

An underwater photograph featuring a diver in the center, surrounded by a massive school of fish. Sunlight rays penetrate the water from above, creating a dramatic, ethereal atmosphere. The scene is set against a backdrop of dark, rocky seabed.

evac
nothing to waste

Annual Review 2023

Global leader in cleantech
solutions for marine and
land-based applications

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CEO's review

"I am very proud of what our teams delivered in 2023, and excited about 2024."

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Our M&A history

Evac has a successful track-record of eight acquisitions in the last ten years.

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Innovation and sustainability

Evac's R&D teams in the UK and Finland are driving innovation beyond regulation.

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2023 outcome

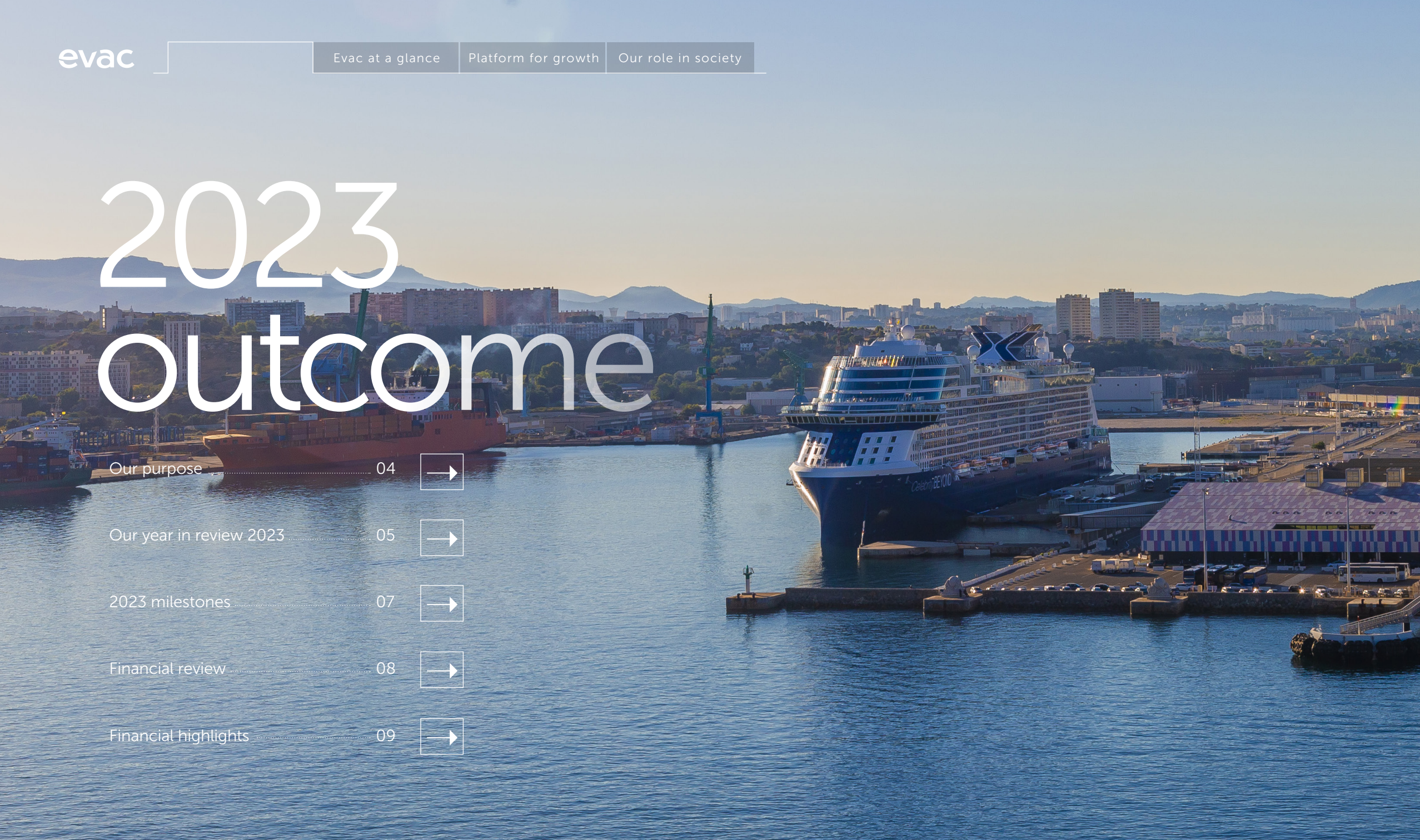
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OUR PROMISE

Nothing to waste

OUR PURPOSE

Enable a future with no waste

Over the decades, Evac has established itself as a prominent advocate for sustainability. We specialize in water, waste, and wastewater management, hull protection, and biofouling management solutions across commercial, naval, and offshore segments in the maritime industry.

We have evolved from a Finnish start-up into a global leader in environmental stewardship. Today, we set the standard for solutions that reduce CO₂ emissions, safeguard life below water, and drive the transition of the maritime industry towards the circular economy.

In the land-based industries, our business is driven by the growing demand for real estate

flexibility, increasing water scarcity, and hygiene requirements, with our solutions responding to the global challenges.

Our dedication extends beyond regulatory adherence; we are committed to enabling our customers to optimize their sustainable practices and surpass legal requirements. Leveraging decades of expertise, sustainable technologies, and an extensive installed base, we ensure a significant impact that exceeds the scale of our company.

Together with our customers and partners, we strive to enable a future with no waste. Our mission transcends individual technologies, defining our corporate identity and purpose.



CEO's review

Looking back at 2023: a year in review

2023 has seen Evac make excellent progress across its various markets, cementing our position as the #1 global market leader in our selected areas of waste, water and wastewater management. We start 2024 with a stronger market environment than in 2023, encouraging order book and exciting new product opportunities. The broad diversity of our products, customers, and our leading position in a number of markets provides an exciting outlook.

Our core business focuses on the design, development, and supply of mission critical original equipment, backed up by a highly responsive spares and service capability that accounts for about two-thirds of Evac's revenue. With an installed base covering over 50,000 vessels worldwide, and product lifespans exceeding 15 years, our service revenue is on average up to three times the initial product value.

The cruise industry, which constitutes 28% of Evac's revenue, recovered strongly in 2023 to very healthy occupancy rates, with the sustainability

agenda and management of the waste challenge rising to unprecedented levels of customer importance. Alongside this, we have deliberately increased our focus on the provision of experienced onboard service engineering capability as this offers a key touchpoint between Evac and its customers.

Our longstanding and deep relationships with the military market have also served us well, and we see interesting medium-term opportunities in this growing sector, accompanied by long-term service arrangements. The segment is characterised by >

|| We start 2024 with a strong order book and exciting new product opportunities.

Björn Ullbro | CEO of Evac



CEO's review

multi-vessel series with fixed designs, where we can leverage our various brands. We are also excited by the opportunities on land, where we are confident several of our products have a wider applicability as has been seen during the last years. Page 41 sets out the creative solution Evac helped to deliver for the new luxury hotel at the former London US embassy site in Grosvenor Square, reducing water, energy, and construction footprint.

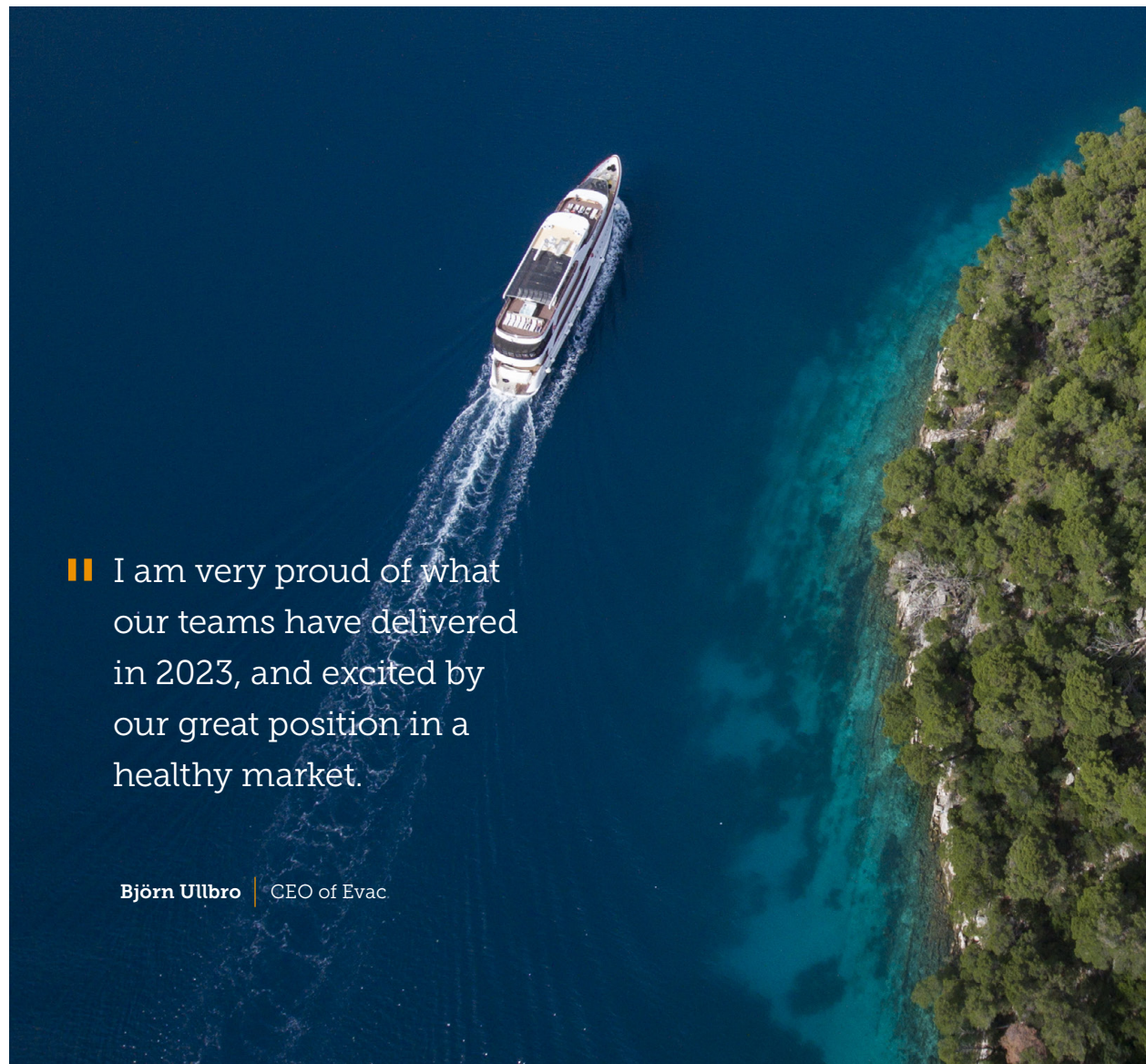
Notable orders in 2023 include Edge V for Royal Caribbean Group at Chantiers de L'Atlantique and our first vessel-series wide service agreement with Ponant. We are also encouraged by the start of 2024 with an all-time-high single order for Norwegian Cruise Line at Fincantieri, and our first retrofit order for Evac's HydroTreat solution for the MS AROYA. The latter is covered in more detail on page 38.

In 2023, we implemented a new, leaner, and more decentralised operating structure which has already delivered clearer accountability and accelerated decision-making and collaboration. Page 30 sets out the renewed focus on culture and developing our talent. To drive culture change at every level, we connected performance management to more efficient processes,

commonly defined values, and desired behaviour. Regular and frequent communication helped improve employee engagement.

Evac has successfully expanded its addressable market over the years through a mix of in-house R&D and M&A. Two exciting new products offer pioneering innovation, in emission-free, non-incineration onboard treatment of wet waste (see page 35) and ultrasound antifouling (see page 23) have been introduced to the market. Our track-record of eight acquisitions in ten years, including Cathelco in 2018, has materially expanded our product portfolio and opened up new markets. Our acquisition in 2022 of the vacuum spare part business of our Greek distributor EPE has delivered ahead of the investment case and allowed the Evac team to successfully build direct contact with its important Greek customer base.

In summary, I am very proud of what our teams have delivered in 2023 and excited by the positioning in terms of products, market, and macro trends. Our focus on strengthening the core of the company, accelerating growth, and driving sustainability through innovation gives us confidence going into 2024 and the medium term.



I am very proud of what our teams have delivered in 2023, and excited by our great position in a healthy market.

Björn Ullbro | CEO of Evac

2023 milestones

January



New organizational structure implemented. From a function organization to two Business Lines with global P&L responsibility and specialized customer focus.

February



Evac signed its first Annual Service Agreement with Ponant to take care of the maintenance and spares for their fleet of eight luxury cruise ships.

April



Evac was awarded an order from Chantier de l'Atlantique for the fifth ship in the Edge class series, intended for Celebrity Cruises, a Royal Caribbean Group company.

