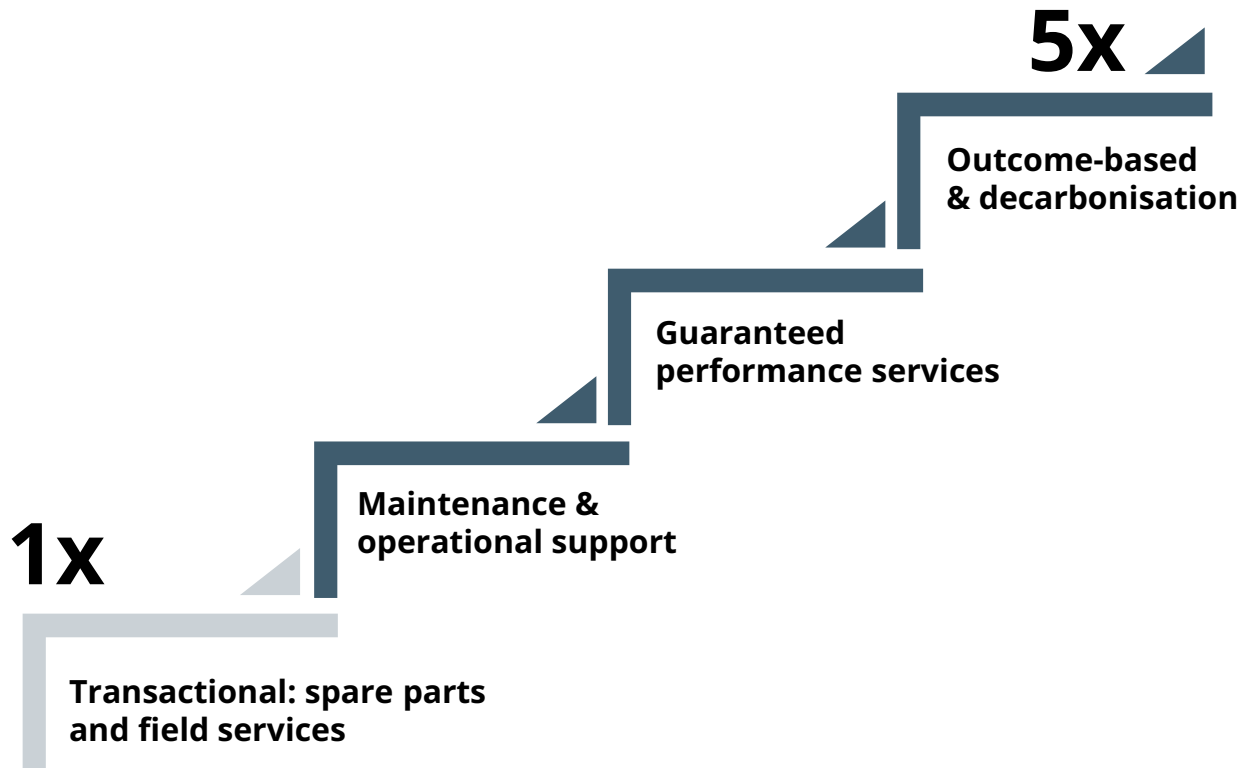
- Growing installed base over time
- Stable total operating hours
- Increasing agreement coverage
- Upgrades & fuel conversion demand
- Future growth potential in decarbonisation services and outcome-based agreements



# We increase sales, profitability and customer satisfaction by moving up the service value ladder

## Wärtsilä service value ladder

Sales EUR/kW relative to transactional



## Continuous growth in agreement coverage

- Securing service agreements for **new power plants**
- Maintaining **high renewal rate** for existing agreements: >90% renewal rate shows high customer satisfaction
- Increasing the **share of agreement customers** in our installed base: 29% agreement coverage and ~18GW under agreement<sup>1)</sup>, 3,4GW added since 2021

## Moving customers up the service value ladder

- Local presence, global operations, and investments in data & digital solutions enable us to meet high customer expectations
- Higher satisfaction scores for agreement customers that are higher up the value ladder
- Portfolio of **agreements with performance guarantees** is growing: Total 7GW with ~2GW added since 2021

1) Includes agreements covering both installed assets and assets to be installed in the future

# Future performance will be driven by strong sales growth and service volumes, continuous improvement, and a future-proof solution portfolio

## Recent actions:

- ✓ **New organisational structure and processes:** Updated sales-to-order processes and Business Units with P&L responsibility
- ✓ **Rebalance in risk appetite:** EEQ as the preferred offering, EPC only considered in selected markets
- ✓ **Stronger risk / reward profile:** Legacy projects have been concluded

### New build margins

- ✓ New organisation & governance
- ✓ Stronger risk management
- ✓ Operational leverage from growth

### Continuous improvement

- ✓ Lean operations and flow efficiency
- ✓ Predictive and autonomous operations
- ✓ Cost indexation & active pricing

### New build sales

- ✓ Strong thermal balancing growth
- ✓ Strong energy storage growth
- ✓ Future-proofed portfolio for sustainable fuels and optimisation

### Service sales

- ✓ Growing installed base
- ✓ Increasing agreement coverage
- ✓ Climbing the service value ladder

← Profitability →

← Growth →

# Advantages of Wärtsilä power plants over combined cycle gas turbines

## Faster startup time

- Combined cycle gas turbines can take over 30 minutes to start, whereas combustion engine power plants can start and reach full load in less than 5 minutes

## Advantages of modularity

- Combustion engine power plants are comprised of multiple generating units

## Better part-load efficiency and flexibility

- Unlike gas turbines, Wärtsilä engine power plants have near full range capability of emissions-compliant turndown

## Better pulse-load efficiency and profitability

- Combustion engine power plants are dispatchable and can adjust load daily, ramping up and down with demand

## Higher ramp rate

- Ramp rate = the rate at which a power plant can increase or decrease output
- Wärtsilä engines can ramp at over 100%/minute. For combined cycle gas turbines, typical ramp rates are around 10%/minute.

## Derating due to ambient temperature

- Combustion engines are less sensible to temperature and humidity

## Fuel flexibility

- Gas turbines have reduced availability and output when running on fuel oils

## Lower water consumption

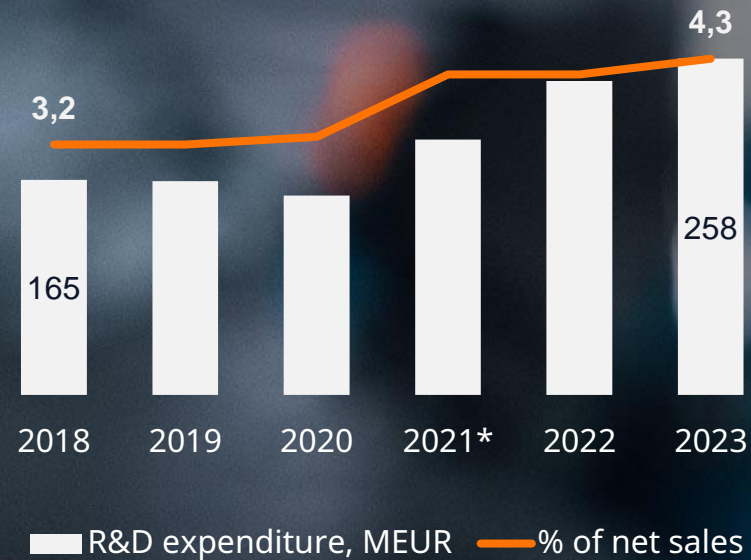
- A combined cycle gas turbine power plant (CCGT) with a recirculating system = 780 liters/MWh.
- Wärtsilä combustion engine power plant operating in simple cycle on natural gas = 3 liters/MWh.

# R&D



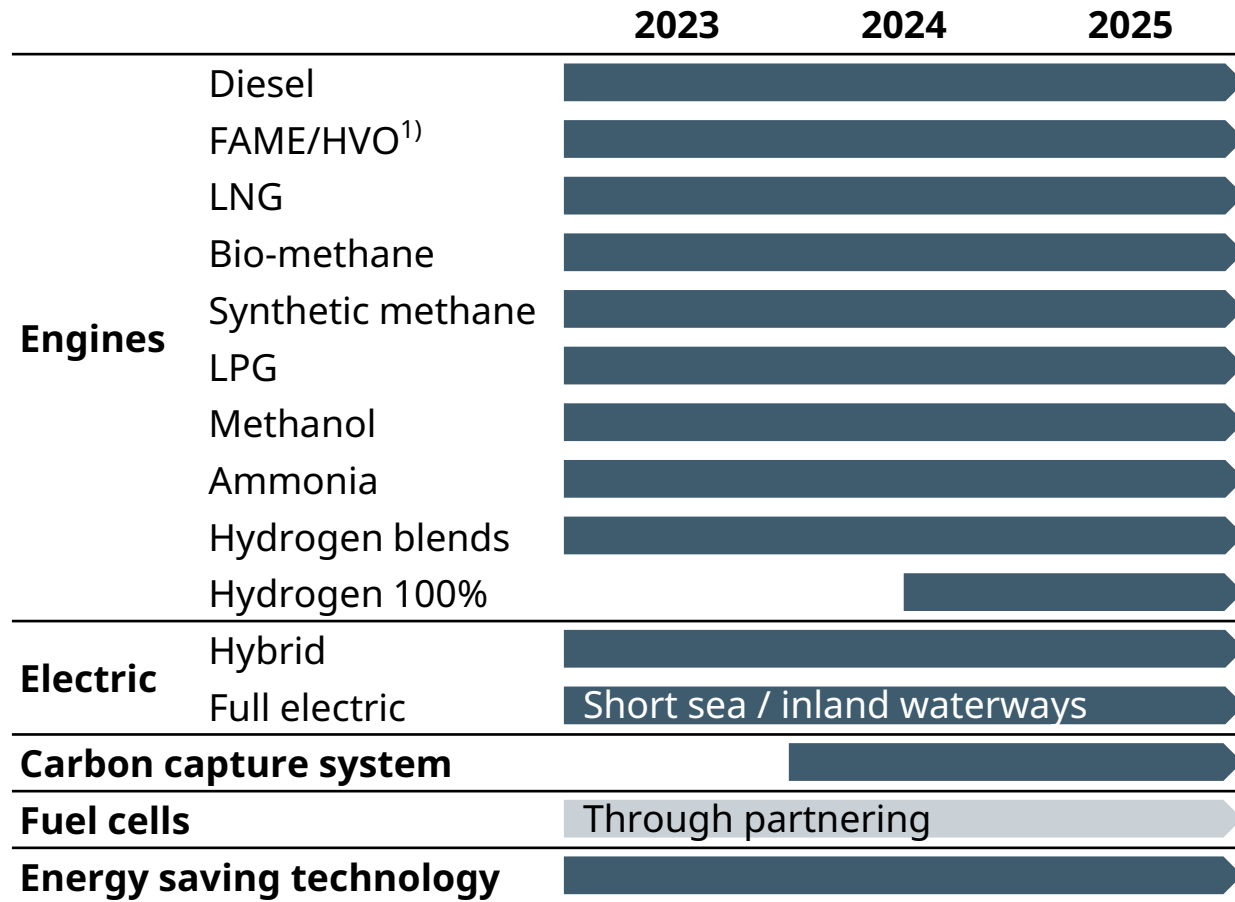
AMMONIA  
 $\text{NH}_3$   
 WÄRTSILÄ

We continue investing in innovation to ensure a broad, industry-leading solution offering



\* Figure in the comparison period 2021 has been restated to reflect a change in the definition of research and development expenditure.

