



Wärtsilä

Shaping the decarbonisation of marine and energy
Roadshow presentation

November 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

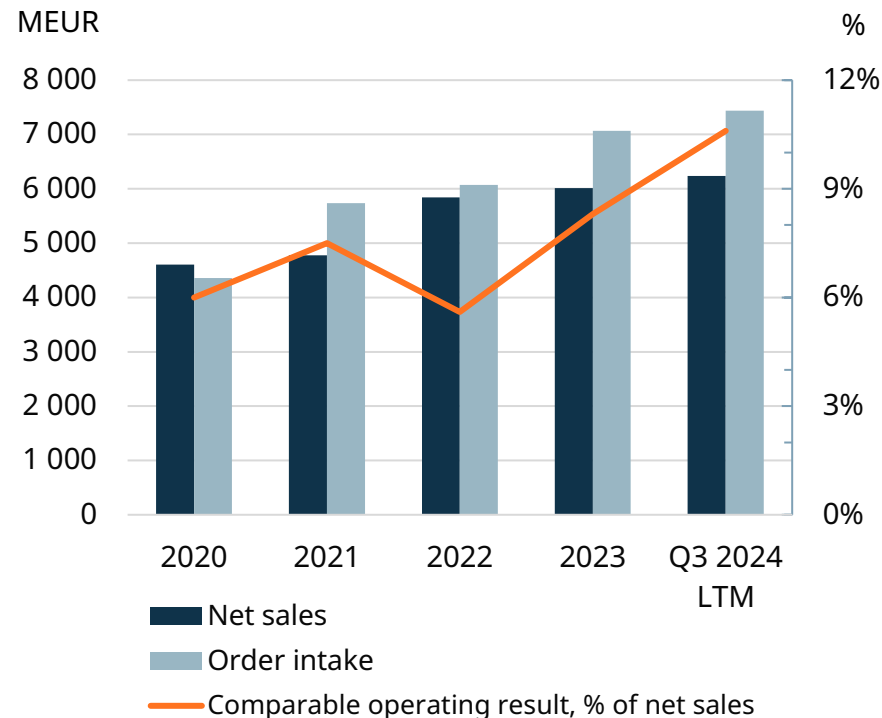
12% operating margin

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 ¹⁾
- Gradual replacement of coal
- Renewables expected to become the largest source of global electricity by early 2025 ²⁾
- 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%¹⁾ in services
 - +17% in thermal balancing installed base
 - 3X¹⁾ 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

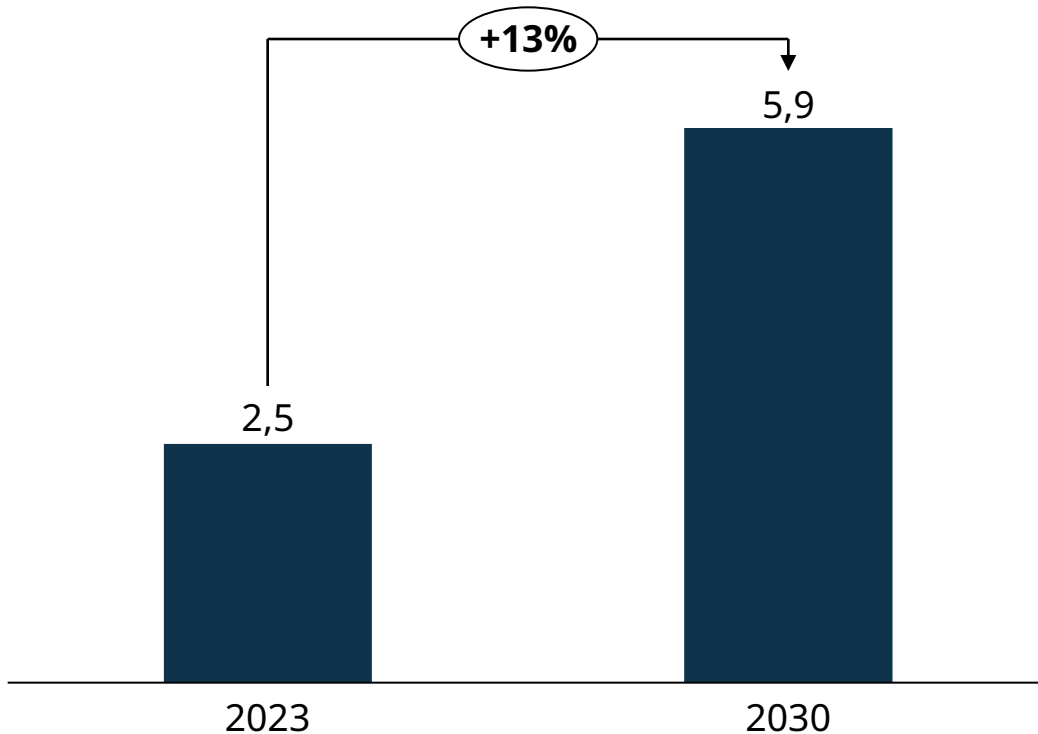


**Transform –
attractive growth opportunities at the center of the decarbonisation transformation**

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)¹⁾; 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 2030²⁾
- **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

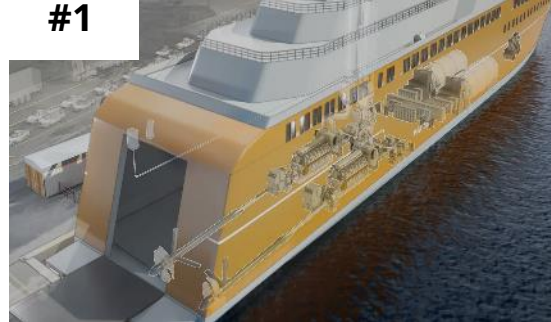
#1



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 consumption¹⁾
- 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 years²⁾
- Commercial release in 2025, CCS-ready scrubbers available already today

+60%
of net sales³⁾



Global services network to ensure maximum uptime & fuel efficiency

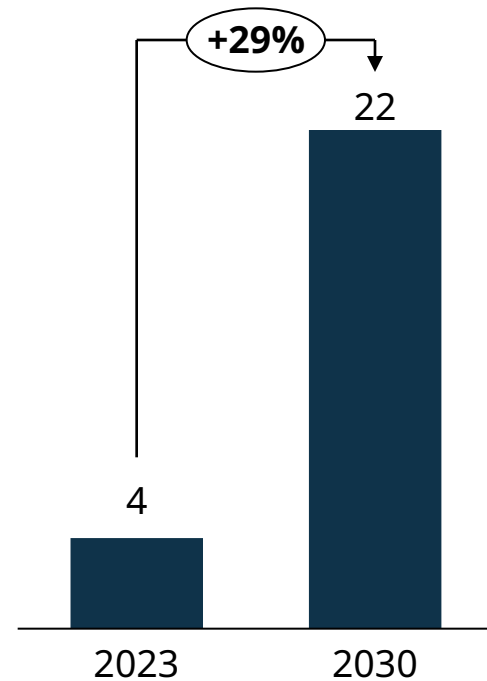
- Transactional: spare parts & field services
- Enhanced support & technical management agreements
- Optimised maintenance & guaranteed asset performance leveraging digital solutions

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

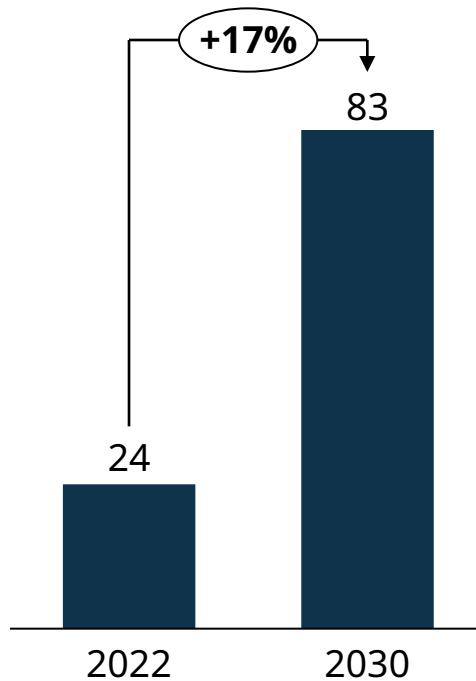
Thermal balancing

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** (IRA¹ 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 plants¹⁾

- 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 +30X¹⁾ 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%

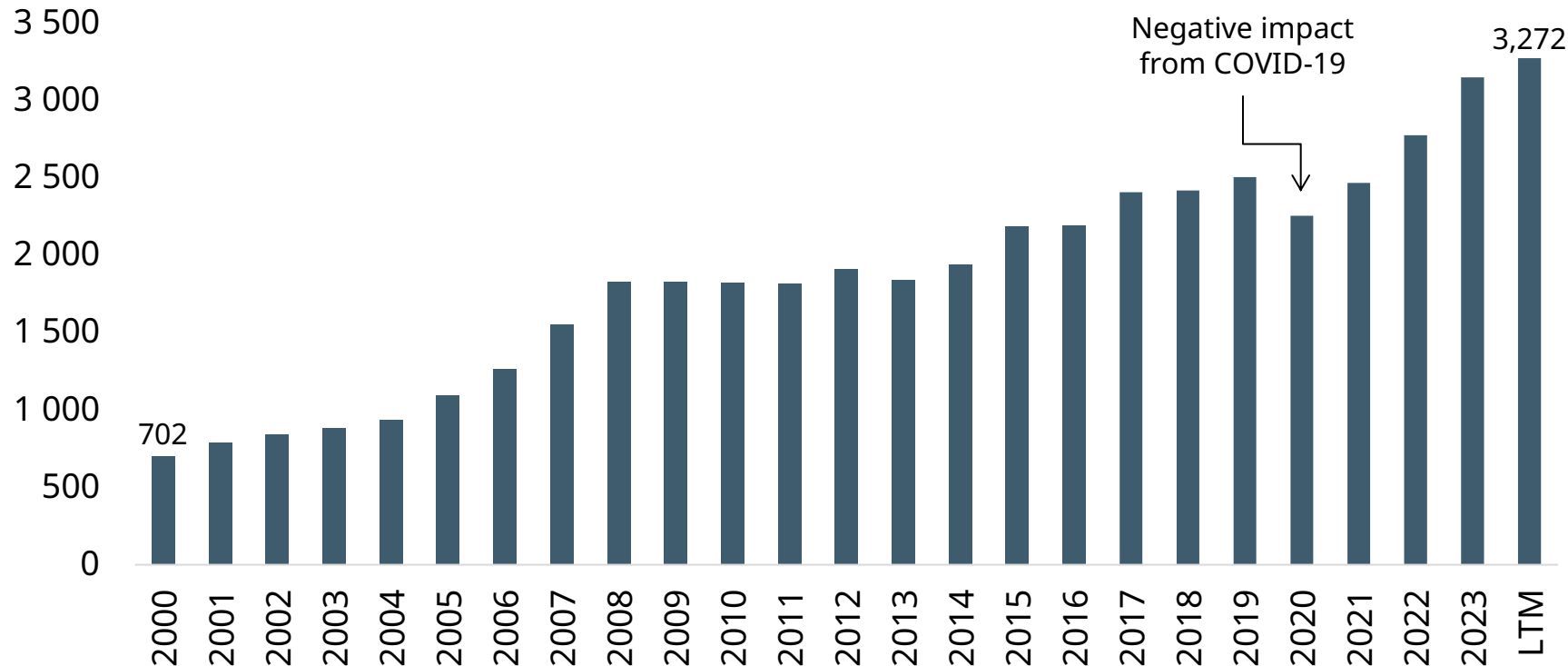
Growth in net sales since 2021

>90%

Renewal rate of service agreements

Service has provided resilient sales and profits for Wärtsilä over decades

Service Net Sales, EURm¹⁾



>€3.2bn

in LTM service net sales by Q2/2024 with good future growth potential

~30%

of installed base covered by service agreement by Q2/2024

>90%

LTM renewal rate of existing service contracts by Q2/2024

1) Service net sales as reported in Annual Reports 2000-2023, and LTM Q2/2024. 2000-2018 service was reported as its own division and from 2019 onwards as a part of the other reporting segments. Figures reflect the data as per the organisation structure at each point in time and is not adjusted for changes such as acquisitions; LTM = Last twelve months, Q3 2023-Q2 2024.

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 base²⁾ 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 growth¹⁾

Share of
absolute growth

- **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

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%¹⁾

Drivers of improved profitability²⁾

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 | } >0 |
| ▪ Cost inflation & related price adjustments | |

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 1st 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

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

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)

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

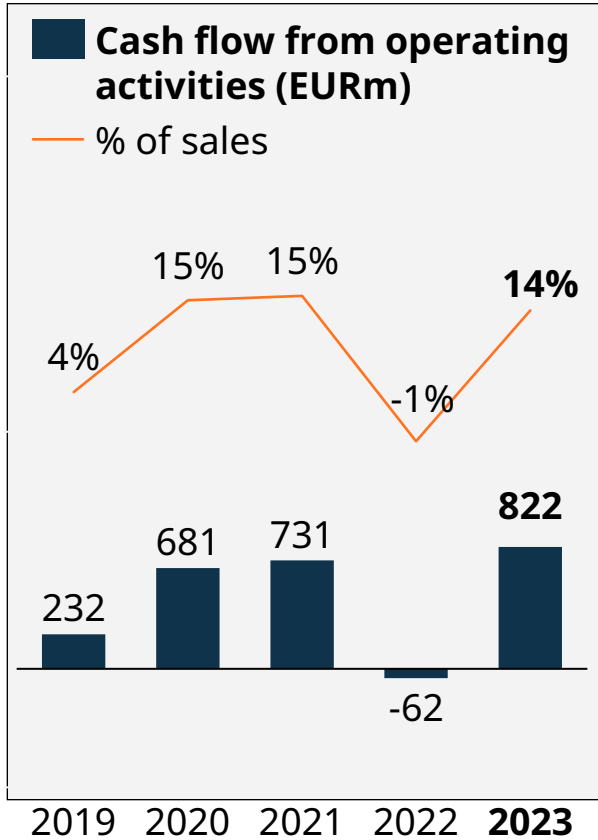
- Geopolitical tensions
- Potential trade restrictions / trade wars
- Recession risk

- Negative factors

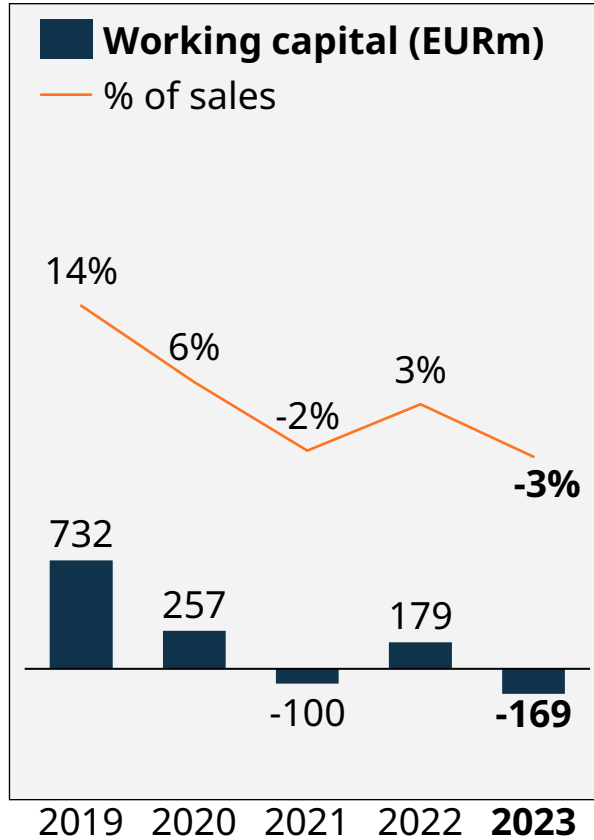
- Wage inflation
- Equipment deliveries in H2/2024 will grow faster than service deliveries, especially in Energy, which will impact relative profitability



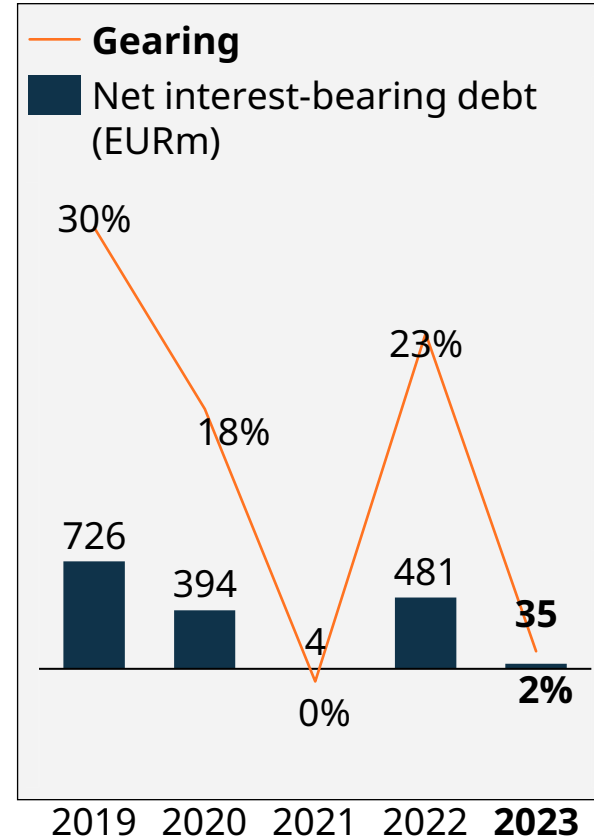
Strong balance sheet and financial position to support strategy execution



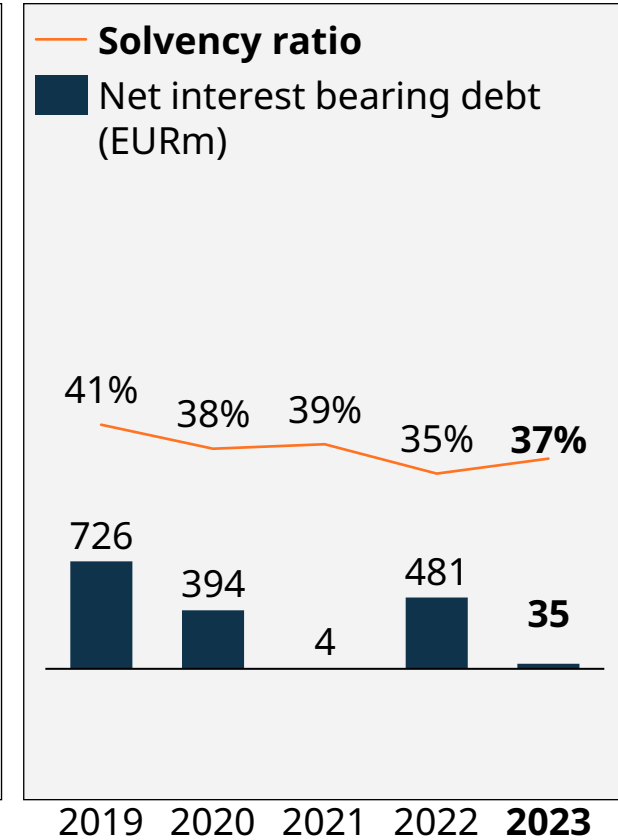
Strong cash flow development from 2022 level



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

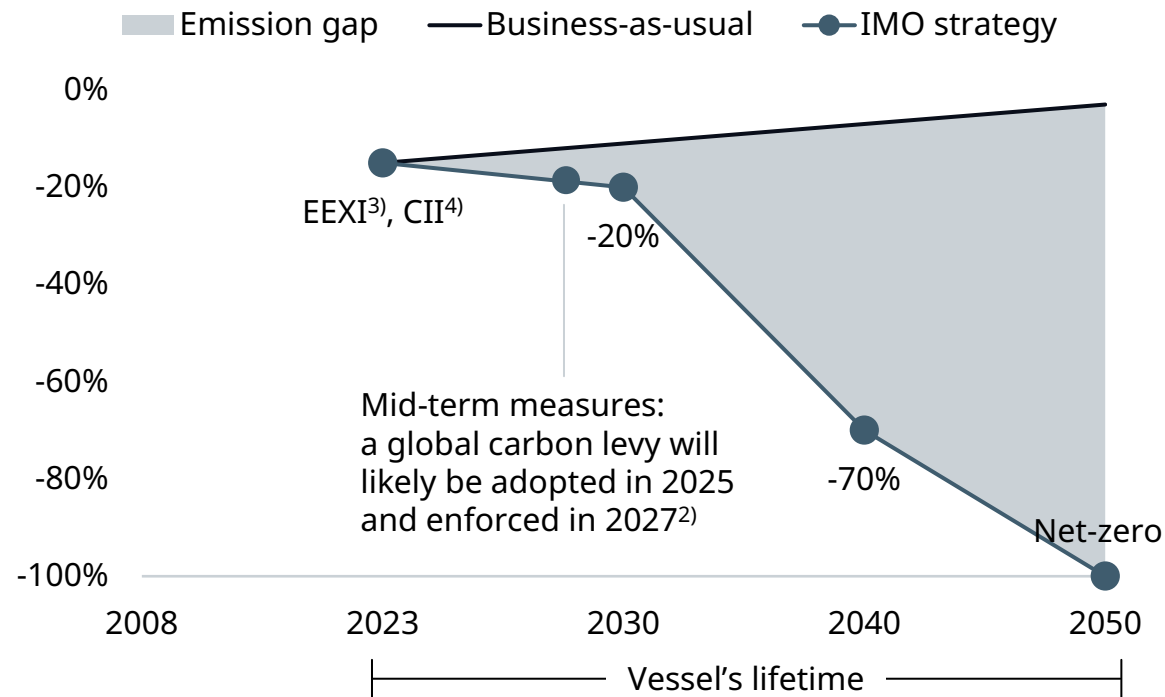


After IMO net-zero commitment last year, the regulatory focus has moved to “mid-term measures”

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

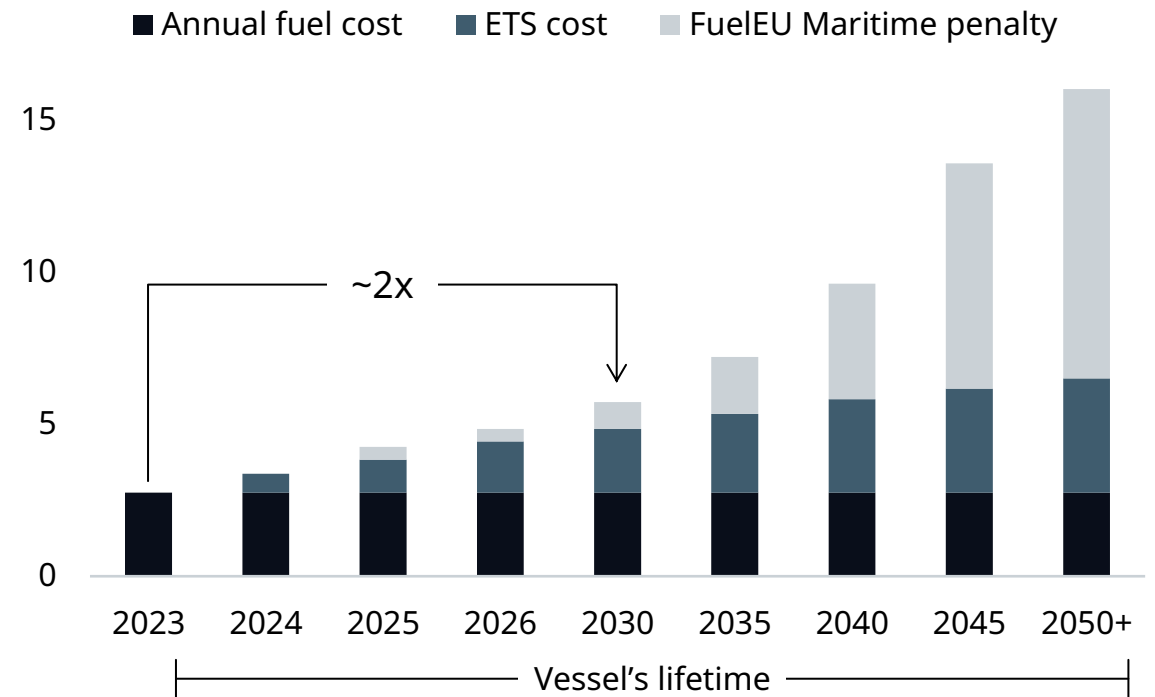
IMO GHG Strategy¹⁾

GHG emission reduction % vs 2008



EU Fit-for-55

Fuel-related costs for Handymax bulker operating in EU, EURm³⁾



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

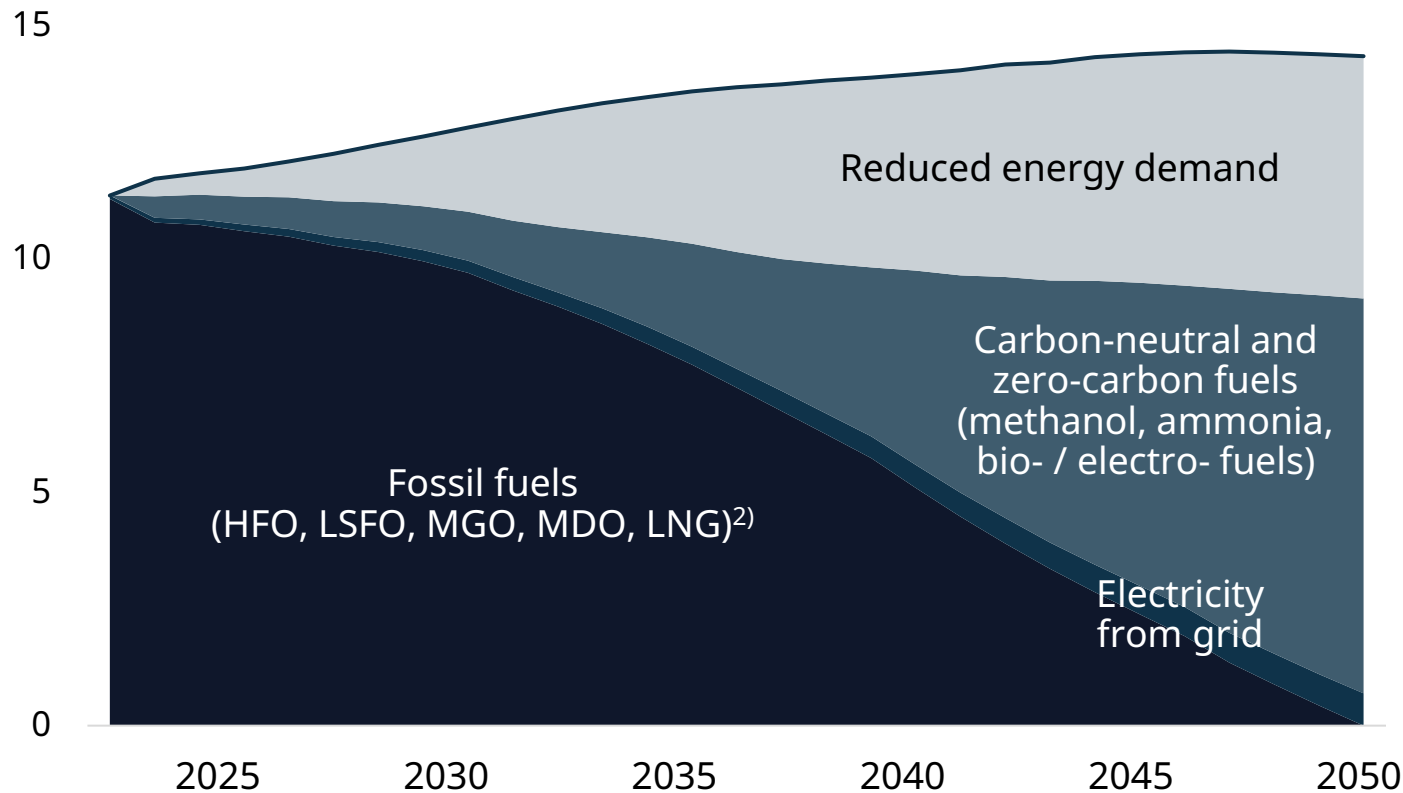
Burn less fuel ¹⁾		Clean up emissions ¹⁾	Use alternative energy sources	
Vessel efficiency	Operational efficiency	Emission abatement	Sustainable fuels	Electrification
<ul style="list-style-type: none"> Reduction of GHG emissions and fuel cost E.g., energy efficiency improvement of engine, propulsion,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