May



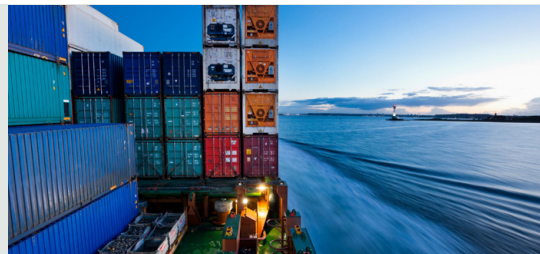
Evac launched its shared company values that were co-created together with the entire organization.

July



We reached a milestone of 250 million m³ of water saved since year 2000 by Evac vacuum systems, equivalent to 100+ Olympic swimming pools.

September



Our Cathelco business improved its on-time delivery to over 90%.

November



Cathelco's ultrasonic antifouling technology won the Technology of the year award in the European Decarbonization Awards.

December



Onboard Service strategy delivered 27% growth in the Cathelco & HEM Business Line.

CFO's review

Financial review

The momentum in the business has translated through to financial performance, growing revenue and EBITDA by 12% and 39% respectively over the 2021-2023 period. In 2023, we delivered solid revenue growth of 6% (5% organic) driven in large part by our Service business which grew 13% year-over-year.

During 2023 we also improved our EBITDA margin from 13% to 17%, and our near-term target of delivering EBITDA margin in excess of 20% remains highly achievable. These results reflect our focus on enhancing the quality of our customer relationships, increasing operational efficiency through a leaner operating model, and stringent working capital management, despite a challenging supply chain backdrop and elevated global freight costs.

In 2023, we increased our gross margin by 2 percentage points, from 43% to 45%, through:

- Increasing sales volume, especially in our profitable spare parts business.
- Improving our pricing strategy and value proposition.
- Addressing legacy new-build projects with lower margins.

- Achieving material cost improvements through active sourcing and vendor management.
- Emphasizing the importance of planning and structured follow-up in projects and onboard services, enabling improved variable cost control.

We also reduced our overhead costs relative to revenue by 2% through a simplified operating model, which has delivered clearer accountability, streamlined management structures, while empowering our employees to make faster and better decisions. We achieved savings by insourcing a number of critical activities, allowing more efficient collaboration among our delivery teams. These developments have helped build on the advantages we enjoy from our asset light model.

Furthermore, during 2023, we actively managed our net working capital, delivering a reduction to 11% of revenue (compared to 15% in 2022). The main drivers for the improvement were:

- Implementing a new sales and operations planning process and inventory management tool to enable better demand forecasting and

more effective inventory management. The majority of Evac's business inventory is now consolidated in Duisburg, Germany, allowing for optimal inventory levels and rapid turnaround times.

- Establishing a team and structured approach to collection and credit management.
- Improving vendor management, negotiating better payment terms with our suppliers, and streamlining our procurement processes.

Furthermore, we drove a material improvement in liquidity such that we ended the year with 34 MEUR of available liquidity and bank facilities. Overall, 2023 saw strong progress in our financial performance and liquidity by enhancing our margins, lowering our overhead costs, and controlling net working capital. These actions have had a powerful impact on our profitability and strengthened our cash generation, and we expect to see further momentum in 2024. We are confident that we have a solid financial foundation to support our growth and innovation in the future and look forward to 2024 and beyond with confidence.

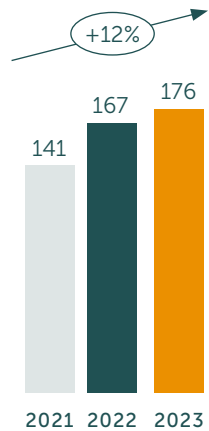


|| During 2023 we improved our EBITDA margin from 13% to 17%.

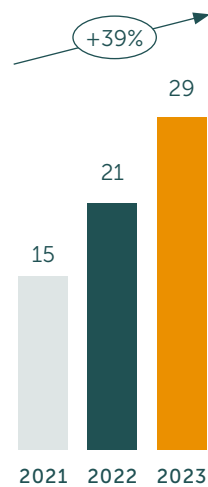
Katja Laurila | CFO of Evac

Financial highlights

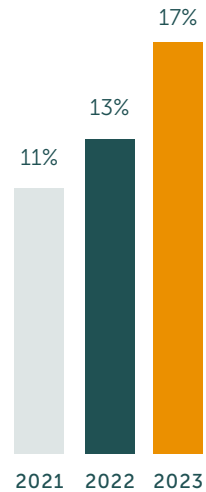
Revenue (MEUR)



Adj. EBITDA (MEUR)



EBITDA margin %



Evac at a glance

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Market leading brands

Our solutions and services are sold under three respected brands

Evac®

For decades, Evac® has been a pioneer in sustainability by empowering its customers to eliminate waste and mitigate emissions. Evac is recognized as a market leader in integrated water and waste management systems in the maritime industry. On land Evac's solutions provide customers with significant benefits in water conservation and enhanced real estate flexibility, both leading to a rapid return on investment.



Cathelco®

Cathelco® stands as a market leader in vessel protection and a prominent provider of sustainable biofouling management solutions. Cathelco's diverse product lineup, suitable for every type of seagoing vessel, includes advanced water maker systems, corrosion protection, and marine growth prevention technologies. Committed to quality and customer service, Cathelco prioritizes reducing environmental impacts.



HEM®

HEM® stands as the market-leading brand renowned for its exceptional quality in a comprehensive array of reverse osmosis desalinators and freshwater treatment systems. Its offering is meticulously crafted for superyachts with specific requirements for product quality. In its segments, HEM sets the standard for excellence.



Revenue

133 M€

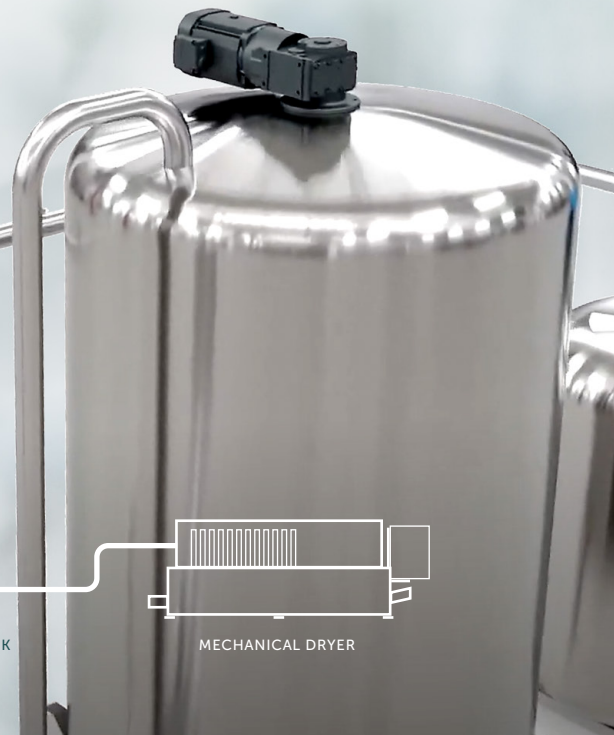
Employees

280

Latest innovation

Evac HydroTreat

As set out on page 35 of this review, Evac HydroTreat represents a revolutionary solution to the challenges of handling organic wet waste. Evac’s initial focus has been on supplying the product in a marine environment, but the technology has clear land-based applicability which we are exploring.



Evac Business Line

Evac is an R&D and intellectual property company with a light asset base and a strong network of external manufacturing partners. The Evac brand is synonymous with water and waste treatment technologies across the maritime industry, with a growing presence in the onshore building sector.

Our leading solutions in vacuum collection, wastewater treatment, dry and wet waste treatment and freshwater generation and related services position us as a system integrator for all our customers’ water and waste treatment needs. We are the sole supplier in the maritime industry with a total water and waste concept available for all commercial, navy and offshore segments.

The continuous development of our state-of-the-art technologies enables our customers

to future-proof their installations to meet current regulations and beyond. Our ambitious purpose of enabling a future with no waste is a promise to our customers and the entire planet. We pioneer in circularity in the maritime industry and are committed to driving the green transition forward.

Our technologies have also been successfully applied to land-based applications across real estate, retail, life science, and high-traffic locations. Land-based opportunities are driven by the increasing need for real estate flexibility, scarce water resources, and enhanced hygiene requirements.

Evac business is present in 14 countries and has around 280 employees. Our own sales network is complemented by a global channel partner network offering excellent local service to our customers.



|| Our ambitious purpose of enabling a future with no waste is a promise to our customers and the entire planet. We are committed to driving transition to the circular economy forward.

Björn Ullbro | CEO of Evac

Revenue

45 M€

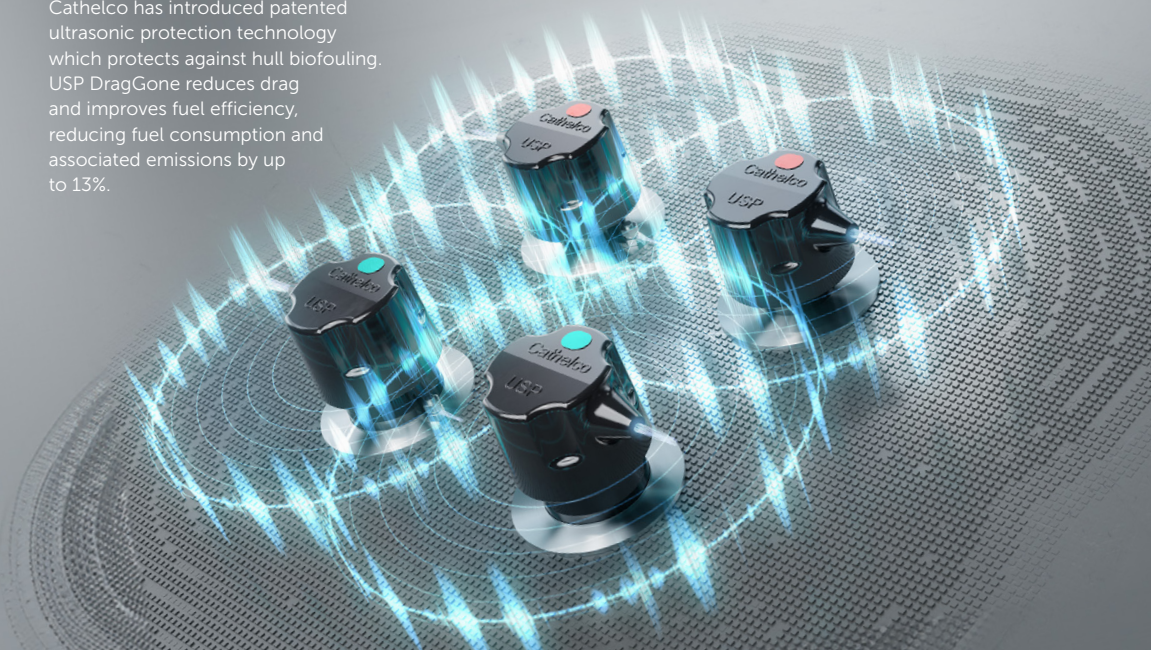
Employees

170

Latest innovation

Cathelco USP DragGone

As set out on page 23 of this review, Cathelco has introduced patented ultrasonic protection technology which protects against hull biofouling. USP DragGone reduces drag and improves fuel efficiency, reducing fuel consumption and associated emissions by up to 13%.



Cathelco & HEM Business Line

The Cathelco brand is known as a market leader in corrosion protection and the supply of marine growth prevention and ultrasonic antifouling systems. The technologies deliver reduced maintenance costs and extend a vessel's lifecycle.

With a wealth of knowledge built up over almost 70 years of experience, Cathelco systems are deployed on an estimated 15,000 vessels worldwide.

Our loyal customer base across military, commercial, and offshore segments all require a regular service and maintenance cycle and rely on our services.

We are continuously building our production capabilities and processes to support long-term growth. Our factories in the UK and France have significantly reduced lead times and driven on-time deliveries to an all time high.

Evidencing our commitment to sustainable innovation, the new ultrasonic antifouling system, Cathelco USP DragGone™, was launched in early 2024.

The HEM brand is a market leader in fresh water generation designed to meet the unique requirements of luxury superyachts. The HEM systems are turning seawater into drinking water and providing water also for swimming pools, hot tubs, kitchens, showers, and toilets.

Thanks to our strong reputation for quality and service, HEM products are supplied worldwide and are trusted for applications where quality and reliability are paramount. Approximately 35% of global superyachts measuring 80-120 meters have water generation systems from Cathelco or HEM installed on board.

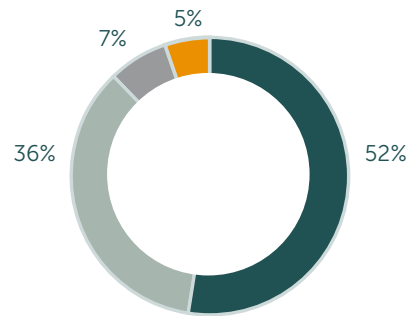


|| I am immensely proud of the team efforts during the last year, both in establishing a solid foundation for growth and in developing our new ultrasonic product to tackle the environmental impact of marine traffic.