# Industry's most comprehensive offering for decarbonisation



- ✓ Industry's fastest and broadest future fuel roadmap
  - ✓ Market leaders in 4-stroke medium-speed main engines
  - ✓ Market leaders in hybrids with 26% market share<sup>2)</sup>
  - ✓ Pioneer with the world's first full scale carbon capture plant in 2024 and full commercial release in 2025
  
- ✓ Methanol engine types available today<sup>3)</sup>,
- ✓ Ammonia engine was launched in Q4 2023,
- ✓ 100% hydrogen-ready power plant engine technology was launched in Q2 2024, available for orders in 2025

1) Biodiesels: FAME – Fatty Acid Methyl Esters, HVO – Hydrogenated Vegetable Oil; 2) Battery MWh on 2000+ GT hybrid vessels; 3) Newbuild and retrofits

# Q2 2024 development



19 July 2024

## Order intake, profitability and cash flow all improved

- Net sales increased by 7%
- Order intake increased by 10%
- Order book continues at all-time high (7,607 MEUR)
- Comparable operating result increased by 63%
  - Double-digit comparable operating margin
- Good progress in services continued:
  - Service order intake increased by 8%
  - Service net sales increased by 3%
- Strong cash flow from operating activities (216 MEUR)





## Good development in key figures

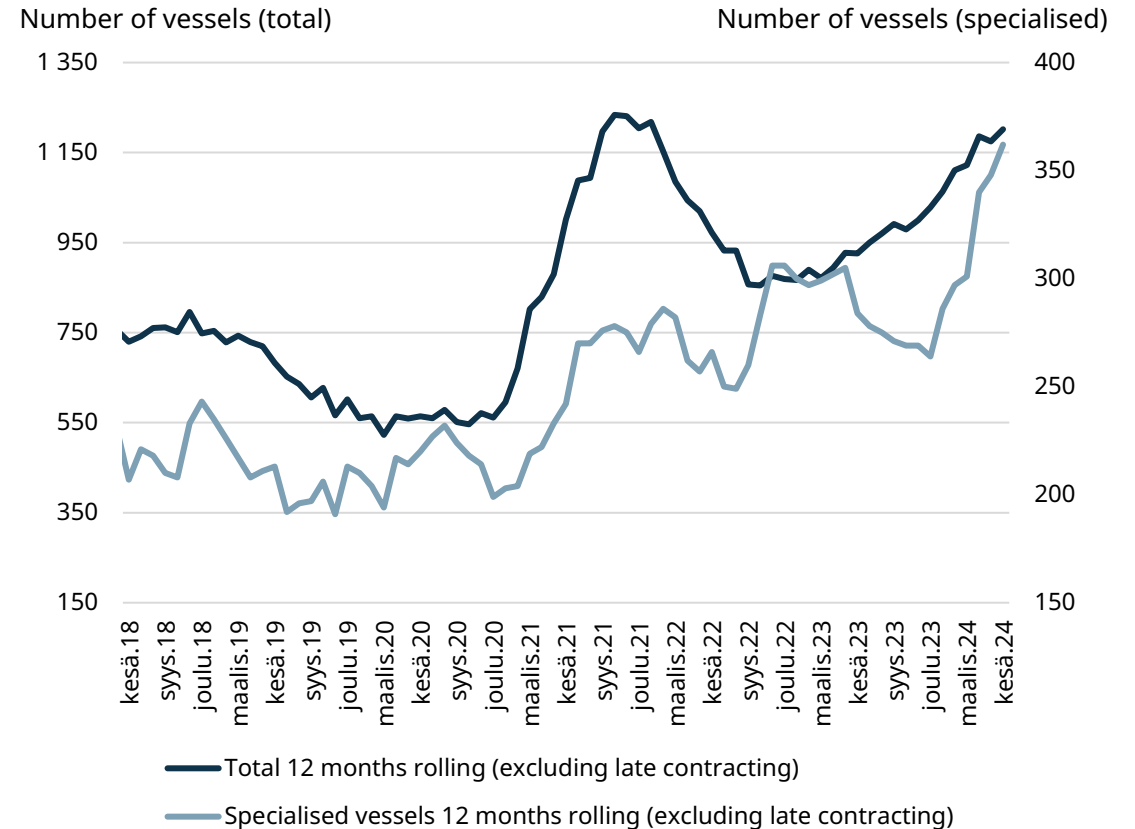
MEUR	4-6/2024	4-6/2023	CHANGE	1-6/2024	1-6/2023	CHANGE
<b>Order intake</b>	<b>1,854</b>	1,687	10%	<b>3,778</b>	3,427	10%
of which services	<b>982</b>	913	8%	<b>1,931</b>	1,802	7%
of which equipment	<b>872</b>	774	13%	<b>1,847</b>	1,625	14%
<b>Order book</b>				<b>7,607</b>	6,249	22%
of which current year deliveries				<b>2,967</b>	2,589	
<b>Net sales</b>	<b>1,556</b>	1,454	7%	<b>2,877</b>	2,919	-1%
of which services	<b>834</b>	807	3%	<b>1,666</b>	1,543	8%
of which equipment	<b>722</b>	647	12%	<b>1,211</b>	1,376	-12%
<b>Book-to-bill</b>	<b>1.19</b>	1.16		<b>1.31</b>	1.17	
<b>Operating result</b>	<b>168</b>	66	156%	<b>295</b>	158	87%
% of net sales	<b>10.8</b>	4.5		<b>10.2</b>	5.4	
<b>Comparable operating result</b>	<b>176</b>	108	63%	<b>308</b>	196	57%
% of net sales	<b>11.3</b>	7.4		<b>10.7</b>	6.7	

# Marine: market sentiment is positive for Wärtsilä's key segments

Continued good appetite for new ships in the second quarter

- The number of vessels ordered in H1 increased to 1,069 (773 in the corresponding period in 2023, excluding late reporting of contracts).
- Investments in new ships were higher than in H1/2023, driven by increasing demand for ship capacity, solid average earnings across cargo segments, low order book mainly in bulk carrier and tanker segments, and continued fleet renewal.
- The uptake of alternative fuels remained at a healthy level with 242 orders reported in H1/2024, accounting for 23% (24%) of all contracted vessels and 39% (43%) of vessel capacity.
- Newbuild ship prices continued to increase. This is despite growth in shipyard capacity and output, especially in China and South Korea, which indicates an ongoing shortage of yard capacity.

## Total and specialised vessel contracting



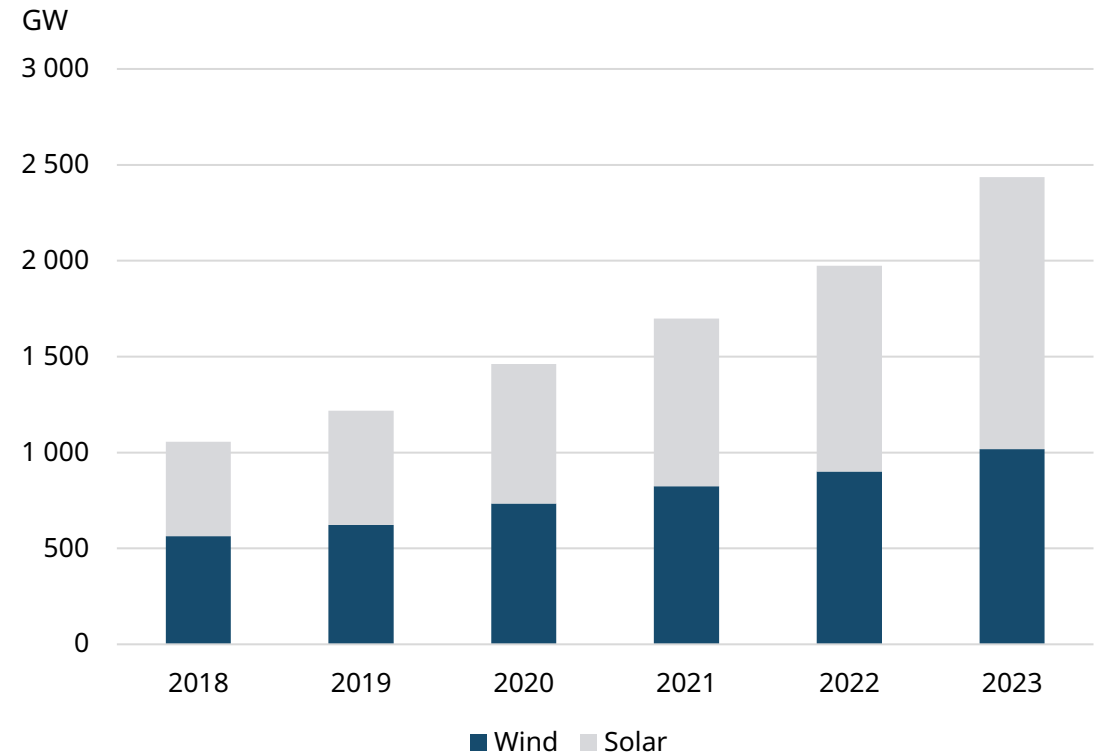
Source: Clarksons Research, 12m rolling contracting as per 3rd of July 2024 (+100 gt, excluding late reporting of contracts)  
 Specialised vessels include LNG carriers, LPG carriers, cruise & ferry, offshore, and special vessels.

# Energy: solid mid to long-term market opportunities

Continued uncertainty in the market environment in the second quarter

- Macroeconomic development in Q2 was influenced by protectionist policies, with trade risks elevated by developments such as the recently imposed import tariffs by the US and EU
- The market for engine power plants was stable, with good activity especially in the US.
- Global natural gas prices rose in Q2. Commodity pricing overall was stable, despite elevated uncertainty in geopolitical and trade environments.
- The energy transition continues to advance, BloombergNEF expects wind and solar capacity additions to increase by 6% and 32%, respectively, in 2024.
- The rapid growth of AI is having sizable impact on the global electricity demand for data centers. Today data centers account for approximately 1–2% of global electricity demand, potentially doubling in share by 2026.\*

## Development on installed wind and solar capacity\*\*

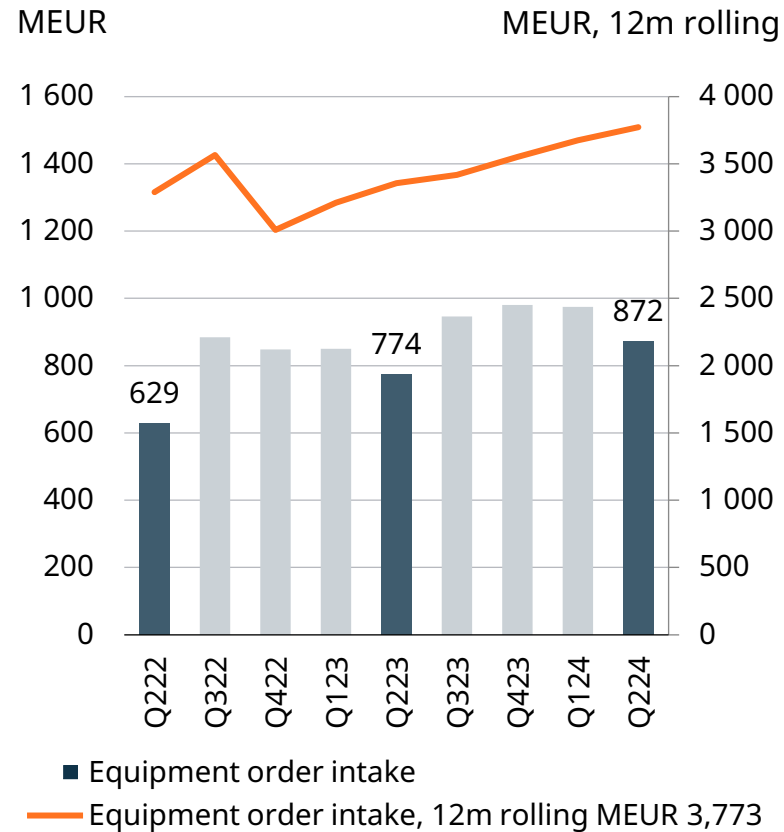


\*Source: IEA

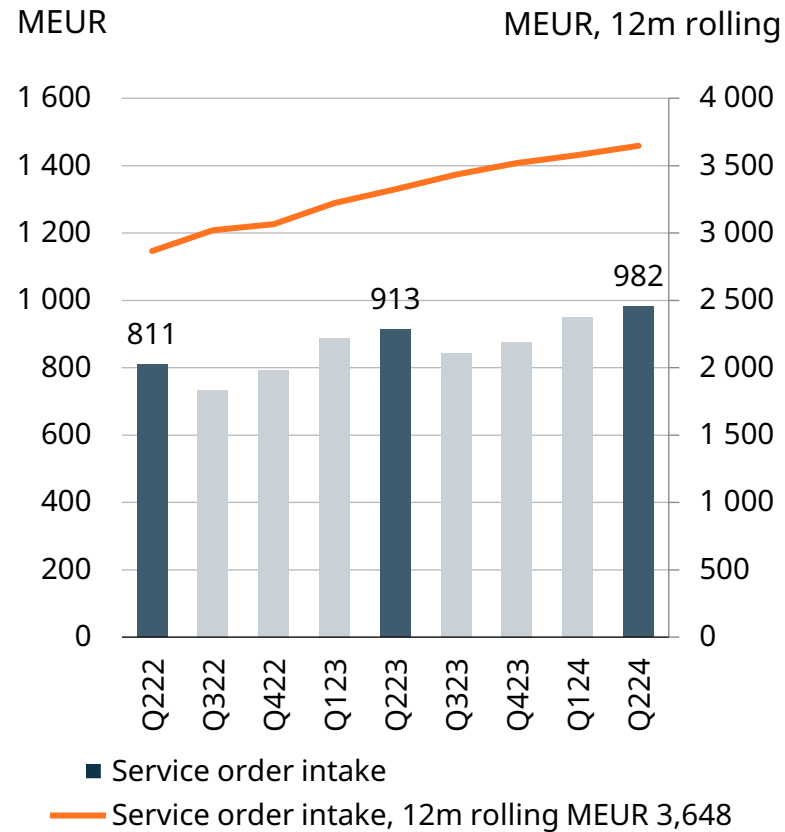
\*\*Source: IRENA (2024), Renewable capacity statistics 2024