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 2050¹⁾

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, ESTs³⁾ are growing:**
 - 37% of the tonnage on orderbook is fitted with at least 1 EST³⁾
 - 129 hybrid / full-electric 2 000+ GT vessels were ordered in LTM (compared to 99 in 2022 and 55 in 2019)

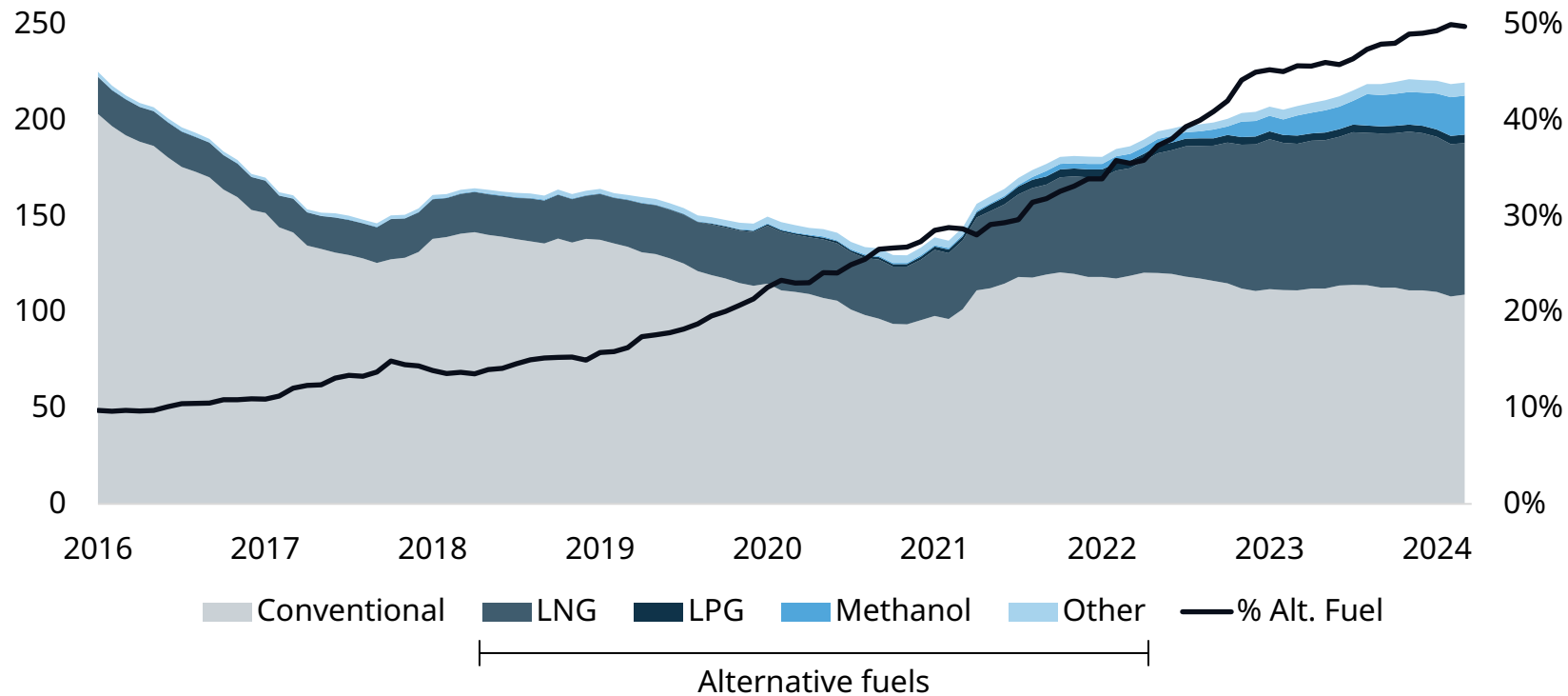
1) Source: DNV Maritime Forecast 2050; 2) HFO – Heavy Fuel Oil; LSFO – Low Sulphur Fuel Oil; MGO – Marine Gas Oil; MDO – Marine Diesel Oil; 3) Energy Saving Technology

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, mGT¹⁾



~50%

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

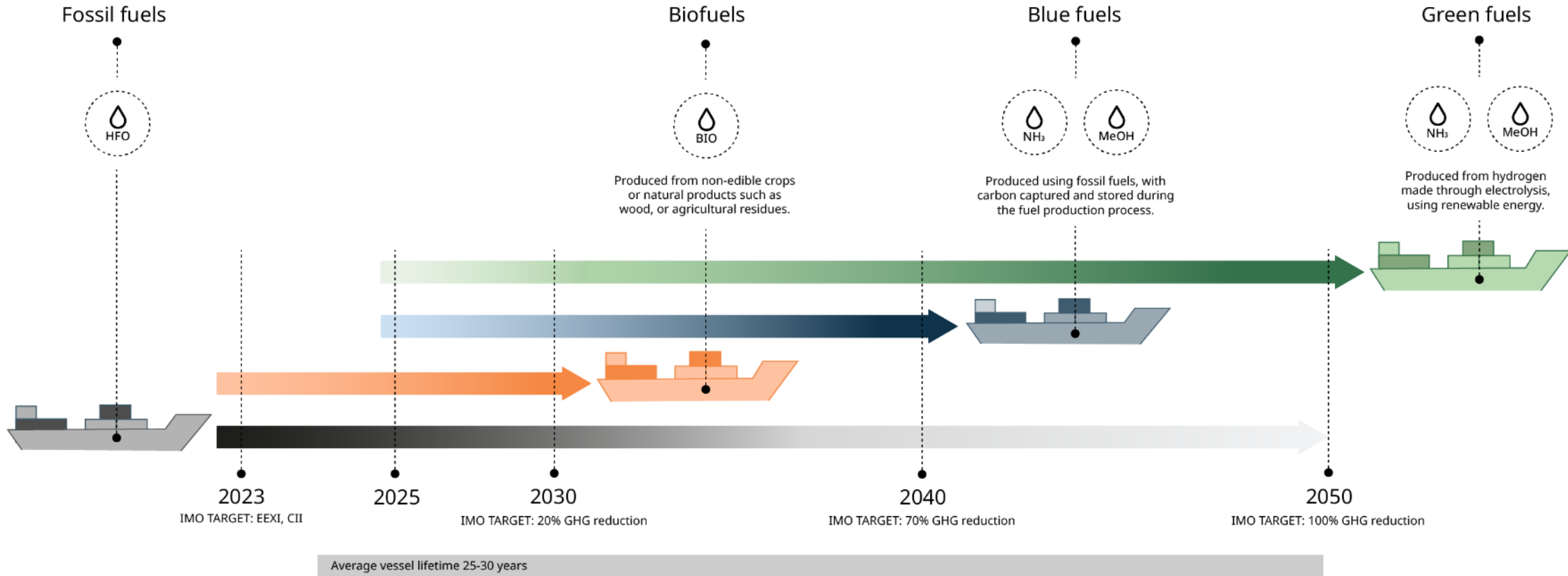
~60%

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

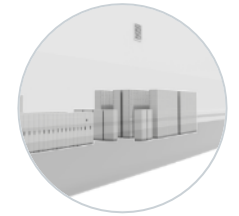
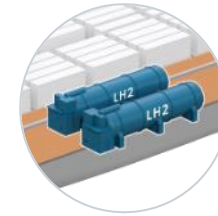
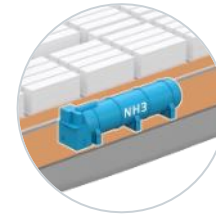
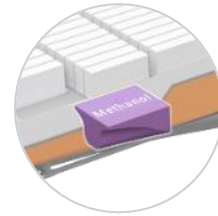
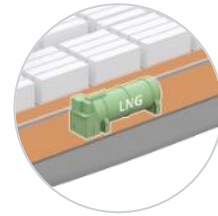
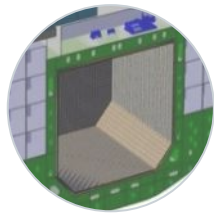
In Wärtsilä, alternative fuel-capable engines account for >60% MW ordered in 2023



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

HFO: Heavy fuel oil. NH₃: 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
Fuel price factor (per GJ) ¹⁾	1x	1.1x – 4.6x ²⁾	2.6x – 5.5x ³⁾	2.4x – 4.3x ⁴⁾	3.6x – 4.6x ⁴⁾	2.1x – 3.1x ⁴⁾	2.0x – 5.3x ⁸⁾
Fuel price factor in 2035, incl. carbon tax ^{1) 5)}	1x	0.8x – 1.4 ²⁾	0.8x – 1.6x ³⁾	0.7x – 1.2x ⁴⁾	1.2x – 1.5x ⁴⁾	0.6x – 1.0x ⁴⁾	0.8x – 2.0x ⁸⁾
Gross tank size factor ⁶⁾	1x	1.7x – 2.4x ⁷⁾	1.7x	3.9x	7.3x	19.5x	~40x (~20x potential)

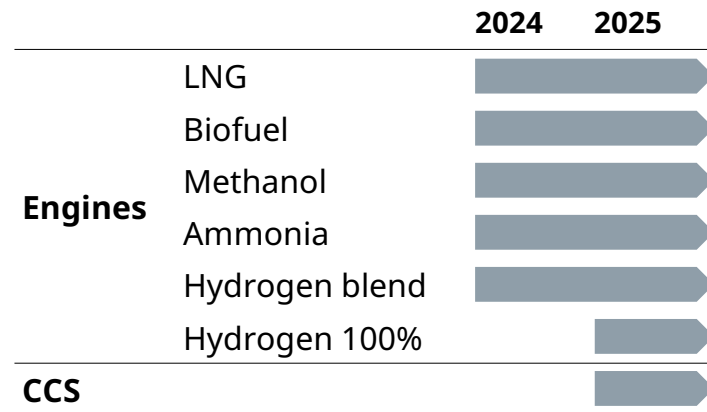
1) Fuel production cost estimate for 2025 and 2035; source: Maersk Mc-Kinney Møller Center for Zero Carbon Shipping – NavigaTE 2023; 2) Price range spans between fossil & electro- methane; 3) Price range spans between bio- & electro- methanol; 4) Price range spans between blue- & electro- ammonia/hydrogen; 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:

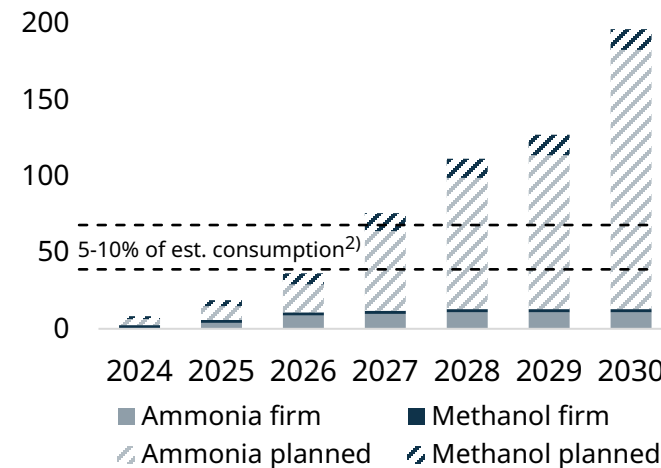
Wärtsilä's alternative fuel roadmap



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 2030¹⁾:

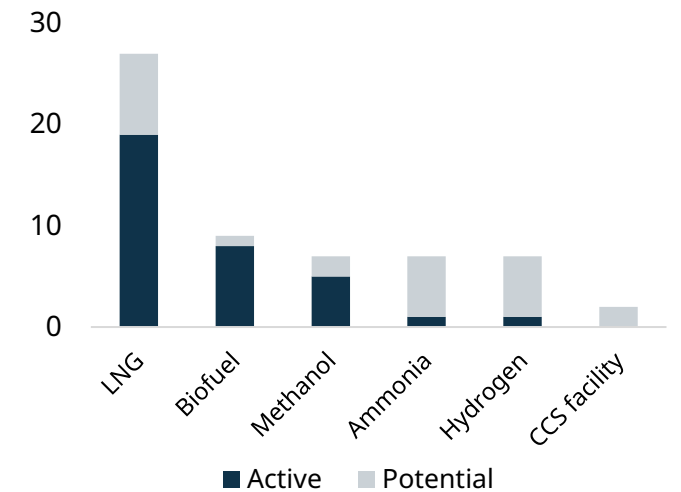
Production of sust. methanol and ammonia, Mt



Port infrastructure

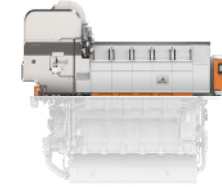
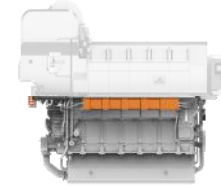
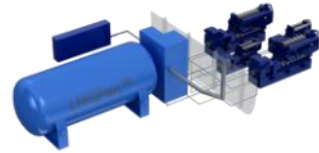
- Bunkering infrastructure is limited but developing rapidly; carbon capture and storage infrastructure is still lacking
- ~60% of the top 50 ports worldwide are planning to build alternative fuel bunkering³⁾:

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 ¹⁾ engine to run on:	Fuel System	Engine base	Engine top
▪ Bio/Synthetic diesel	▪ No changes	▪ No changes	▪ No changes
▪ Bio/Blue/Green methane	▪ No changes	▪ No changes	▪ No changes
▪ Ammonia	▪ Replace with AmmoniaPac	▪ No changes	▪ Change fuel injection system and power pack ²⁾
▪ Methanol	▪ Replace with MethanolPac	▪ No changes	▪ Change fuel injection system and power pack ²⁾
▪ Hydrogen blend ³⁾	▪ Move to alternative fuel handling system	▪ No changes	▪ No changes

↓

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

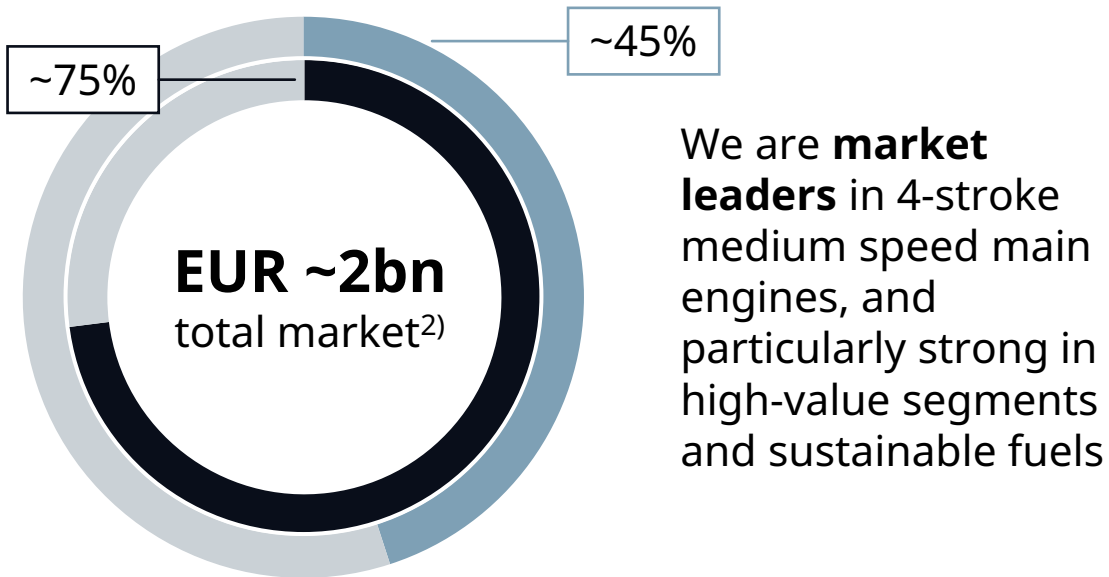
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Upgrading a multi-fuel engine to a new fuel requires limited investment thanks to high modularity and part commonality

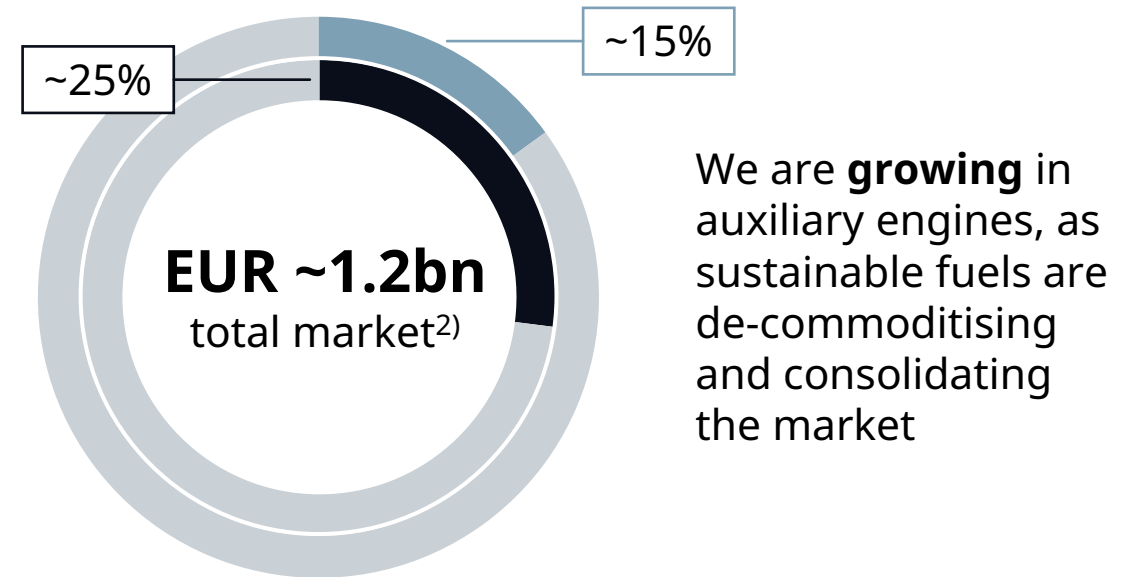
1) DF – Dual Fuel; 2) I.e., piston, cylinder liner, connecting rod; 3) Up to 15% on fuel volume

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

4-stroke medium speed main engines market share¹⁾



Auxiliary engines market share¹⁾










● 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

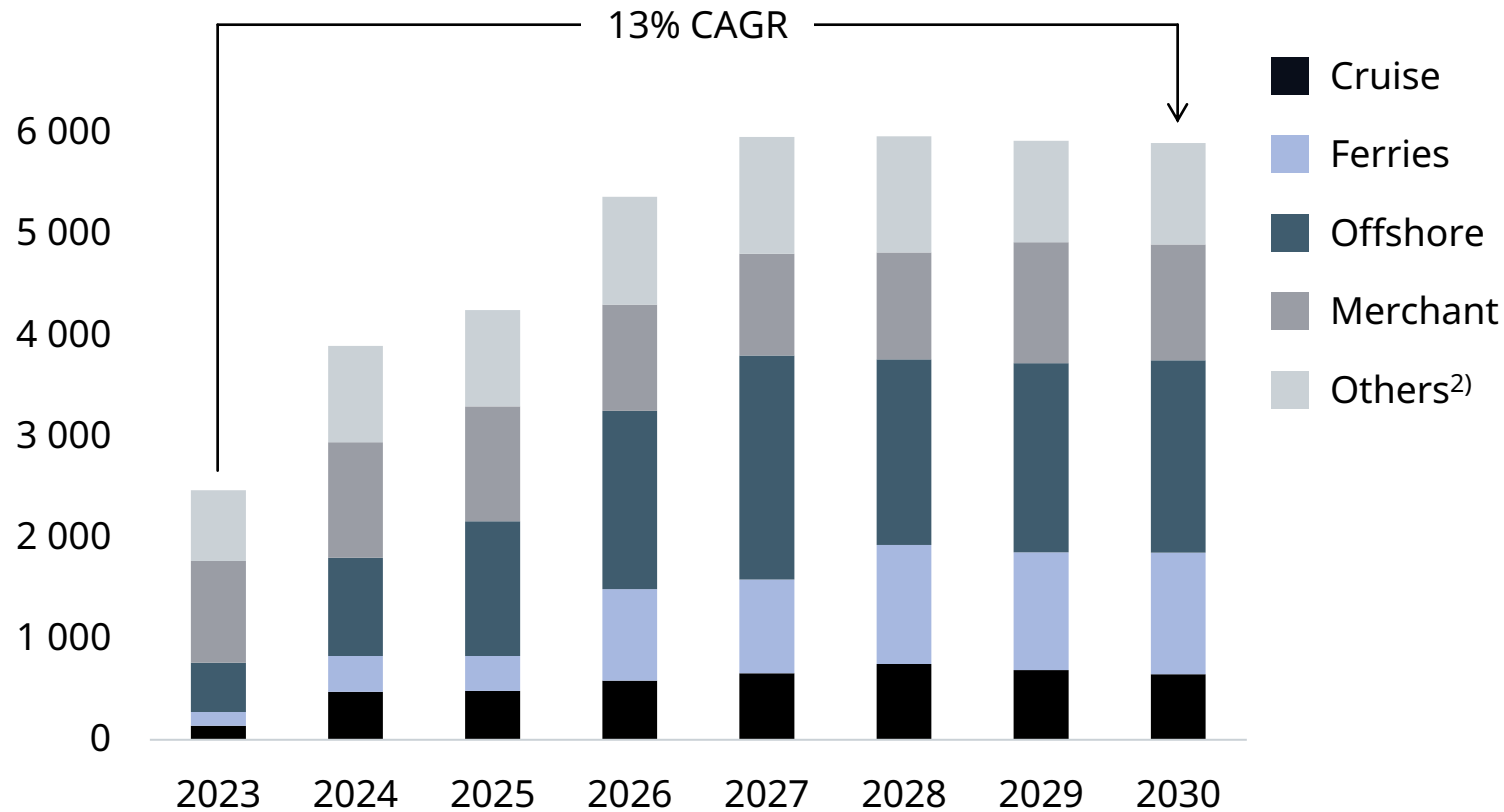
Typical Wärtsilä Marine offering per vessel¹⁾

	Cruise	Ferries	Offshore	Navy	Specials	Merchant	Hy-El merchant
							
Engines / Hybrid¹⁾	Diesel-Electric	Main Engines Aux Engines Hybrid System	Hybrid-Electric	Aux Engines	Main Engines	Aux Engines Main Engines ⁵⁾	Hybrid-Electric
Propulsion²⁾	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
Potential³⁾	EUR 15-40m	EUR 10-25m	EUR 5-15m	EUR 5-15m	EUR 5-15m	EUR 2-15m	EUR 25-30m
% of Order Intake⁴⁾	~25%		~5%	~10%	~5%	~50%	-

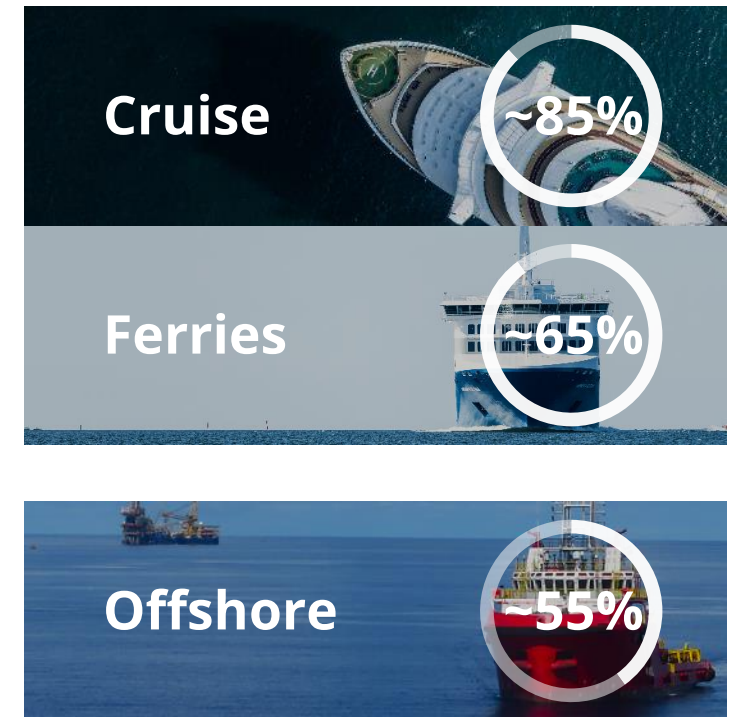
1) Non-exhaustive list; offering depends on vessel specific configuration and may vary substantially. 2) CPP/FPP = Controllable/Fixed Pitch Propeller; EST = Energy Saving Technology, e.g., gate rudder, EnergoProFin, EnergoFlow, EnergoPac; 3) Potential per shipset; it includes catalyst systems and electrical 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, MW¹⁾



Wärtsilä market share, MW³⁾

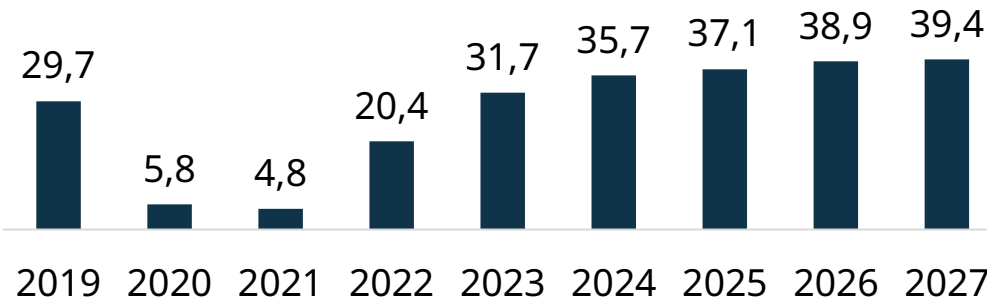


1) Source: Clarksons March 2024 forecasts; 2) Fishing, dredgers, support units, yachts, tugs, etc.; 3) Market share on 4-stroke main and auxiliary engines as per Q4 2023, Wärtsilä estimates, MW