Nick Cowley | President of Cathelco & HEM Business Line

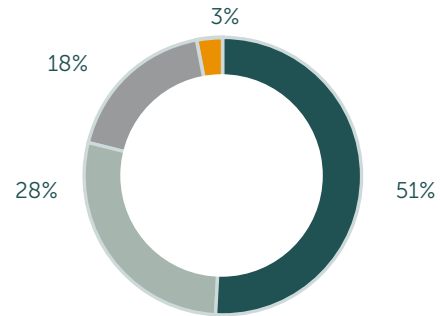
Company overview

Revenue per business segment



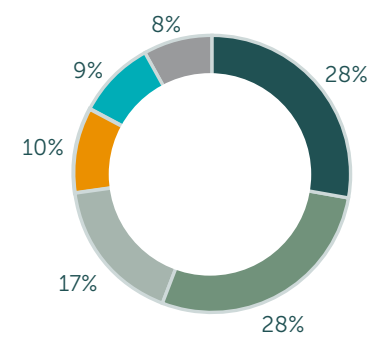
- Spare parts
- Newbuild
- Onboard service
- Retrofit

Revenue per customer region



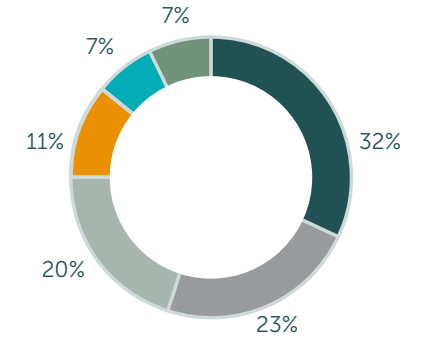
- Europe
- Americas
- Asia
- Rest of the world

Revenue per customer segment



- Commercial marine
- Cruise
- Navy
- Distributor
- Yacht
- Building

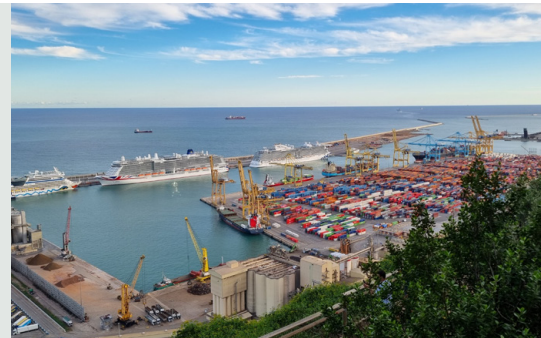
Revenue per product group



- Vacuum systems
- General and other*
- Corrosion protection and marine growth prevention
- Fresh water generation systems
- Waste water treatment
- Waste treatment

* Includes spares used in multiple products and other consumables

Services account for 64% of revenue



Platform for growth

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Evac is a leading cleantech solutions provider for marine and land-based applications

1 MARKET LEADERSHIP

Evac is the world's #1 global provider of water, waste and wastewater management, hull protection and biofouling management solutions for the global marine, offshore and building industries.

2 INNOVATION AND SUSTAINABILITY

Evac is in the forefront of R&D, constantly developing new innovative and sustainable solutions for the marine and land-based markets. The adoption of new solutions are further driven by increasingly stringent regulations.

3 LEADING SERVICE OFFERING

High quality spare part focused service business complemented with leading onboard service team which together generate over 60% of the company's revenue. Established global service network near customers.

4 ACCELERATING GROWTH

Evac has consistently extended its product offering through a mix of in-house R&D and M&A. The company has a proven M&A track-record with eight successful acquisitions in the last ten years.

5 PEOPLE AND TALENT

Evac has a strong focus to diversity, with 500+ employees spread across 14 countries. The company prioritises attracting and retaining key talent, and is led by an experienced management team.

Market leading product portfolio



Vacuum systems
1979



Wastewater treatment
1985



Dry waste treatment
2007



Wet waste treatment
2007



Fresh water generation
2012



Corrosion protection
2018



Marine growth prevention
2018



Ultrasonic antifouling
2024

Evac offers one-stop shop solutions for a wide range of customers

Diversified end market exposure – long-standing customer relationships



CRUISE



FERRY & ROPAX



YACHTS



MERCHANT



NAVY



OFFSHORE



BUILDING

1 MARKET LEADERSHIP

Evac has a market leading offering

Vacuum systems



Vacuum-based blackwater (sewage) collection systems and toilets ensure energy efficiency and significant water savings.

PRODUCTS

KEY BENEFITS

KEY END MARKETS

- Proven track-record and extensive customer references
- Market leading energy efficiency in vacuum production
- Optimized footprint and refitting possibility on land and sea

- All marine segments
- Building, e.g., hotels, hospitals and supermarkets

Corrosion protection



Impressed current cathodic protection (ICCP) prevents hull corrosion and extends the lifecycle of vessels.

- Low maintenance
- Prolong hull lifespan and integrity
- Propeller and rudder protection
- Reduced hull maintenance

- All marine segments

Dry and wet waste treatment



Waste recycling units, efficient compacting and hydrothermal carbonization (HTC) empower the circular economy.

- Decreases customers' costs by reducing landed waste volume
- Extensive portfolio fitting for all marine vessels
- Advancing circular economy of recycled material

- Yacht
- Offshore
- Navy
- Cruise
- RoPax

Fresh water generation



Seawater converted to potable and technical water with reverse osmosis eliminate the need for shoreside water supplies.

- Highest quality for yacht segment
- Low CAPEX – low energy consumption, specially with energy recovery in large Cruise solutions

- Yacht
- Offshore
- Cruise
- Navy

Wastewater treatment



Advanced wastewater treatment systems ensure the highest quality effluent entering our seas.

- Fulfilling the strictest marine regulation and matching the best municipal wastewater treatment quality
- Microplastic removal and treated wastewater reuse possible
- High level of automation

- All marine segments

Marine growth prevention and ultrasonic antifouling



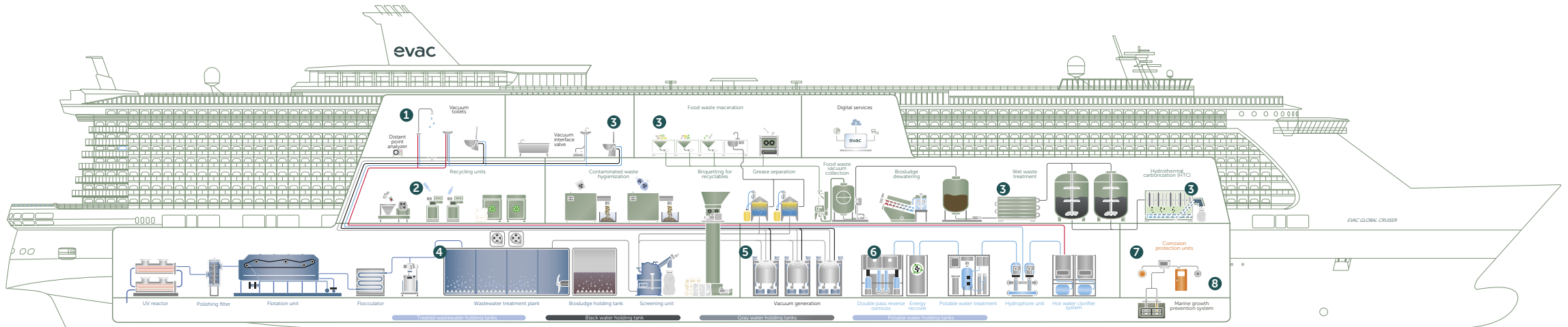
Ultrasonic antifouling and marine growth prevention systems provide efficient protection from biofouling.

- Up to 13% reduction in fuel consumption and CO₂ emissions
- Low CAPEX – low energy consumption
- Over 50 years of experience
- Service throughout a vessel lifecycle

- All marine segments

1 MARKET LEADERSHIP

Evac's solution portfolio empowers sustainable maritime



1 Vacuum toilets

Evac vacuum toilets save up to 90% more freshwater than gravity toilets.

2 Dry waste treatment

Evac recycling units advance sustainability by optimizing waste compaction and empowering the circular economy.

3 Wet waste treatment

Evac HydroTreat® cuts CO₂ emissions by 80% compared to conventional methods and pioneers circular waste management via its byproduct, biochar.

4 Wastewater treatment

Evac MBR® removes 99% of suspended particles, including microplastics and nutrients, ensuring the highest quality effluent entering our seas.

5 Vacuum collection

Evac vacuum collection offers market leading energy efficiency, together with vacuum's unique plumbing flexibility.

6 Fresh water generation

Energy-efficient freshwater generation systems eliminate the need for shoreside water supplies and are not dependent on heat generation aboard.

7 Corrosion protection

Cathelco's corrosion protection systems lower the fuel usage and reduce the need for expensive corrosion repairs.

8 Ultrasonic antifouling

Cathelco USP DragGone™ ultrasonic anti-fouling achieves up to 13% reduction in fuel consumption and CO₂ emissions. Effective in both fresh and sea water.

1 MARKET LEADERSHIP

Diversified end market exposure with a large customer base

Marine

Evac caters to a large variety of vessel types in different sizes, resulting in a dominant position in a growing marine market and long-standing customer relationships

Land-based

Evac offers solutions for a large variety of facilities in different sectors for the land-based segment



CRUISE VESSELS



ROPAX VESSELS & FERRIES



YACHTS



CARGO VESSELS



NAVY & COAST GUARD VESSELS



OFFSHORE JACK-UP RIGS



WINDFARM INSTALLATION VESSELS



HEALTHCARE FACILITIES



LABORATORIES & LIFE SCIENCE FACILITIES



SUPERMARKETS, COLD STORAGE & WAREHOUSE FACILITIES



MOBILE & TRANSPORTABLE FACILITIES



HIGH TRAFFIC



UNIVERSITIES & EDUCATIONAL FACILITIES



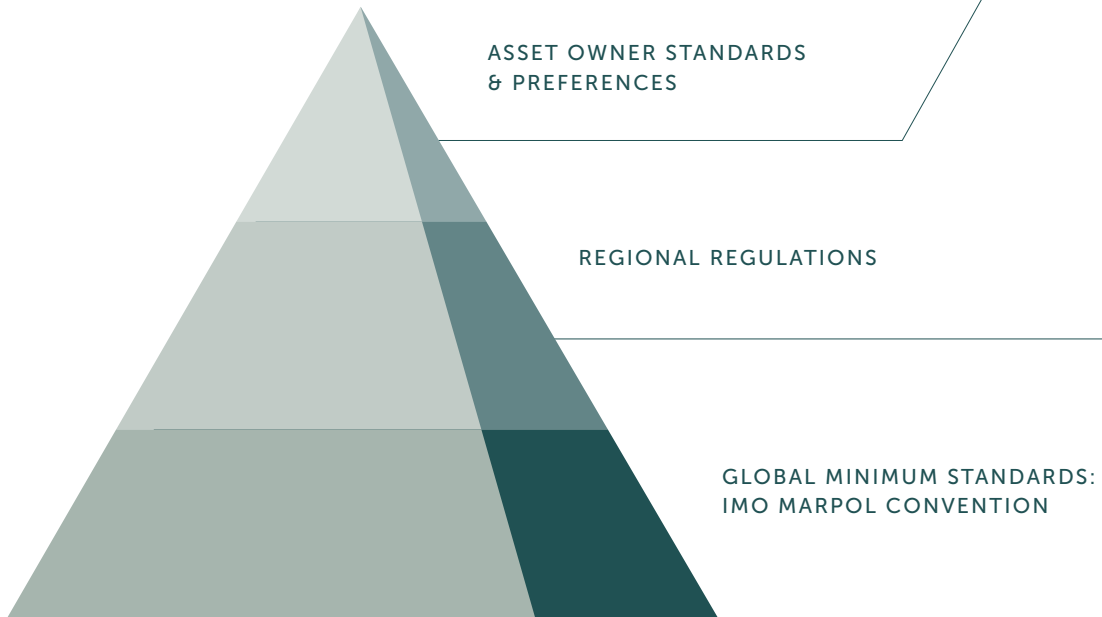
HOSPITALITY & ACCOMMODATION FACILITIES

Customer examples



2 INNOVATION AND SUSTAINABILITY

Increasing regulations driving adoption of innovative solutions



- Most owners look for opportunities to transform into more sustainable solutions, that go beyond the applicable regional regulations
- The motivation is often to be prepared for the potential future regulations, or to be leading with respect to environmental performance

|| We see policymakers and government officials as partners toward our shared goals. We work with them to increase the amount of shore power at cruise terminals, and we provide input on future policies and regulations.

Royal Caribbean Group

- More forward-looking regulations introduced for certain regions, including: Alaska, Great Lakes, Antarctica, the Mediterranean, the Baltic Sea, the USA and EU
- Regional regulations impose stricter constraints on discharge levels



|| Cruise operations comply with strict regulations, including those established by international maritime conventions, as well as a multitude of national and local regulations. We view compliance with laws and regulations as the bare minimum requirement for our operations.

Norwegian Cruise Line Holding

- Annex IV-V in IMO's MARPOL convention regulate discharge of sewage and dry & wet waste respectively
- Vast majority of the world's tonnage is covered by the convention



|| 2022 saw a growing number of initiatives ramping up in preparation for upcoming global and regional regulation including ship carbon intensity mandatory measures introduced by the IMO and European Union regulation on maritime and road transport – part of the 'Fit for 55' package".