# Organic order intake increased by 12%

## Equipment



## Services



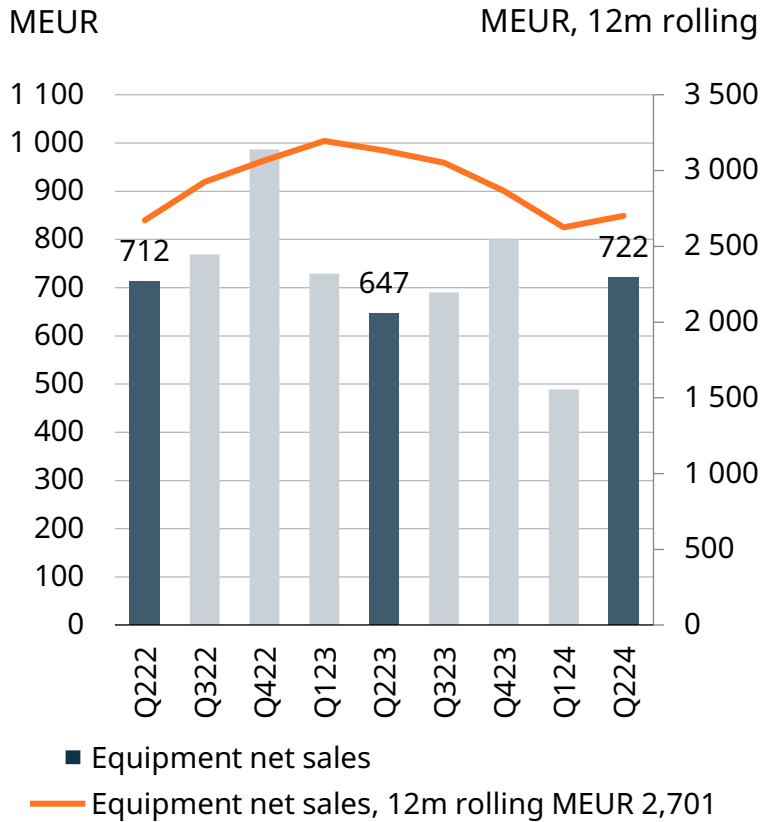
Order intake increased by 10%

Equipment order intake increased by 13%

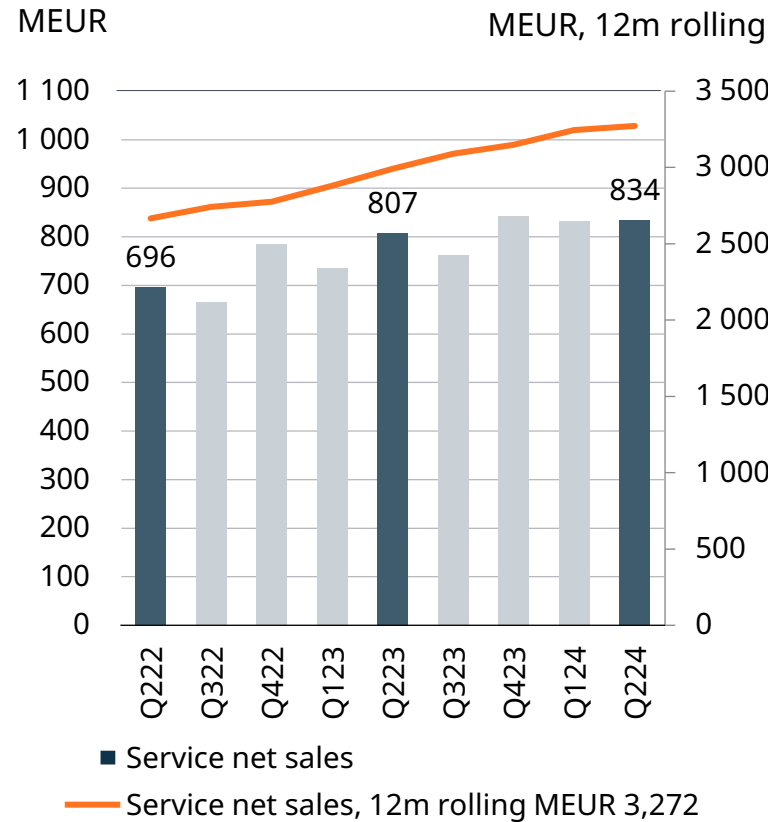
Service order intake increased by 8%

# Organic net sales increased by 9%

## Equipment



## Services



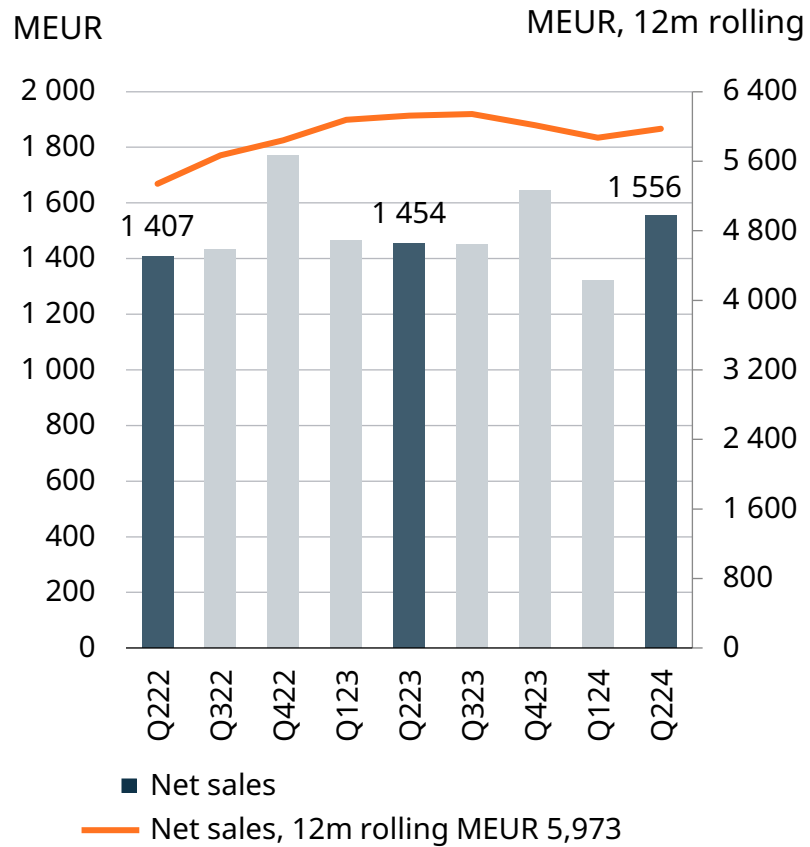
Net sales increased by 7%

Equipment net sales increased by 12%

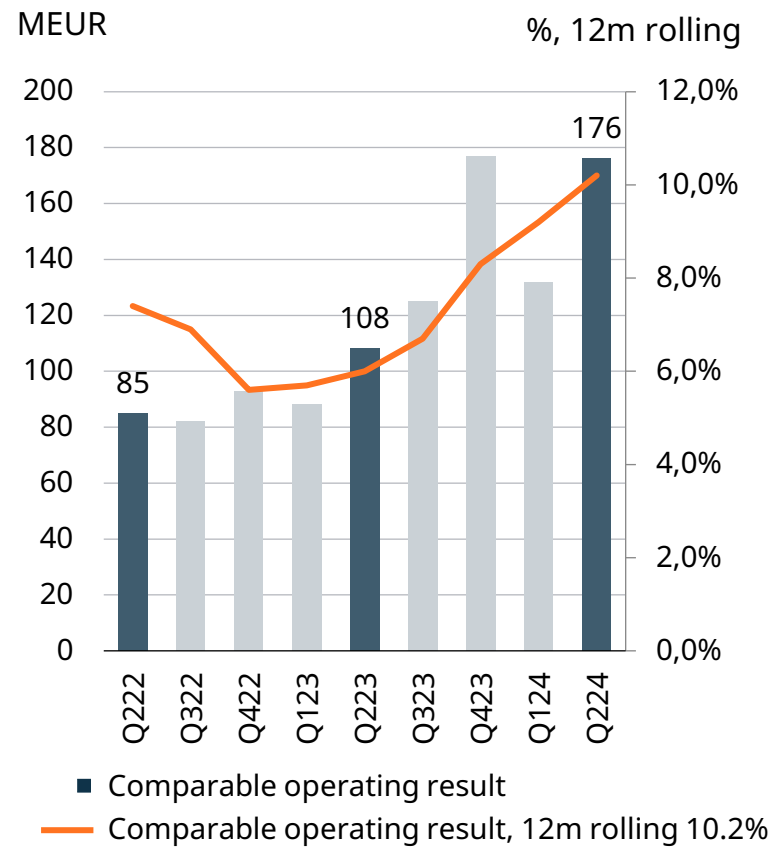
Service net sales increased by 3%

# Profitability continued to improve

## Net sales



## Comparable operating result



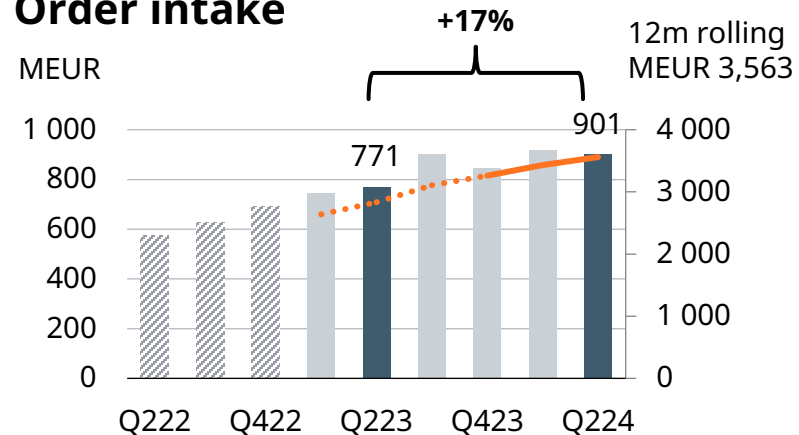
Net sales increased by 7%

Comparable operating result increased by 63%

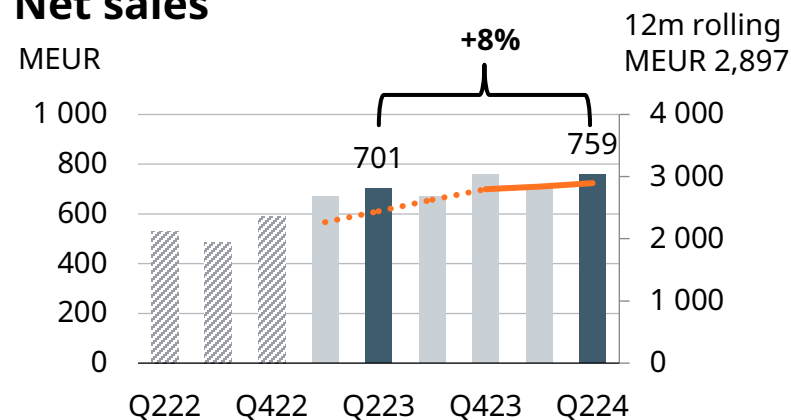
# Marine: Good performance continued

Order intake, net sales and comparable operating result increased

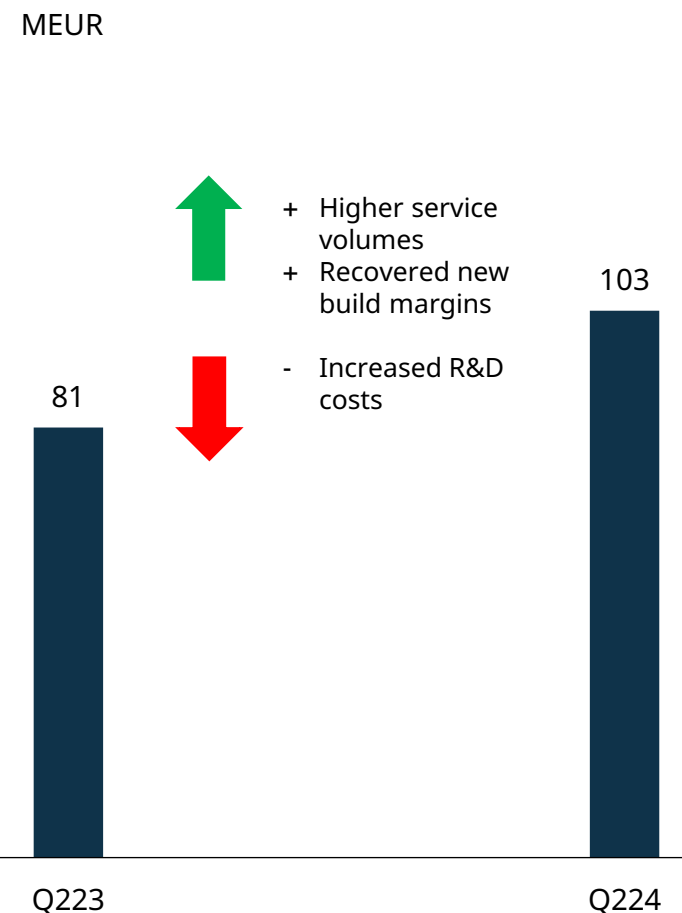
## Order intake



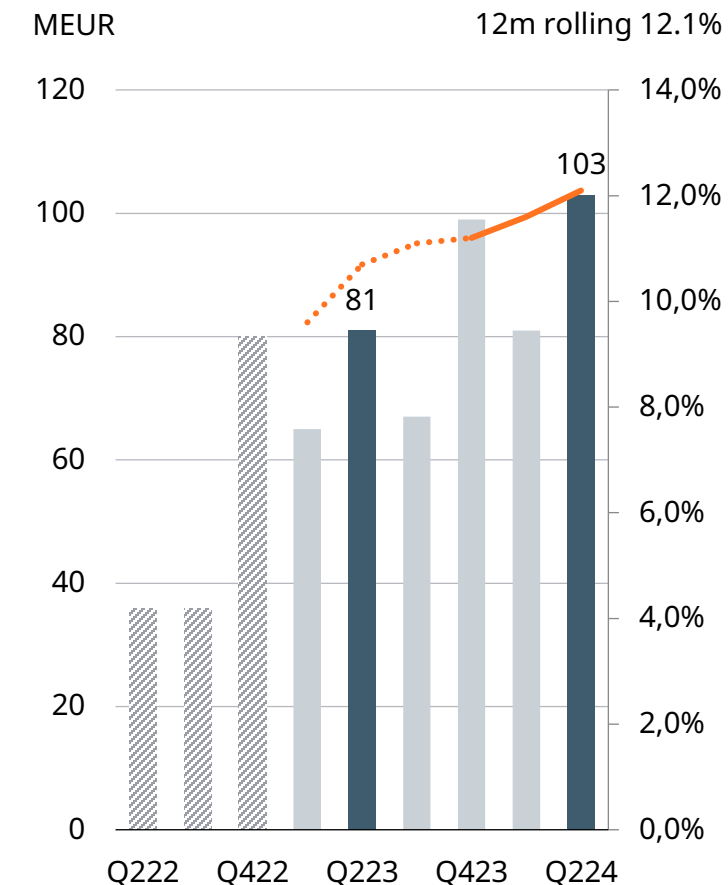
## Net sales



## Comparable operating result



## Comparable operating result

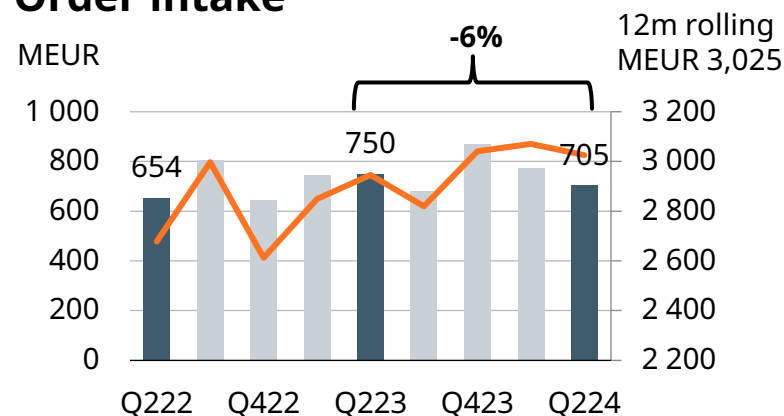


Financial figures for 2023 have been restated to reflect the redefined organisational structure after the discontinuation of Marine Systems as a reporting segment as of 1 January 2024. Exhaust Treatment and Shaft Line Solutions business units were moved from Marine Systems to Marine Power and consequently, Marine Power changed its name to Wärtsilä Marine. Financial figures for 2022 have been restated to reflect the redefined organisational change considering the integration of Voyage into Marine Power and moving part of the Voyage business to the Portfolio Business. As financial figures prior to 2023 have not been restated to account for the current organisational structure, the non-comparable figures are marked with dashed columns and a dashed line.

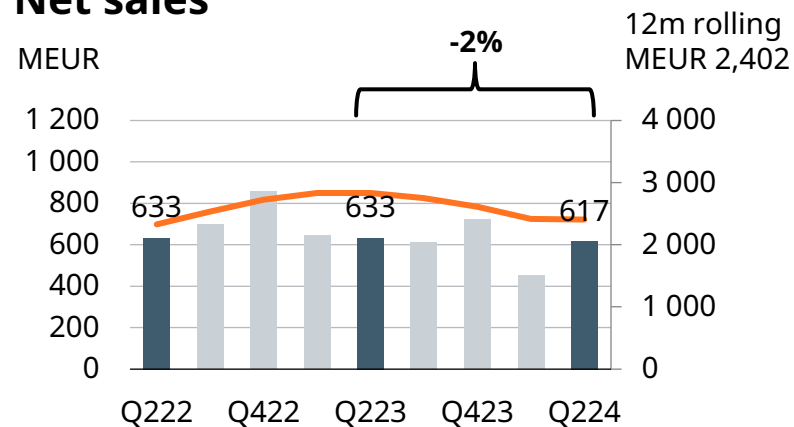
# Energy: Comparable operating result increased

Equipment order intake decreased driven by lower orders in ES&O while orders in EPP increased