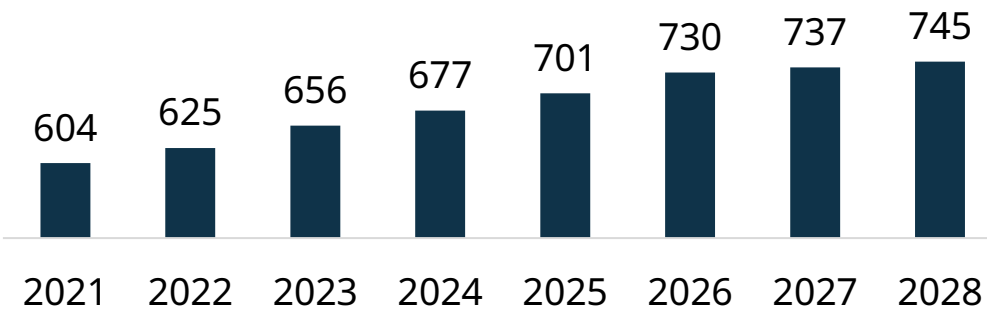
Global cruise capacity is forecast to grow over 10% from 2024 to 2028



Cruise passengers, million passengers



Cruise capacity, 1000x lower berths¹⁾



- ✓ 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

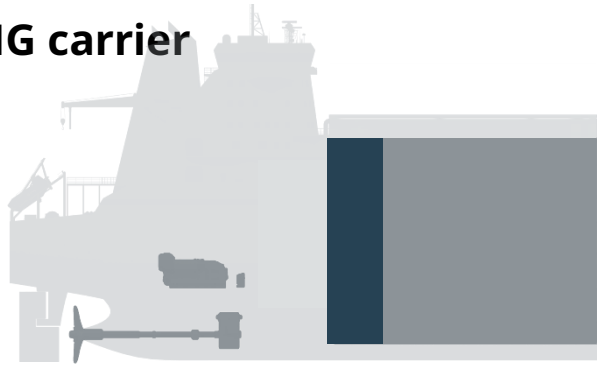
~185k cbm capacity

3x 4-stroke spark-gas gensets

2x 4-stroke dual fuel gensets

2 MWh batteries

■ Extra cargo capacity

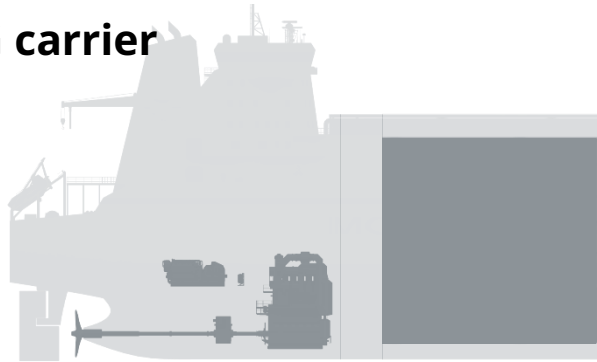


Conventional 2-stroke LNG carrier

174k cbm capacity

2x 2-stroke main engines

4x 4-stroke aux engines

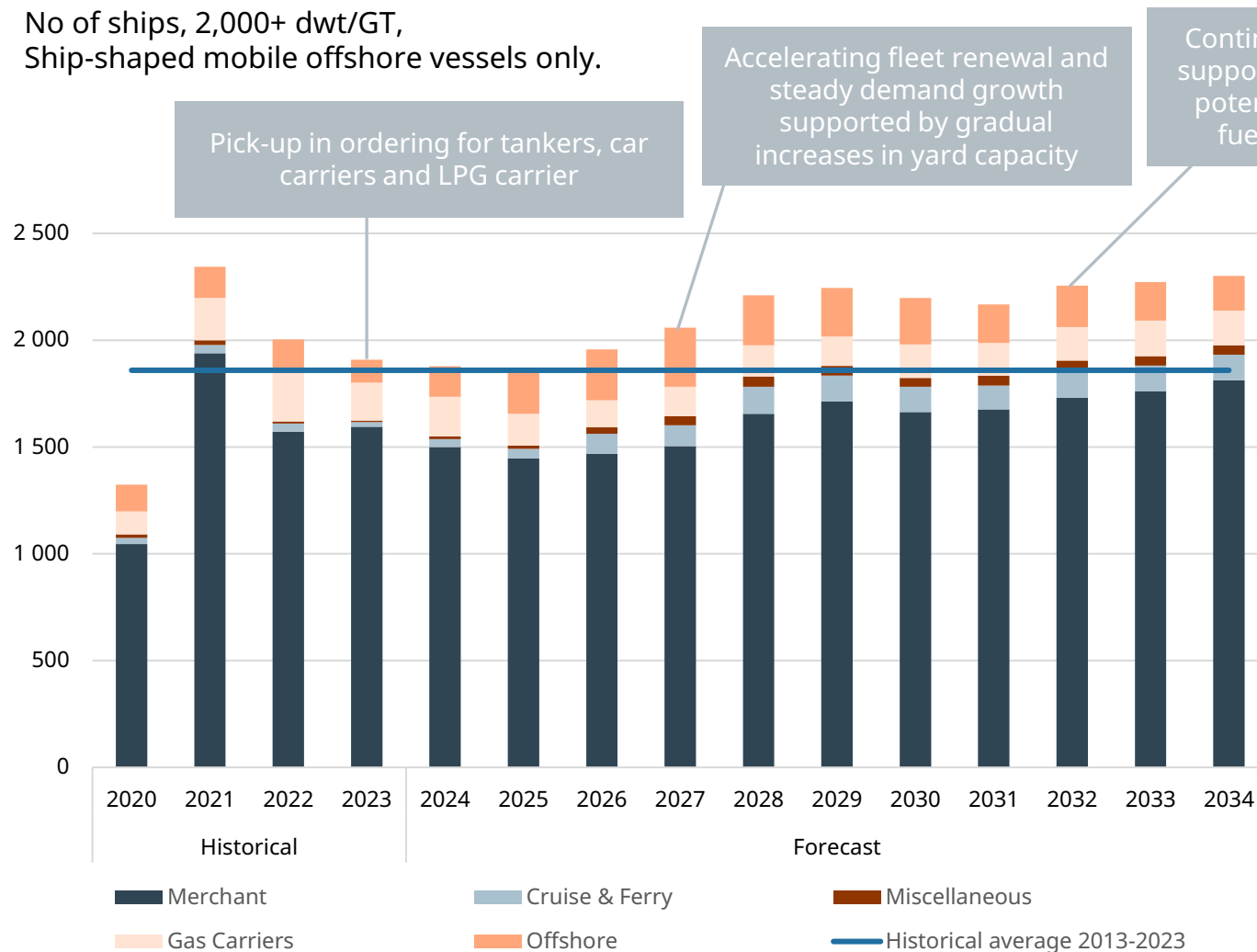


- ✓ **Launched at Gastech in 2023**
with Shell and Hudong-Zhonghua Shipbuilding
- ✓ **6% extra cargo capacity**
with same ship dimensions
- ✓ **>10% lower fuel consumption and emissions**
with optimal efficiency across all speeds
- ✓ **20% lower maintenance costs**
with fewer engine running hours
- ✓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

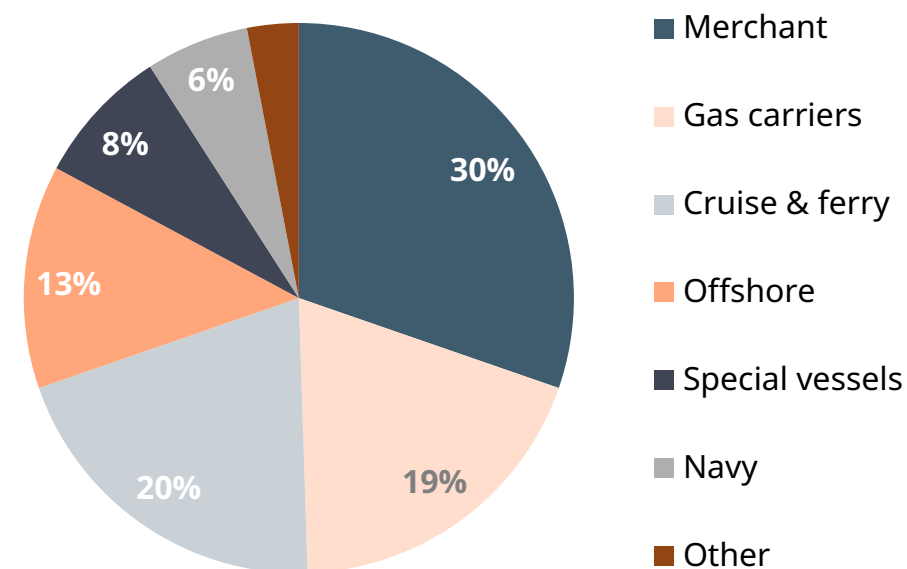
Values refer to a comparison with a conventional 174k cbm LNGC (2x 2-stroke low pressure DF main engines, 4x 34DF 4-stroke aux engines), calculated on full year cycle real operating profile with average speed of 15 knots in laden and 13.5 knots in ballast; cargo increase confirmed by Hanwa Ocean and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

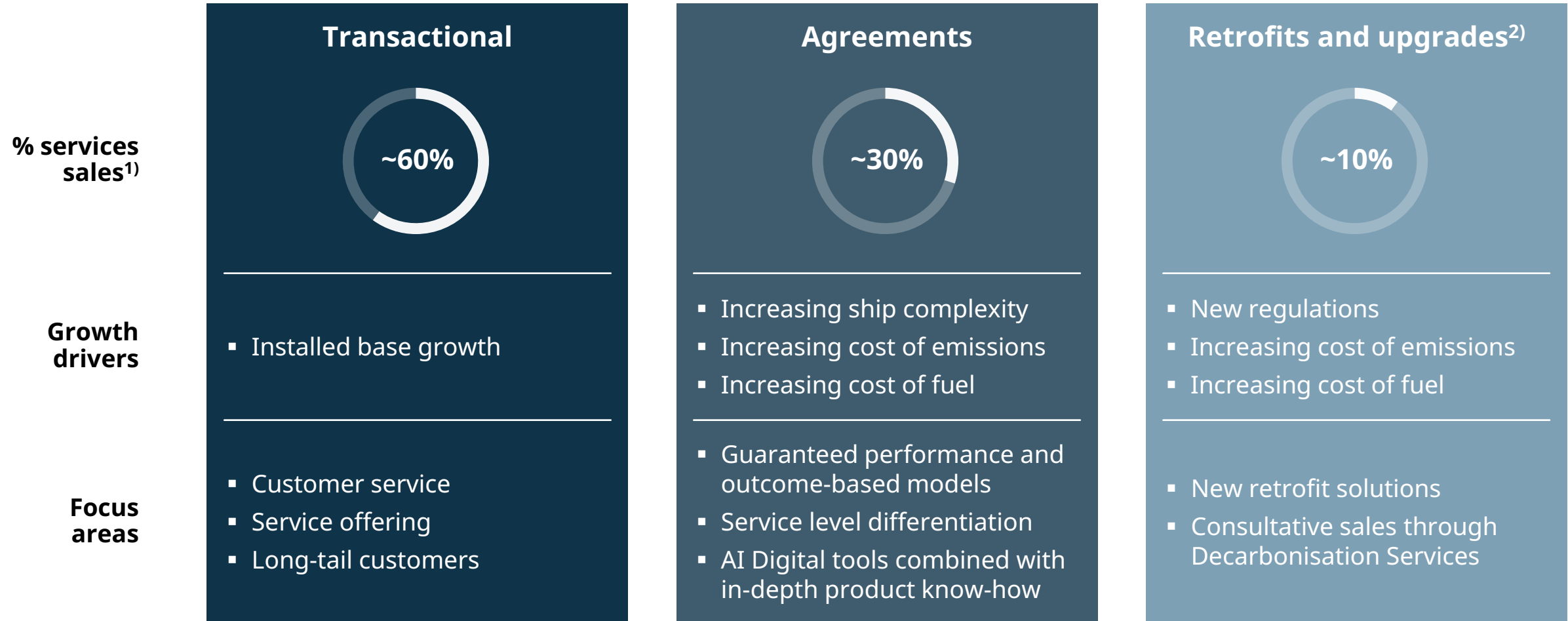


Wärtsilä's order intake in Marine businesses by customer segment in 2023



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 accounts for >60% of Marine sales; we operate through an integrated service framework with three service delivery models

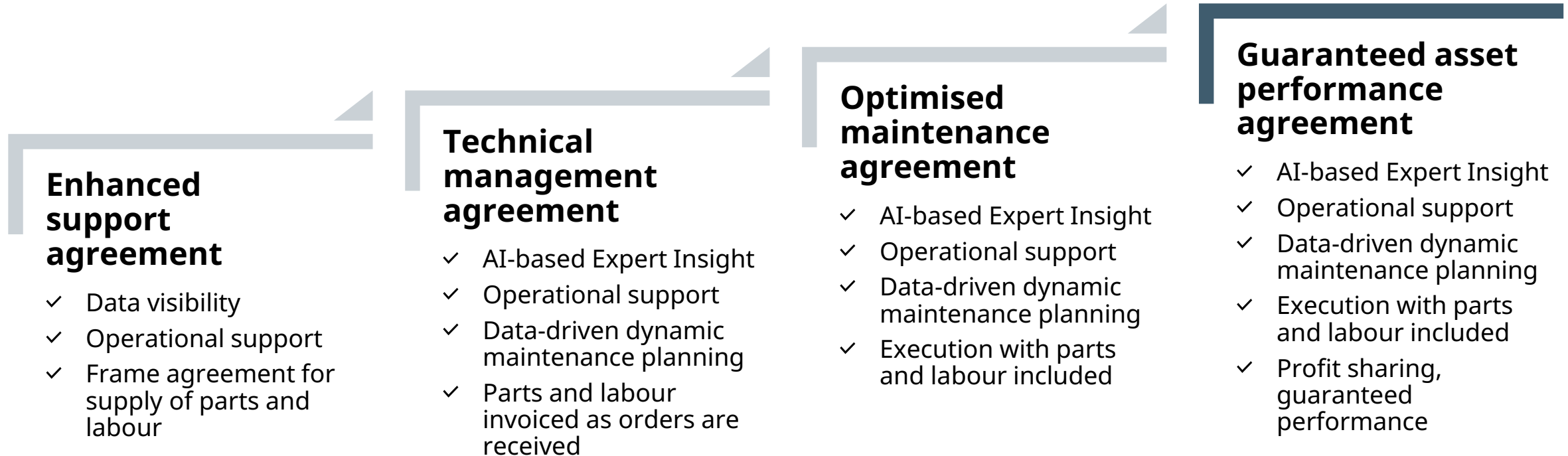


1) Q3 2023–Q2 2024; agreement sales include all spare parts and field services sold to vessels under agreement, plus the agreement fee; 2) Referred to as Service Projects in the interim reports

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

From 1x¹⁾

Up to 2-3x¹⁾



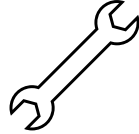
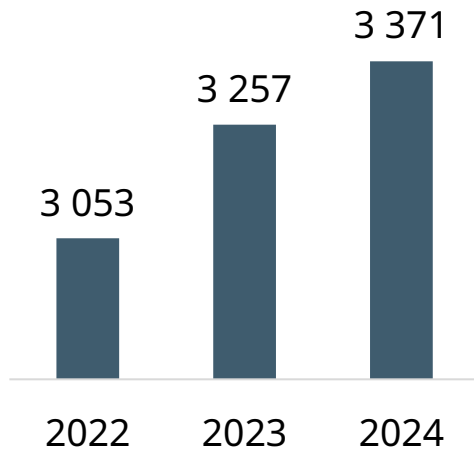
1) Sales EUR/kW relative to transactional

We have the widest service network in marine



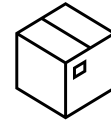
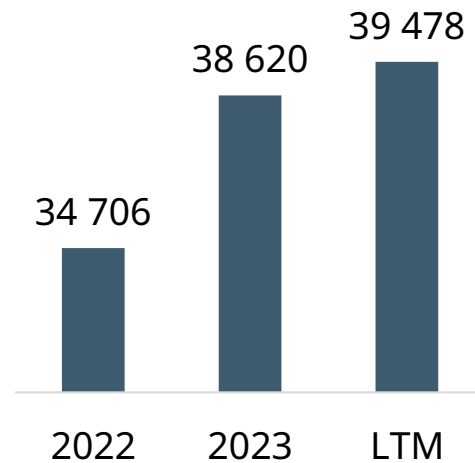
~3,400

professionals in 70+ countries¹⁾



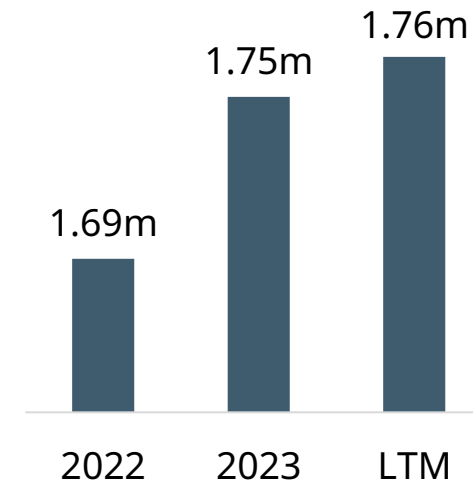
~39,500

marine field service jobs started annually



~1,760,000

marine outbound delivery lines annually²⁾



We continuously review our footprint to better serve our customers and access the best talents

LTM - Last twelve months, Q3 2023-Q2 2024; 1) Billable field services and workshop personnel as per Q2 2024, including Marine and Energy; 2) One delivery can include one or multiple lines to for the same customer, one line includes a material number and its quantity

Service agreements enable maximum fleet efficiency and uptime



Reliability and uptime have increased while unforeseen maintenance events have decreased; with early anomaly detection, enabled by Expert Insight service, we expect to deliver further improvements in all these areas



Head of Fleet Asset Management, major cruise line



11

Expertise Centres, providing 24/7 remote technical support to agreement customers



40 million

datapoints collected on average every day from a connected vessel



>90%

issues resolved remotely



EUR >60m

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



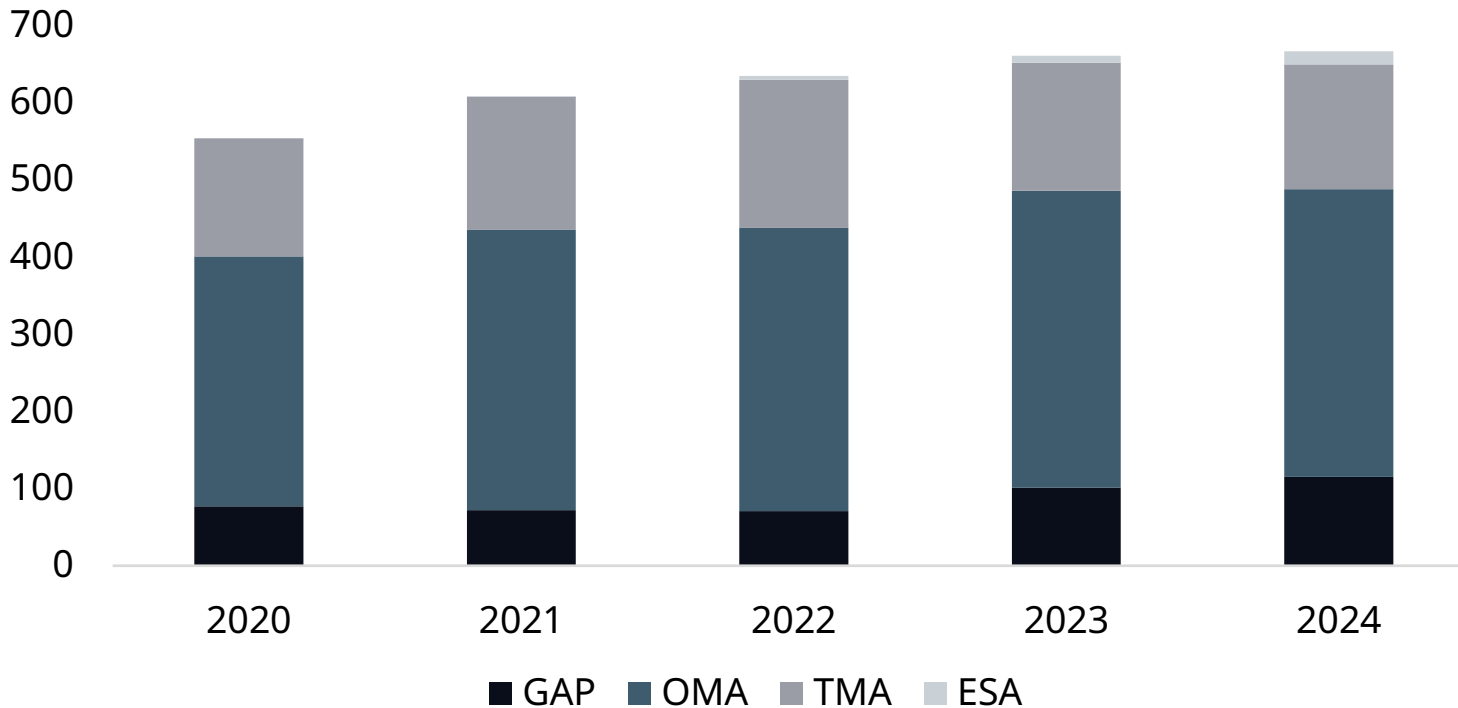
25-30%

average reduction in planned/unplanned maintenance¹⁾

1) Analysis on 160 LNG carriers with an active GAP - Guaranteed asset performance or OMA - Optimised maintenance agreement

The fleet under Wärtsilä service agreement keeps expanding and shifting towards higher-tier agreements

Fleet under agreement as end of Q2 over 2020-2024, # ships¹⁾



LTM - Last twelve months, Q3 2023–Q2 2024; 1) Agreement scope including 4-stroke and 2-stroke engines; Ship Electrical Solutions, Propulsions, Voyage, Exhaust Treatment excluded; GAP - Guaranteed asset performance agreement, OMA - Optimised maintenance agreement, TMA - Technical management agreement, ESA - Enhanced support agreement; figures as per end of June of each year; 2) In MW terms, 4-stroke installed base, excluding QuantiParts

>90%
renewal rate LTM Q2 2024

29%
of our engine installed base is under agreement²⁾

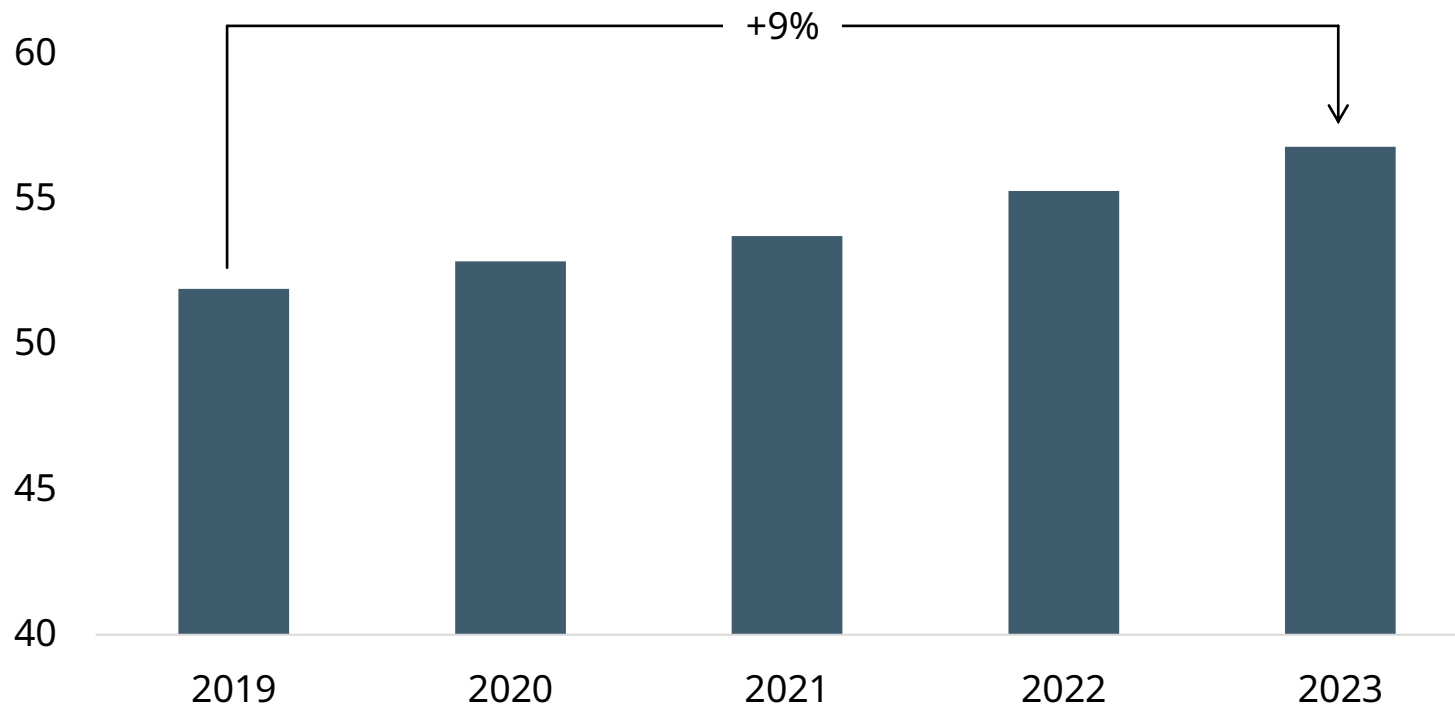
24%
sales to agreement vessels in 2023 were linked to GAP

13%
growth in sales to agreement vessels LTM Q2 2024

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, GW¹⁾



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

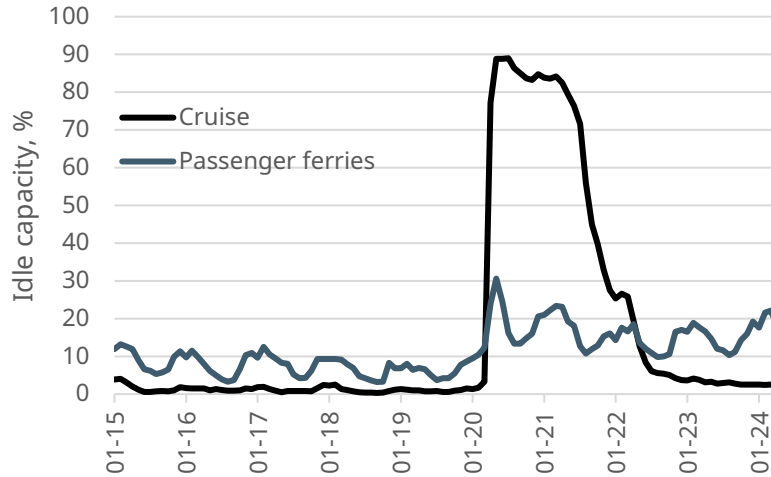
>3,000
customers groups buy from us at least once a year