MSC

2 INNOVATION AND SUSTAINABILITY

Evac R&D drives innovation beyond regulation

As a technology company, research and development (R&D) sits at the heart of Evac's future and critical for driving the future growth trajectory. The company is committed to fostering innovation that not only meets but exceeds the evolving needs of customers and their regulatory landscape.

Evac's R&D teams are located in the UK and Finland, where the company has its research centre.

"Our R&D teams have a robust technical expertise and years of experience. At our state-of-the-art R&D centre, we are actively engaged in the comprehensive development and testing of full customer systems, ensuring authenticity

and reliability in scale and conditions," says **Jari Jokela**, Head of Research at Evac.

"Our solutions are based on market-leading knowledge from our scientific studies. With this strong foundation, our technical team, equipped with deep experience and knowhow, work closely with our product teams to develop spearhead solutions. Also, our in-house automation and data management capabilities are critical to the development."

Seeking to exceed customer expectations, the R&D team work requires seamless cross-functional collaboration with customers, own sales organisation, regulatory bodies and authorities. Additionally, Evac actively participates in the collaborative consortium projects >



2 INNOVATION AND SUSTAINABILITY



Currently Evac has
144 patents and
12 pending applications.

Our game-changing innovations have a massive role in advancing both our customers' sustainability goals and our business interests.

Jari Jokela | Head of Research at Evac

across the maritime cluster, like the Business Finland founded SusFlow (Sustainability through Information Flows) project.

Pioneering in circularity

Evac is currently dedicating resources to the cruise industry where resource-efficient operations are a key priority in delivering sustainable tourism. Evac sees this circularity as the only sustainable way forward for the industry.

“Given that a significant portion of ships visit ecologically sensitive sea areas, minimising their environmental footprint is crucial for both cruise guests, local residents and the planet. Evac’s circular economy solutions are delivering minimal emissions to water, air, and soil. Additionally, these solutions contribute to biodiversity conservation and support

the development of local livelihoods in sensitive areas,” Jokela says.

A key in ongoing R&D focus is the transition from traditional waste treatment methods to truly sustainable circular and biocircular solutions. A further area to focus is the mitigation of microplastic discharge from ships. Evac also sees huge potential on land-based business when it comes to its circular innovations.

The latest innovations of the company, Evac HydroTreat (introduced on page 35) and Cathelco USP DragGone (introduced on page 23) both offer significant reduction of ship carbon emissions.

“These game-changing innovations have a massive role in advancing both our customers’ sustainability goals and Evac business. We see demand for HydroTreat rapidly growing also on land.”

2 INNOVATION AND SUSTAINABILITY

A sustainable solution launched for ultrasonic antifouling: USP DragGone™

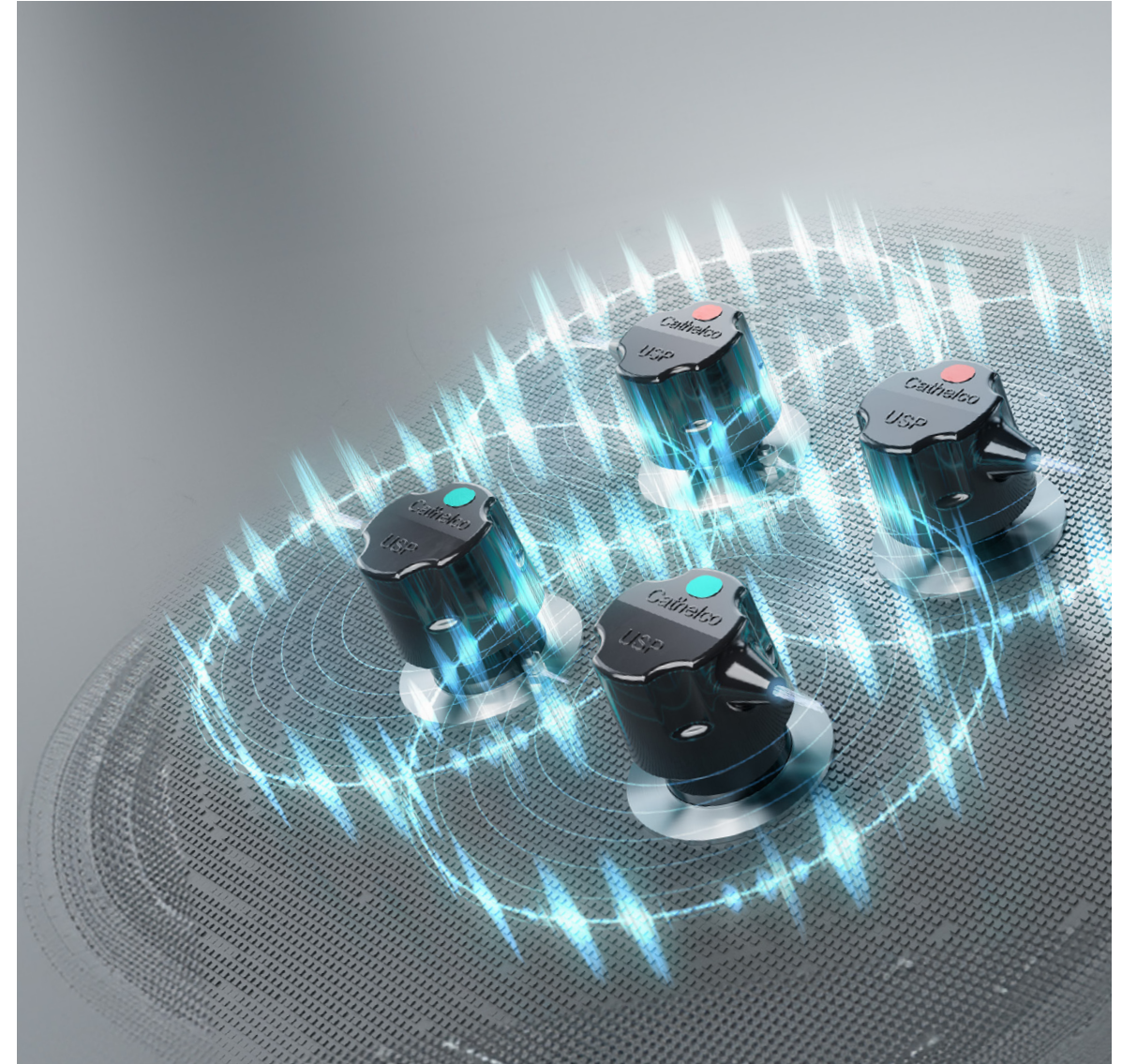
Evac has recently introduced a patented ultrasonic protection technology which protects against hull biofouling. Cathelco USP DragGone™ reduces drag and improves fuel efficiency, reducing fuel consumption and associated emissions by up to 13%.

Biofouling is the accumulation of various aquatic organisms that gather on any part of a vessel exposed to sea and fresh water. This increases the drag as a vessel moves through the water, increasing the load on the engines, driving higher fuel cost and carbon emissions. Effective biofouling management prevents these accumulations, reducing friction and lowering fuel consumption and associated GHG emissions.

Ultrasonic protection is a proactive solution, complementary to antifouling paint, which ensures the hull remains clean from day one

for a newbuild, or as soon as it has been cleaned for existing vessels. The technology is effective in both fresh and sea water. With Cathelco USP DragGone, transducers are attached to the inside of the hull and emit ultrasonic waves which disrupt any kind of a biological attachment to the hull surface. The vibration generated stops the microorganisms and algae from attaching themselves to a vessel's hull. This also mitigates the risk of the translocation of invasive aquatic species, which has a significant ecological impact.

USP DragGone combines two key technical differentiators: guided wave and heterodyning >



2 INNOVATION AND SUSTAINABILITY

technology – two existing and established principles, applied to biofouling management for the first time. With guided wave technology, DragGone enables the waves to travel over longer distances than traditional ultrasonic fouling solutions, which means fewer cable runs, fewer control panels, and up to 60% fewer transducers. This makes it easier to install and maintain, reducing service costs. Heterodyning generates additional frequencies, which increases range and optimises efficiency, as standard, single frequency transducers are unable to protect against all species of fouling.

Chris Hewitt, Product and Technical Manager, said: “The more biofouling on the hull, the greater the drag reducing fuel efficiency. By keeping the hull clean from biofouling, DragGone reduces fuel consumption, thereby reducing emissions and costs. The International Maritime Organization (IMO) recognises that biofouling management is an important part of the roadmap to a decarbonised future for shipping. The macro organisms can wreak havoc in marine habitats if they detach from the hull and reproduce in areas where they are non-native. While much effort on this issue

has gone into ballast water treatment over the past decade, biofouling is also a key contributor.”

“Hull cleaning is an expensive process, either during regular dry docking when the vessel is taken out of service, or using cleaning robots, or divers, which have potential safety implications. With DragGone, the hull remains clean from day one, preventing even a microfouling layer from forming, which is what creates an environment for macrofouling to form.”

Cathelco’s antifouling systems are already installed on over 15,000 vessels worldwide. These marine growth prevention systems (MGPSs) are volume treatment systems for the sea chest, internal pipework and box coolers, for example. Sea water is full of bacteria and different types of fouling organisms which clogs the pipework and reduces the amount of flow through the pipes.

DragGone joins Cathelco’s full suite of products for vessel protection from biofouling, spanning MGPS, impressed current cathodic protection (ICCP) technology - which reduces maintenance costs by preventing corrosion on ship hulls and offshore structures, and—now—ultrasonic antifouling.



Illustrative picture



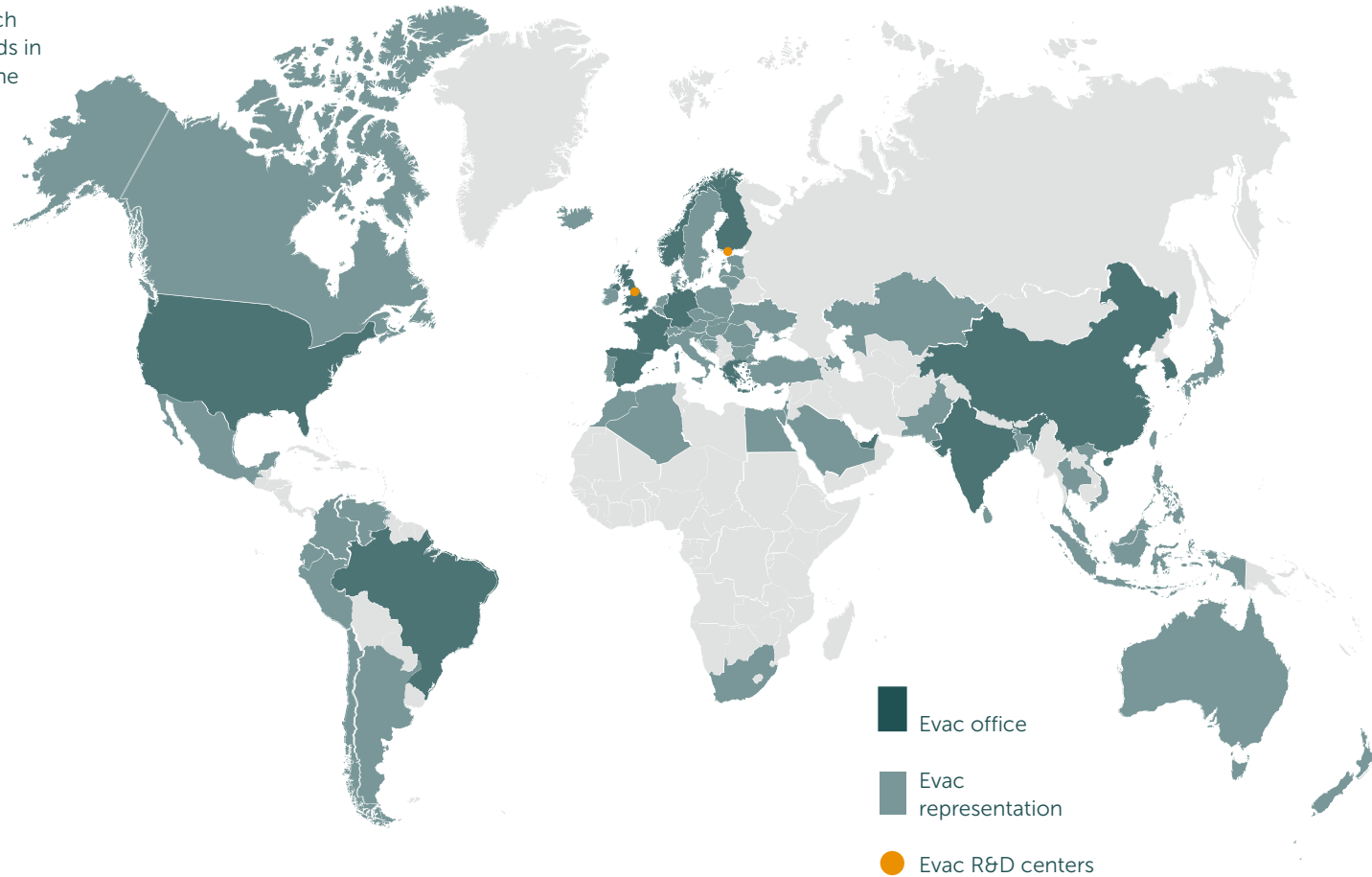
Customer feedback:

Feedback from the Chief Engineer on a test vessel noted the USP DragGone system’s distinctive effectiveness. Their observations highlighted that, unlike other ultrasonic devices previously encountered, Cathelco USP DragGone delivered on its promises, marking a first in their experience for reliability against fouling. The positive impact of the system will lead to its inclusion in future vessel builds, underscoring its value and effectiveness in real-world maritime operations.