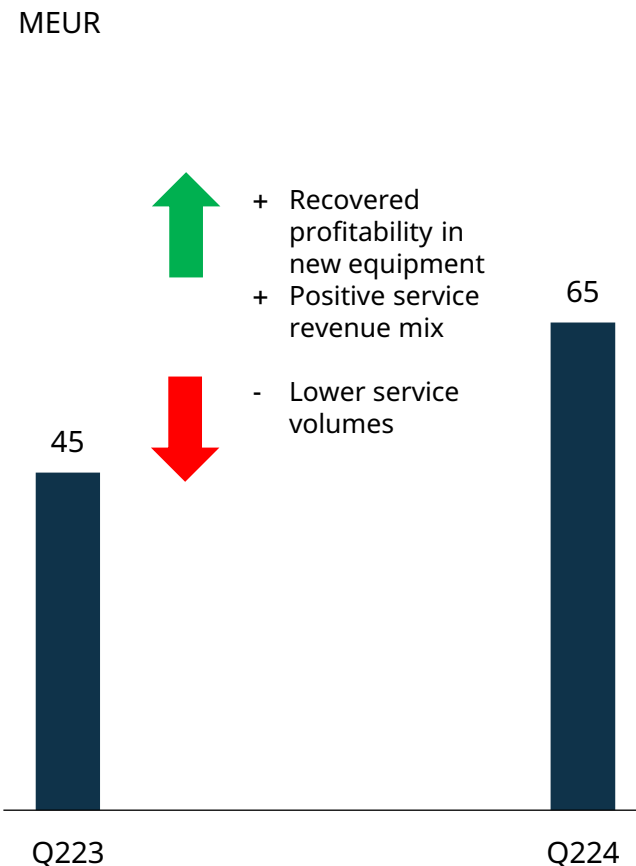
## Order intake



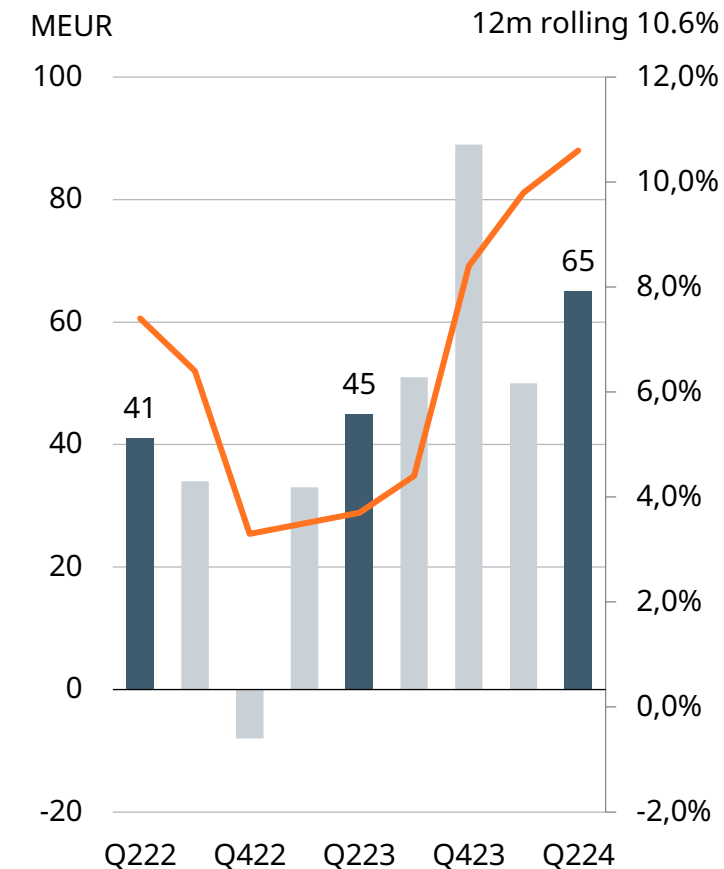
## Net sales



## Comparable operating result



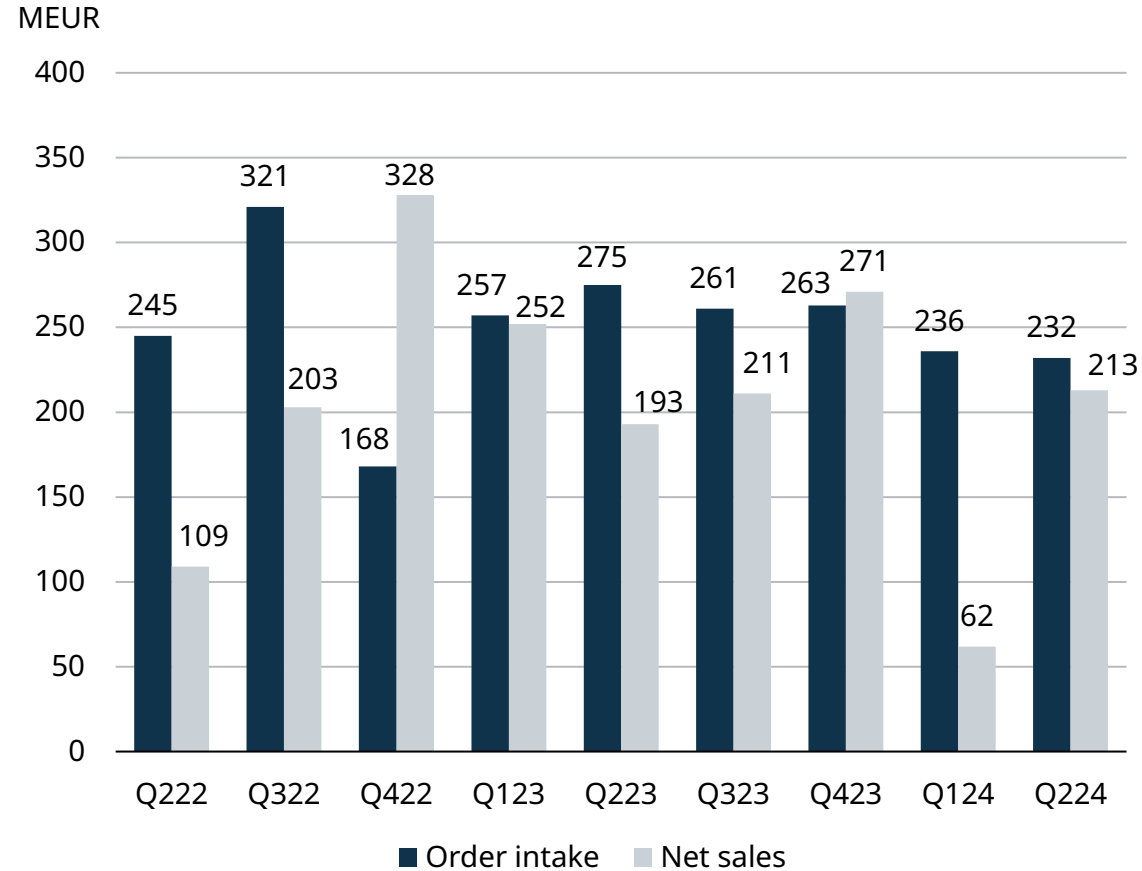
## Comparable operating result



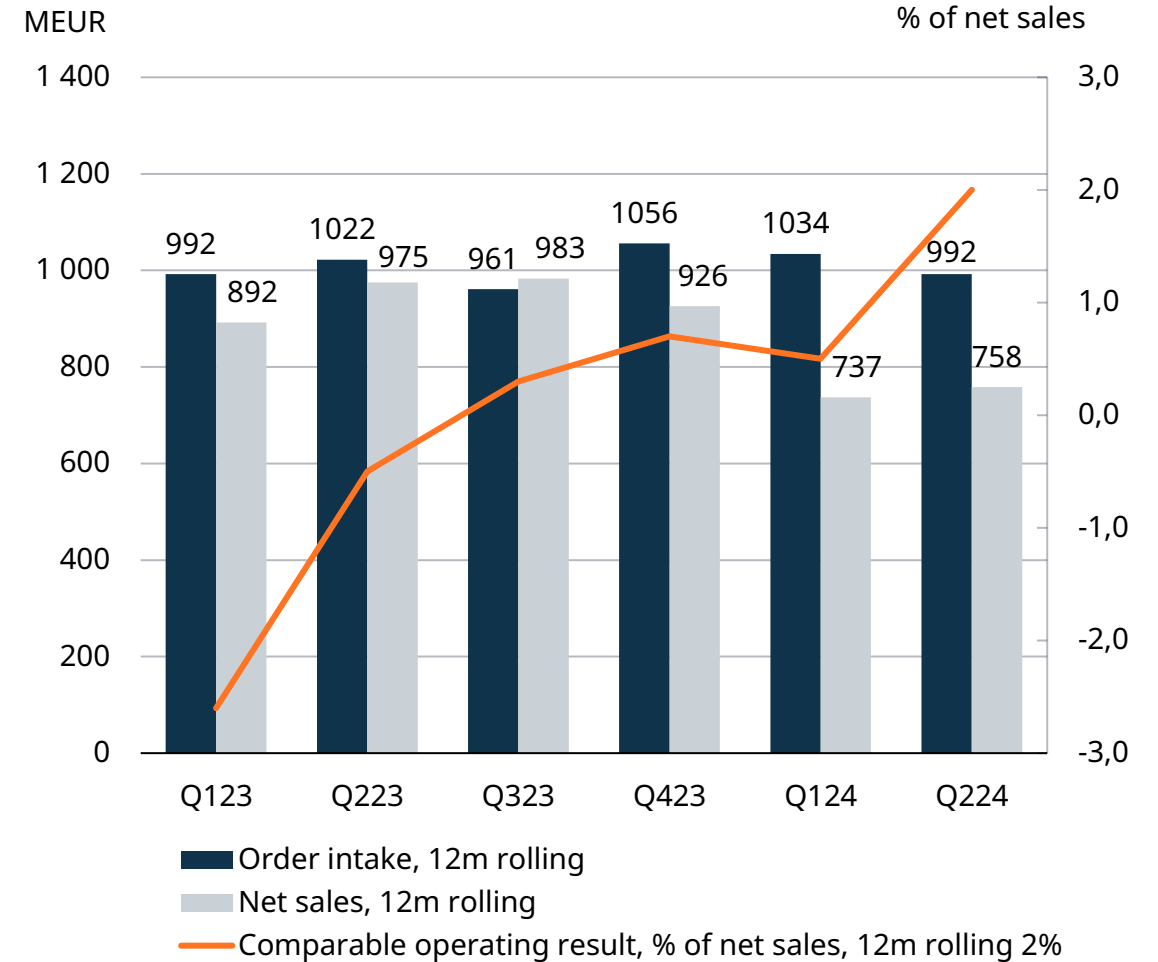


# Energy Storage & Optimization: Comparable operating result margin (12m rolling) continued to improve

## Quarterly development



## Rolling 12 months development

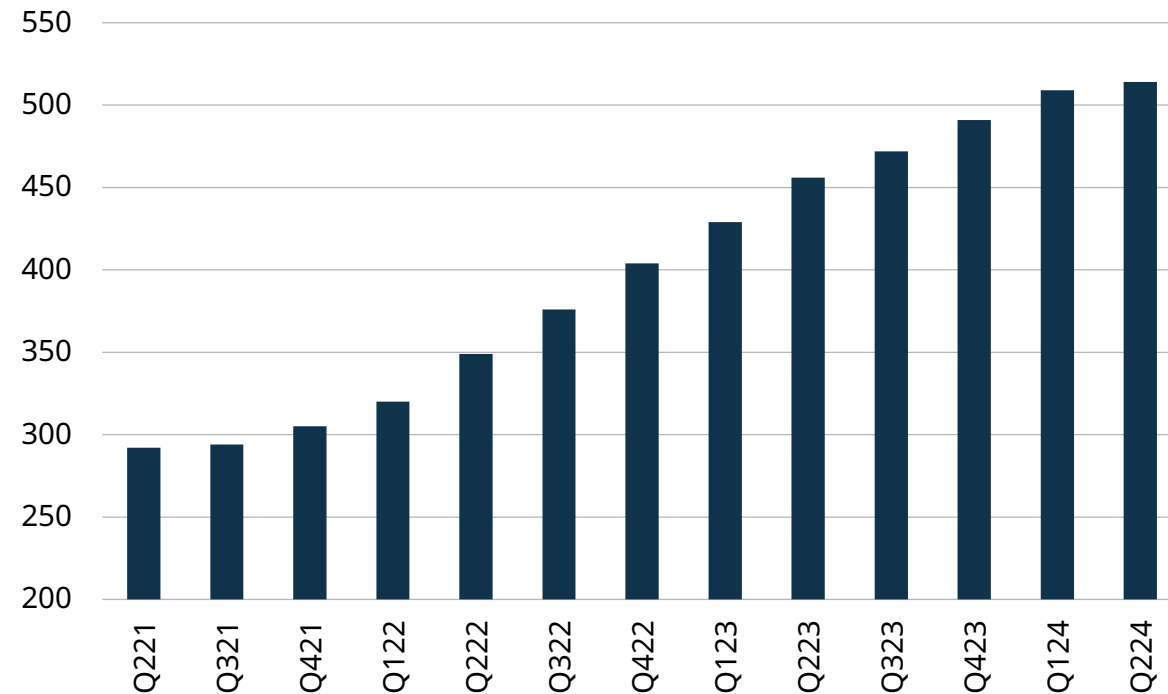


## Good development in Marine service

Marine net sales to agreement installations increasing

### Net sales to agreement installations (12 month rolling)<sup>1)</sup>

MEUR, 12m rolling



1) The figures include Marine scope related to 4-stroke, 2-stroke, and propulsion

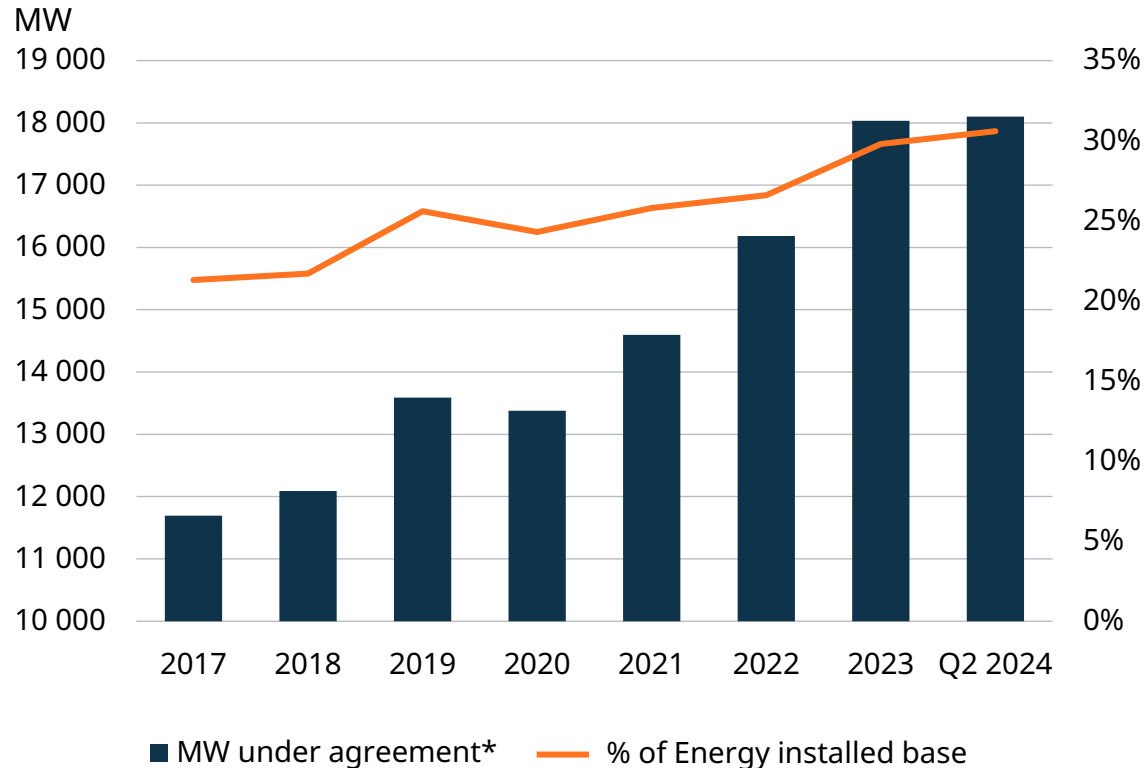
### Success in retrofits

#### Wärtsilä to convert two Scandlines ferries to plug-in hybrid operation

- Wärtsilä will supply the electrical systems needed to convert two ferries to a plug-in hybrid solution.
- The project involves replacing one out of several engines with a new shore-charged electrical system, including a large energy storage system.
- The conversion represents a key element in Scandlines' target to achieve emission-free operations on the route by 2030.