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

+7%
number of buying customer growth since 2019

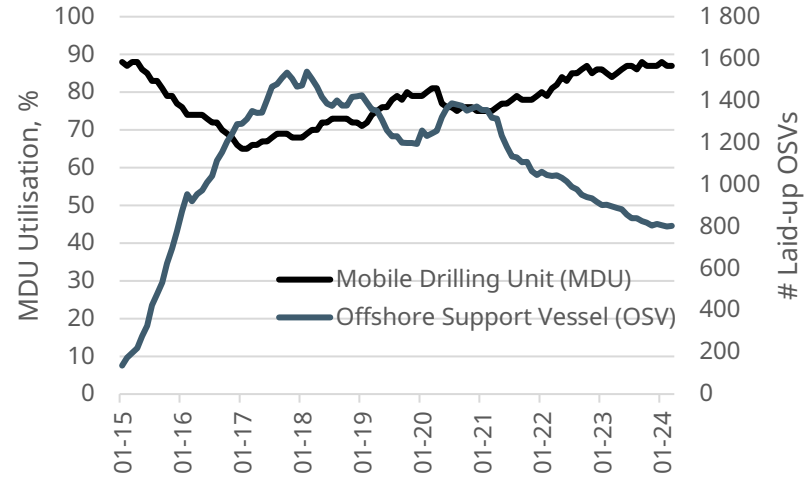
Vessel utilisation rates driving Wärtsilä's service business

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, including Carbon Capture and Storage solutions (CCS), are estimated to be EUR 15-20bn over the next decade¹⁾

Propulsion efficiency upgrades	Alternative fuel conversions	Radical power derating	Electrification projects
Propulsion efficiency improvements, e.g., OptiDesign, EnergoFlow, EnergyProFin ³⁾	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 ⁴⁾ upgrade, including hybrids and shaft generators to improve OpEx, emissions, safety
700+ vessels contracted	10+ vessels contracted	30+ vessels contracted	30+ vessels delivered ⁵⁾
EUR 20k-1m per shipset	EUR 3-8m per shipset	EUR 5-8m per shipset	EUR 3-8m per shipset

1) Source: Clarksons, incl. ESTs, CCSs, 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



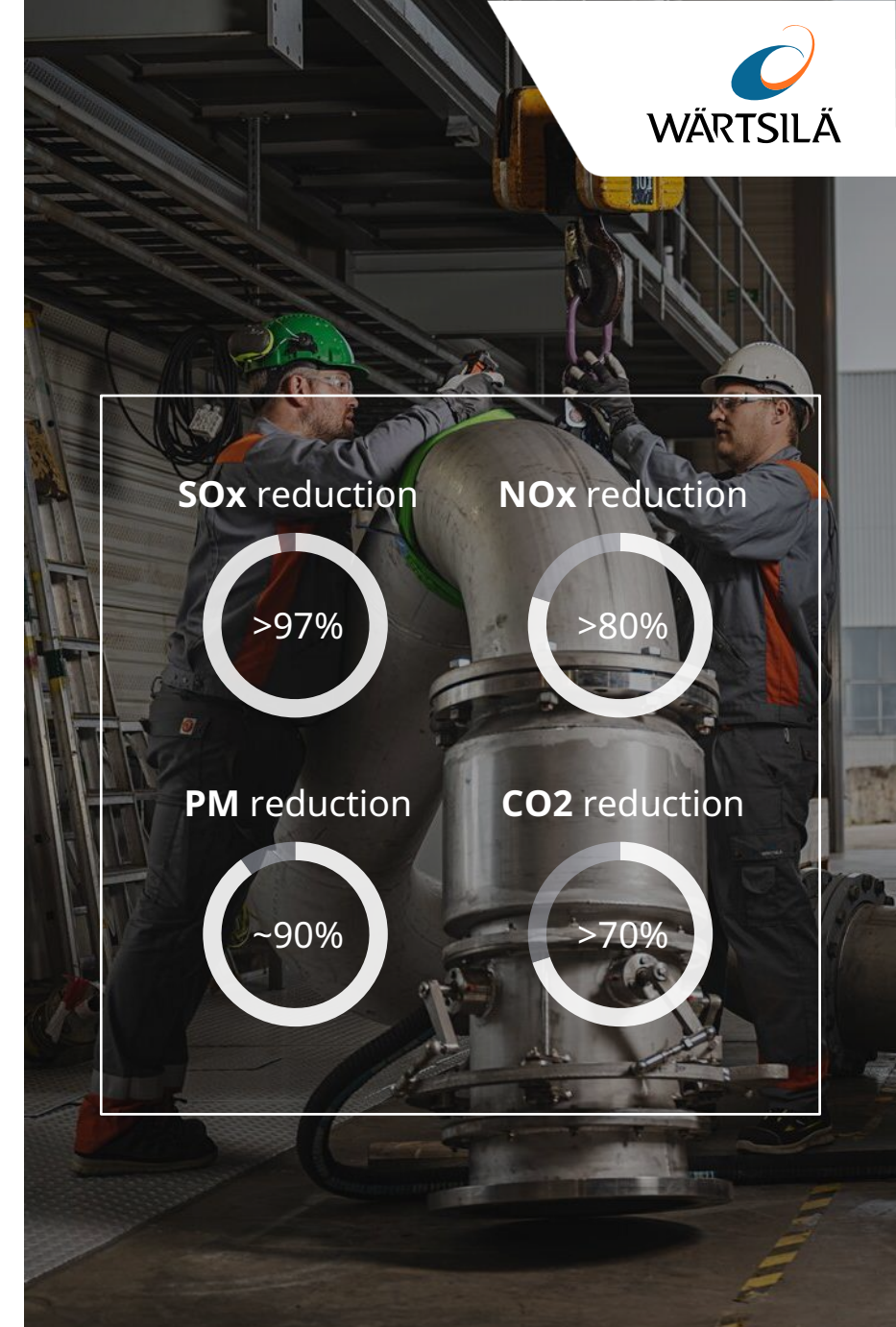
53%
of the fleet is not CII compliant in 2024²⁾

79%
of the existing fleet will not be CII compliant in 2028 if no action is taken²⁾

Onboard Carbon Capture and Storage (CCS) allows to capture >70% of the CO₂ generated onboard

Onboard CCS can unlock EUR ~10bn business in the next 10 years¹⁾

- ✓ Applicable to all carbon-based fuels, vessels types and sizes
- ✓ Captured CO₂ 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
 - CO₂ capture capacity: 10 tons/day
 - CO₂ 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, CO₂ 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	
Addressable market	⊕ ⊕ ⊕	Favorable vessel contracting mix	⊕ ⊕ ⊕	Decarbonisation-driven retrofits ⊕ Growing installed base
Market share	⊕ ⊕	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 29% p.a.** between 2023-2030
- 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

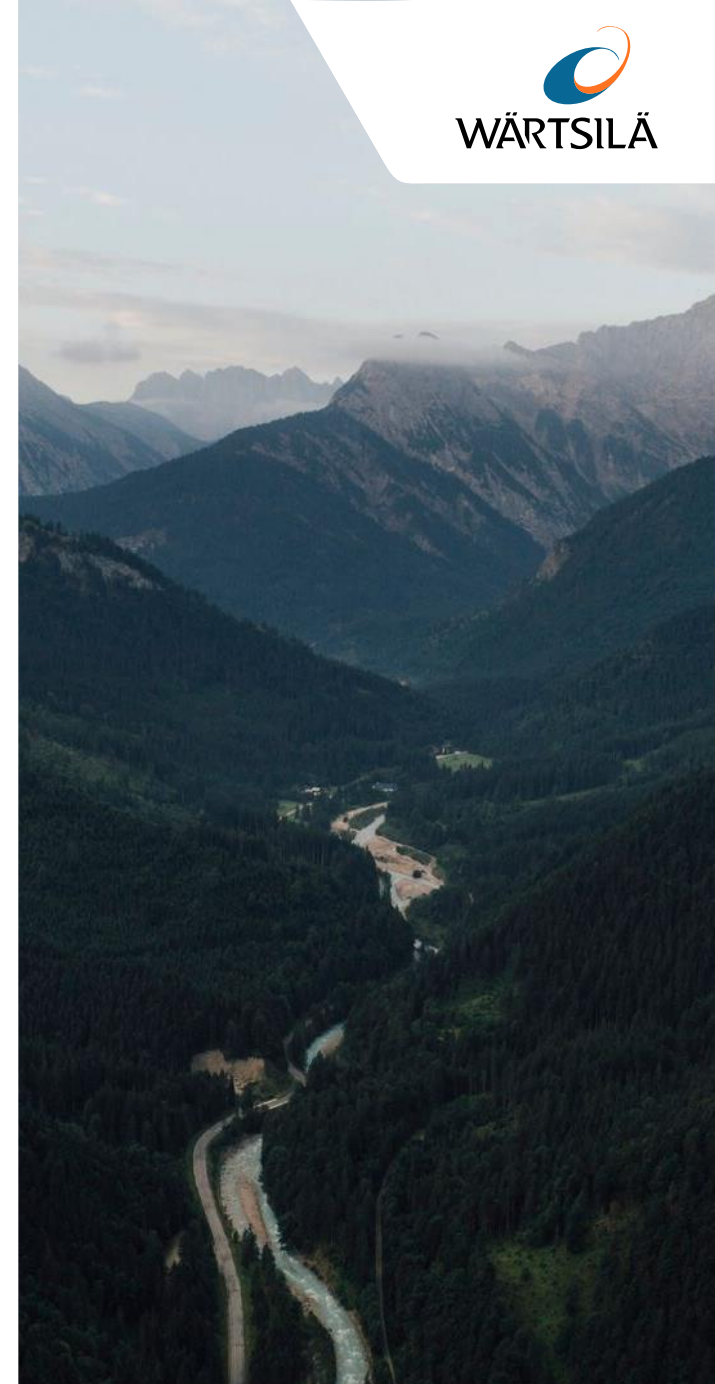
Actions taken to improve new build profitability and achieve better risk / reward

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

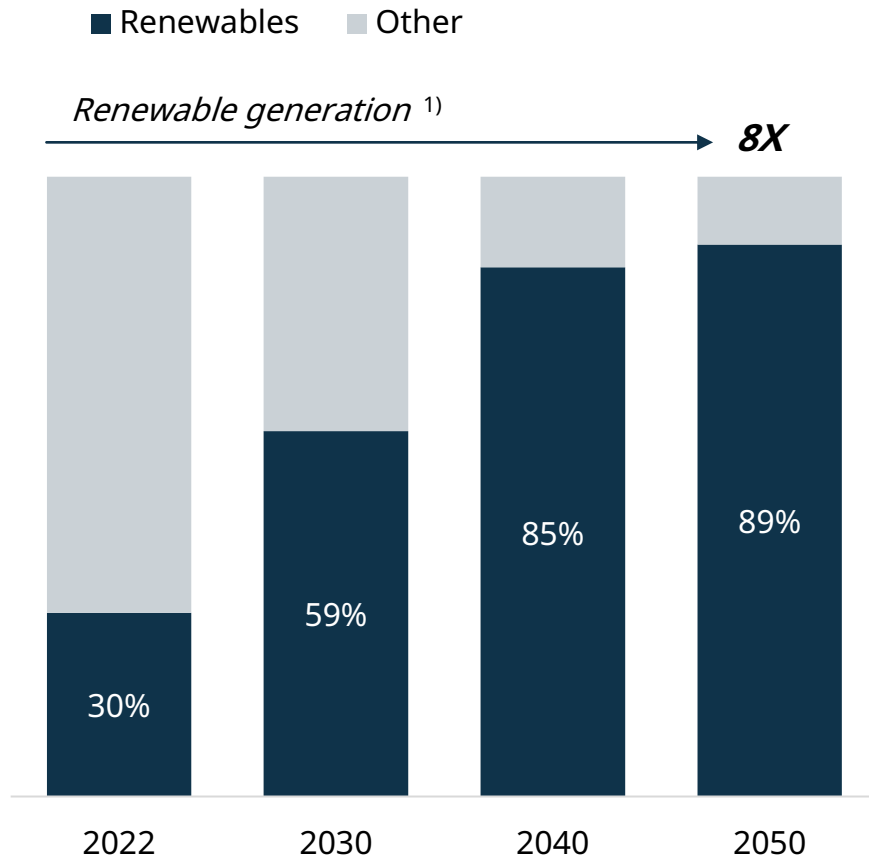
- Energy has **EEQ** (extended equipment supply) as **the preferred offering**, EPC (engineering, procurement and construction) is only considered in selected markets
- Going into 2024 **more than 80% of the order book is equipment orders**, compared to 40% going into 2022
- Rebalance in risk appetite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

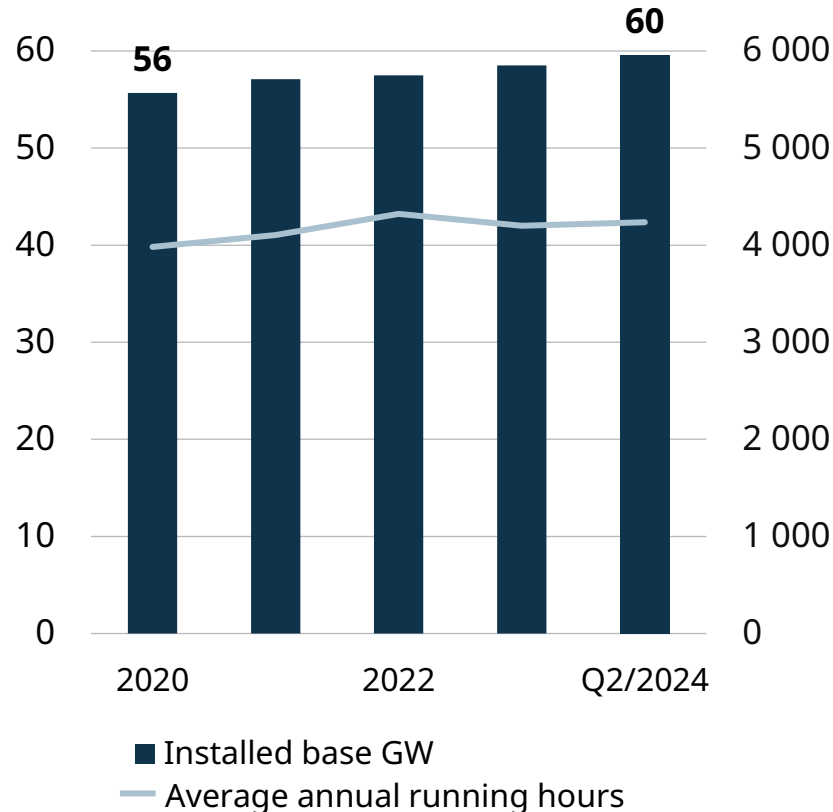
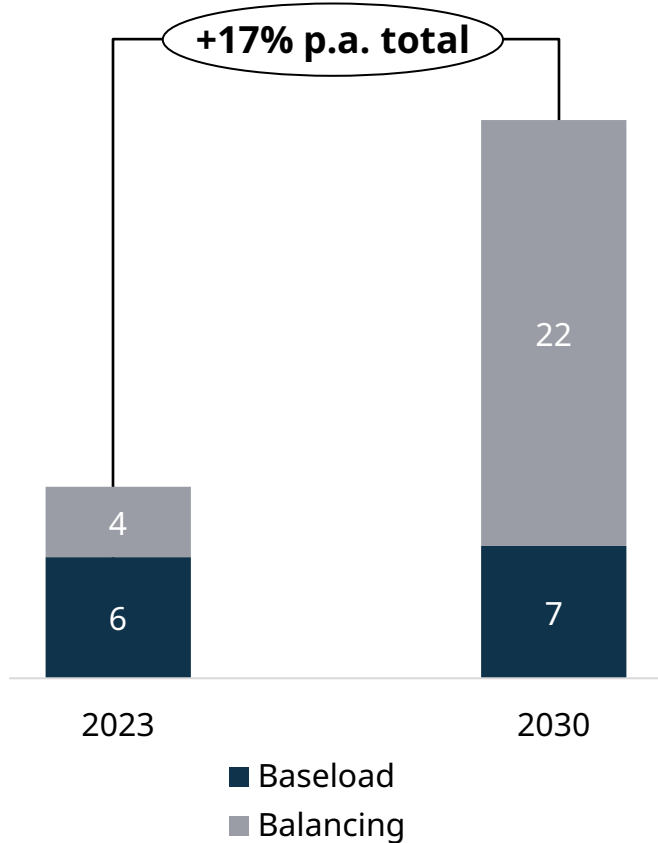


Thermal balancer market expected to grow ~29% per year – the baseload market outlook remains stable

Engine power plants

Wärtsilä operating installed base (GW)

Addressable annual market (GW)



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
- Running hours have remained stable even with the growth of balancing

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

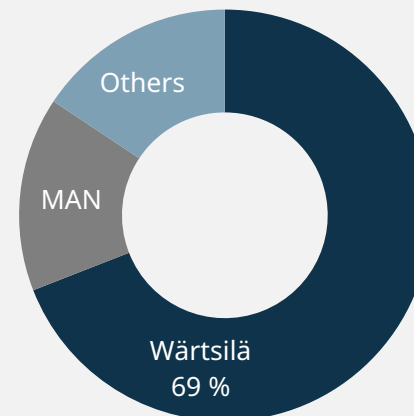
Modelling supports Wärtsilä go to market approach

- 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 ¹⁾



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 ²⁾

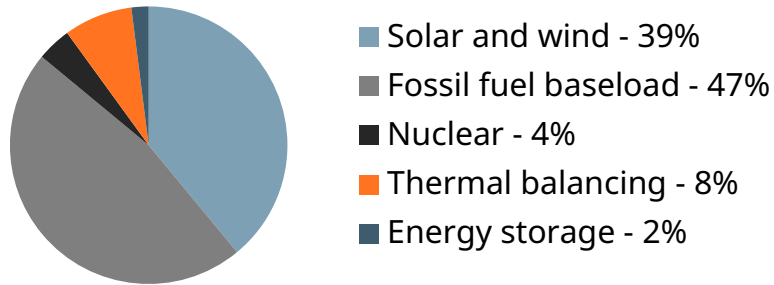
	2027 (GW)	5-year CAGR
US	3.6	19%
Australia	0.7	
Europe	5.0	
India	1.7	

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

2) Based on BloombergNEF ETS and Wärtsilä data

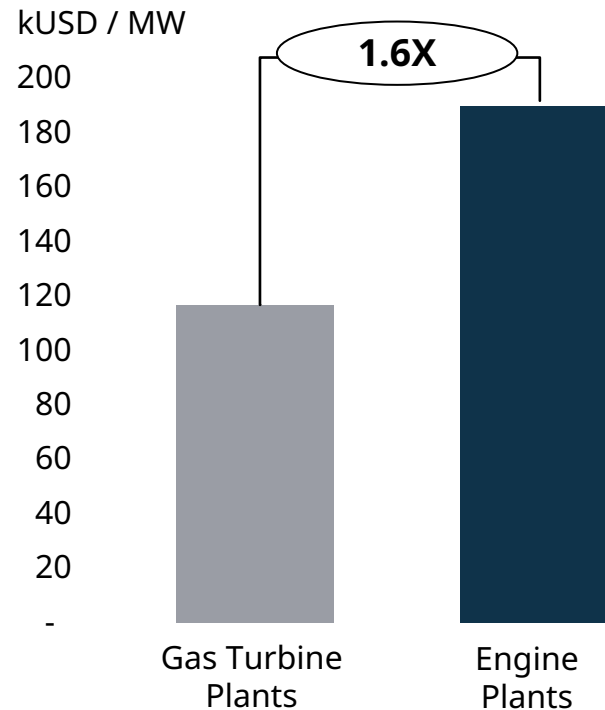
Case Texas shows future trends. Increasing renewables creates need for balancing with engines outperforming competing technologies

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 higher¹ 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

*SPP = Southwest Power Pool

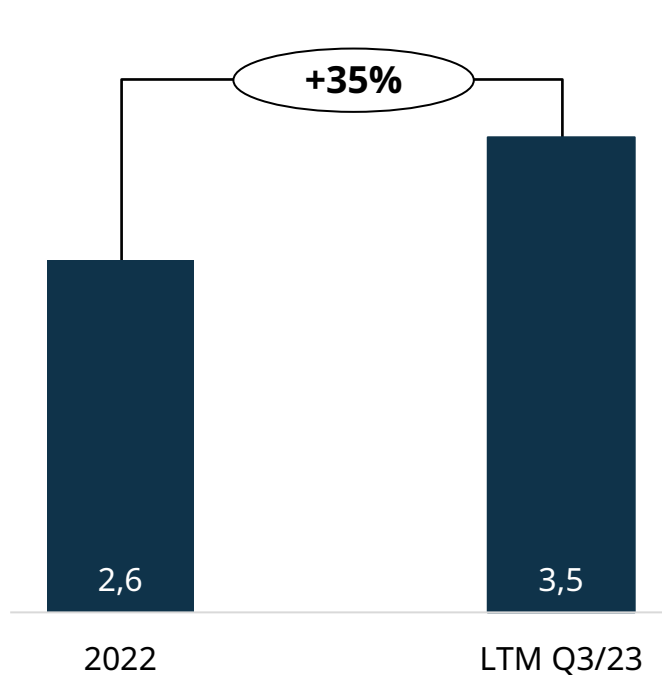
*MISO = Midcontinent Independent System Operator

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

Energy storage growth outlook remains strong

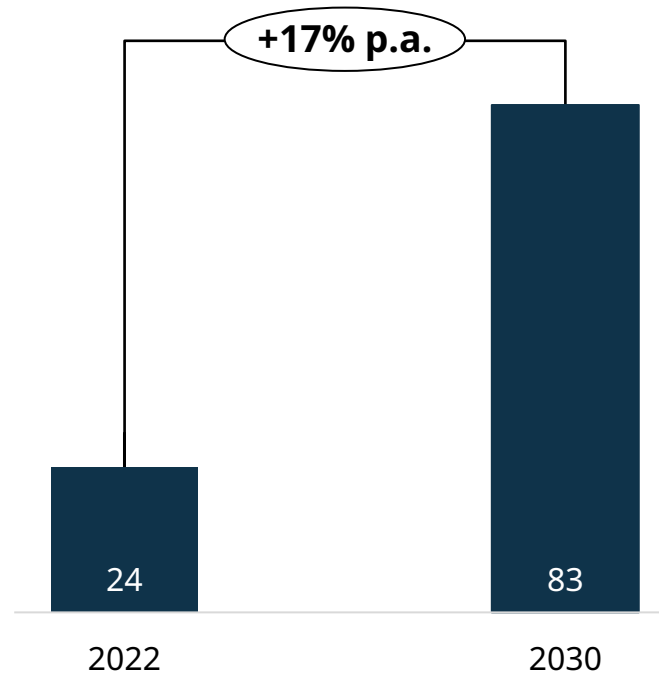
Order intake

Order intake (GWh)



Market outlook

Addressable annual market (GWh) ¹⁾



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 3X¹⁾ 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

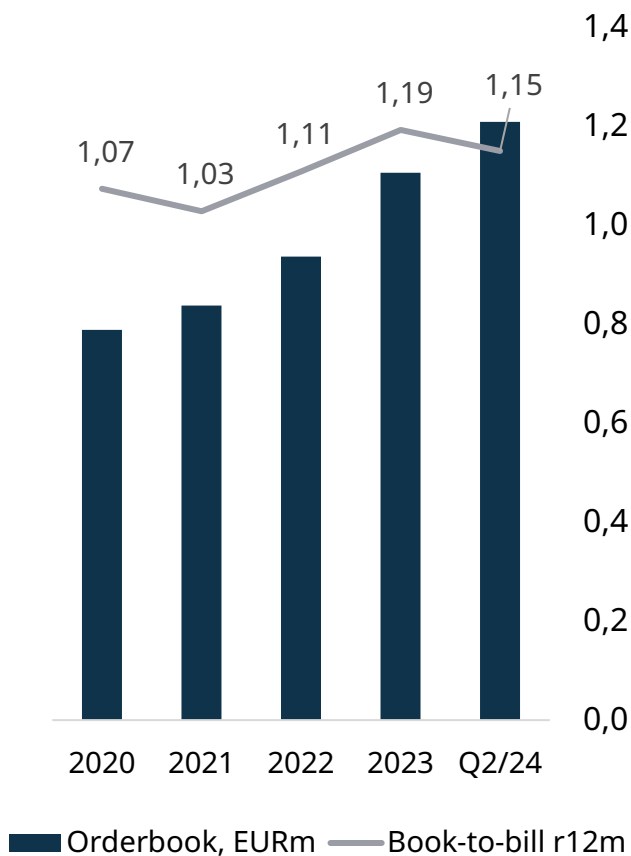
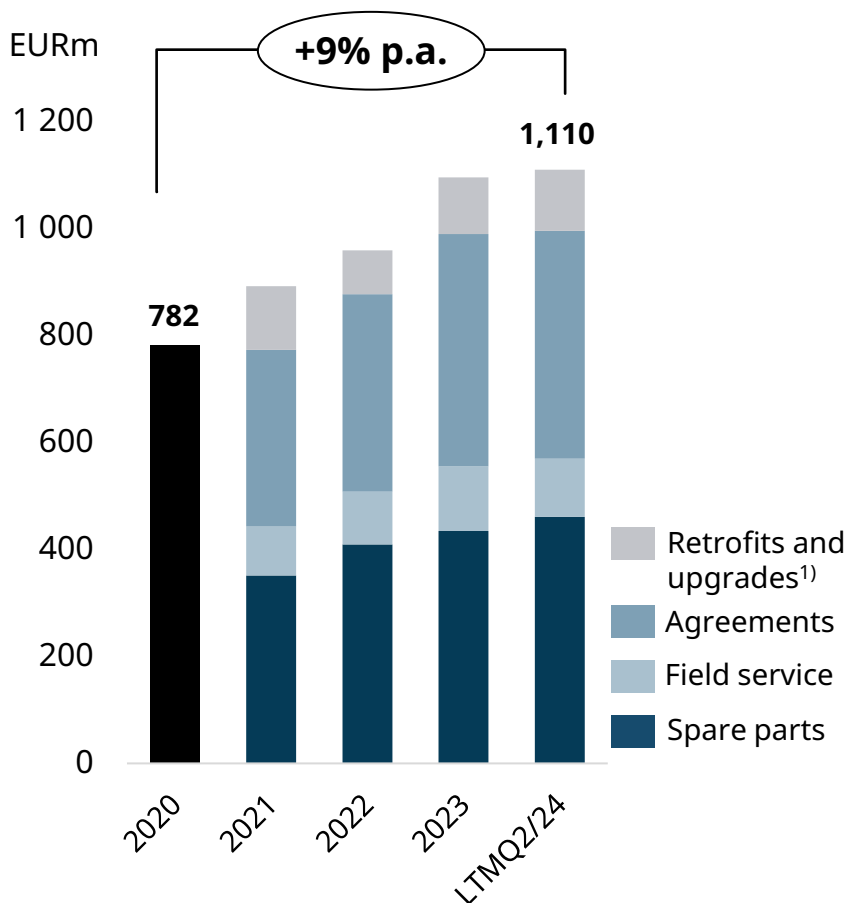


Source: CMD 2023

Good performance in Services with a solid foundation for future growth

Growing Service Net sales

All time high orderbook & strong book-to-bill



+24% total Services sales
2021-LTM Q2/2024

+29% Service agreements sales
2021-LTM Q2/2024

+40% total orderbook
2020-2023

Energy services growth drivers remain solid

- Increasing agreement coverage
- Growing installed base
- Upgrades & sustainable fuel conversion demand
- Growth potential in outcome-based and decarbonisation agreements
- Stable total running hours