3 LEADING SERVICE OFFERING

Evac has a global reach through a mix of in-house sales team and a strong channel partner network

Evac has a strong global presence, which enables us to meet our customers' needs in the best possible way and to leverage the growth potential in different markets.



Services available globally

Over **40** service engineers

Over **90** partners worldwide

500+
employees globally

Representation in more than **70** countries

Established in **1979**

3 LEADING SERVICE OFFERING

Market-leading solutions and services to the marine and building industries

Evac offers a comprehensive suite of solutions and services tailored to the lifecycle needs of ships and buildings worldwide. The offerings include preventive maintenance and technical support carried out by Evac's in-house service engineering teams, alongside the provision of spare parts.

An increasing share of the services is provided under multi-year service agreements. Additionally, Evac is capitalizing on the maritime industry's shift towards environmental sustainability, with a growing demand for retrofit and modernization solutions on existing vessels. Page 38 sets out the Evac retrofit project underway for the AROYA cruise ship.

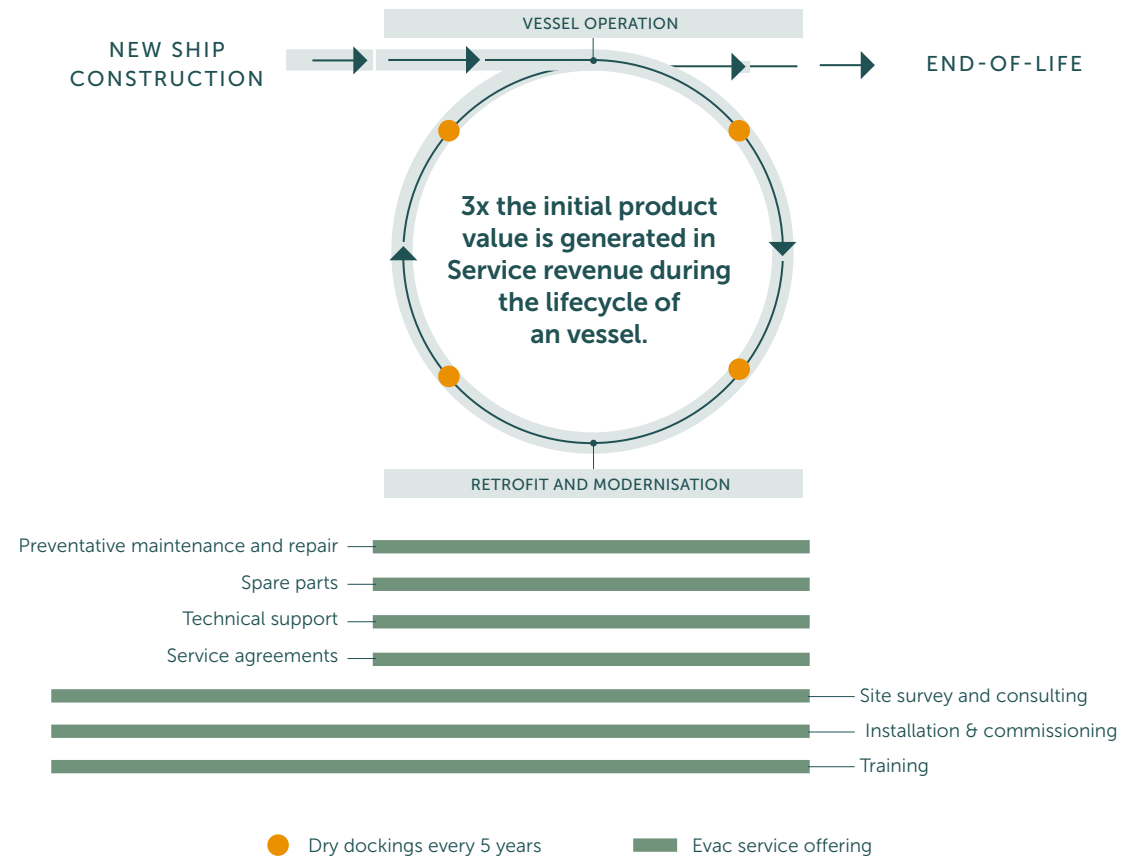
Services are mission-critical for customers and account for two-thirds of Evac's revenue. Evac provides services to both its own extensive installed

base of over 50,000 vessels worldwide and installations by competitors. As the installations often have product lifecycles of more than 15 years, they create long-term, recurring service revenue streams, on average, approximately three times the initial product value.

Our team of onboard service professionals is based in strategic locations globally, including Antibes, Miami, Palma de Mallorca and Shanghai. Evac has developed a reputation for reliability and commitment to delivering quality service efficiently. The business is further backed by a well-established global distribution network, including strategically located logistics centers across maritime hubs in North America, Europe, and Asia, to ensure seamless operations and timely support for our customers regardless of location.



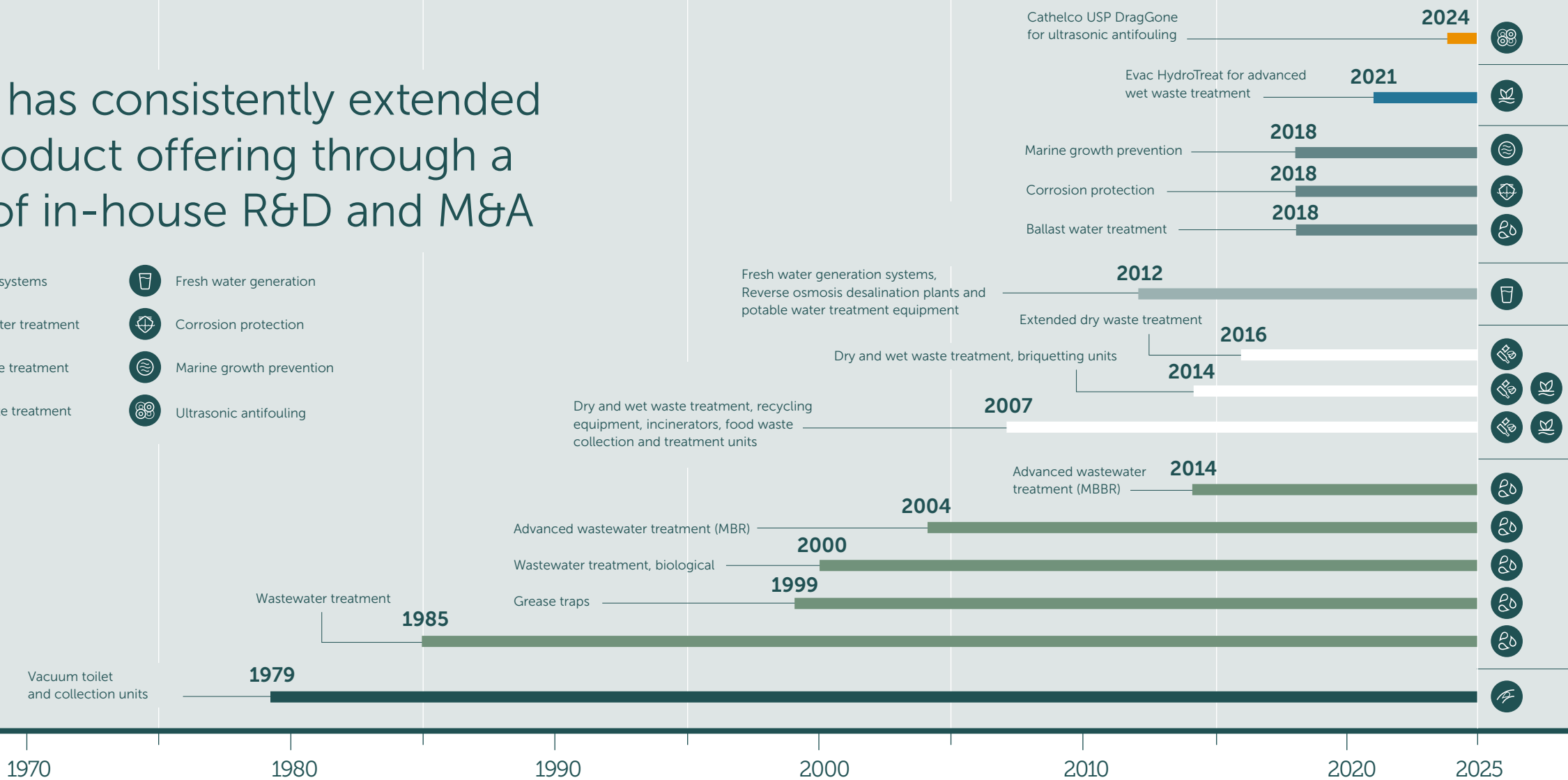
Vessel lifecycle and Evac's service offering 15Y+ PRODUCT LIFECYCLES



4 ACCELERATING GROWTH

Evac has consistently extended its product offering through a mix of in-house R&D and M&A

-  Vacuum systems
-  Fresh water generation
-  Wastewater treatment
-  Corrosion protection
-  Dry waste treatment
-  Marine growth prevention
-  Wet waste treatment
-  Ultrasonic antifouling



4 ACCELERATING GROWTH

M&A history

Evac has a successful track-record of eight acquisitions in the last ten years

The history of Evac dates back to 1970's

Acquisition of Headworks' technology

2014

Acquisition of Deerberg-Systems

2015

Acquisition of Uson Marine

2016

Acquisition of Cathelco & HEM

2018

Acquisition of Transvac

Acquisition of Virtus

2019

Acquisition of Environmental Systems International

Acquisition of Allied Marine Services

2020

Acquisition of the vacuum spare part business of Environmental Protection Engineering S.A.

2022

5 PEOPLE AND TALENT

Highly experienced management team



Björn Ullbro

CEO of Evac and President of Evac Business Line
 Swedish & Finnish citizen, M.Sc. Econ
 Evac CEO since June 2023
 Member of Evac Leadership Team since October 2021

EMPLOYMENT HISTORY

Wärtsilä Energy, Vice President 2019-2021
 Wärtsilä, several leadership positions 2008-2019
 Shell, various analytical positions 2005-2008



Katja Laurila

Chief Financial Officer
 Finnish citizen, M.Sc Econ
 Member of Evac Leadership Team since 2024

EMPLOYMENT HISTORY

FSP Corporation, Group Chief Financial Officer, 2022-2023
 Stark, Chief Financial Officer 2021-2022
 YIT, Vice President, Business control, Infrastructure segment 2018-2021
 Maersk, several positions 2015-2018
 Wärtsilä, several positions 2007-2015



Nick Cowley

President of Cathelco & HEM Business line
 British citizen, MBA, B.Sc.
 Member of Evac Leadership Team since 2023

EMPLOYMENT HISTORY

Modular Group Investments, CEO 2019-2023
 Cubis Systems, COO & Integration Director 2015- 2018
 Eldon Group, several positions 2006 – 2015



Senja Koivusalo

Chief People and Culture Officer
 Finnish citizen, MBA, BBA
 Member of Evac Leadership Team since 2022

EMPLOYMENT HISTORY

Metso Outotec, Vice President, Human Resources 2021-2022
 Wärtsilä, Vice President, Human Resources and Internal communications 2017-2021
 Microsoft, several leadership positions 2015-2017
 Nokia, Head of HR Donnguan Operations 2013-2015
 Itella, Senior HR Manager 2012-2013
 Nokia, several positions 2001-2012

5 PEOPLE AND TALENT



|| To capture our employees' feedback, we took systematic steps towards more active employee listening in 2023.



Focus on people and culture

Evac's success depends on our ability to attract, retain, and grow the best talent. Our people priorities focus on great place to work, leadership, talent and culture.

Great Place to Work

We want to create an environment where everyone feels treated fairly and with respect and where differences are valued. We want our people to feel a sense of belonging and enjoyment and that their opinions matter. We strive for an environment with high internal energy and are focused on driving our growth strategy forward without compromising the well-being of our people.

Leadership

Leadership is the foundation for building a high-performance culture. We encourage our leaders to be authentic, inspiring, and engaging and expect them to role model accountability and deliver results. Our global leadership development program, 'Leader's Anchor', for 68 managers advanced in 2023 with six additional training modules.

Talent

We want to be recognized as a company where people can grow and are proud to work for. Each employee can have a growth conversation with their manager to have an individual career development plan in place. We provide opportunities for our people to expand their knowledge and grow to their full potential, such as secondments, and global projects. We aim to attract and develop the right talent to meet our future business needs.