- Wärtsilä continues to be a market leader in hybrid solutions.
- The order was booked in Q2, 2024.

# Energy service agreements coverage continues to improve

## MW under agreement globally



## Wärtsilä service agreement central to maintaining Nigerian cement plant's production schedule

- Wärtsilä has signed a ten-year Operations and Maintenance (O&M) Agreement for a captive power plant providing the energy for a Nigerian cement producing facility.
- The new cement plant is owned by Mangal Industries and is located in Kogi State, Nigeria.
- The O&M agreement is designed to ensure the reliable maintaining of the facility's cement production target of three million metric tons per year.
- The order was booked in Q2, 2024.

\* Includes agreements covering both installed assets and assets to be installed in the future



## Prospects

### Marine

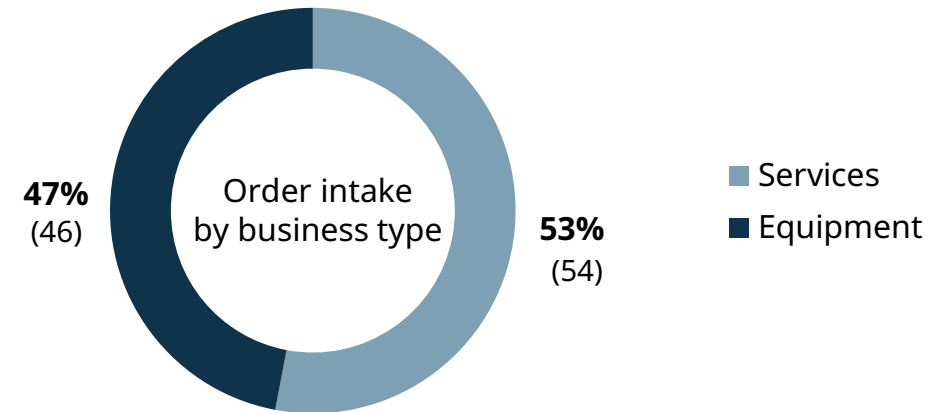
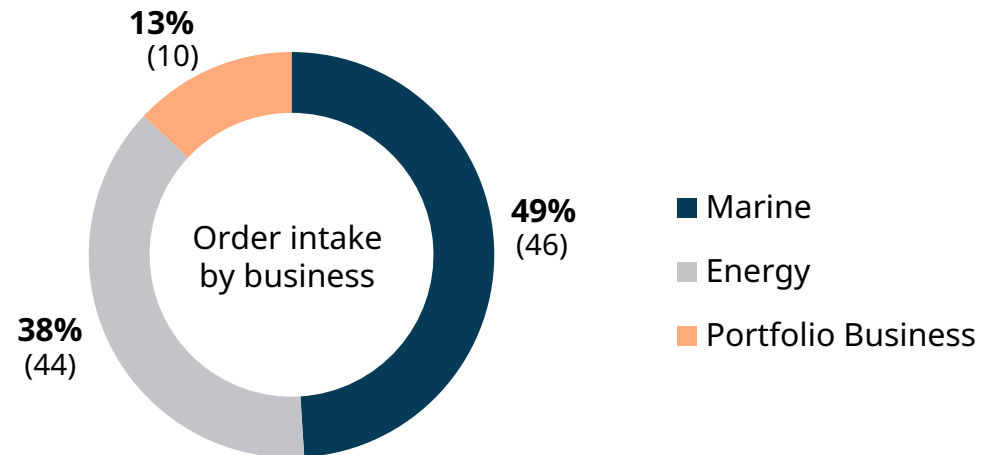
- Wärtsilä expects the demand environment for the next 12 months (Q3/2024–Q2/2025) to be better than that of the comparison period.

### Energy

- Wärtsilä expects the demand environment for the next 12 months (Q3/2024–Q2/2025) to be better than that of the comparison period.

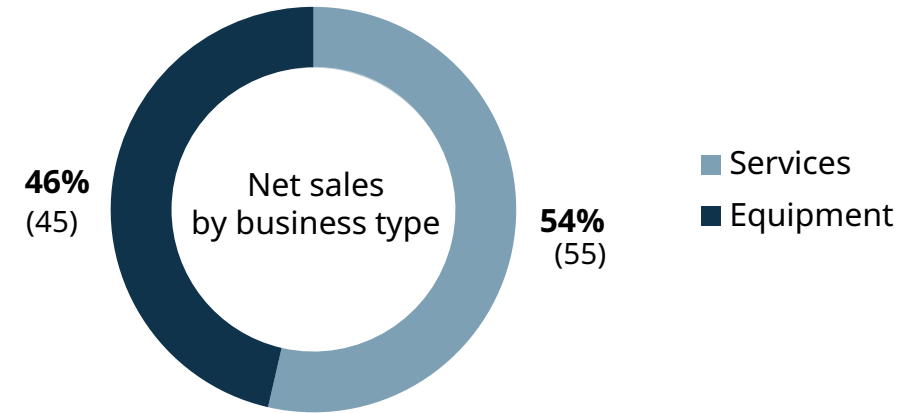
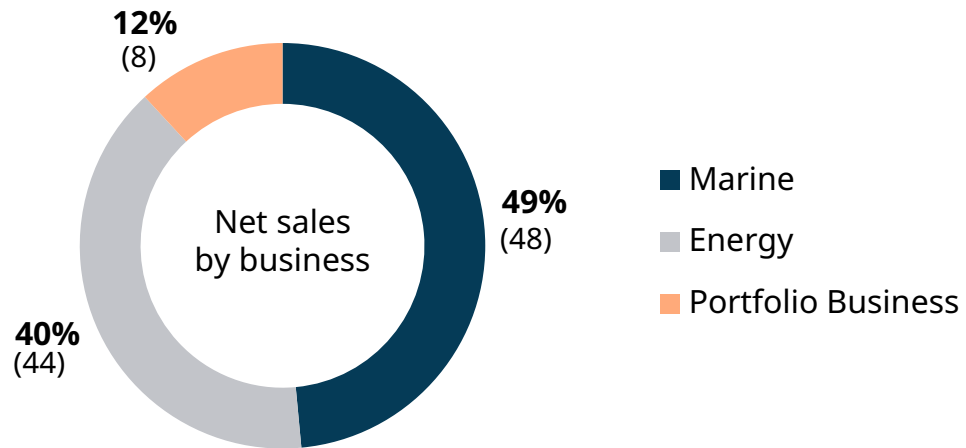
# Order intake