1) Referred to as Service Projects in the interim reports

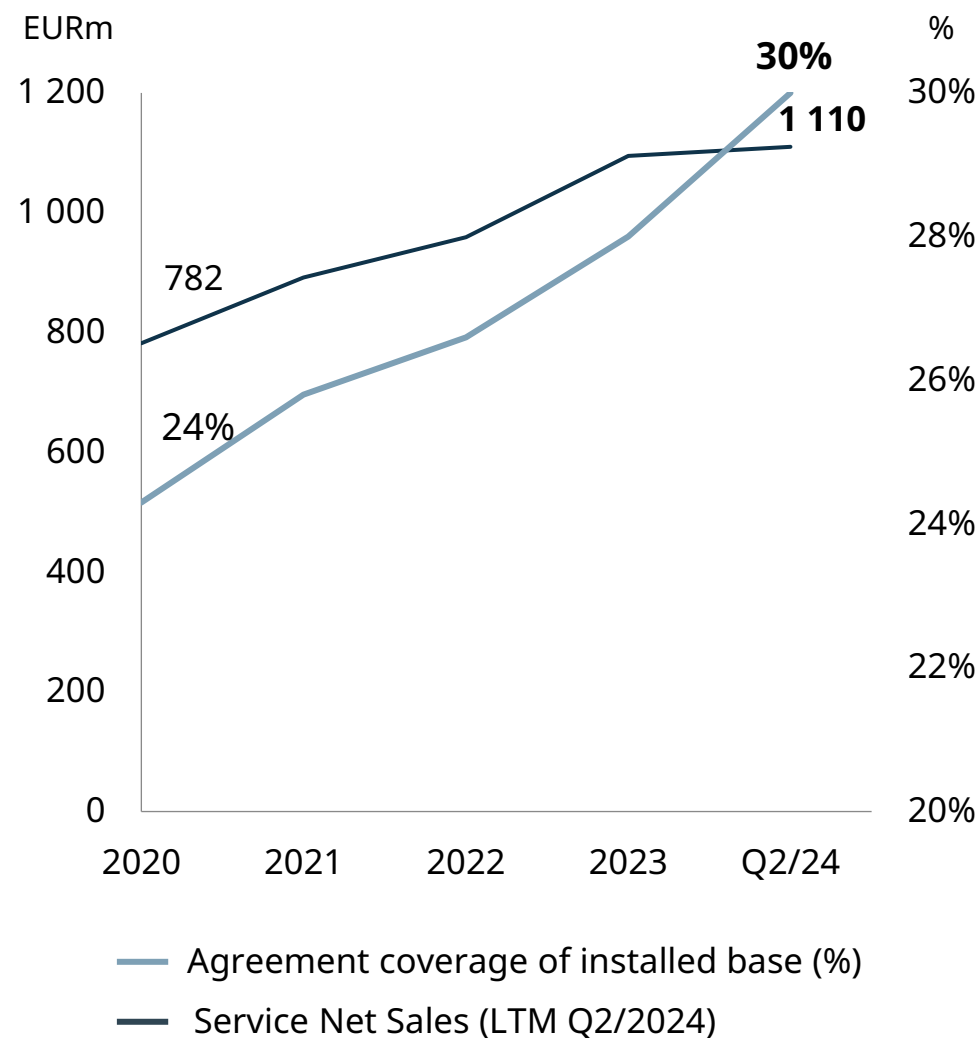
Increasing agreement coverage is supporting growth



Our strategic focus to increase lifecycle agreement coverage is generating growth in Energy



Anders Lindberg
President, Energy



Increasing share of agreement customers in our installed base
30% agreement coverage

High agreement renewal rate for existing customers
>90% renewal rate LTM Q2/24

Sales to installations under agreement account for
56% of net sales (2023)

Decarbonisation Services provide new growth opportunities

Decarbonisation Services optimises microgrids by integrating



Energy Management Systems



Engine Power Plants



Battery Energy Storage



Customer's renewable power generation



into outcome-based agreements

Our target customers are captive microgrids in the industrial segment and small-scale island utilities, with requirements in:

grid efficiency, reliability, and sustainability

Our modelling shows that customers face challenges with optimising microgrids even at low renewable penetrations. As share of renewables grow, grid reliability constraints further complicates optimisation for **lowest CO2 and Levelised Cost of Electricity**



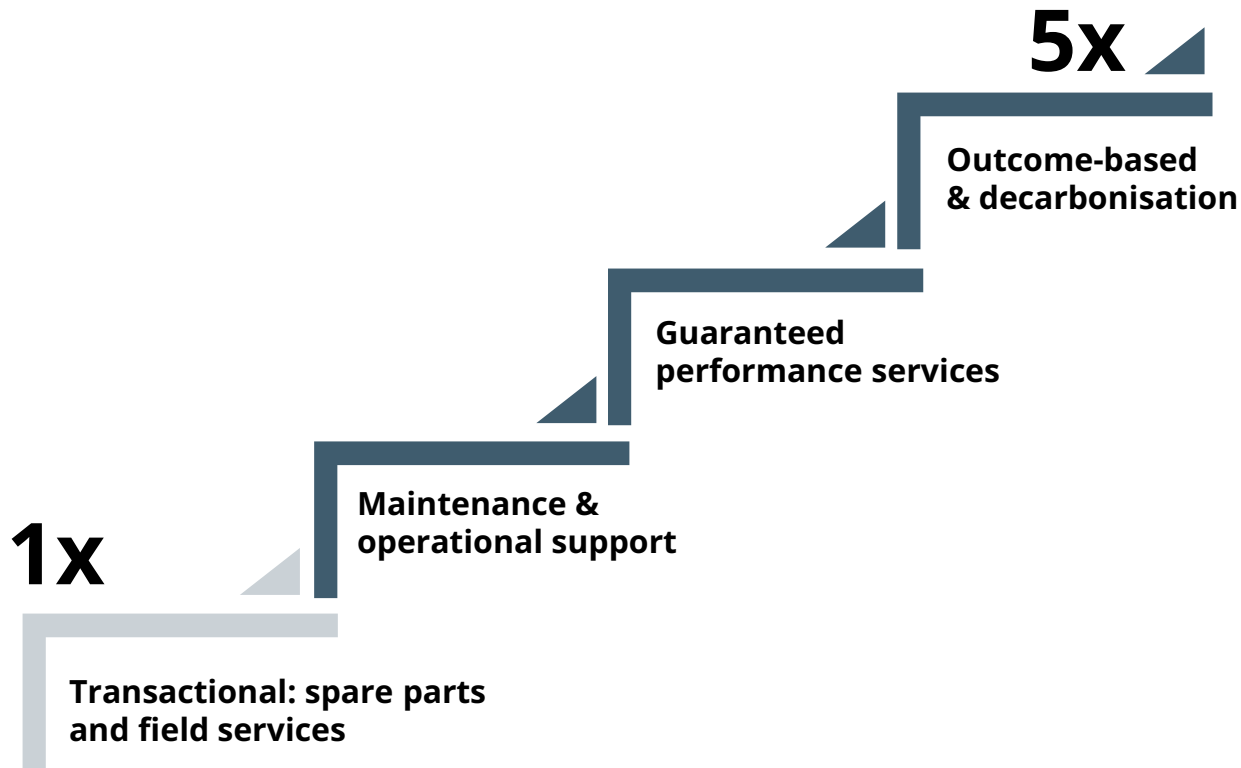
Out of our installed base, approximately 23% or **14 GW is addressable for Decarbonisation Services.**

In addition, as a part of new microgrid investments, we see an increasing interest for decarbonisation services

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 agreement¹⁾, 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

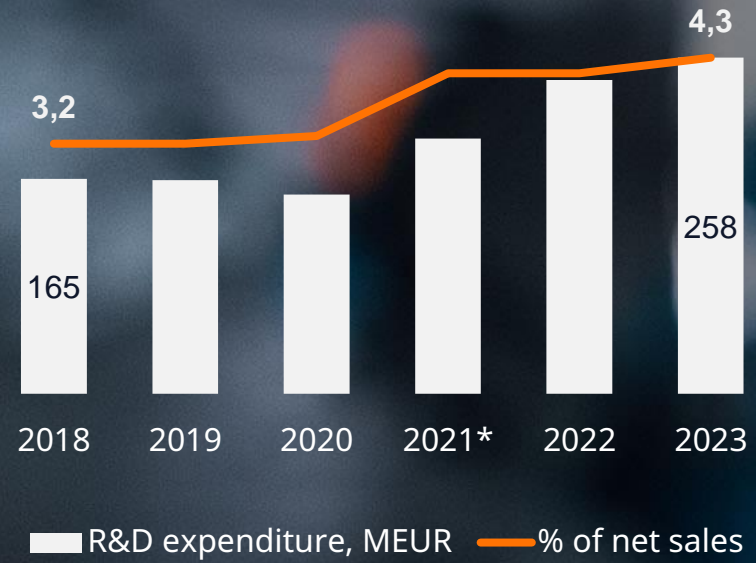
- A combined cycle gas turbine power plant (CCGT) with a recirculating system = 780 liters/MWh.
- Wärtsilä combustion engine power plant operating in simple cycle on natural gas = 3 liters/MWh.

R&D



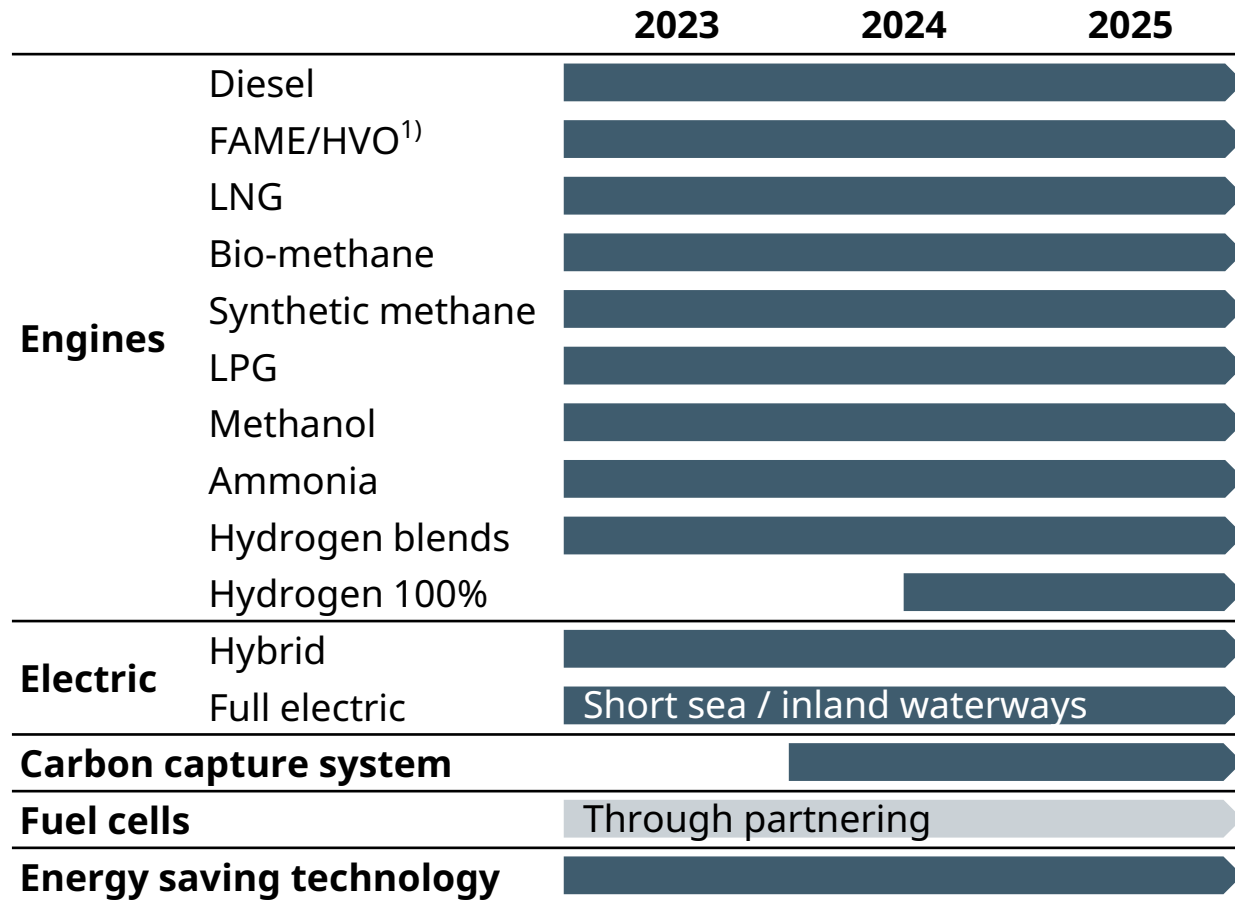
AMMONIA
 NH_3
 WÄRTSILÄ

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 share²⁾
 - ✓ Pioneer with the world's first full scale carbon capture plant in 2024 and full commercial release in 2025

- ✓ Methanol engine types available today³⁾,
- ✓ 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

Q3 2024 development



29 October 2024

Improved net sales, profitability and cash flow

- Net sales increased by 18%
- Continued strong order book (7,583 MEUR)
- Comparable operating result increased by 41%
- Good progress in services continued:
 - Service order intake increased by 4%
 - Service net sales increased by 6%
- Strong cash flow from operating activities (296 MEUR)

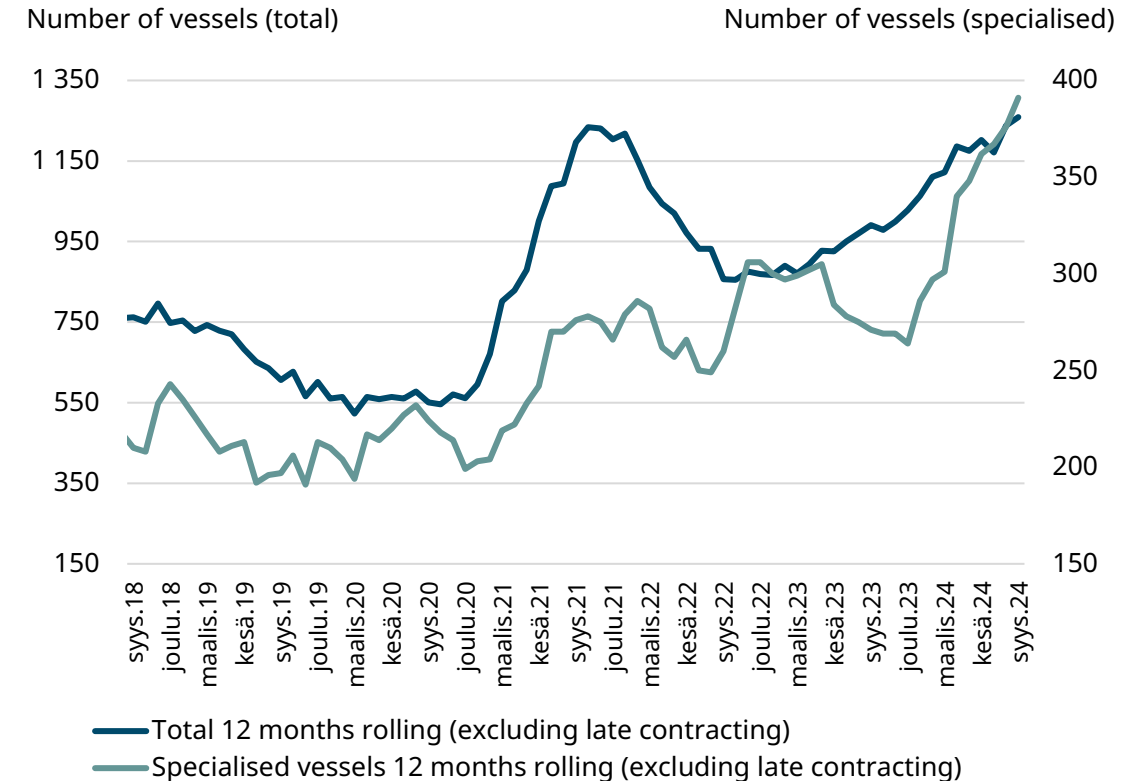


Marine: market sentiment is positive for Wärtsilä's key segments

Increase in demand for new ships in the third quarter

- The number of vessels ordered in the review period increased to 1,953 (1,356 in the corresponding period in 2023, excluding late reporting of contracts).
- Despite growth in shipyard capacity and output (especially in China and South Korea), newbuild shipyard capacity utilisation remains high, indicating that a shortage of yard capacity still exists.
- Global shipyard capacity is currently at ~70% of 2011 peak level and could increase to 80-85% by 2030 mainly driven by yard reactivations and expansions in China which has accounted for around three quarters of announced capacity increases since 2021.
- The positive trend in interest for alternative fuels continued with 486 orders for alternative fuel capable ships reported between January-September, accounting for 25% (23) of all contracted vessels and 49% (44) of vessel capacity.
- Strong growth in demand and a positive outlook has driven cruise newbuild ordering while containership newbuild investments have increased in recent months as shipowners continue to renew their aging fleets.

Total and specialised vessel contracting



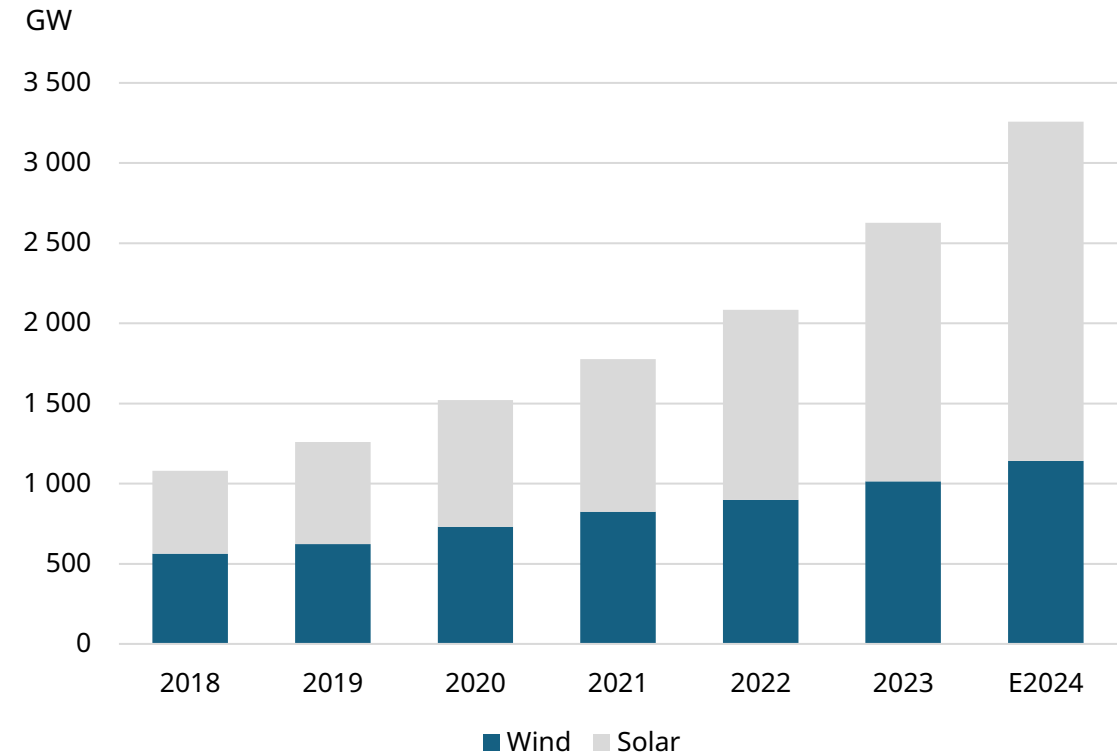
Source: Clarksons Research, 12m rolling contracting as per 4th of October 2024 (+100 gt, excluding late reporting of contracts)
 Specialised vessels include LNG carriers, LPG carriers, cruise & ferry, offshore, and special vessels.

Energy: solid long-term market opportunities

Rising protectionism and decreasing inflation impact energy markets in the third quarter

- Macroeconomic development continued to be impacted by protectionism and elevated risks in the geopolitical environment creating uncertainty and slower decision making.
 - The Inflation Reduction Act has boosted the outlook for clean energy deployment in the US, while policies such as domestic content requirements or import tariffs hurt the outlook for the energy transition.
- Global natural gas prices continued to increase moderately.
- The demand for balancing has been strong during 2024, while demand for baseload has been stable.
- In October 2024 DNV's Energy Transition Outlook predicted peak in energy-related emissions to be reached this year.
- 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.*

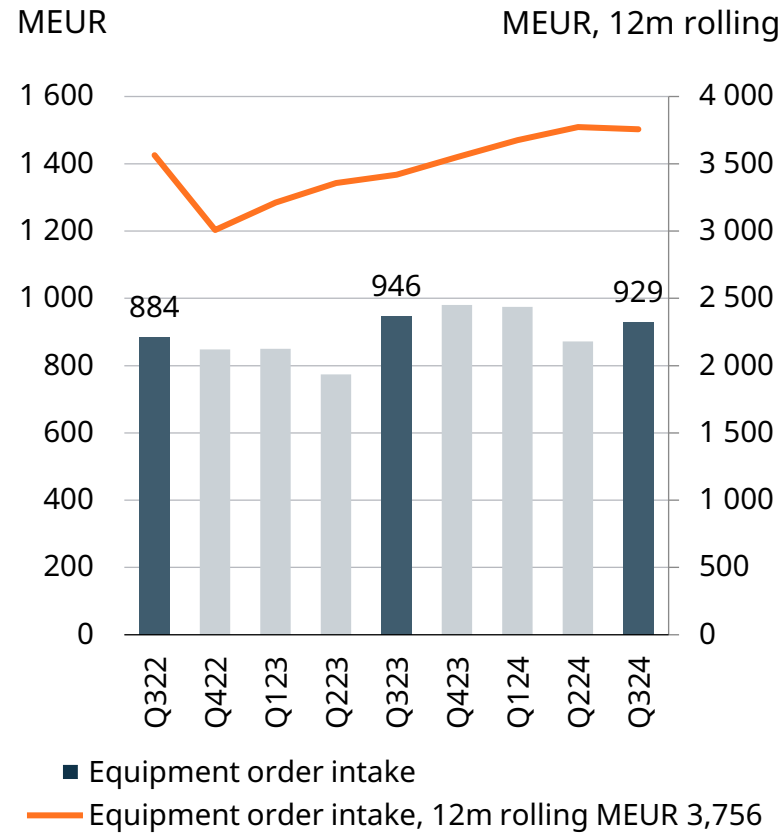
Development on installed wind and solar capacity *



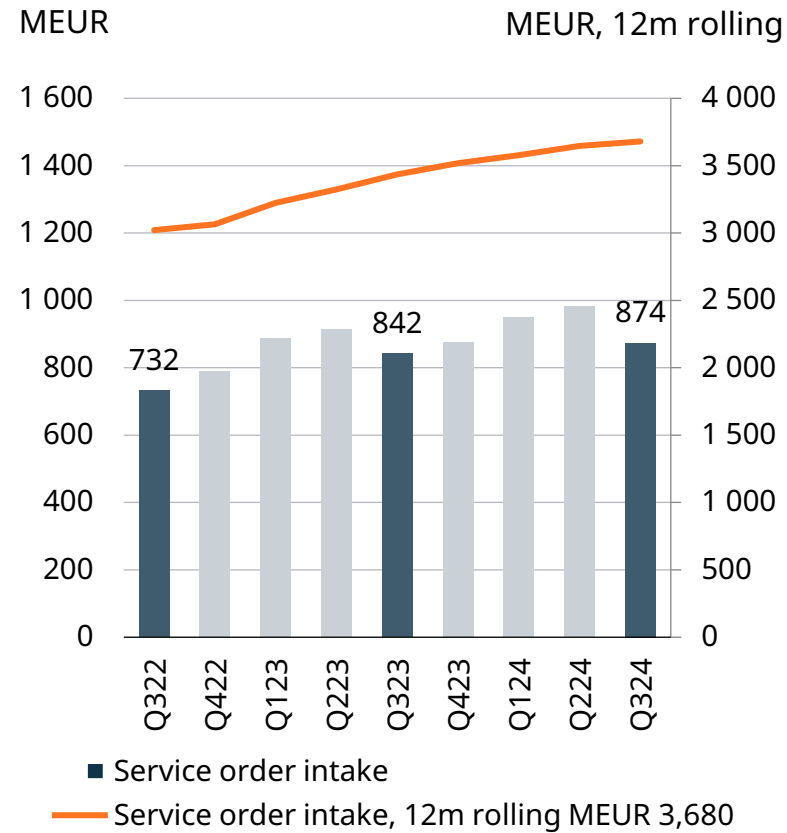
*Source: IEA Renewables 2024 - Renewable Energy Progress Tracker

Organic order intake increased by 4%

Equipment



Services



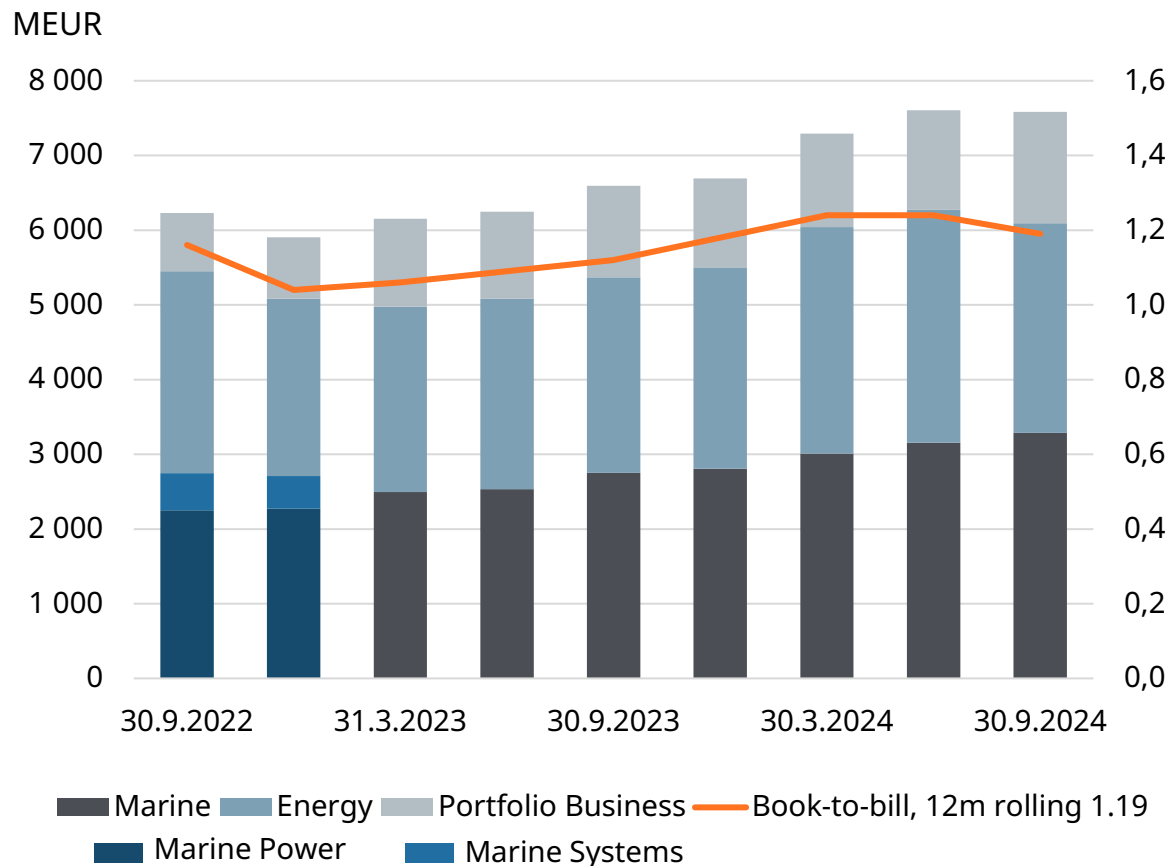
Order intake increased by 1%

Equipment order intake decreased by 2%, primarily driven by timing of Energy Storage & Optimisation orders