Culture

Evac has a shared purpose, promise and values that are built around four themes: customer, quality, collaboration, and accountability. Our values describe how we operate and behave as individuals and how we interact with each other on a day-to-day basis. In 2023 we took systematic steps towards more active employee listening and used our global employee surveys to capture the feedback. In 2023, we conducted two global employee surveys with excellent participation rates and an 11% increase compared to the engagement level in 2022.

5 PEOPLE AND TALENT

Evac's diversity commitment

A path to sustainable growth

In today's world, diversity and inclusion (D&I) are crucial drivers of success. As organisations strive to innovate, adapt to global markets, and attract top talent, prioritising D&I initiatives offers many benefits.

At Evac, around 40 nationalities are represented within the company's 500 employees across 14 countries. The gender ratio (females 32% in 2023) is well-balanced compared to similar international engineering companies.

"I am very proud of our diverse workforce, and it's something we don't take for granted: We have a strong, board-led commitment to D&I and we have dedicated energy to develop the culture of inclusion. We are committed to providing a working environment where everyone feels welcomed, trusted, respected, supported and valued for who

they are. All our people need to be fully involved and feel that their voices are heard," says **Senja Koivusalo**, Chief People & Culture Officer.

Equal chances for growth and advancement

Lin Jiang, Evac's Project Manager for product-based projects, originally comes from China and is located in Espoo, Finland today. She moved to Finland in 2010 and joined Evac in June 2021 as a Procurement Project Leader. Currently, she is in charge of project management for Nordic and North American customers.

"Diversity and inclusion in work life mean a lot to me. In my eyes, it's all about equal opportunities: we all are granted equal chances for growth and advancement, and our efforts are

recognised and rewarded, regardless of the demographic, cognitive and cultural diversities," says Jiang.

"Throughout the years at Evac, I have felt empowered, trusted, and fully supported for being my authentic self. The trust placed in me to make independent decisions has been invaluable. Additionally, I've received unwavering encouragement and support while pursuing my MBA studies. Opportunity for career advancement has been provided through the role transfers."

Lin feels that Evac embodies a robust diversity and inclusion culture: "This nurturing environment has fostered a strong sense of belonging within me over the years, and the years ahead. The "future with no waste" thesis establishes an important mindset and operating basis for the company."

39 Nationalities | 32% of the personnel are female



5 PEOPLE AND TALENT



2023 set new standards for safety

In 2023, Evac made significant progress towards implementing a sustainable safety culture. Our lost time incident frequency (LTIF) improved from 4.3 to 2.2, highlighting our dedication to safety and the ultimate target to prevent all incidents.

Evac set new standards for safety in 2023. “We introduced new practices that aimed to prioritise the wellbeing of all employees. We also took bold steps to foster a collective responsibility for safety. This included making two safety training sessions mandatory for all personnel and introducing on-site safety training for subcontractors,” explains **Terhi Nordström**, QEHS Manager of Evac.

The commitment to safety has been translated into concrete actions, resulting in a substantial increase of over 150% in safety observations and a remarkable 30% surge in the implementation of safety improvements in 2023. “The increased amount of observations and actions is perfectly correlating with the decreasing trend in lost time incident frequency,” Nordström says.

Our focus on safety was also evident in our increased emphasis on reporting safety actions, risk assessments, safety walks, and discussions. Communication played a crucial role in our safety initiatives, with transparent reporting of lost time incidents and serious near misses.

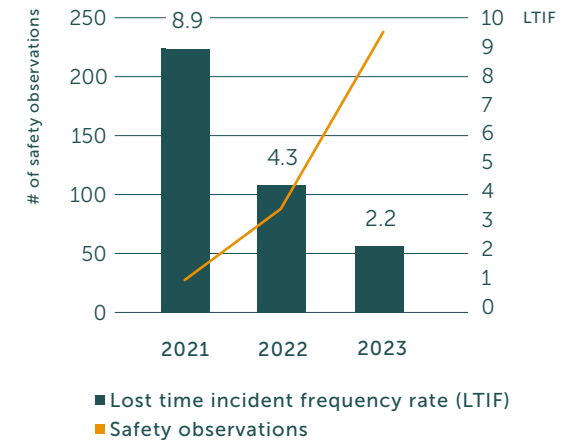
As a result, our heightened safety culture led to significant improvements in key performance indicators, particularly our LTIF rate, which saw a substantial decrease from 4.3 to 2.2 in 2023. Our dedication to continuous learning and improvement

was evident in the impressive 98% completion rates for both mandatory trainings.

Looking ahead to 2024, we have set ambitious objectives to further demonstrate our unwavering commitment to safety. We aim to increase safety observations by 67%, improve safety improvement actions by 25%, and to achieve a 100% safety training participation rate.

Currently our target is to continue maintaining a lost time incident frequency below 3.0. with the ultimate goal of zero accidents.

SOLID PROGRESS IN SAFETY



Biochar, the end-product of the HTC process under inspection at Evac's research center in Finland.

Our role in society

Sustainability program 34



Sustainable solutions 35



SUSTAINABILITY PROGRAM

Navigating towards a sustainable future

At Evac, sustainability is an engine driving our business forward. With an extensive array of solutions aimed at enhancing our customers' sustainable practices, we empower them to meet societal expectations and go beyond regulatory requirements. Our offerings address a spectrum of global megatrends, including climate change, circular economy principles, water scarcity, and the preservation of marine biodiversity.

In the maritime industry, Evac is committed to steering its customers towards using sustainable technologies that fuel the circular economy, respond to climate change and safeguard precious marine ecosystems.

In land-based industries, Evac's vacuum technology presents vast opportunities, boasting significant water-saving capabilities and offering unparalleled real estate flexibility compared to conventional technologies.

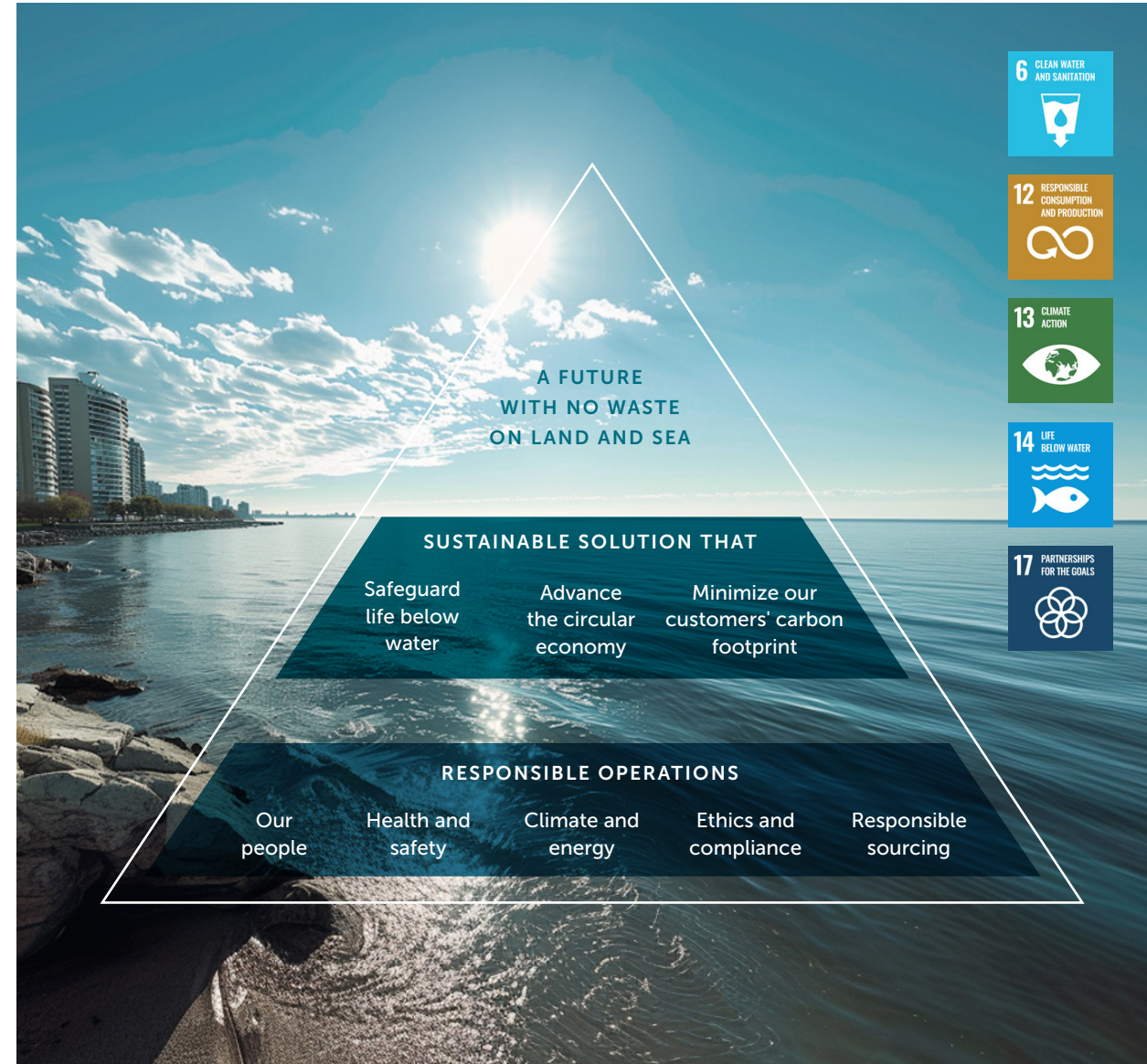
Evac's approach to sustainability is strategically aligned with the key material topics and an ambitious goal to strive for a future with no waste. Guided by our

sustainability program and our pledge to advance the UN Sustainable Development Goals (SDGs), we channel our efforts across the entire Evac.

The safety and wellbeing of our employees, climate and energy management, and ethical operations throughout our own operations and supply chain are at the core of our business practices. We are committed to responsible business practices in all aspects of our operations.

Our ambitious sustainability agenda isn't just about minimising negative impacts but maximising positive contributions to people, the planet, and prosperity. Moreover, we aspire to catalyse industry-wide transformation by sharing our expertise and driving broader shifts toward sustainability within the maritime sector.

Our progress and continuous improvement in sustainability are measured through key performance indicators (KPIs) implemented across the entire Evac. We are constantly navigating and improving our course towards a more sustainable future.



CASE

SUSTAINABLE SOLUTIONS

TUI Cruises and Evac HydroTreat: A new sustainability standard for handling wet waste

“This isn’t just a groundbreaking innovation for the cruise-line industry, but for waste management in general,” says Head of Newbuilds at TUI Cruises, Georgios Vagiannis.

TUI Cruises is a significant player in the global cruise industry. With its fleet of 11 vessels, the cruise line carries approximately 700,000 passengers each year on some 380 cruises. TUI Cruises serves popular destinations around Europe, the Caribbean and the rest of the world with its Mein Schiff and Hapag-Lloyd Cruises (HLC) brands. HLC also offers cruises to Antarctica and the Arctic.

Since it was founded in 2008, the company has deliberately focused on the German market. Today, the vast majority of Mein Schiff’s passengers are German speakers. They select the cruise line for its generous square-metre ratio per passenger, premium experiences and focus on sustainability.

“When it comes to sustainability, Germany is the most demanding European market. We’ve made sustainable business a core value for TUI Cruises >



CASE

SUSTAINABLE SOLUTIONS

|| This is not just a ground-breaking innovation for the cruise industry, but for waste management in general.

Georgios Vagiannis | TUI Cruises



and we are always trying to be at the forefront of circular economy innovation. By 2030, we want to have reduced our absolute global carbon dioxide emissions by 27% across all our cruise brands,” says **Georgios Vagiannis**, Director of Newbuild at TUI Cruises.

Against this background TUI Cruises went looking for a better solution for handling organic wet waste aboard its vessels. Comprising food waste and biosludge (i.e. surplus solids from wastewater treatment), organic wet waste is notoriously problematic for cruise operators. It’s bulky, unpleasant and subject to strict disposal restrictions.

“It’s possible to recycle, burn or otherwise dispose of organic wet waste, but we wanted to find a solution that would help us to achieve our ambitious environmental targets. In 2018 we wrote an open letter to waste technology suppliers asking them to put forward innovations for this task. This is how we settled on Evac HydroTreat.”

From wet waste to sterile biochar

Evac HydroTreat deploys a closed-loop hydrothermal carbonisation (HTC) process to break down organic wet waste into sterile biochar and

water. In a process akin to a pressure cooker, the organic wet waste is heated to 200°C until the cells break down into carbon and eventually form biochar as a stabile end product.

Unlike traditional methods of treating organic wet waste, HydroTreat generates no direct emissions and has lower energy consumption. The compact design of the Evac HydroTreat system allows for easy installation in the waste-handling area of any ship.

“The main driver behind adopting this technology is that we wanted something circular. This is not just a ground-breaking innovation for the cruise-line industry, but for waste management in general,” says Vagiannis.

TUI Cruises is now installing the Evac system in three new Mein Schiff vessels, two of which are being constructed in Italy, and one in Finland.

Landside circular benefits

TUI Cruises and Evac began building their relationship many years ago with the implementation of various Evac technologies aboard TUI Cruise vessels. This initiative includes equipment for reverse osmosis; removing salt from seawater so it can be used for passenger showers.