## Second quarter development



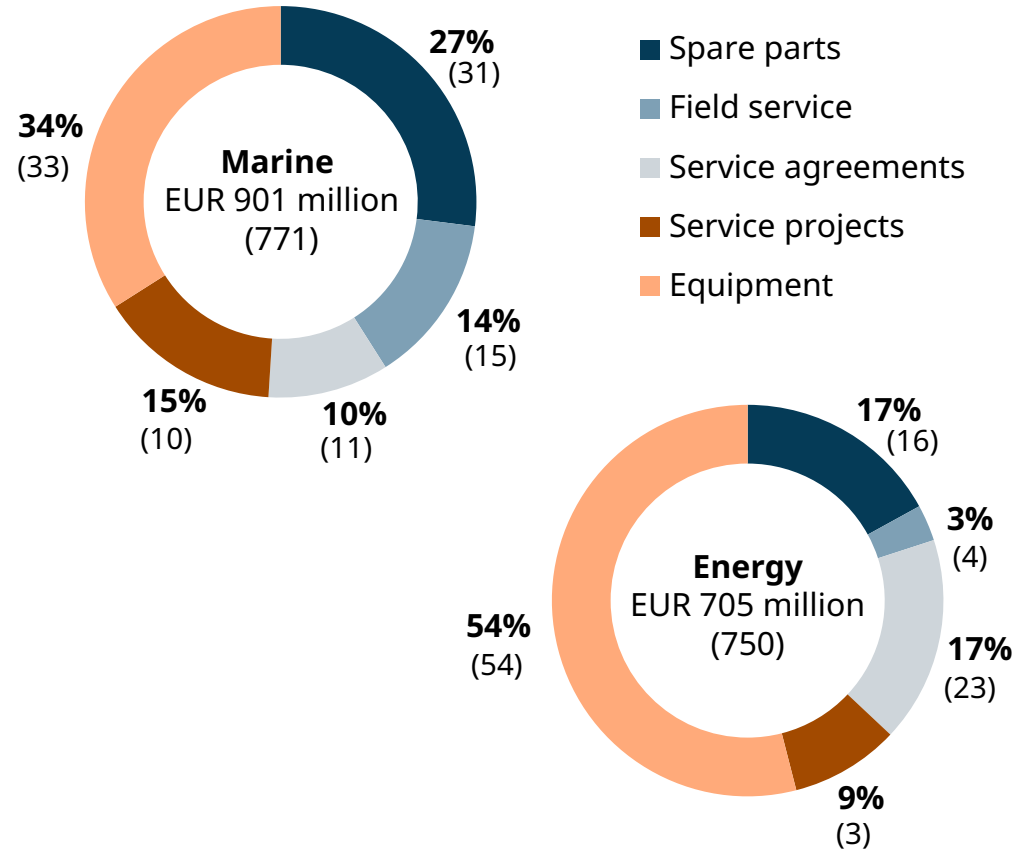
# Net sales

## Second quarter development

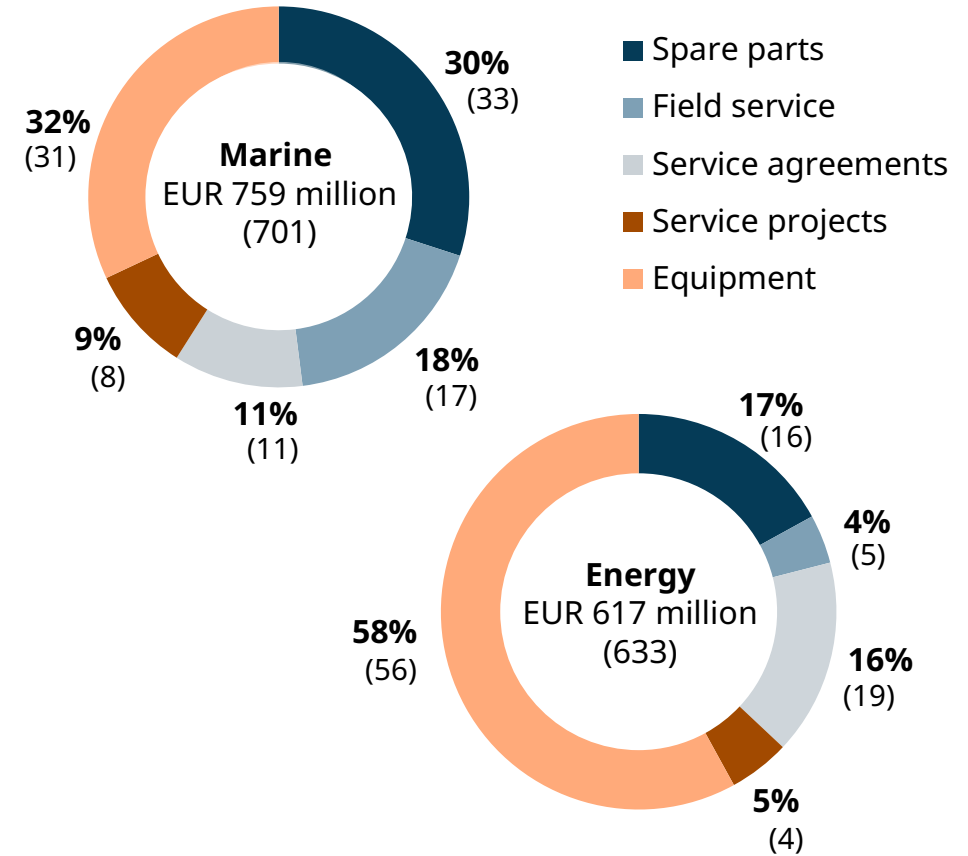


# Second quarter development by business type

## Order intake



## Net sales



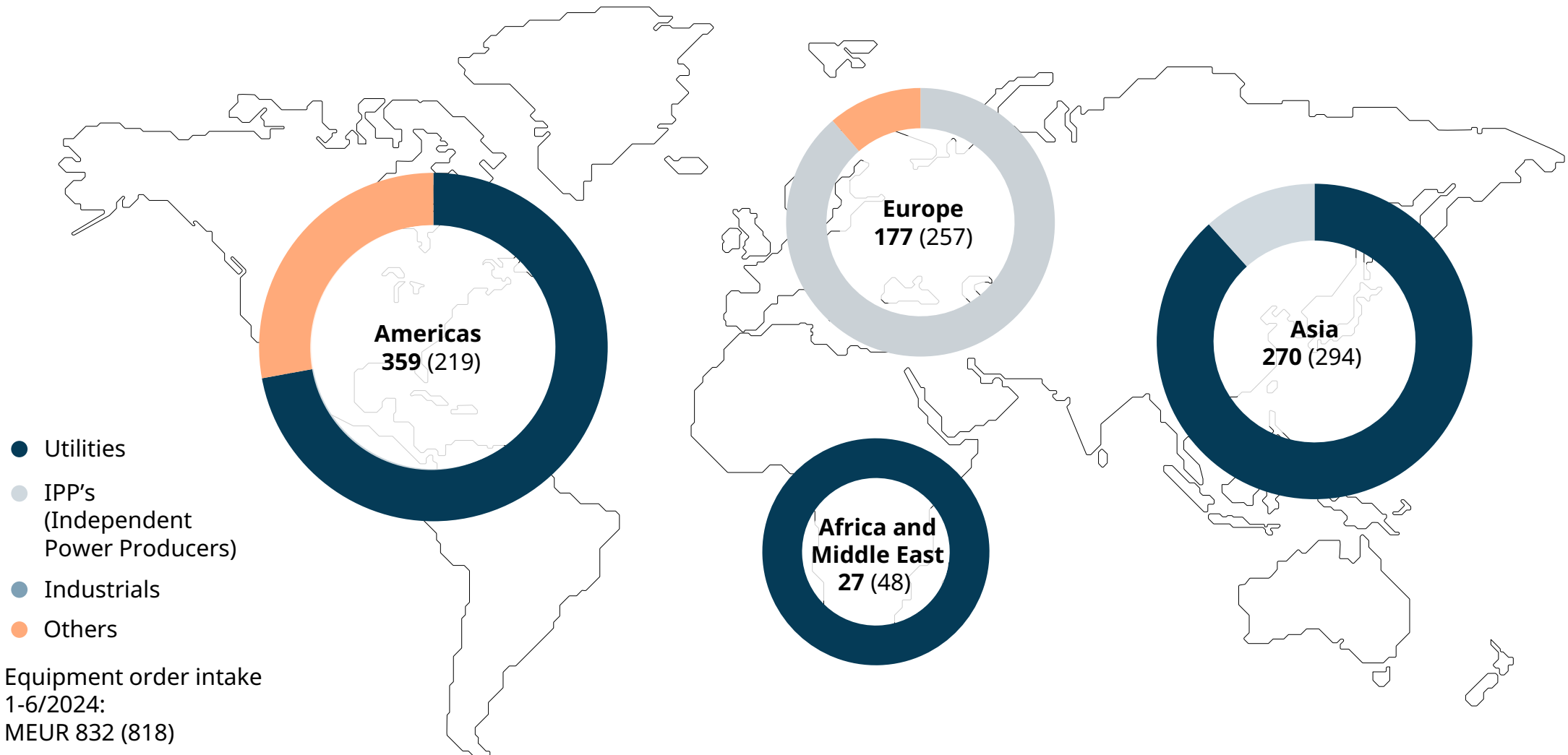
# January–June order intake by customer segment

<b>Marine</b>	<b>Gas carriers</b>	<b>Cruise &amp; ferry</b>	<b>Offshore</b>	<b>Navy</b>	<b>Special vessels</b>	<b>Merchant</b>	<b>Other</b>
Equipment	5% (8)	27% (22)	5% (5)	6% (12)	13% (5)	38% (45)	6% (3)
Services	14% (15)	23% (22)	15% (17)	10% (8)	11% (11)	26% (26)	1% (2)
<b>Total</b>	<b>11% (12)</b>	<b>24% (22)</b>	<b>11% (13)</b>	<b>9% (9)</b>	<b>12% (9)</b>	<b>30% (32)</b>	<b>3% (2)</b>

<b>Energy</b>	<b>Utilities</b>	<b>Independent Power Producers</b>	<b>Industrials</b>	<b>Other</b>
Equipment	63% (74)	23% (24)	0% (2)	14% (0)
Services	29% (33)	33% (33)	24% (22)	13% (13)
<b>Total</b>	<b>48% (56)</b>	<b>27% (28)</b>	<b>11% (11)</b>	<b>14% (6)</b>



# Orders received for Energy equipment globally



# Sustainability



# We are delivering towards our sustainability targets

## On track for our 2030 decarbonisation targets

- ✓ To become **carbon neutral in own operations**
- ✓ To provide a **product portfolio ready for zero carbon fuels**

## Improving safety, wellbeing and employee engagement

- ✓ **Positive trend in safety indicators**
- ✓ **Wellbeing behaviours & toolkit launched** to support teams
- ✓ **Improving trend in employee engagement**

## Strengthening thought leadership and being a responsible company

- ✓ Developing **industry ecosystems** and **co-operation with academia**
- ✓ Continued focus on **ethical compliance**
- ✓ Listed by TIME magazine as **TIME100 most influential companies in 2023**

# Strong presence in sustainable development indices

Member of  
**Dow Jones  
Sustainability Indices**

Powered by the S&P Global CSA

**Sustainability Yearbook**  
Member 2021

**S&P Global**

S&P Europe 350 ESG Index



RATED BY  
**ISS ESG**

**STOXX**

Member 2020/2021  
**ESG Leaders  
Indices**



**FTSE4Good**










# Decarbonising our own operations requires a wide range of actions

## "SET FOR 30"

### OUR MAIN DECARBONISATION INITIATIVES

2021

2030

-  Energy efficiency measures +/-€
-  Low emission company vehicles +/-€
-  Heat pumps in heating +/-€€
-  R&D and factory engine testings - reduced time +/-€
-  Self-generation and green electricity +++/€€
-  Simulations and other technologies +/-€
-  Replacing fossil fuels with alternative fuels +++/€€€