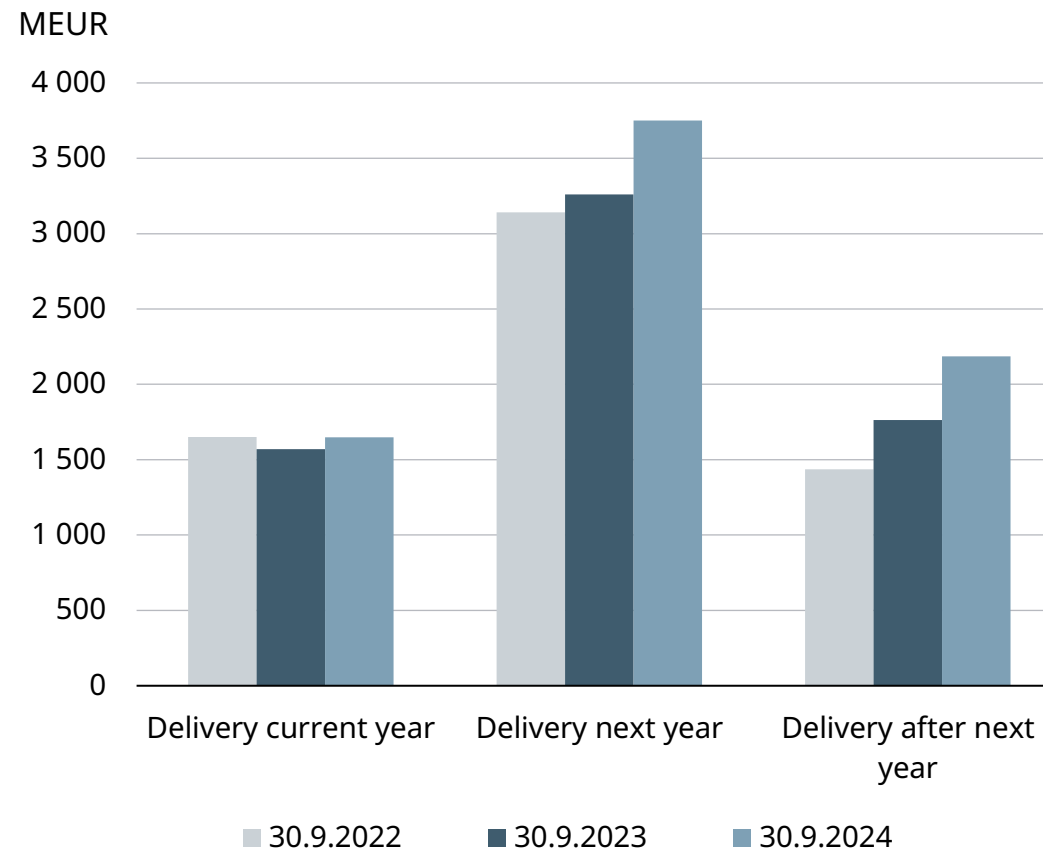
Service order intake increased by 4%

Strong order book, rolling book-to-bill continues above 1

Order book by business



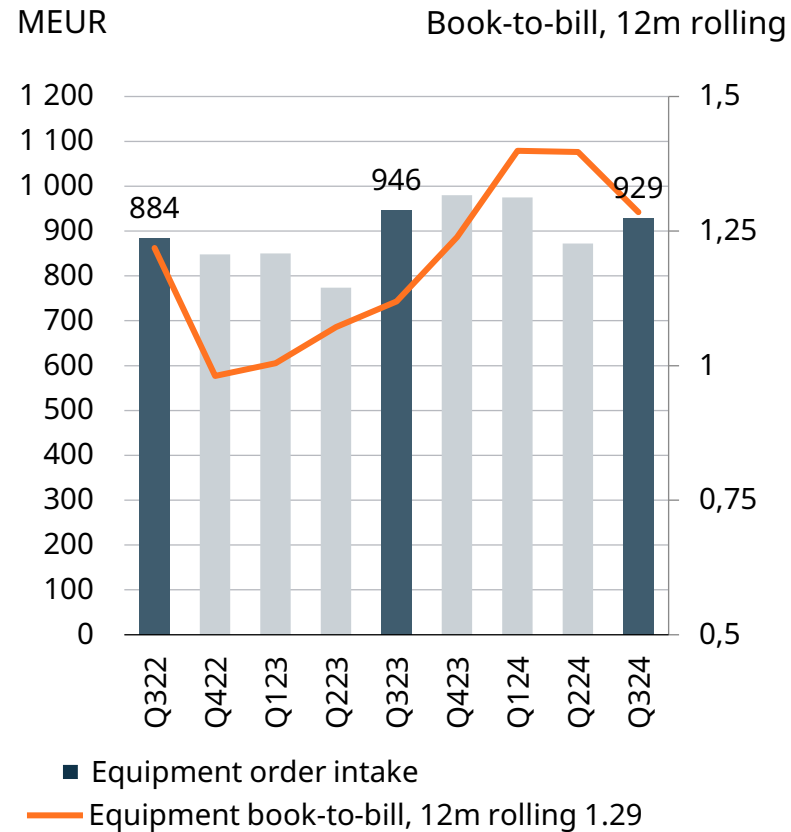
Order book delivery schedule



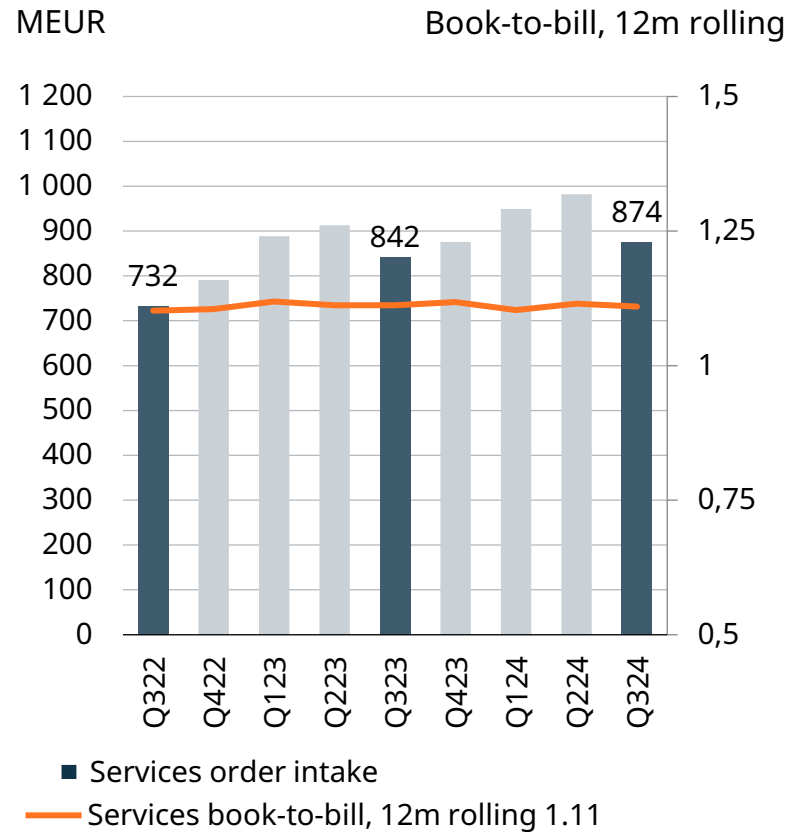
Financial figures for 2023 have been restated to reflect a redefined organisational structure after discontinuation of Marine Systems as a reporting segment as of 1 January 2024. Gas Solutions business unit was moved to Portfolio Business for divestment, and Exhaust Treatment and Shaft Line Solutions business units were moved from Marine Systems to Marine Power and consequently, Marine Power changed its name to Marine as of 1 January 2024. 2022 figures are 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.

Book-to-bill above 1 in both equipment and services

Equipment



Services



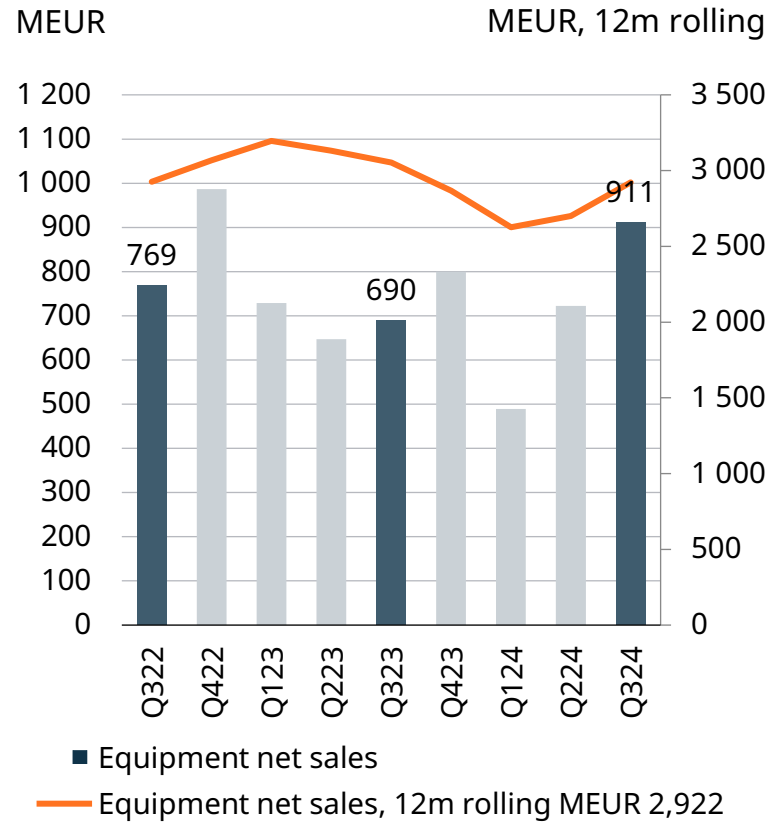
Rolling book-to-bill (12m) stood at 1.19 at the end of the third quarter

Rolling book-to-bill (12m) for equipment was 1.29

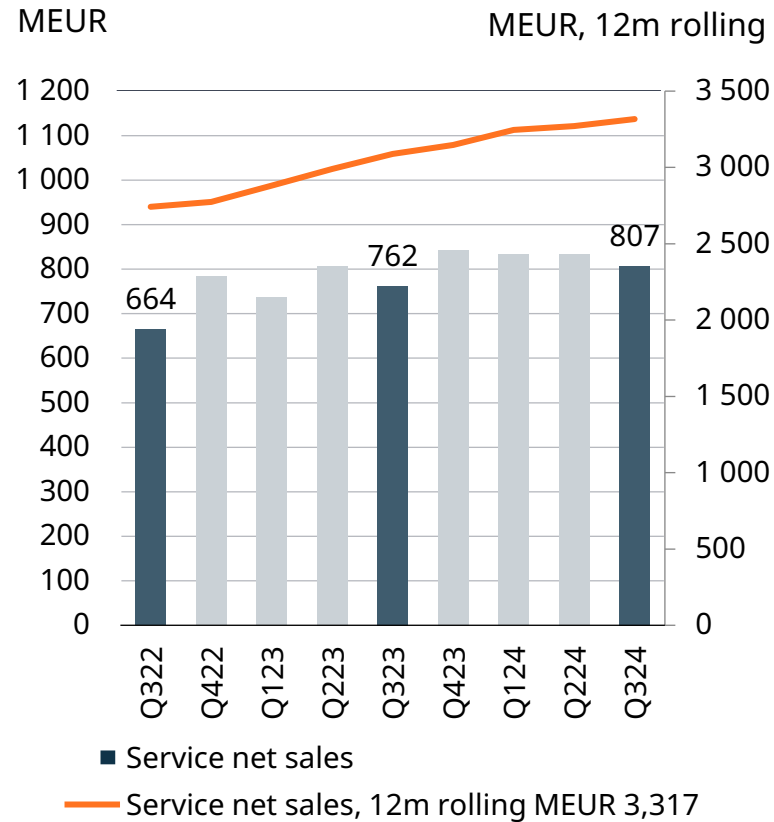
Rolling book-to-bill (12m) for services was 1.11

Organic net sales increased by 21%

Equipment



Services



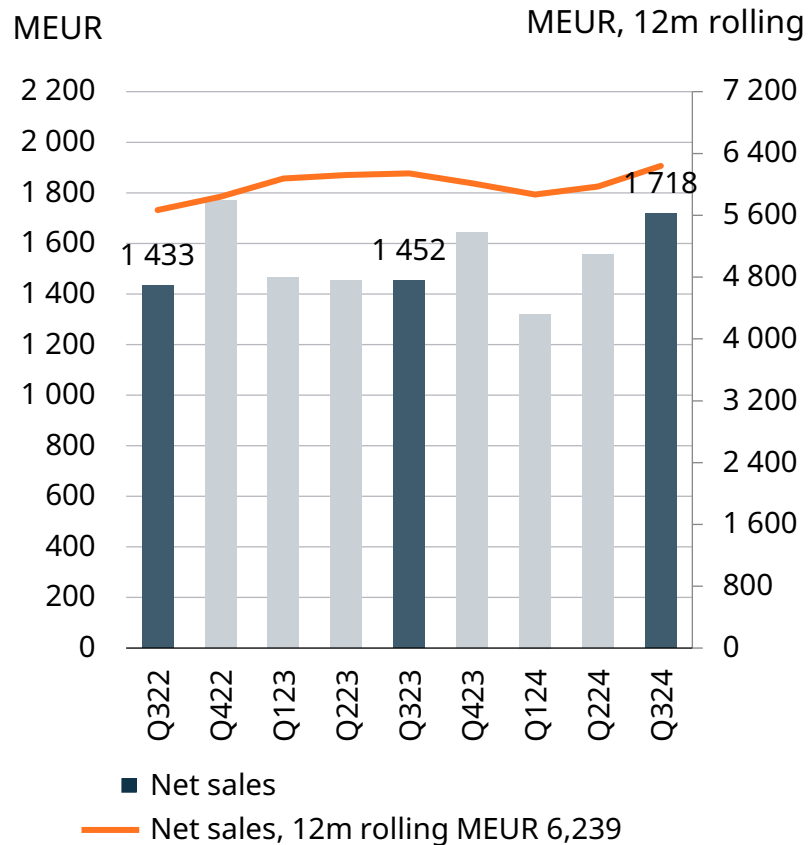
Net sales increased by 18%

Equipment net sales increased by 32%

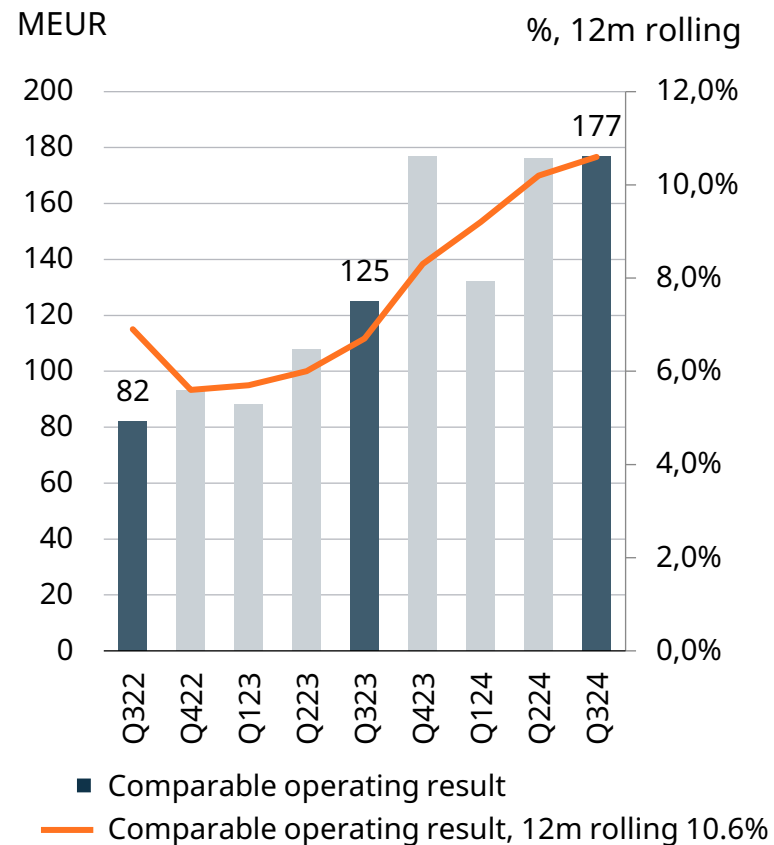
Service net sales increased by 6%

Profitability continued to improve

Net sales



Comparable operating result



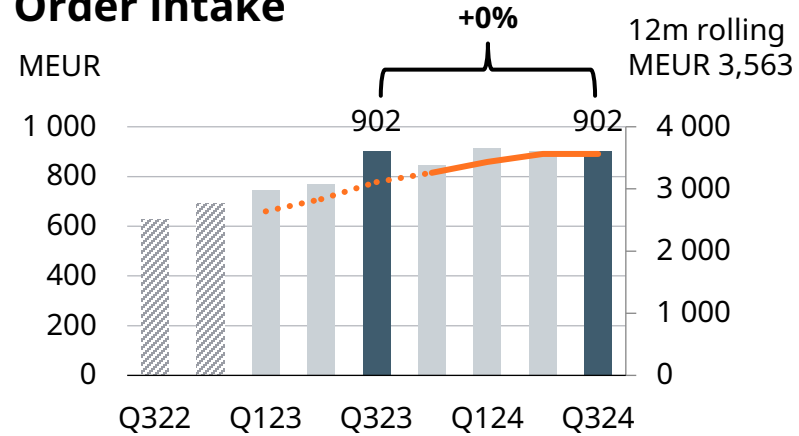
Net sales increased by 18%

Comparable operating result increased by 41%

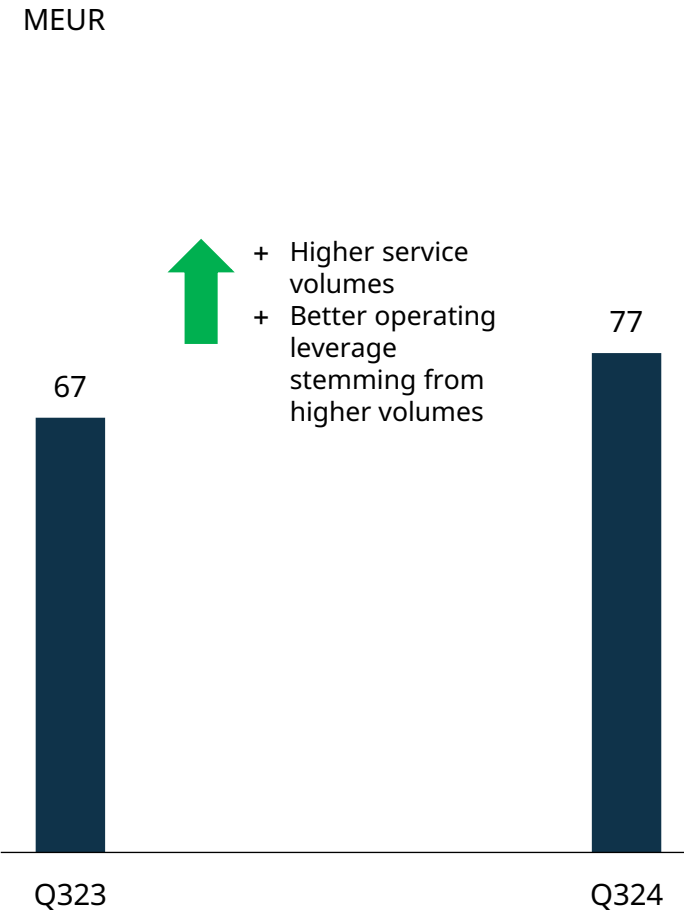
Marine: Good performance continued

Net sales and comparable operating result increased

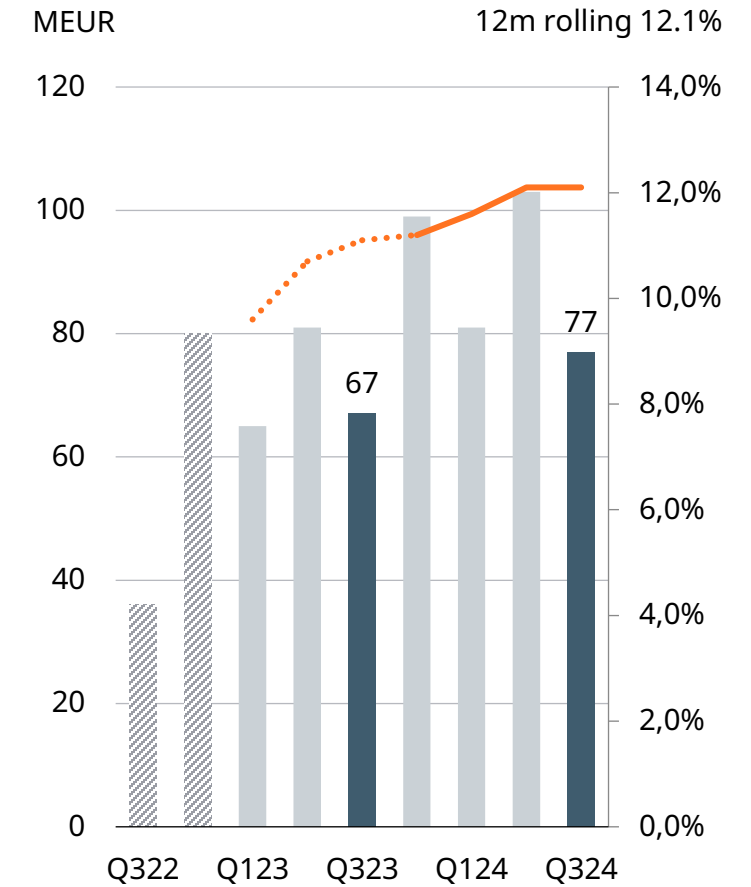
Order intake



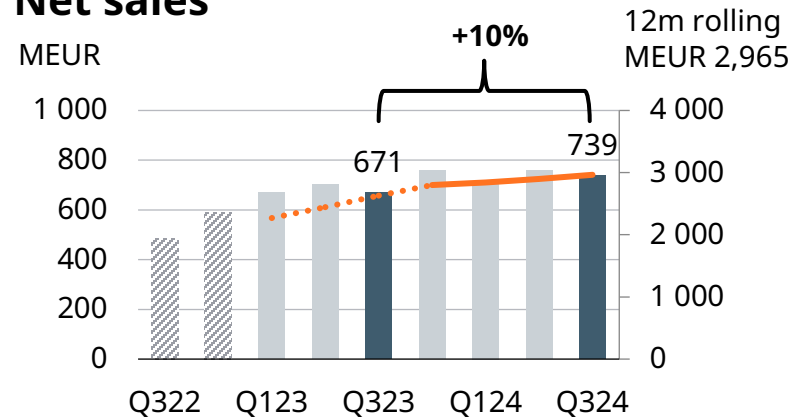
Comparable operating result



Comparable operating result



Net sales



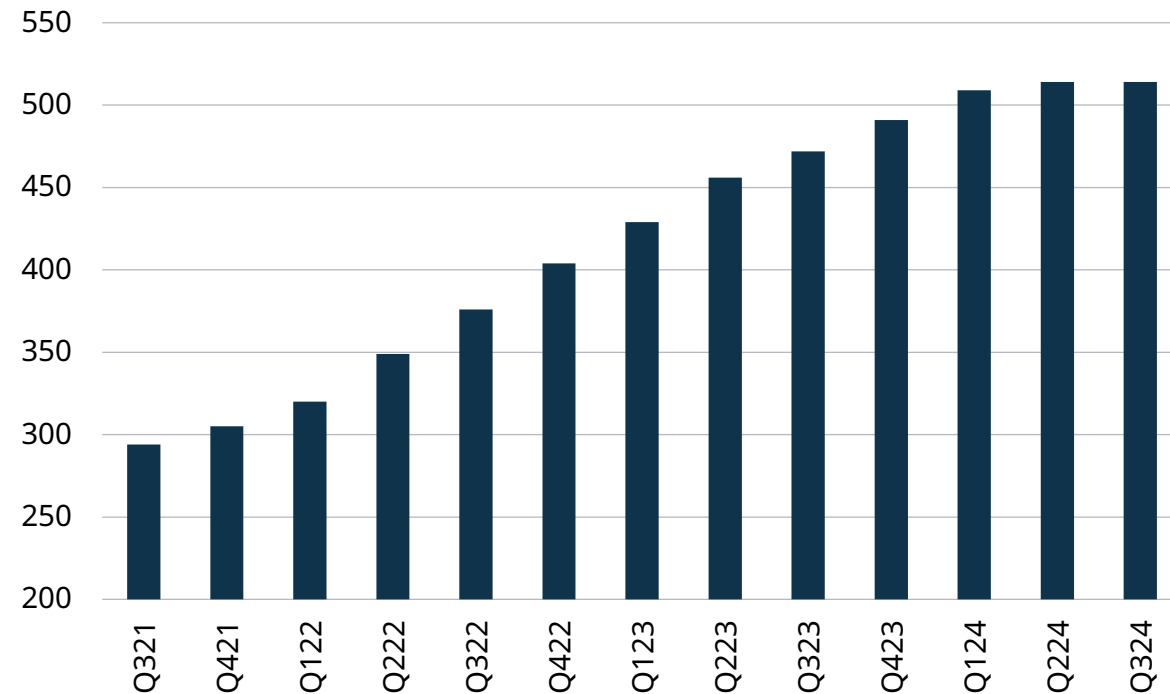
Financial figures for 2023 have been restated to reflect the redefined organisational structure after the discontinuation of Marine Systems as a reporting segment as of 1 January 2024. Exhaust Treatment and Shaft Line Solutions business units were moved from Marine Systems to Marine Power and consequently,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

Good development in Marine service

Marine net sales to agreement installations was stable at over 500 MEUR in Q3

Net sales to agreement installations (12 month rolling)¹⁾

MEUR, 12m rolling



Wärtsilä and Royal Caribbean Group sign Lifecycle Agreement to accelerate sustainability goals

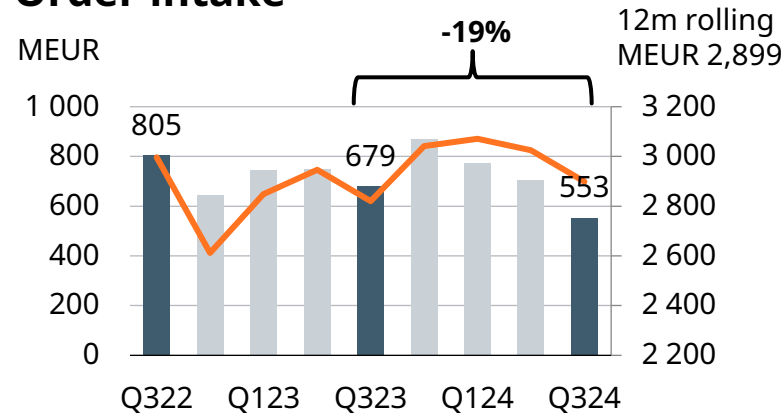
- Wärtsilä signed a 5-year Lifecycle Agreement with Royal Caribbean Group covering 37 of the company's cruise ships.
- The agreement is designed to optimise the performance, reliability and availability of the ships' engines, ensuring the highest level of operational efficiency.
- The contract covers both scheduled and unscheduled maintenance, as well as Wärtsilä's Expert Insight service.
- A performance-based model is also implemented, meaning that gains resulting from best operation and maintenance practices will be shared between Royal Caribbean Group and Wärtsilä, further highlighting the collaborative efforts.
- To be booked in Q4 order intake.