TUI Cruises has also installed Evac vacuum toilets in crew cabins, passenger staterooms and public areas.

“Every vessel in the TUI Cruises fleet has some Evac equipment. We have a very good partnership. The company understood the priorities on our side and we’re on this sustainability journey together. Both TUI Cruises and Evac have invested a lot in HydroTreat,” explains Vagiannis.

In another boost for sustainability, the biochar produced by the HydroTreat process is rich in phosphorus and nitrogen, essential components for fertiliser. TUI Cruises is now working with port authorities in different countries to study how best to bring the material into local circular economy systems including usage as soil fertilizer or biochar as an energy source.

“We are allowing port authorities to do their own analysis, so they understand that this is an organic material that can be used as a fertiliser,” says Vagiannis.

“When we talk about sustainability, we need to think about the whole picture. Here we are commercialising a technology that can be used for something much bigger. It’s a game changer in the whole circular economy process.”

CASE

SUSTAINABLE SOLUTIONS

Superyachts choose HEM's water-treatment equipment and market leading onboard-service network

Superyachts crew and guests around the world depend on HEM water-treatment solutions. With a long-established reputation for reliability and ease of use, HEM is the brand of choice in an industry that requires quality.

Luxury and quality often go hand in hand. When something looks and feels good on the outside, it needs to be engineered to the highest of standards on the inside. This is why the superyacht industry has embraced Evac's HEM-branded onboard water solutions. From desalination to water treatment, heating and softening, the HEM range offers equipment that is compact, easy to operate and has a reputation for reliability.

While HEM's design, manufacturing and service headquarters are located in Antibes (France), remote assistance is provided globally. HEM has an expanding spares and onboard-

service network that covers Amsterdam, Antibes, Auckland, Florida, Istanbul, and Palma de Mallorca, so superyachts can always find assistance when needed.

HEM product and solutions are found aboard many of the world's most prestigious superyachts, including those from Dutch boat-building masters Oceanco and Heesen. A recent HEM installation is aboard the exquisite Dutch built 96.5 metre superyacht Faith from Royal De Vries shipbuilders. Faith has won six industry awards, including 'Motor Yacht of the Year' in the World Superyacht Awards.

Water for all onboard needs

Faith's Chief Engineer **Derek McIntosh** began



his career on cruise ships and then moved to superyachts some 15 years ago.

"All three of the yachts I've worked on have HEM water-treatment equipment installed. They are rightly known as quality products backed up by a responsive service capability," says McIntosh.

Faith has two HEM Series 38 Duplex desalination units, which together produce over 50,000 litres of freshwater each day. With such a large crew and up to 12 passengers, this volume of water is needed for consumption, bathing, and cleaning. The crew may use up to 15,000 litres just for washing down the boat. Producing this freshwater from seawater is sustainable, as it limits waste and environmental impact.

From the Antilles to Antibes

McIntosh and the rest of the crew aboard Faith typically spend the northern-hemisphere winter months in the Caribbean. The yacht is then navigated back to the Mediterranean in time for the Monaco Grand Prix in May, kicking off the summer season in Europe.

"When we're in or near Antibes, the team from HEM may come aboard. They're very good at responding and helping us with any issues we may need support with. We've popped up unannounced in Antibes before and they've always been able to sort something out for us," he says.

CASE

SUSTAINABLE SOLUTIONS

Cruise-ship retrofits surge as the industry commits to sustainability

There's an increased demand for retrofits that help cruise operators meet sustainability goals and environmental regulations. In an example for the industry to follow, Cruise Saudi has ordered the Evac HydroTreat as a retrofit for its flagship AROYA.

Covid-19 and other global shocks in recent years slowed down new builds in the cruise industry. Bad news for that part of the industry was good news for another: retrofitting. Passenger numbers began recovering in 2022 and are now surpassing pre-pandemic levels – with even more growth forecast for the coming years. To cope with this surge in demand, ship owners are looking for ways to upgrade existing vessels with new equipment.

"The retrofit market is truly booming, as ship owners and operators are trying to squeeze more years out of their vessels," explains **Gavin McGirr**, Key Account Manager, Retrofit and Service Sales at Evac.

"Equipment wears out and technologies change. Environmental regulations also renew, so operators need to upgrade to meet increasing sustainability and compliance demands."

Cruise Saudi sets the sustainability standard

With its large portfolio, Evac is well positioned to empower the industry with its retrofits. During 2024, we are performing our largest retrofit to date with the installation of Evac HydroTreat aboard the 335-metre-long cruise liner AROYA.

Based out of Hong Kong, the vessel, formally known as Manara, served the Asian market since 2017, before it was acquired in 2023 by newly formed operator Cruise Saudi.

"The ship's owner wants AROYA to set the sustainability example for the industry to follow. Part of this means treating food waste and biosludge in an environmentally friendly way, which is why they became interested in Evac HydroTreat," explains McGirr.

As part of the retrofit, Cruise Saudi is also replacing the ship's engines to run on biofuel. Therefore, the exhaust-gas scrubber can be removed from one side of the ship, creating space for HydroTreat.

"With a conventional treatment solution on one side and HydroTreat on the other, AROYA will have more than enough capacity for treating organic wet waste," says McGirr.

Reducing emissions, lowering costs

The system is scheduled for installation during the dry docking of AROYA in mid-2024. Evac will provide supervision and commissioning services, helping to prepare the vessel for its next cruise season.

"Cruise Saudi's aspiration is to sail in the Red Sea, Arabian Gulf and the Mediterranean. The challenge for AROYA is that the countries it will stop in do not always have waste-treatment facilities. Even when offloading is possible, it's very expensive," explains McGirr.



"Wet waste can of course be dried and incinerated, but this is not environmentally friendly at all. Burnt waste also smells unpleasant, which is not something you want on a cruise liner!" he says.

Evac HydroTreat will help AROYA to reduce its waste treatment -related CO₂ emissions as much as 80%. Increased energy efficiency also means lower operating costs. Cruise Saudi has assigned local entities to use the biochar in agricultural activities.

"We have a wide range of advanced solutions that can be retrofitted to existing vessels to be ready for current and future regulation. We are happy to support in finding the right solutions for our customers' sustainability goals and business needs," McGirr.

CASE

SUSTAINABLE SOLUTIONS

Supermarkets opt for design flexibility

Supermarkets are a key market for Evac. Currently thousands of supermarkets across the world use Evac vacuum systems for collecting run-off and condensate water to avoid the challenges and cost of installing gravity drainage.



Top supermarket brands in competitive markets often revamp and develop their stores. From running special promotions to arranging better shopping layouts, supermarkets dedicate effort into looking fresh and staying ahead of the competition.

No business, least of all supermarkets, welcomes the forced downtime caused by the reconstruction or renovation of premises. Revenues drop, costs rise, and customers potentially go elsewhere.

Minimizing this downtime and inconvenience is crucial and is driving the sector's sustained interest in vacuum-

collection systems. Supermarkets often prefer to use such systems instead of gravity drainage to collect run-off water from refrigeration units and the condensate from air conditioning.

"Existing sanitary sewer lines are hidden underground, so finding and connecting to them via the designated drainage points can be a major obstacle. Vacuum-collection systems completely eliminate this headache," explains **Cody Bowers**, Manager of Program Customers at Evac.

"Instead of a complex network of below-floor drainage beneath every refrigeration or freezer unit, with vacuum-collection systems you can simply lift the wastewater up to an above-ground piping

network and then to a single collection point. It's far quicker. You can shave weeks off the construction schedule," he says.

Evac has been a leader in this business since the 1990s and enjoys thousands of supermarket references around the world. The largest supermarket brands in the USA are leading the way.

Some higher-end supermarkets in the United States have invested in epoxy-coated flooring, with the aim of bringing a quality feel to the shopping experience. An additional benefit of vacuum drainage is that supermarkets can avoid the need to dig up and then repair these expensive floors.

"You have the benefit of total store-design

flexibility with a vacuum system. This brings cost savings both at the time of installation and over the longer term, as grocery stores can easily perform facelifts," says Bowers.

Evac prides itself on offering a streamlined process for designing the vacuum-collection system thus meeting customer's specific needs.

"What separates us from the competition is our experience and simplified approach. There are a numerous obstacles to overcome in the construction world, so clients appreciate when there are no surprises. We keep our promises and we're there to support our customers so that our system operate as they expect," explains Bowers.

CASE

SUSTAINABLE SOLUTIONS

Sustainable and flexible drainage system for Shanghai Stadium

Building toilets in high-traffic areas such as stadiums, shopping malls, railway stations, airports and other public areas come with multiple challenges ranging from heavy duty needs to possible hygiene issues with shared restrooms.

Vacuum drainage systems offer an ideal solution for demanding locations, providing design flexibility, ease of installation, significant water savings, and improved hygiene benefits. Evac has been providing vacuum solutions both for maritime and land-based needs for decades. In China, the company has a strong foothold in high-traffic buildings.

The Shanghai Stadium, the home of Shanghai SIPG FC is one of the oldest football stadiums in China, built in 1997. The stadium is a large-scale outdoor stadium, with a construction area of 170,000 m² and a seating capacity of 72,000 people.

Shanghai Stadium had its first renovation project after more than 20 years of operation in 2018 and Evac was selected as system provider for the public toilets. Evac continued its supply to the Shanghai Stadium's second retrofit project that was finished in 2022.

"In the first phase of the comprehensive renovation project of the Shanghai Stadium, the only way to meet the elevator shaft pit position was to renovate the original sewage collection as well. Due to the modifications, the original gravity drainage couldn't be used. A vacuum system was selected after significant market research. Evac was chosen because of its specialist expertise, brand image, market reputation, product quality and available services, says **Jun Cao**, Director Engineering Dept, Shanghai Jiushi Sport Construction and Management Co., Ltd.

"We have been very happy with the service of Evac and its partner, with weekly routine inspection and all other necessary measures to secure the operation, which means a lot to us," says Liang Kang, Senior Manager at the Engineering Department of the Shanghai East Asia Sports & Culture Center Co. Ltd.

"Water saving and flexibility are not just a theoretical promise in vacuum systems, but in real operations, we have observed water savings of over 80%" Kang continues.

Today, 1,000+ toilets and 1,000+ interface units, powered by nine large-scale vacuum stations are in operation in several Shanghai stadiums.



The Shanghai Stadium in China.

The benefits of vacuum drainage

FLEXIBILITY

- Using vacuum technology reduces construction costs and time compared to traditional technology.
- Customers also have the option to remodel the building at any time, with minimal impact on construction.

HYGIENE

- Evac systems significantly improve the environment of public toilets by eliminating any unpleasant odours.
- They also minimise the risk of infection and cross-contamination.

SUSTAINABILITY

- By using Evac systems in the Shanghai Stadium, approximately 100,000 m³ of water is saved every year.

CASE

SUSTAINABLE SOLUTIONS

Architectural heritage, iconic location and vacuum innovation meet at a new luxury hotel in London

Finnish architect Eero Saarinen designed the US embassy at London’s Grosvenor Square in 1960. Now the iconic building is being turned into the Chancery Rosewood Hotel, with Evac providing a vacuum-drainage system enabling the building to be remodelled without causing structural damage.

The mid-century modernist building at 30 Grosvenor Square was commissioned by the US government to be the first purpose-built embassy in London, and the largest US embassy in Western Europe.

Designed by Eero Saarinen, the building featured office space partitions and structures throughout. While this functional design served the US embassy well for many decades, it posed major challenges in achieving the spacious architectural vision >



Illustration of the upcoming Chancery Rosewood Hotel.

CASE

SUSTAINABLE SOLUTIONS

for the luxury hotel now set to open in the former embassy.

David Chipperfield Architects sought to significantly raise the ceiling height across the Chancery Rosewood Hotel’s seven floors, as well as increase the square-metre size of the rooms. The plan negated traditional drainage, as the required excavation would have made the building structurally unstable. This is why public health design consultant Hilson Moran therefore turned to Evac for a vacuum-drainage system.

Zero excavation, silent innovation

“The floor plan would have looked like Swiss cheese if they had drilled all the 100-millimetre holes needed for traditional drainage. But by using the vacuum drainage system from Evac—taking everything up to a high level with minimal riser points—no excavation was needed at all,” says **Stephen Royle**, Managing Director of Evac’s UK based agent EVDS.

“In addition to preserving the structural stability of the building, the developer was able to save time and money by using the Evac solution,” adds Royle.

The luxury hotel’s 137 rooms, many of

|| The developer was able to save time and money by using the Evac solution.

Stephen Royle | MD of EVDS

which have more than one bathroom, have been equipped with 192 units of the Evac Optima 5S toilet. Using only 1.2 litres of water per flush, the vacuum toilet lifts water through a narrow and unobtrusive 50-millimetre pipe without requiring an electricity supply. The ‘S’ stands for ‘silence’, as Royle explains:

“The toilet seat has acoustic properties that minimise the sound outbreak. When you flush with the seat down, it’s actually quieter than a traditional gravity toilet. This is our first UK implementation of the silent variant,” he says.