+ GHG reduction potential € Cost to reduce

# Wärtsilä "Set for 30" is progressing well

Variety of concrete actions have been taken – some examples



Green electricity purchasing fully in use in Finland



Solar panel investment in Bermeo Spain



Environmental standards for selecting new facilities in use



Electric Vehicle policy defined and being rolled out



Heat pumps installed in server room in Norway



Intelligent energy meters installed in Norway - leakages detected



Electric Forklift policy defined and being rolled out



Variety of actions identified to reduce engine testing time

# Set for 30

# Wärtsilä's ESG Agenda in brief

# E

## **Ambitious decarbonisation targets for 2030**

- Portfolio ready for zero carbon fuels
- Carbon neutrality in own operations

# S

## **Good Corporate Citizen and Responsible Employer**

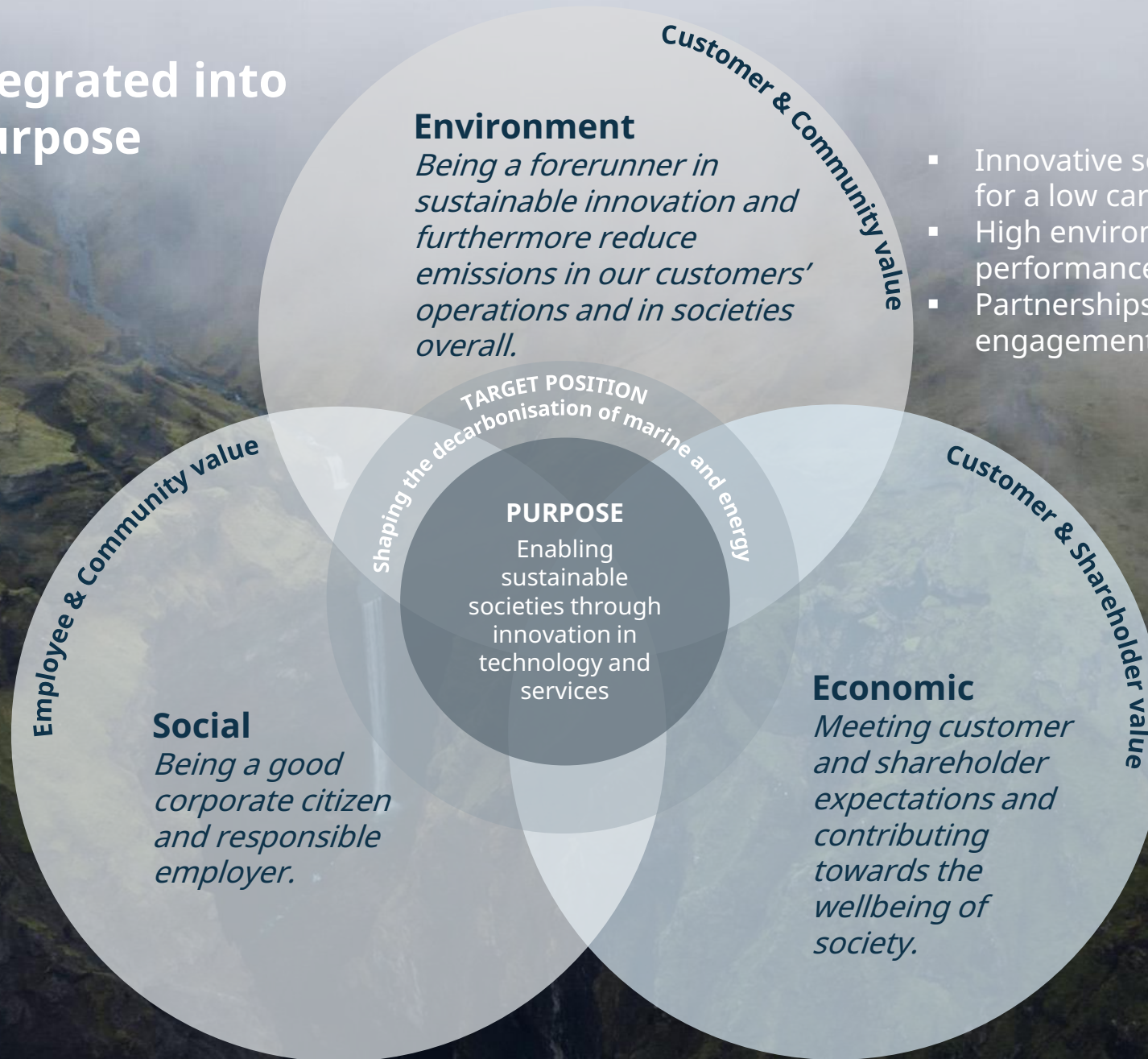
- High ethical standards
- Diversity in focus
- Strive for safety

# G

## **Effective Governance model**

- Sustainability matters embedded

# Sustainability is integrated into our strategy and purpose



- High ethical standards
- Responsible employer offering, interesting and exciting workplace
- Equal opportunities and diversity
- Hazard free working environment

- Innovative solutions for a low carbon economy
- High environmental performance and efficiency
- Partnerships and active engagement in ecosystems

- Efficient, profitable, and competitive company operations



## Wärtsilä's focus on social responsibility

### Strong ethical culture



Fair competition  
Trade compliance  
Anti-corruption  
Human and Labour Rights

- Clear policies and instructions
- Ethical training programmes and transparent communication
- Effective compliance programmes

### A responsible employer



Equal opportunities and diversity  
Fair employment practices  
Well-being of our employees  
Talent and leadership development

- Global policies and processes
- Training programmes and effective communication
- Co-operation and consultation with our employees

### A Safe place to work



Strong safety culture  
Providing means for safe work  
Product design principles

- Employee and leadership engagement
- Consistent safety competencies
- High quality tools and protective equipment
- Robust risk assessment practices
- Incident reporting and investigation
- Emergency preparedness
- Clear supplier requirements
- Supplier assessment process
- Setting contractual obligations
- Monitoring the supplier performance
- Taking necessary actions in case of non-compliance

### Responsible value chain



Human and Labour Rights  
Compliance  
Anti-corruption

# Governance



# Board of Management



**Håkan Agnevall,**  
President & CEO



**Arjen Berends,**  
Chief Financial  
Officer



**Tamara de Gruyter,**  
President, Wärtsilä Portfolio  
Business



**Kari Hietanen,** Corporate  
Relations and Legal Affairs



**Roger Holm,** President,  
Wärtsilä Marine



**Anders Lindberg,** President,  
Wärtsilä Energy



**Teija Sarajärvi,**  
Human Resources

# Board of Directors



**Tom Johnstone CBE**, Chair of the Board, President and CEO of AB SKF 2003–2014



**Mika Vehviläinen**, Deputy Chair of the Board, President & CEO of Cargotec Oyj 2013–2023



**Karen Bomba**, President of Smiths Interconnect 2017–2020



**Morten H. Engelstoft**, CEO & EVP of A.P. Møller - Mærsk A/S, APM Terminals 2016–2022



**Karin Falk**, President, Husqvarna Construction Division



**Johan Forssell**, President and CEO of Investor AB



**Mats Rahmström**, President & CEO of Atlas Copco AB



**Tiina Tuomela**, CFO, Fortum Corporation

## Largest shareholders June 2024 (CMi2i quarterly update)

#	Name	Shares	Share %
1	Invaw Invest AB	104,711,363	17.69%
2	Varma Mutual Pension Insurance Company	31,768,252	5.37%
3	BlackRock Fund Advisors	20,054,907	3.39%
4	The Vanguard Group, Inc.	18,164,571	3.07%
5	Ilmarinen Mutual Pension Insurance Company	16,473,037	2.78%
6	Keskinäinen Työeläkevakuutusyhtiö Elo	8,451,000	1.43%
7	Amundi Asset Management SA (Investment Management)	8,340,117	1.41%
8	SSgA Funds Management, Inc	7,249,423	1.22%
9	BlackRock Investment Management (UK) Ltd.	7,071,134	1.19%
10	BlackRock Advisors (UK) Ltd.	6,788,325	1.15%
11	Marathon Asset Management LLP	6,062,285	1.02%
12	Legal & General Investment Management Ltd.	5,984,072	1.01%
13	The Social Insurance Institution of Finland (Invt Port)	5,517,730	0.93%
14	UBS Asset Management (UK) Ltd.	5,437,193	0.92%
15	Dimensional Fund Advisors LP	5,040,397	0.85%
<b>Total Top 15</b>		<b>257,113,806</b>	<b>43.44%</b>

## For more information, visit our [Investors page](#)

### Next upcoming IR events

- 5.9. Morgan Stanley Industrial CEOs Unplugged in London
- 10.9 CEO Strategy call
- 16.9. Investor theme call: Services
- 23-27.9. Roadshow in the US

### Wärtsilä Investor Relations

**Hanna-Maria Heikkinen, Vice President, Investor Relations**

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# Appendix

# Main competitors

## Engines

MAN  
Himsen  
Rolls-Royce

## Other marine solutions

Kongsberg  
Alfa Laval  
GE  
Siemens  
Schottel

## Other energy solutions

GE  
Siemens  
Tesla  
Fluence

# Customer base

## Marine businesses

Ship owners  
Ship operators  
Ship management  
companies  
Charterers  
Shipyards  
Port authorities