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

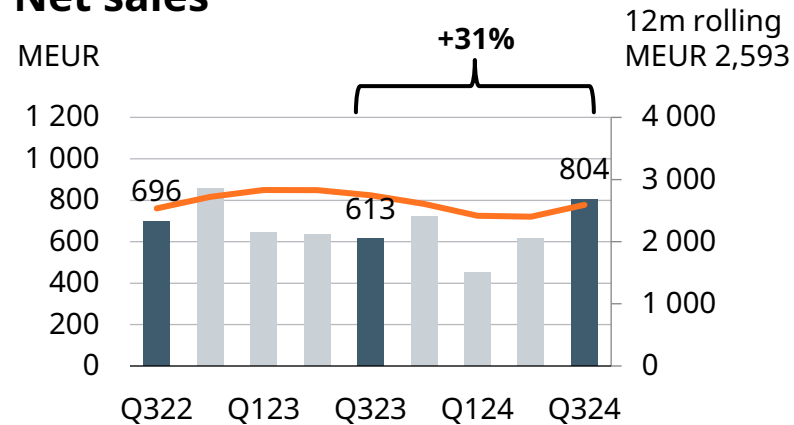
Energy: Comparable operating result increased

Equipment orders and deliveries grew clearly in Engine Power Plants

Order intake

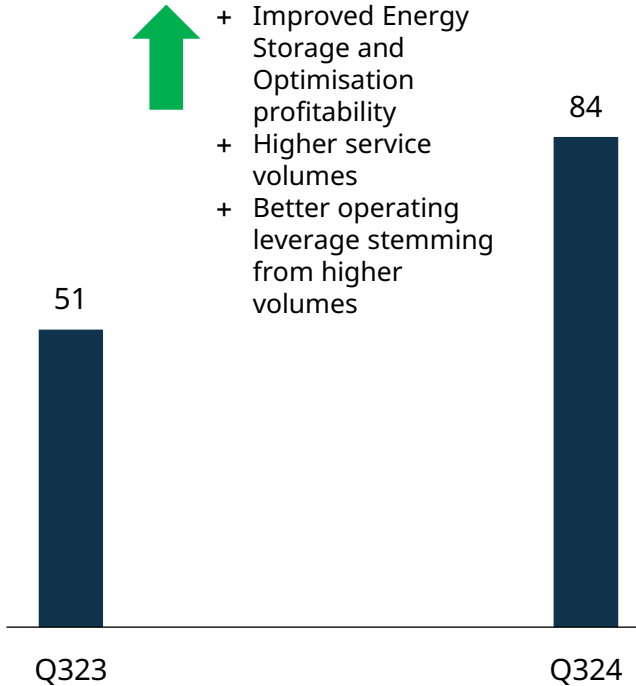


Net sales



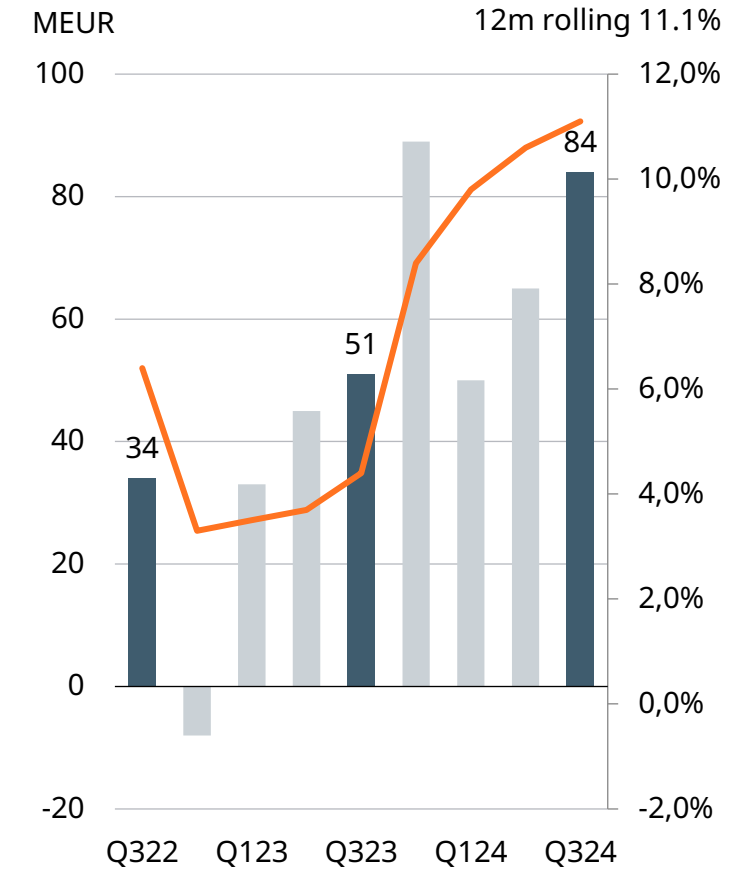
Comparable operating result

MEUR



Comparable operating result

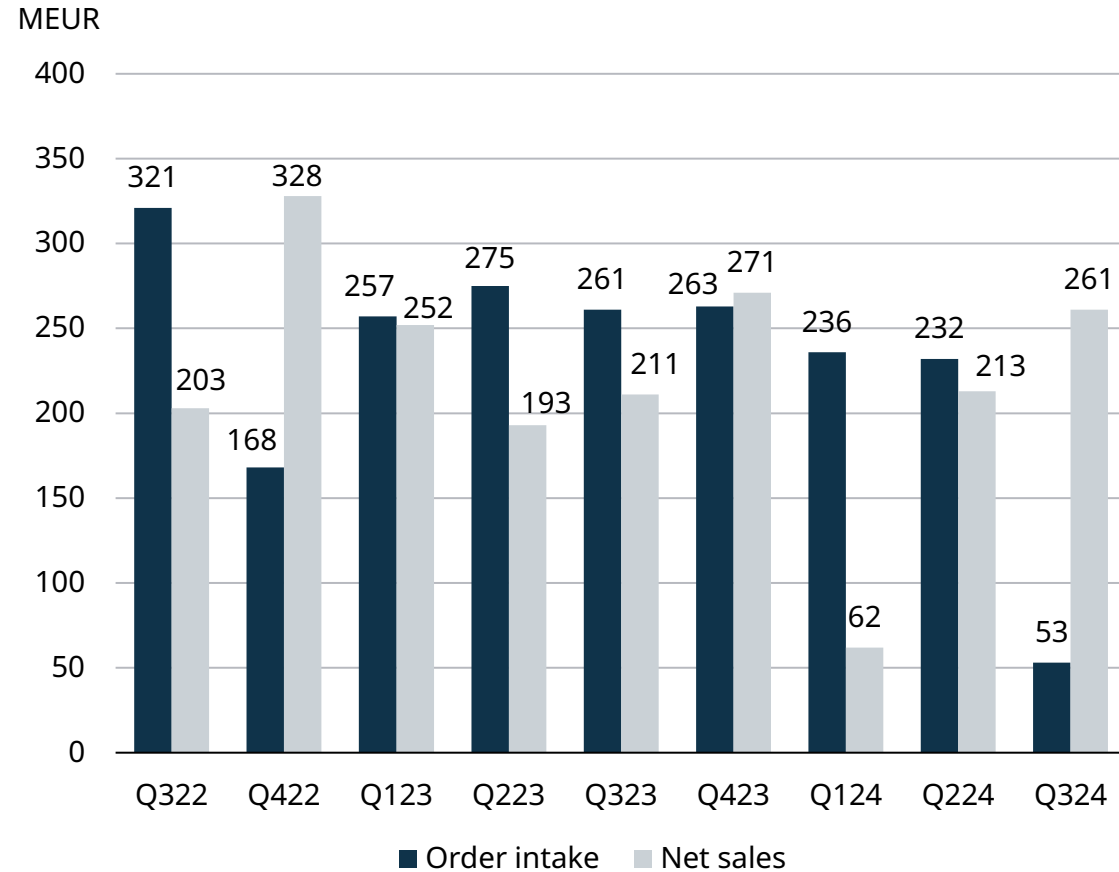
MEUR



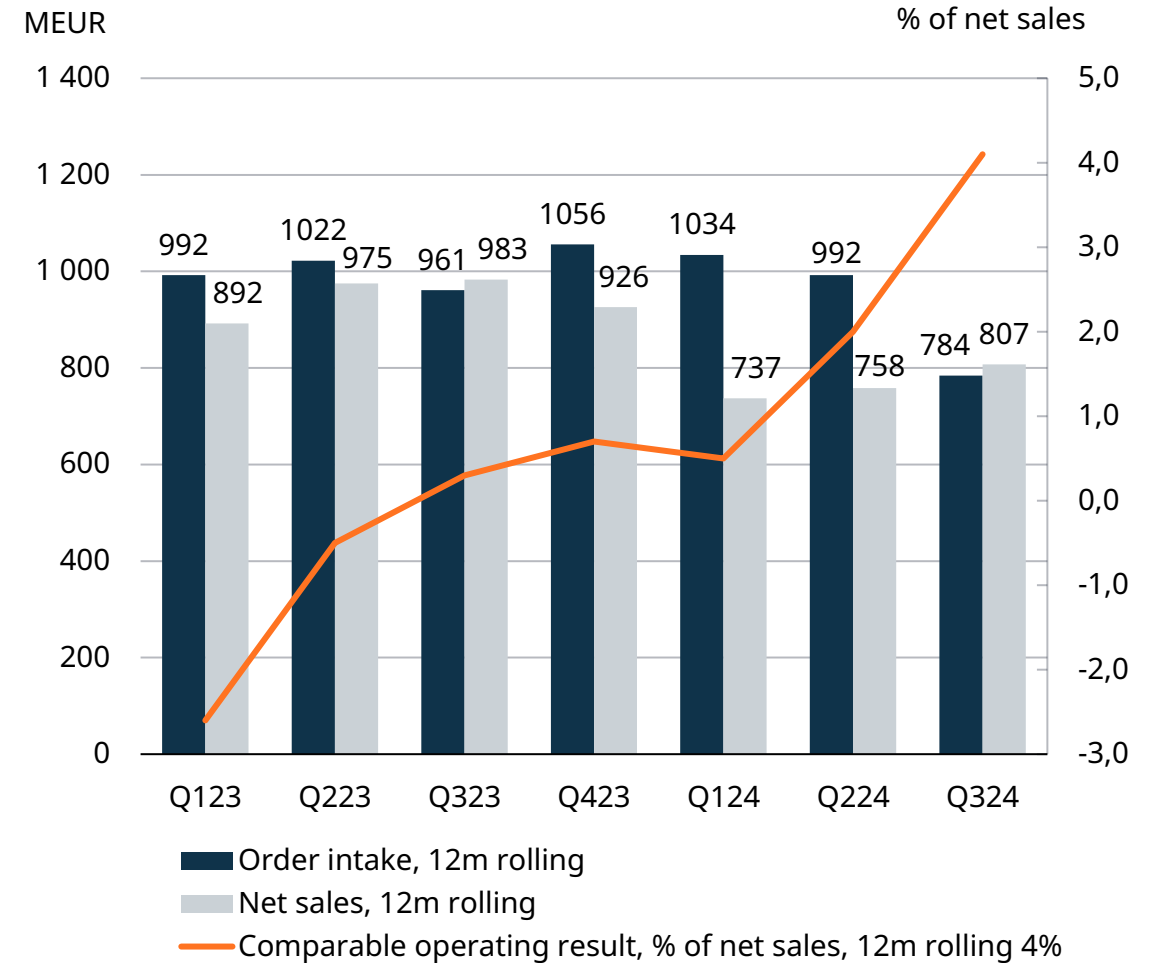


Energy Storage & Optimization: Comparable operating result margin (12m rolling) continued to improve while the order intake is lumpy

Quarterly development

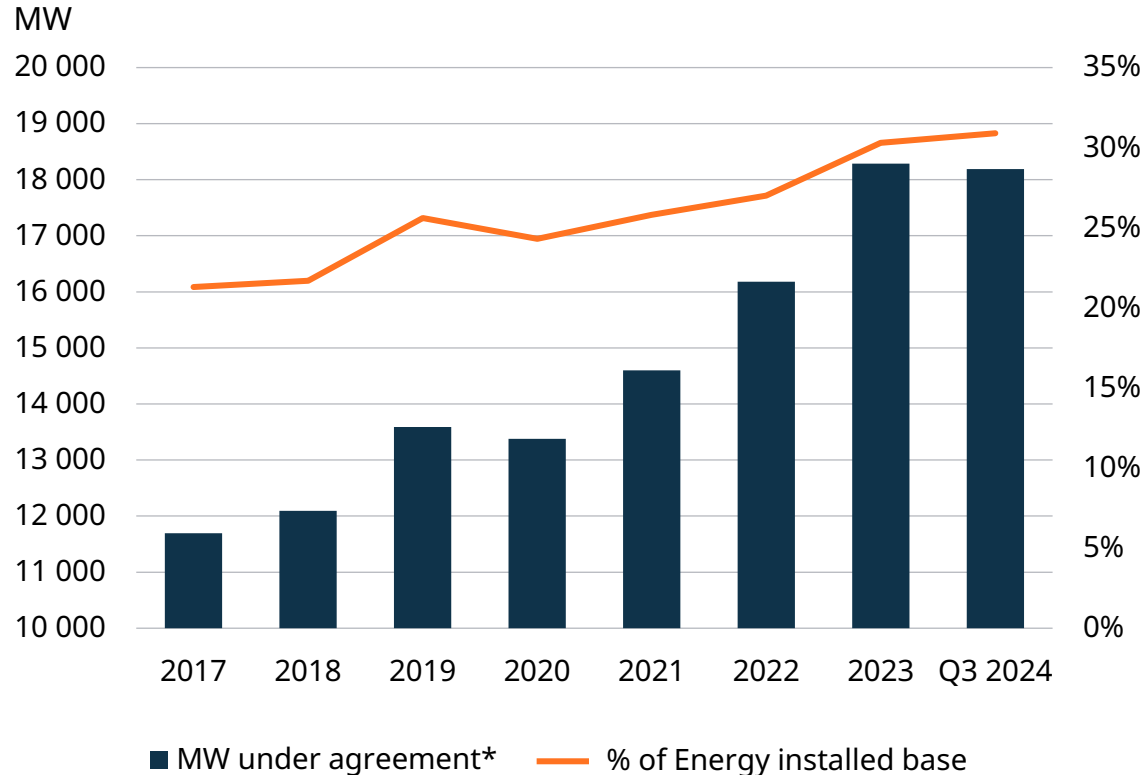


Rolling 12 months development



Agreement coverage in Energy continues to grow

MW under agreement globally



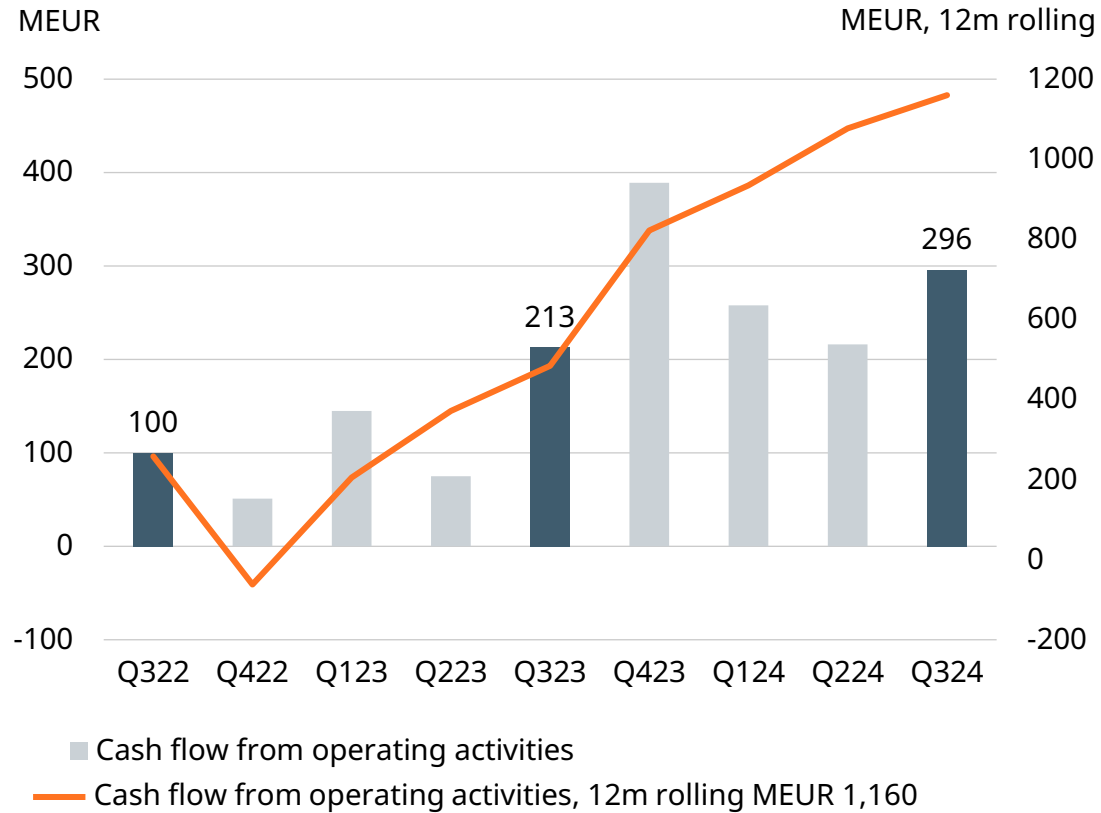
Wärtsilä strengthens commitment to Zambia with O&M agreement renewal for Ndola power plant

- Wärtsilä has signed a renewal of its Operations & Maintenance (O&M) agreement covering the 105 MW power plant owned by Independent Power Producer Ndola Energy Company Ltd (NECL) in Zambia.
- The previous agreement had been in force since 2013.
- The plant operates with twelve Wärtsilä 32 engines, including six equipped with two-stage turbocharging technology. Hydropower is the main source of electricity in Zambia.

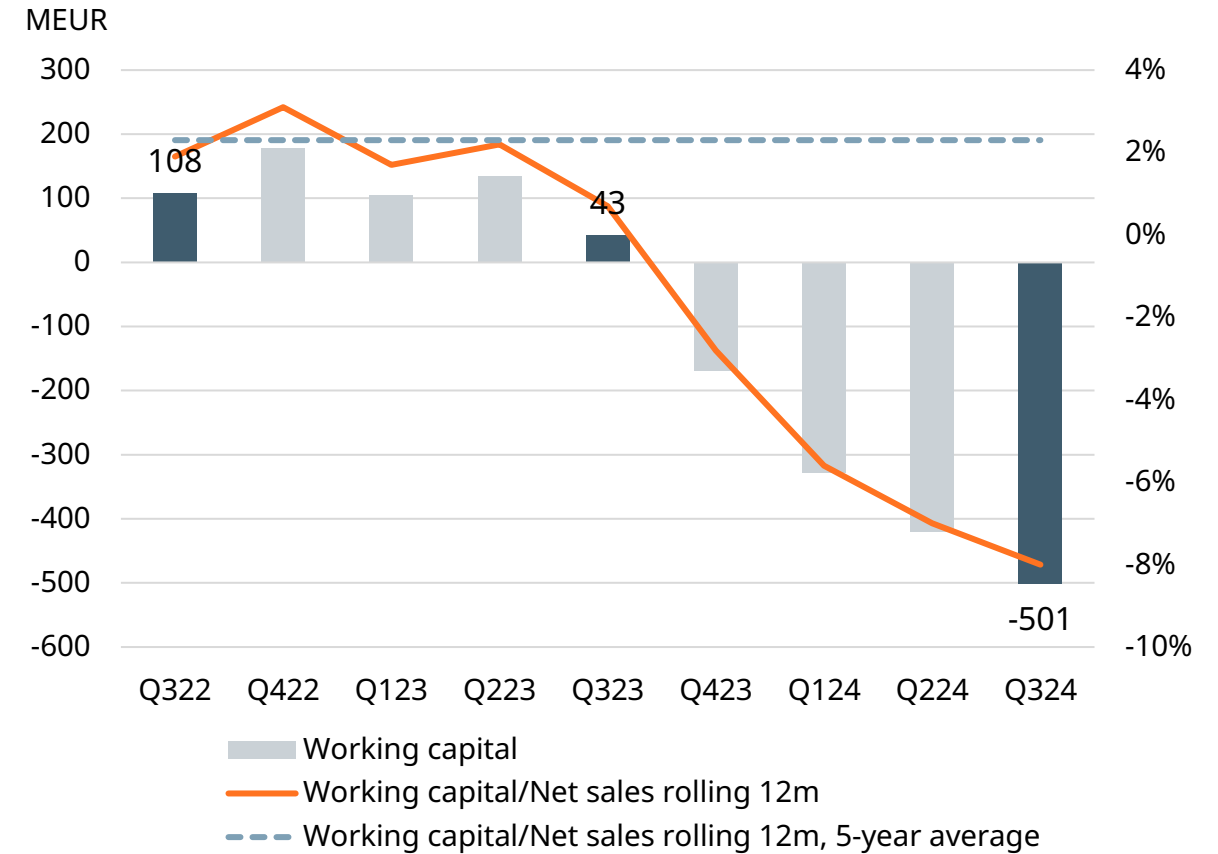
* Includes agreements covering both installed assets and assets to be installed in the future

Strong cash flow from operating activities

Cash flow from operating activities



Working capital to net sales ratio





Prospects

Marine

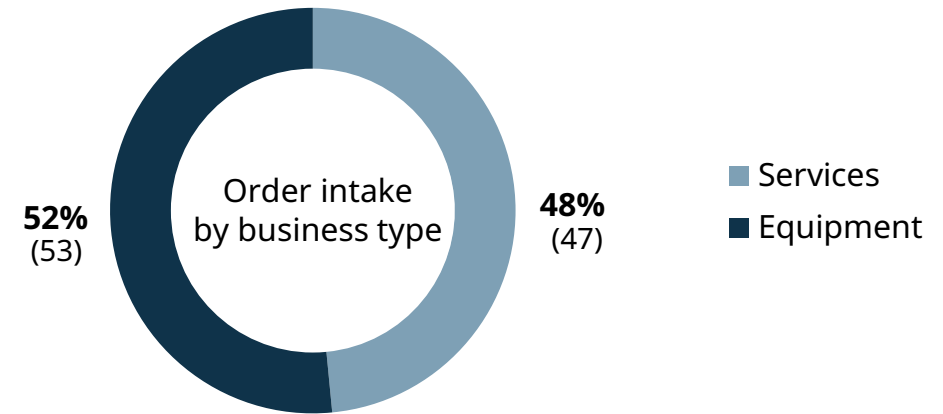
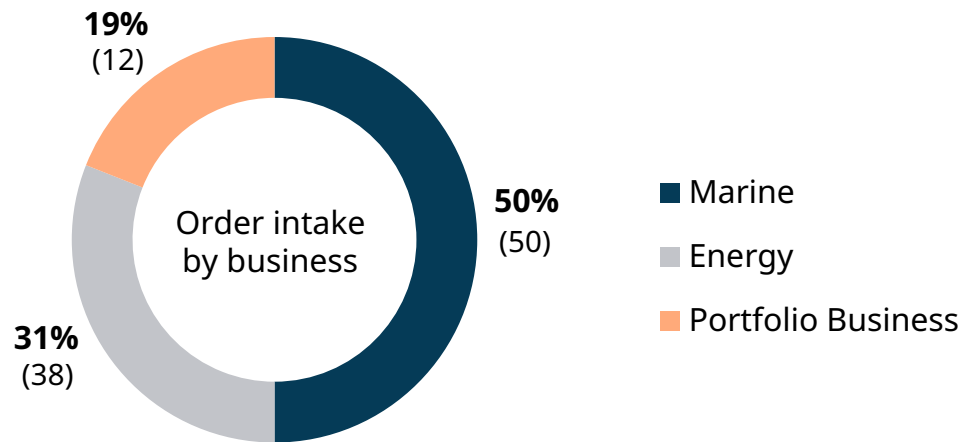
- Wärtsilä expects the demand environment for the next 12 months (Q4/2024-Q3/2025) to be better than that of the comparison period.

Energy

- Wärtsilä expects the demand environment for the next 12 months (Q4/2024-Q3/2025) to be better than that of the comparison period.