The hotel has also installed 559 Evac Single Appliance Units and Vacuum Interface Units for collecting grey water from showers, baths and basins. Both black and grey water are funnelled to five Evac N°30 HQE vacuum collection units installed in the basement. They provide the required vacuum suction across the entire building.



The former US embassy building will be transformed into a luxury hotel in London.

Reusing existing infrastructure

Evac’s vacuum solution also means that the original main sewerage pipes, located at the back of the building, are sufficient for the hotel, too. This is despite a significant increase in the number of drainage units compared to when the building housed the embassy.

“You’ve got to get the effluent to the main stacks, but because the building wasn’t designed to be a hotel, there are very few of these. The

distances are often 70 metres or more. It’s very difficult to achieve a gravity fall in this scenario, as the pipe would need to be at too much of an angle,” explains Royle.

“By using the relatively shallow invert of vacuum drainage, we’re able to reach the main stacks. Whereas traditional drainage requires a fall of 1 for every 60 metres, vacuum drainage needs just 1 in 200. You can run vacuum pipe work over very long distances in shallow spaces,” he says.

CASE

SUSTAINABLE SOLUTIONS

On a shared journey towards climate-neutral ships

In 2023, the global maritime community took a key step towards carbon-neutral shipping. The member states of the International Maritime Organization (IMO) adopted the new Greenhouse Gas Strategy, which aims to achieve net-zero by 2050. The maritime industry is determined to chart a greener future through collaboration and ingenuity.

Meyer Turku shipyard in Finland has raised their bar high. Their ambitious target is to develop a climate-neutral cruise ship concept by 2025 and achieve carbon-neutral shipbuilding as early as 2030. The project will focus on both the cruise ship itself and the shipyard's operations.

Advancing green shipbuilding at Turku shipyard incorporates responding to customers' needs and priorities but it is also deeply rooted in Meyer's own DNA. The shipyard is progressing towards its targets with

determination to meet the project- and customer-specific targets within the timelines set out.

"We see this focus on sustainability as the only viable future, a necessity for our progress in this industry. Cruise business must be able to operate in sustainable and economically feasible way," says **Liina Vahala**, Project Manager at Meyer Turku Shipyard charged with responsibility for coordination of the climate-neutral ship project.

The journey towards the climate-neutral ships requires the involvement of the entire shipyard on board. "To reach our target, we must increase understanding across our organisation. There's a lot to be learned to enhance our competences and understanding of climate matters. That's our current focus," Vahala says.

The shipyard's partner and supplier ecosystem has a crucial role in the project, as the realisation of a climate-neutral ship relies heavily on suppliers. Reaching the target requires a joint vision and

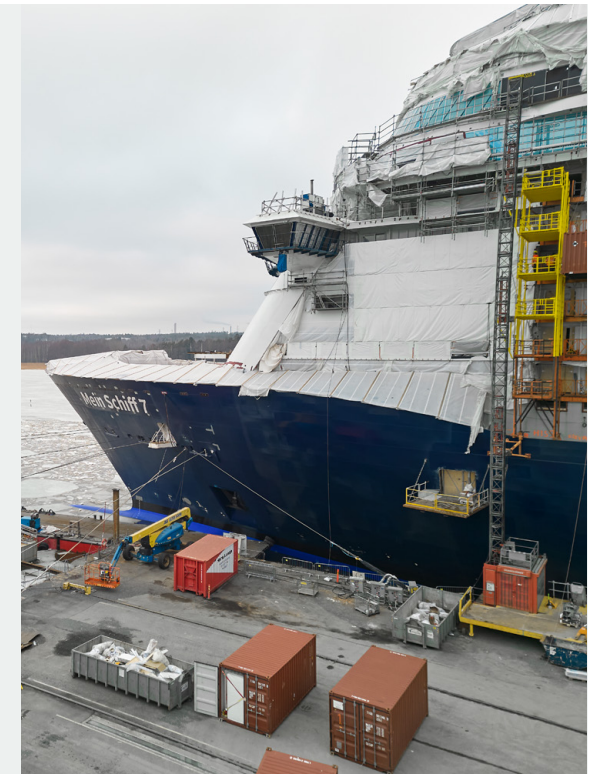
strong and continuously expanding research cooperation.

Waste treatment matters

Maritime climate programs typically focus on the adoption of green fuels. However, enhancing waste and wastewater solutions plays a pivotal role in developing climate-neutral cruise ships. Research collaboration between Evac and Turku Shipyard has been long standing.

"Advanced waste and wastewater solutions are crucial in the development of more environmentally friendly cruise ships. The enhanced energy efficiency of waste systems directly reduces emissions by providing fuel savings in both the main engines and waste equipment, thus lowering the total emissions," says **Jami Kuusisto**, Product Development Engineer at Meyer Turku shipyard.

Modernising waste and wastewater treatment onboard is a response to higher environmental



standards in various ways. Compared to older installations, the spearhead solutions minimise emissions and discharges to sea and air and steer the ships towards a circular economy.

"On the journey towards climate-neutral cruise ships, every emission source must be carefully considered. A significant factor after introducing green fuels will be waste solutions, with focus on carbon capture from waste instead of incineration. Evac is on an important journey with us towards a zero-emission future," Kuusisto says.

CASE

SUSTAINABLE SOLUTIONS

Nothing to waste Evac pioneers in circularity

In today’s world, the spotlight on maritime carbon emissions is growing, but it’s crucial to also focus on enhancing waste management, especially onboard passenger ships.

Evac’s Sustainability specialist, **Janica Toivari**, is a true circularity expert and a leader in the field to delve into the evolving landscape of waste management, recycling, and the imperative of circularity. It is clear that this is a key challenge and priority for the maritime sector.

Toivari’s first-hand experiences onboard numerous cruise ships provide crucial insights into maritime waste management. Extensive field studies have proved the need for tailored solutions that address the distinct challenges posed by on ship operations, and importance of leveraging innovative technologies and best practices.

The current recycling rates of passenger vessels lag behind, hovering at a modest 20–30%. This sobering statistic underscores a pressing need for heightened focus and innovation in waste management practices, and the opportunity offered by the retrofit market.

“The maritime industry is at a pivotal juncture, with stakeholders recognising the urgency of enhancing sustainability measures, also in waste management. Our largest customers already understand that continuing the current standard practice of burning the waste onboard is not appropriate in the future. There is a pressing need to improve these ratios and set off on the circular journey,” Toivari emphasises.

Evac’s staunch advocacy for circularity is deeply rooted and backed by extensive research, analysis of prevailing megatrends, and a keen understanding



of evolving regulatory frameworks. It is clear that what is good for the environment is the most feasible solution also from a social and economic perspective.

“Central to our ambition to advance circularity in the industry is fostering collaboration across the maritime ecosystem. Partnerships are pivotal in driving innovation and effecting meaningful change. Evac is spearheading transformative shifts in waste management practices, equipping our customers with the tools and insights needed to navigate the complexities of circularity.”

Circular by 2030

Evac’s ongoing research program offers a comprehensive framework for addressing waste management challenges in the maritime sector. The initiative seeks to drive progress towards

a circular economy. While acknowledging the complexities inherent in systemic change, Toivari identifies opportunities for quick wins, particularly in optimising waste operations onboard cruise ships. However, she emphasises that long-term success hinges on building robust partnerships and streamlining waste management processes across the value chain. The evolving regulatory backdrop is a further driver to this process.

Toivari envisions a maritime industry transformed by circularity by 2030. “By embracing circular economy principles and implementing innovative solutions, we can enhance environmental stewardship, drive economic prosperity and social progress. With a steadfast commitment to the necessary change, we can collectively chart a course towards a future with no waste.”

CASE

SUSTAINABLE SOLUTIONS

Ponant sets the highest of sustainability standards with Evac technology

From processing onboard biowaste today to recycling potable water tomorrow, Evac and Ponant have a shared vision of zero-impact cruises.

The market for luxury and expedition cruises may be niche, but it's growing year on year. By 2027, passenger capacity is expected to have risen by almost 110% from its 2019 level. Fleets are forecast to grow by 45% over the same period*.

French cruise operator Ponant is a leading

players in this niche industry. Founded some 30 years ago by a group of merchant-marine officers, the company operates 13 luxury and specialised vessels (including the only luxury icebreaker) that sail to the planet's most remote and out of the way locations where nature reigns supreme, including the North and South Poles. >



*Annual Report, Cruise Industry News, 2023: State of the Cruise Industry 2023, CLIA

CASE

SUSTAINABLE SOLUTIONS

|| This Evac technology complies with the most stringent of marine environmental rules.

Mathieu Petiteau | Director at Ponant



Capacity aboard each vessel is typically limited to no more than 200 passengers.

Ponant prides itself on sustainability, taking care to reduce the environmental footprint of its operations and staying a step ahead of regulations. This means innovating with technologies that optimise energy consumption and minimise waste. With such a philosophy, it was a natural fit for Ponant to begin working with Evac some 15 years ago.

Fit for the strictest regulations

“When we launched our Boreal series in 2009, we chose to install Evac vacuum-toilet systems onboard. Then later we developed a stronger collaboration with the company to implement an Evac solution to treat black water on our explorer vessels. We also use Evac’s food waste collection systems,” says **Mathieu Petiteau**, Newbuilding and R&D Director at Ponant.

Today, every vessel in Ponant’s fleet has some piece of Evac equipment. All vessels delivered since 2018 feature Evac’s advanced wastewater treatment solution for collecting grey and black water.

The solution uses bacteria to degrade the waste material, after which the water is passed through ultra-filtration membranes with a lower mesh size than the bacteria. The effluent can then be reused in onboard technical processes (such as engine cooling) or it can be safely discharged at sea.

“This Evac technology complies with the most stringent of marine environmental rules, which are

those in place around Alaska and in the Baltic Sea,” explains Petiteau.

Imagining the future together

Ponant is now seeking to go even further and completely eliminate the need to discharge biosludge and food waste at sea.

For its new vessel project SWAP2ZERO, the cruise operator is studying Evac’s HydroTreat technology. The solution transforms biosludge and food waste into organic biochar pellets that can be used as fertiliser.

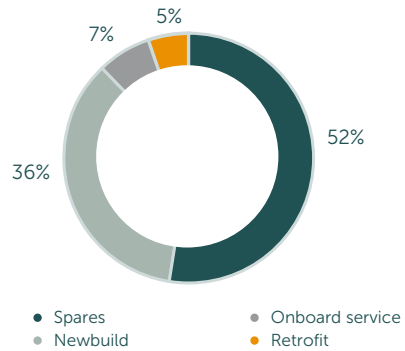
“Evac is a great partner and a very innovative company. They listen to our intentions and understand how Ponant is always trying to go a bit further to solve onboard waste problems and even prevent discharging at sea. We cooperate closely to exchange ideas so that the technology can be improved even more,” says Petiteau.

“Ponant is now focusing on developing a new generation of vessels that we envision will have zero environmental discharge at sea. Evac is a key partner on this journey.”

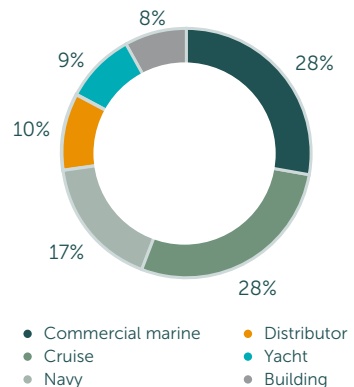
“We are even imagining a future where potable water can be recycled onboard. Water is becoming a scarce resource and energy consumption is something we always need to think about. It’s becoming evident that you can use less energy by treating wastewater onboard and making it potable again. This is now something we are working on together,” he explains.

Evac is positioned for the future

LARGE RECURRING SERVICE BUSINESS, 64% OF REVENUE
Revenue per business segment



DIVERSIFIED END MARKET EXPOSURE
Revenue per customer segment



1 MARKET LEADERSHIP

Evac is the world's #1 global provider of water, waste and wastewater management, hull protection and biofouling management solutions for the global marine, offshore and building industries.

2 INNOVATION AND SUSTAINABILITY

Evac is in the forefront of R&D, constantly developing new innovative and sustainable solutions for the marine and land-based markets. The adoption of new solutions are further driven by increasingly stringent regulations.

3 LEADING SERVICE OFFERING

High quality spare part focused service business complemented with leading onboard service team which together generate over 60% of the company's revenue. Established global service network near customers.

4 ACCELERATING GROWTH

Evac has consistently extended its product offering through a mix of in-house R&D and M&A. The company has a proven M&A track-record with eight successful acquisitions in the last ten years.

5 PEOPLE AND TALENT

Evac has a strong focus to diversity, with 500+ employees spread across 14 countries. The company prioritises attracting and retaining key talent, and is led by an experienced management team.



Vacuum systems
1979



Wastewater treatment
1985



Dry waste treatment
2007



Wet waste treatment
2007



Fresh water generation
2012



Corrosion protection
2018



Marine growth prevention
2018



Ultrasonic antifouling
2024

Evac offers one-stop shop solutions for a wide range of customers

FOR FURTHER INFORMATION, PLEASE VISIT WWW.EVAC.COM OR CONTACT US VIA EMAIL AT INFO.EVAC@EVAC.COM