## Energy

Utilities  
Independent Power Producers  
(IPPs)  
Industrial customers



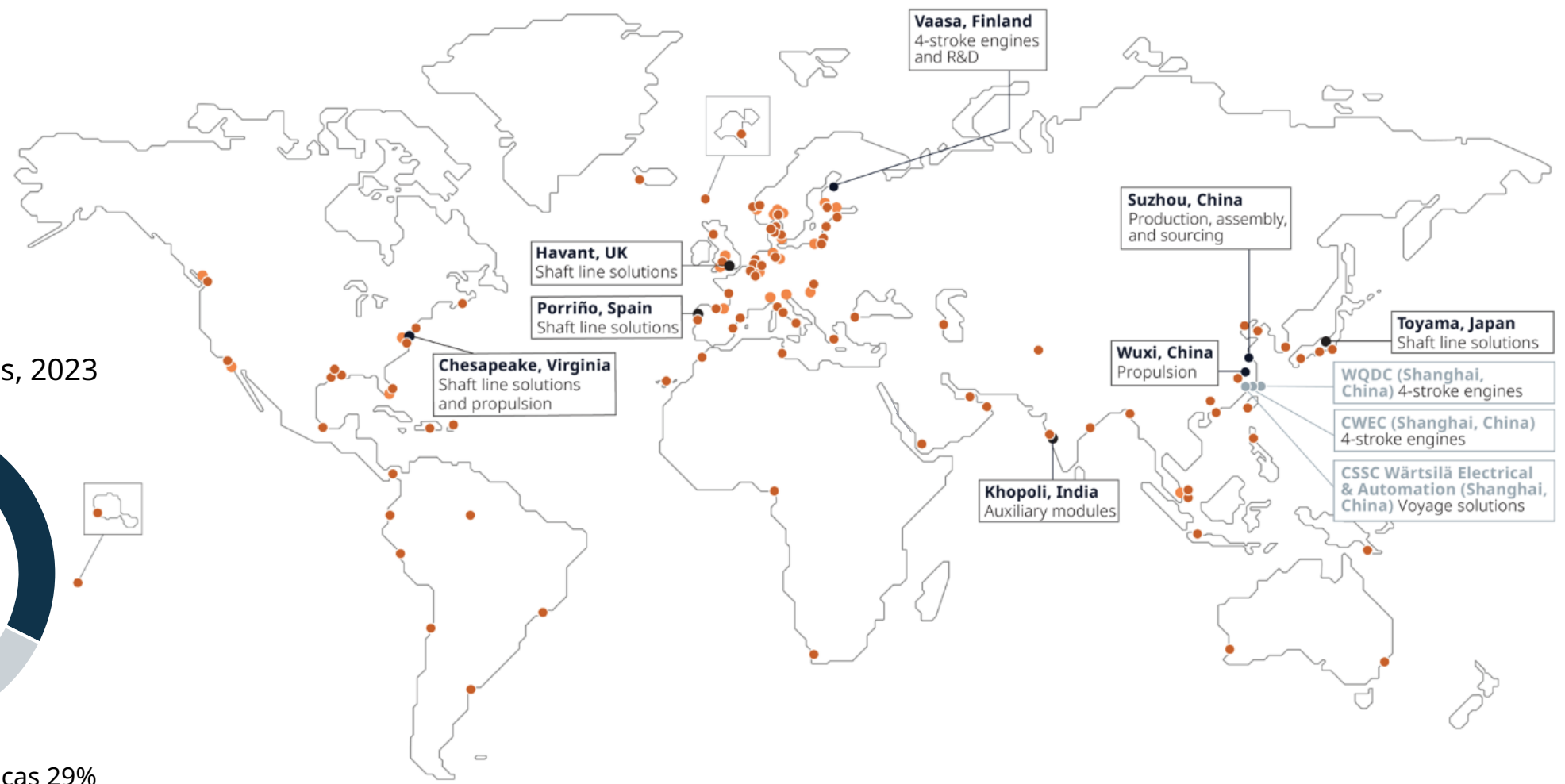


# Wärtsilä's position as a global company is reflected in the geographical breakdown of our net sales

Geographical net sales, 2023



- Europe 32%
- Americas 29%
- Asia 28%
- Other 10%



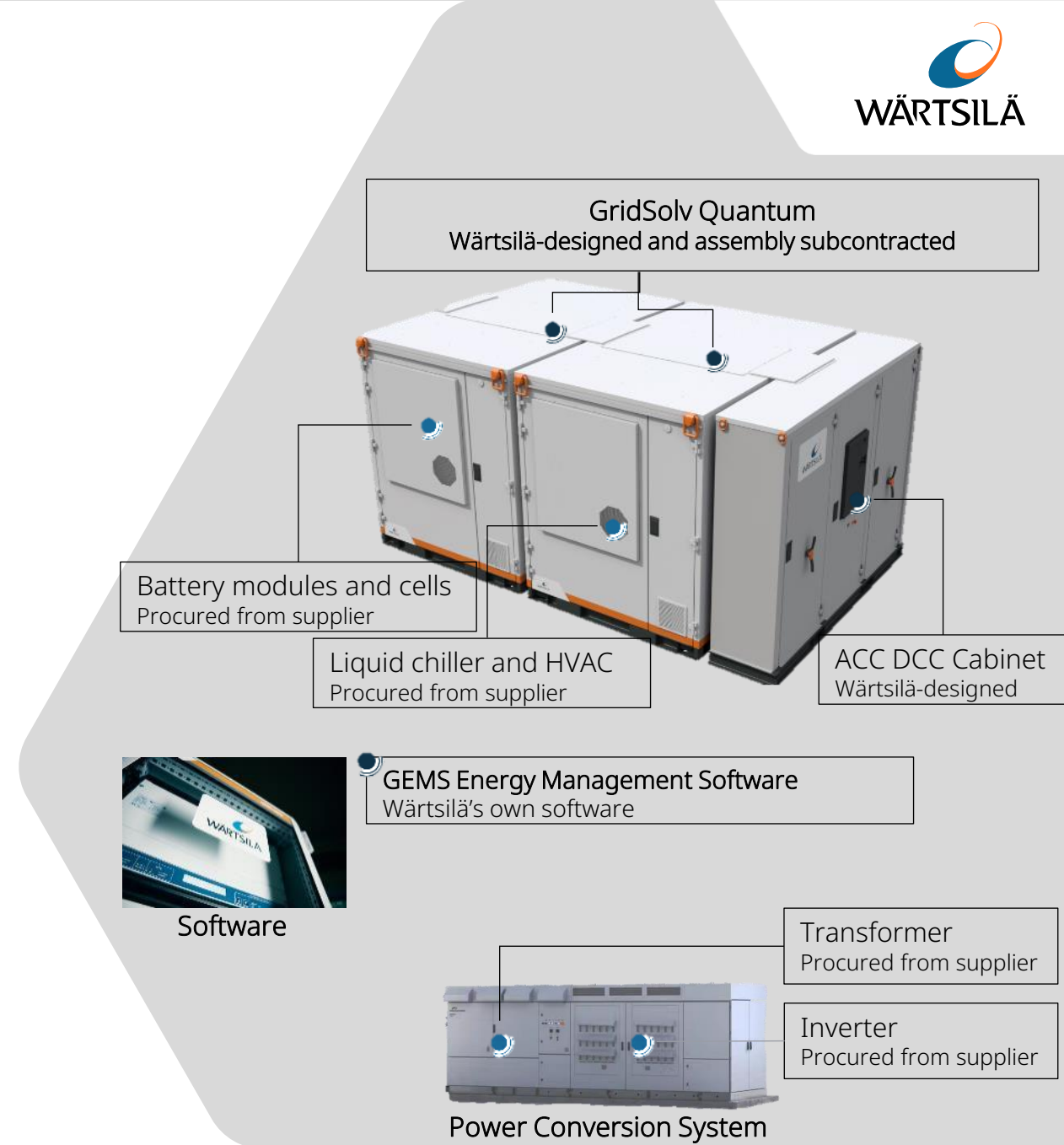
- Sites with engineering, R&D (fully owned)
- Sites with sizeable manufacturing (fully owned)
- Joint venture sites
- Service locations

# Wärtsilä Energy Storage offering

## Our role in the value chain

- Our **core offering** consists of 1) battery energy storage hardware, 2) GEMS Digital Energy Platform, and 3) lifecycle services,
- We are an energy storage **system integrator**, adding value to our customers by providing fully-engineered, end-to-end storage solutions:

- Wärtsilä's energy storage hardware** integrates battery modules, Battery Management System and Power Conversion System to a Wärtsilä-designed GridSolv enclosure to offer a complete energy storage system (ESS) to our customers.
- Our project execution team manages **full installation and integration** at the customer's site(s).
- Wärtsilä's **GEMS Digital Energy Platform** monitors, controls and optimises storage and other energy assets in the system
- Our **Service+ lifecycle solutions** include Expertise Center support, planned maintenance, performance guarantees and software maintenance



# Wärtsilä Energy Storage competitive advantages

## Our key differentiators

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- **Integration and scalability:** Wärtsilä's GridSolv Quantum is a fully-integrated energy storage solution. Its modular and scalable design enables ease of deployment and optimisation. It integrates storage to other energy assets and to the electricity grid to ensure full utilisation of storage benefits.
- **Reliability and maturity:** Wärtsilä combines 15+ years of proprietary software leadership, top-tier battery energy storage systems, and extensive power sector experience in project execution in all key markets. We are a leading player in storage integrator space globally, with a wide services network and +3.6 GW/+9.1 GWh of deployed and contracted projects to-date.
- **Safety:** Wärtsilä's ESS is designed to meet stringent safety and quality standards (including UL certification for fire safety)
- **GEMS and bankability:** With smart optimisation software and complex renewables and grid integration capabilities, our solution ensures the lowest lifecycle costs, the smallest system footprint and new revenue opportunities for our customers – to fully optimise on industry price volatility and demanding transitions in energy.



## Wärtsilä Energy Storage's direction

Key drivers towards higher profitability

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1. Selective approach in project acceptance
2. Value differentiation
3. Volume growth supporting better cost leverage and better economics of scale in procurement and assembly
4. Continuous R&D to secure latest technology and competitive product cost
5. Software monetisation
6. Synergies with thermal energy business



# Key figures in 2023



# KEY FIGURES 2023

Order intake  
**7,070 MEUR**

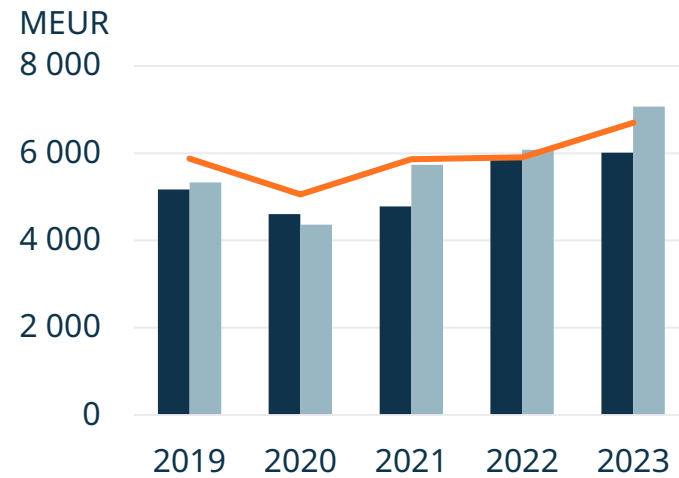
Net sales  
**6,015 MEUR**

Comparable operating result  
**497 MEUR**  
**8.3% of net sales**

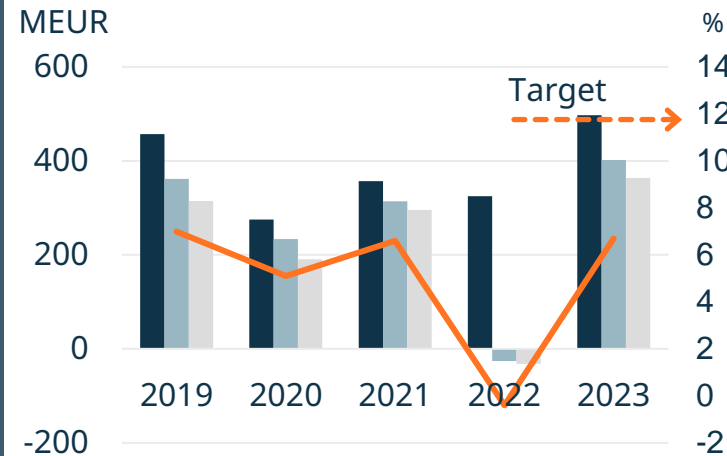
Operating result  
**402 MEUR**  
**6.7% of net sales**

Cash flow from operating activities  
**822 MEUR**

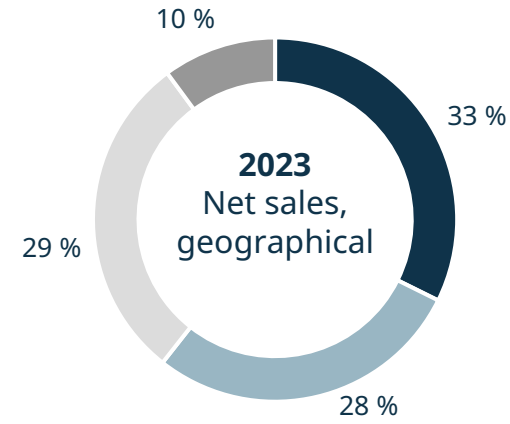
Personnel  
**17,800**



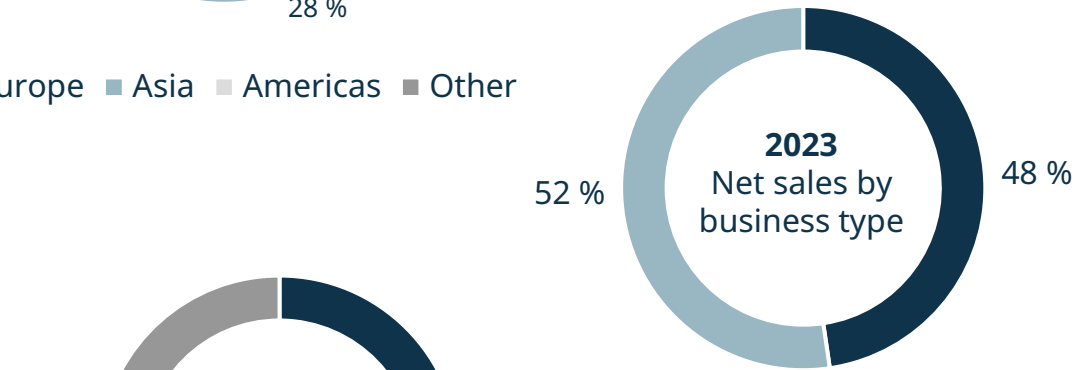
■ Net sales ■ Order intake  
— Order book



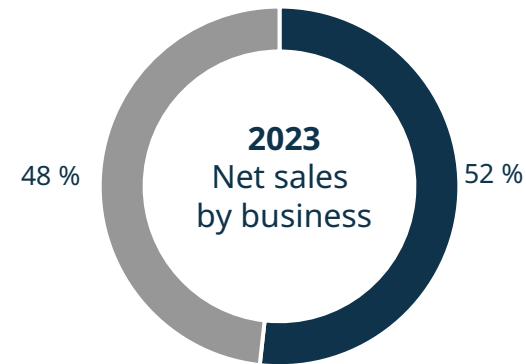
■ Comparable operating result  
■ Operating result  
■ Result before taxes  
— Operating result, %



■ Europe ■ Asia ■ Americas ■ Other



■ Equipment ■ Services



■ Marine ■ Energy

# Wärtsilä Marine – Leading the path towards decarbonisation by developing state of the art technology and enabling adoption of clean fuels

## Key figures in 2023

Order intake  
**3,261 MEUR**

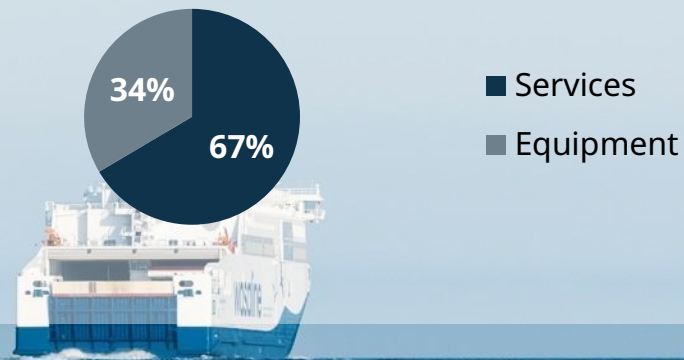
Net sales  
**2,800 MEUR**

Comparable operating result  
**312 MEUR**  
**11.2% of net sales**

## Share of total net sales in 2023



## Net sales by business type in 2023



## Offering

- Multi-fuel 4-stroke engines
- Propulsion systems
- Catalyst systems
- Fuel gas supply systems
- Hybrid and electrification solutions
- Voyage and fleet optimisation
- Exhaust treatment
- Shaft line solutions
- Services
  - Spare parts and maintenance services
  - Performance based agreements
  - Retrofits and upgrades

## Key customer segments

- Gas carriers
- Cruise & ferry
- Offshore
- Navy
- Special vessels
- Merchant



\* Financial figures for 2023 have been restated to reflect the redefined organisational structure after discontinuation of Marine Systems as a reporting segment as of 1 January 2024. Exhaust Treatment and Shaft Line Solutions business units were moved from Marine Systems to Marine Power and consequently, Marine Power changed its name to Wärtsilä Marine as of 1 January, 2024.

# Wärtsilä Energy – Towards a 100% renewable energy future

## Key figures in 2023

Order intake  
**3,041 MEUR**

Net sales  
**2,610 MEUR**

Comparable operating profit  
**219 MEUR**  
**8.4% of net sales**

## Share of total net sales in 2023



## Net sales by business type in 2023



## Offering

- Future-fuel enabled grid balancing power plants
- Hybrid solutions
- Energy storage and optimisation technology, including the GEMS Digital Energy Platform
- Lifecycle services

## Key customer segments

- Utilities
- Independent Power Producers (IPPs)
- Industrial customers





**WÄRTSILÄ**