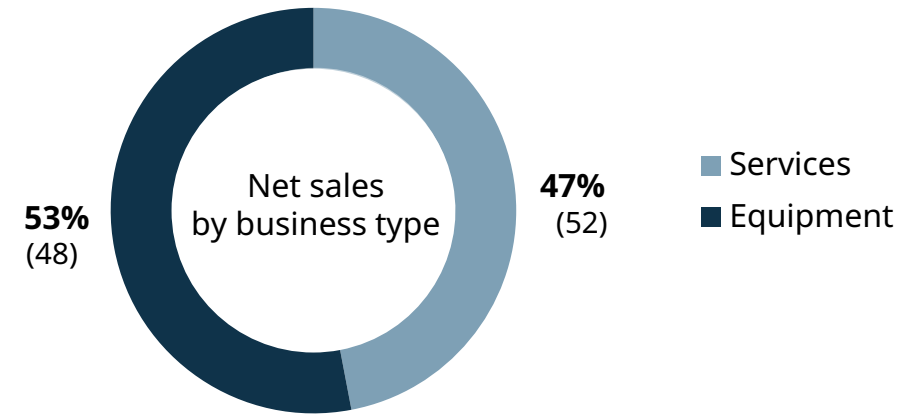
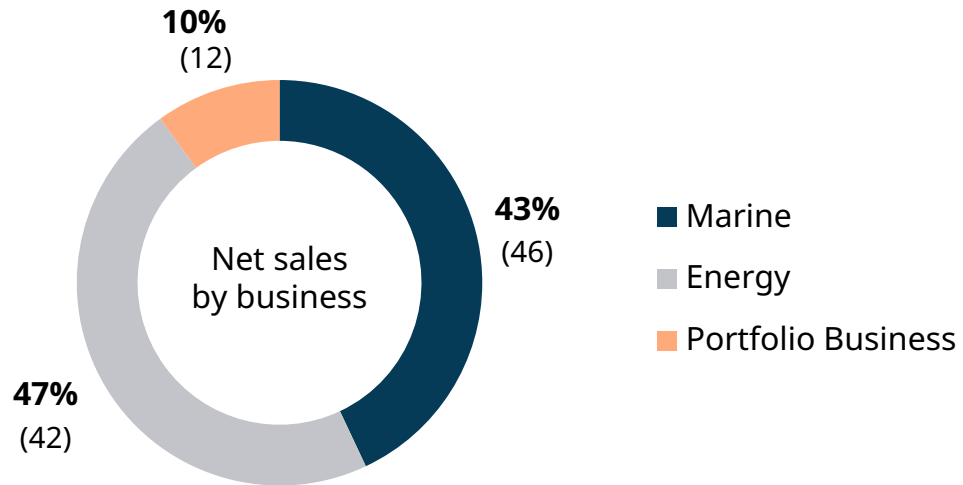
Order intake

Third quarter development



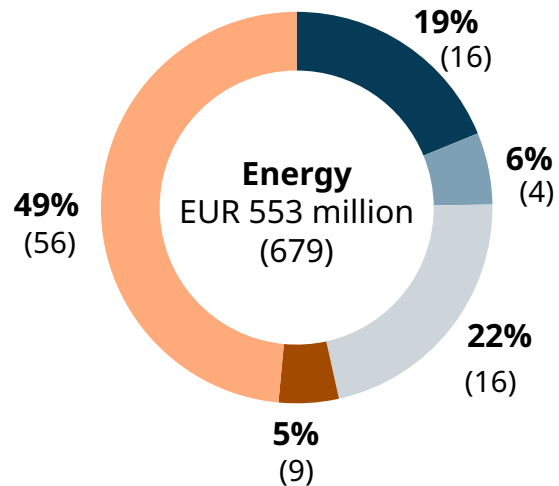
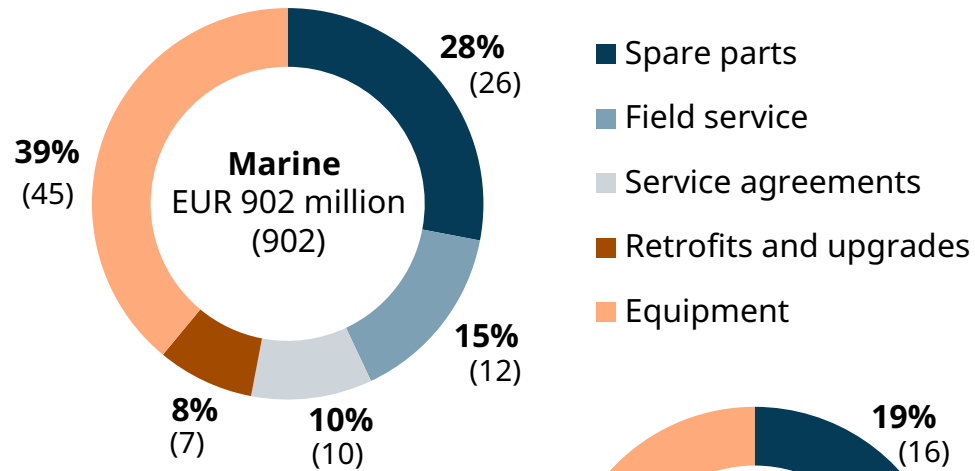
Net sales

Third quarter development

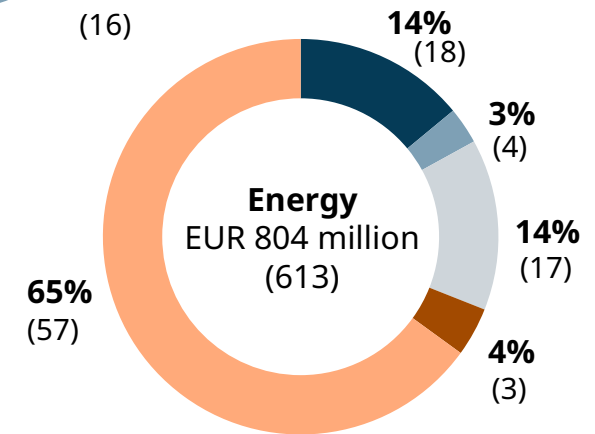
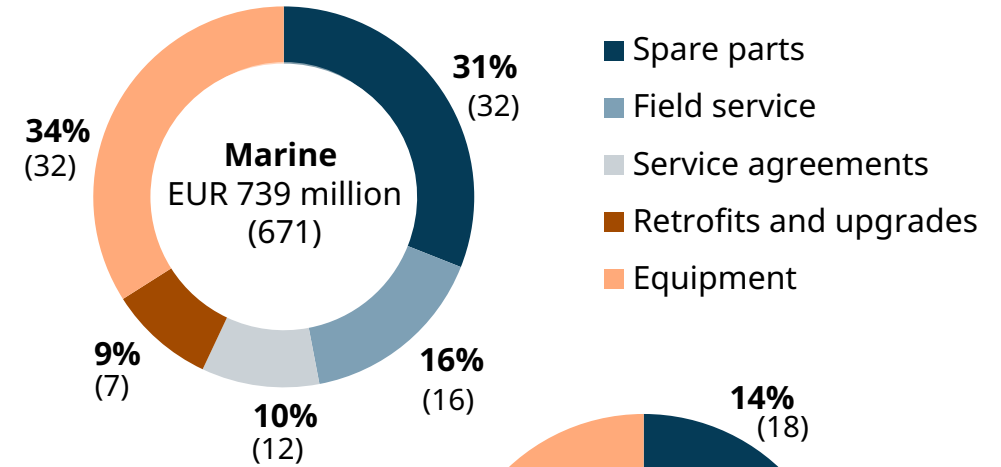


Third quarter development by business type

Order intake



Net sales

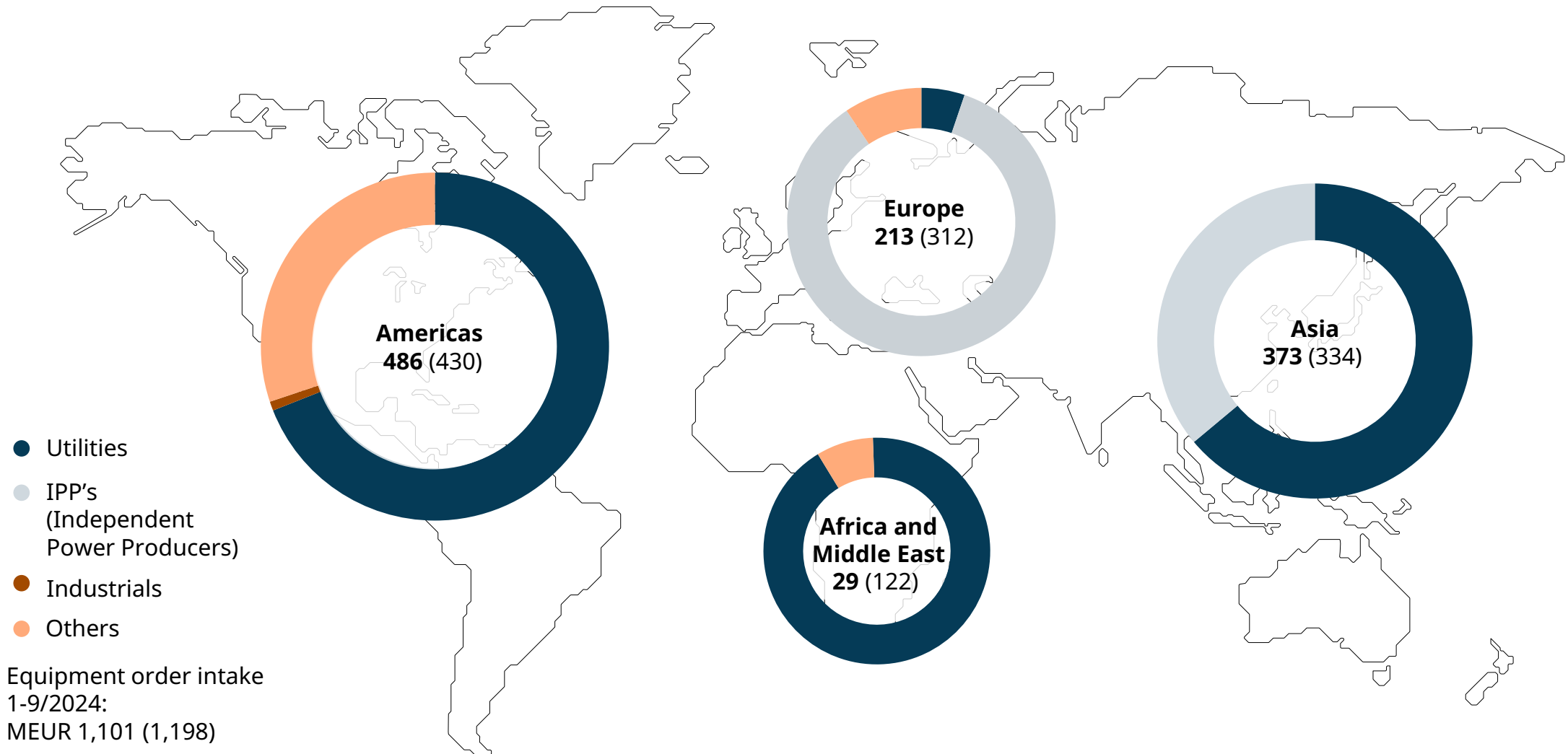


January–September order intake by customer segment

Marine	Gas carriers	Cruise & ferry	Offshore	Navy	Special vessels	Merchant	Other
Equipment	6% (9)	23% (26)	5% (6)	6% (10)	11% (3)	44% (42)	4% (4)
Services	13% (14)	22% (22)	17% (18)	11% (8)	10% (11)	26% (25)	1% (2)
Total	10% (12)	22% (23)	13% (13)	9% (9)	11% (8)	33% (31)	2% (3)

Energy	Utilities	Independent Power Producers	Industrials	Other
Equipment	56% (59)	29% (30)	0% (10)	15% (0)
Services	32% (33)	33% (32)	23% (22)	12% (13)
Total	32% (33)	33% (32)	23% (22)	12% (13)

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



**OMXSUSTAIN
NASDAQ OMX
INDEX**

OMX GES SUSTAINABILITY FINLAND










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

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 October 2024 (CMi2i quarterly update)

#	Name	Shares	Share %
1	Invaw Invest AB	104,711,363	17.70%
2	Keskinäinen Työeläkevakuutusyhtiö Varma	26,543,252	5.37%
3	BlackRock Fund Advisors	19,515,247	3.30%
4	The Vanguard Group, Inc.	18,452,416	3.12%
5	Keskinäinen Eläkevakuutusyhtiö Ilmarinen	16,823,037	2.84
6	Keskinäinen Työeläkevakuutusyhtiö Elo	9,193,739	1.55
7	Amundi Asset Management SA (Investment Management)	8,396,000	1.42
8	BlackRock Advisors (UK) Ltd.	7,139,352	1.21
9	SSgA Funds Management, Inc.	7,137,297	1.21
10	BlackRock Investment Management (UK) Ltd.	6,857,544	1.16
11	Marathon Asset Management Ltd.	5,870,779	0.99
12	Acadian Asset Management LLC	5,857,139	0.99
13	Arrowstreet Capital LP	5,496,337	0.93
14	Legal & General Investment Management Ltd.	5,448,326	0.92
15	UBS Asset Management (UK) Ltd.	5,066,425	0.86
Total Top 15		252,508,253	42.67%

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

Next upcoming IR events

- 18.-20.11. Finnish Industrial Tour
- 27.11. Danske Bank Winter Seminar in Copenhagen
- 10.12. CEO Strategy call
- 11.12. Nordea Capital Goods Week
- 11.12. IR Theme call: Energy (Engine Power Plants)

Wärtsilä Investor Relations

Hanna-Maria Heikkinen, Vice President, Investor Relations

tel. +358 10 709 1461, email: hanna-maria.heikkinen@wartsila.com

Samu Heikkilä, Senior Manager, Investor Relations

tel. +358 10 709 1121, email: samu.heikkila@wartsila.com

Maija Hongas, Senior Manager, Investor Relations

tel. +358 10 709 3178, email: maija.hongas@wartsila.com

Noora Suni, Investor Relations Specialist

tel. +358 10 709 1101, email: noora.suni@wartsila.com

Meeting requests

Janine Tourneur, Executive Assistant

tel. +358 10 709 5645, e-mail: janine.tourneur@wartsila.com

Appendix

Main competitors

Engines

MAN
Himlen
Rolls-Royce

Other marine solutions

Kongsberg
Alfa Laval
GE
Siemens
Schottel

Other energy solutions

GE
Siemens
Tesla
Fluence

Customer base

Marine businesses

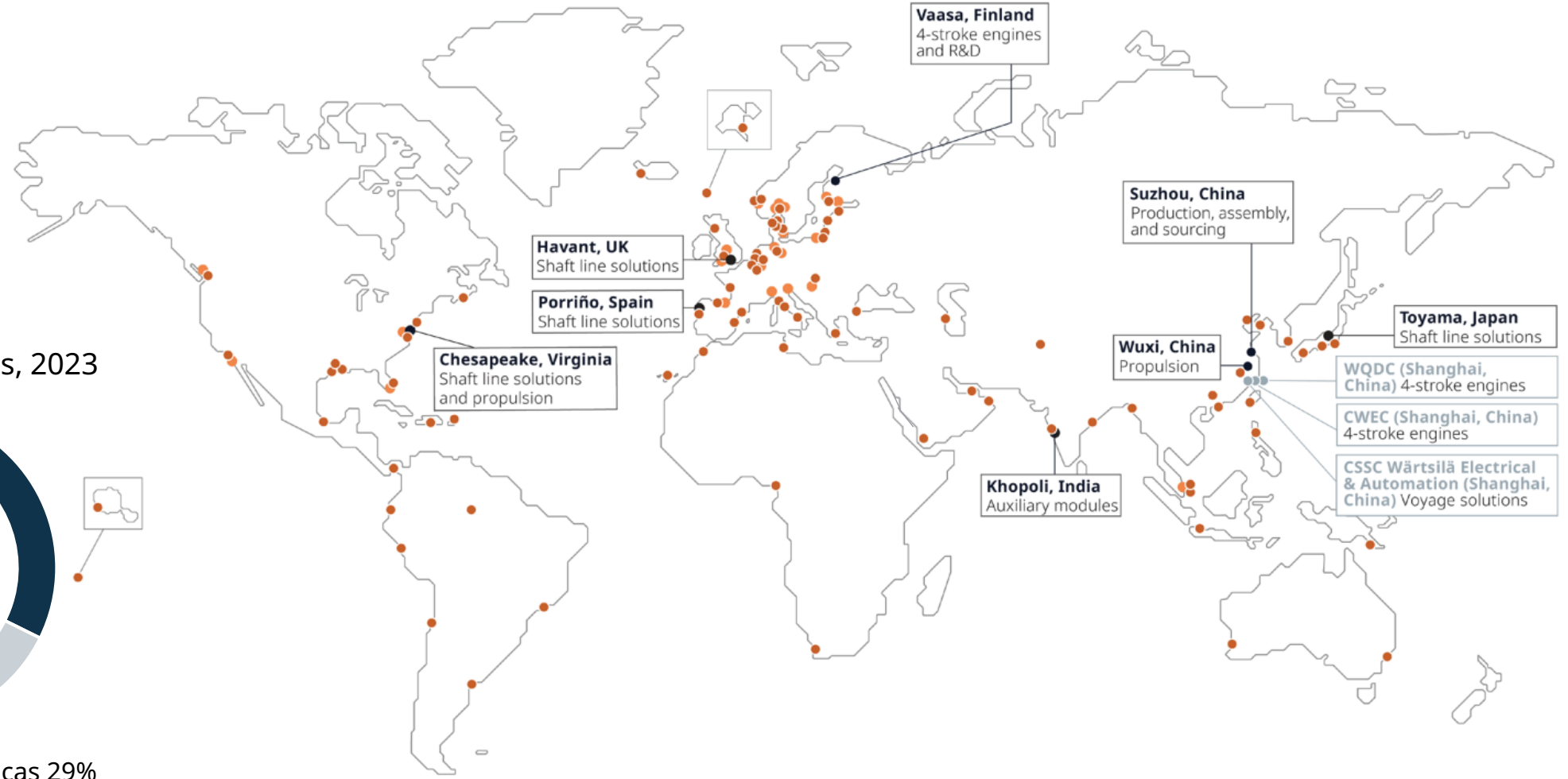
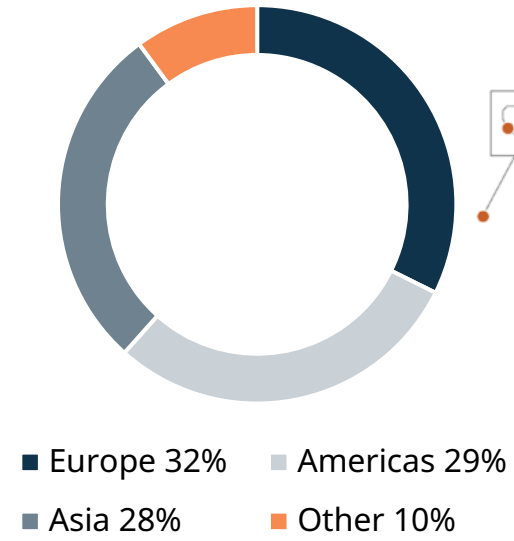
Ship owners
Ship operators
Ship management
companies
Charterers
Shipyards
Port authorities

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



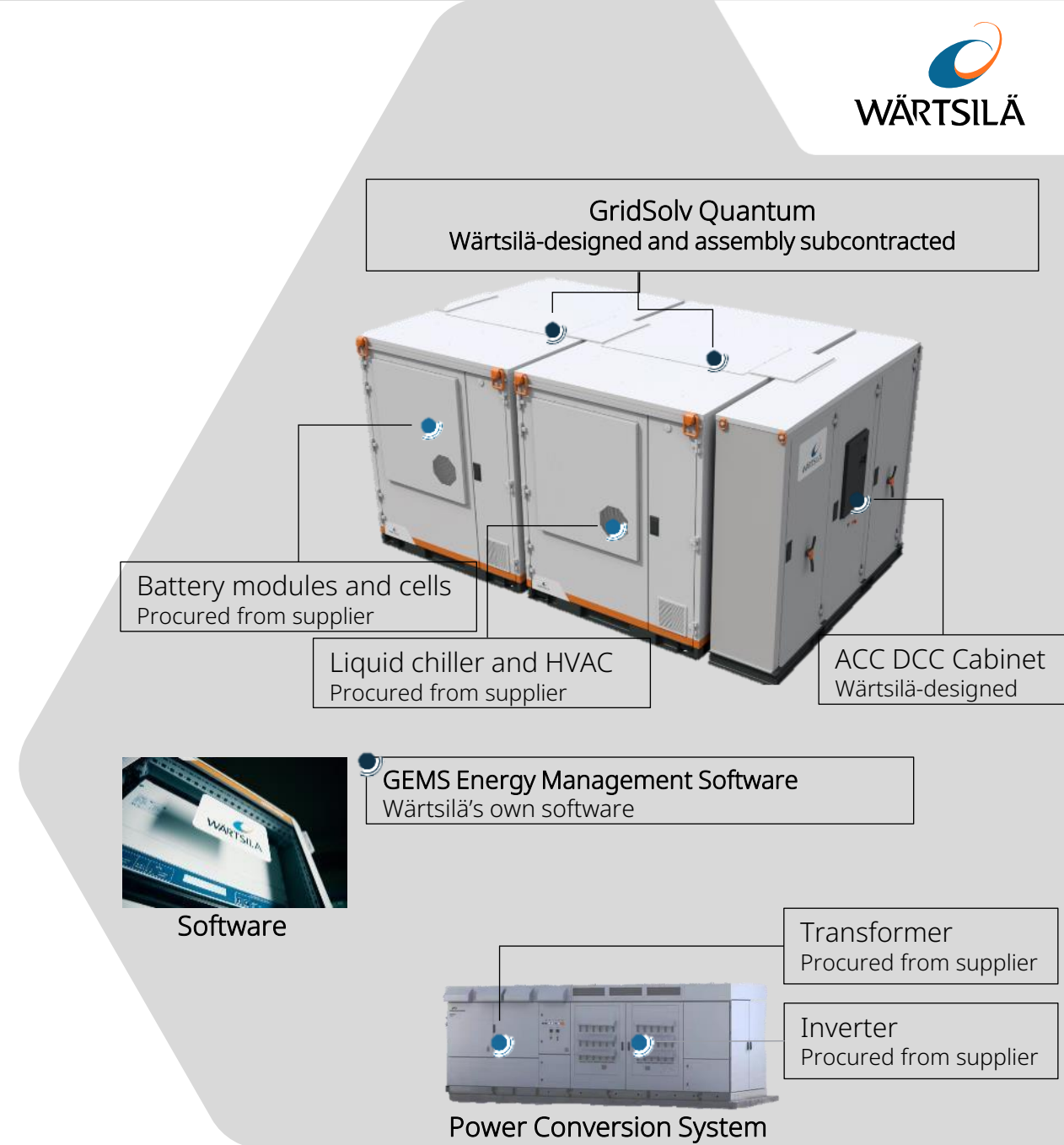
- Sites with engineering, R&D (fully owned)
- Sites with sizeable manufacturing (fully owned)
- Joint venture sites
- Service locations

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

- **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

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

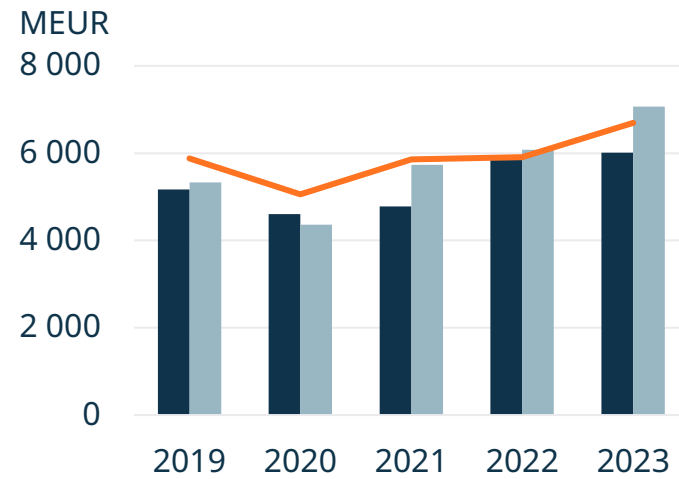
Net sales
6,015 MEUR

Comparable operating result
497 MEUR
8.3% of net sales

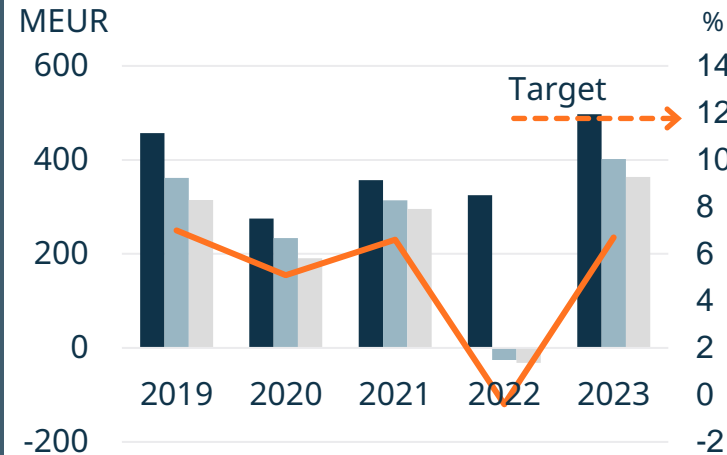
Operating result
402 MEUR
6.7% of net sales

Cash flow from operating activities
822 MEUR

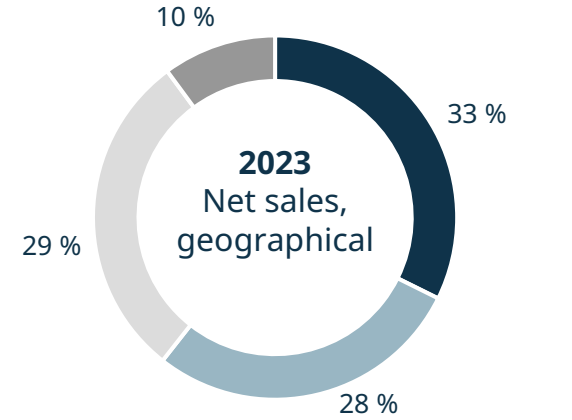
Personnel
17,800



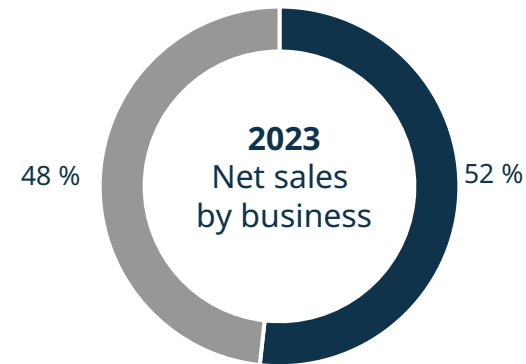
■ Net sales ■ Order intake
— Order book



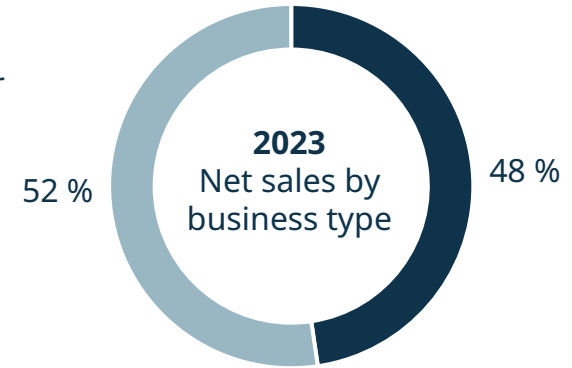
■ Comparable operating result
■ Operating result
■ Result before taxes
— Operating result, %



■ Europe ■ Asia ■ Americas ■ Other



■ Marine ■ Energy



■ Equipment ■ Services

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

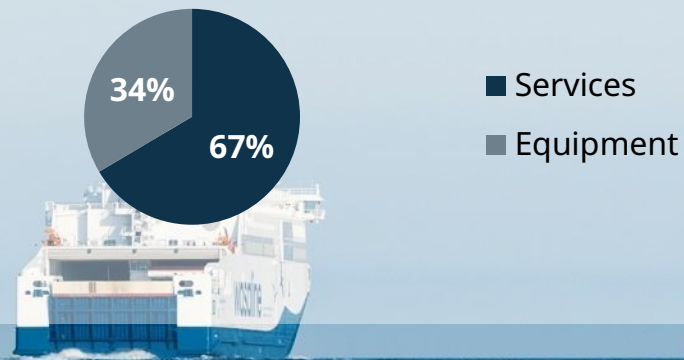
Net sales
2,800 MEUR

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