



# SUSTAINABLE SHIPBUILDING

Sustainability Report

# 2024



Towards net-zero emissions

22



Shipyard environmental impact

36



Safety at the shipyard

31



World-class personnel

44

# CONTENTS

## 01

### Meyer Turku

- 5 A word from our Executive Vice President
- 6 About the company

## 02

### Corporate responsibility at Meyer Turku

- 9 Corporate responsibility strategy
- 10 Goals
- 11 Measures
- 12 Commitments
- 13 Commitment to Code of Conduct
- 14 Sustainability reporting
- 17 The NEcOLEAP green transition project

## 03

### World-class ships

- 22 Towards net-zero emissions
- 24 Measures
- 27 CASE: NEcOLEAP Sustainable Stateroom
- 28 CASE: Net Zero ship concept
- 29 CASE: Steel Material Lifecycle Improvement

## 04

### World-class shipyard

- 31 Safety at the shipyard
- 36 Shipyard environmental impact
- 41 Key figures
- 42 CASE: Implementing 5S+Safety at the Central Warehouse
- 43 CASE: Meyer Turku Logistics Center Pilot

## 05

### World-class personnel

- 45 Trainings and competence development
- 46 Responsibility for personnel health and well-being
- 47 Many ways to Meyer
- 48 Key figures
- 49 CASE: Sustainability Theme of the Month
- 50 CASE: Summer employees
- 51 CASE: Mentoring programme Mentor Excellence

## 06

### Part of society

- 53 Supplier network responsibility
- 54 Cooperation with authorities
- 54 Partnering with schools and students
- 55 Shipbuilding School
- 56 CASE: Green Transition Lab
- 57 CASE: Koulut goes Tekno
- 57 CASE: City of Turku awards recognition for multiculturalism to Meyer Turku

## 07

### GRI chart

Meyer Turku Oy builds the world's most modern cruise ships, ferries and special vessels. Our share of the world's cruise-ship building market is over 10 percent, and our order book extends all the way to 2027. Our largest clients include Royal Caribbean International, Carnival Cruise Line, TUI Cruises and the Finnish Border Guard.

Meyer Turku Oy employs about 2,000 top professionals at the Turku shipyard where ships have been built since 1737. Meyer Turku Oy's subsidiaries include the cabin module manufacturer Piikkio Works Oy in Piikkiö, the interior solution provider Shipbuilding Completion Oy and the Rauma-based shipbuilding and offshore industry design company ENGnD Oy.

We continuously strive towards more sustainable shipbuilding. We have identified five UN's Agenda 2030 goals where we can provide most impact in our operations and in our cooperation with partners and clients.

# 01 MEYER TURKU

## A word from our Executive Vice President



This marks the eighth time we publish our Meyer Turku sustainability report. While it is not yet a legal or regulatory requirement for our company, we have found it to be a great way to compile our key sustainability goals and achievements between single covers. With various global challenges shaking our industry in the past few years, the report has served as a reminder of the

importance of more sustainable shipbuilding: regardless of the volume of fluctuations we experience in the availability of raw materials and labour, prices and international politics, we must retain our unwavering long-term commitment to sustainable development of the maritime industry.

Going forward, increasingly stringent EU regulations are driving us towards more thorough and transparent sustainability reporting. Despite the changes made to the timeline of the Corporate Sustainability Reporting Directive (CSRD), we have decided to proceed in line with our original plan and will publish our first integrated financial and sustainability report in accordance with the directive in 2026, based on data from 2025.

In the last few years, Meyer Turku has taken a major step on its journey towards sustainable shipbuilding by transitioning to sustainably produced electricity and heating. The decision highlights our company's strong commitment to corporate responsibility work in the maritime industry. Since 2018, we have only used electricity that has a Guarantee of Origin certificate. And since 2023, all district heating used at the shipyard has

been supplied by the Kakola heat pump plant. These are some of the areas where Meyer Turku is a pioneer among all major shipyards.

In our corporate responsibility strategy, we have specified the following as our company goals:

1. Designing a net zero ship concept by the end of 2025.
2. Reaching net zero emissions for the shipyard's own operations by 2030 (Scopes 1 & 2).
3. Setting a good example by practicing active local industrial responsibility.
4. Pushing our network to being equally or more responsible than we are.

On our journey towards more sustainable shipbuilding, we engage in constant cooperation with our partners on many fronts, including circular economy, building a biodiversity programme and envisioning the energy future.

We also remain at the forefront of research on potential applications of alternative fuels and energy sources together with our clients, educational institutes and the entire shipbuilding network. Delivered in 2024, Mein Schiff 7 was the first methanol-ready ship built at the Turku shipyard.

While our shared future is dependent on several factors, it is also highly dependent on how well we manage to capitalise on the green transition, understand it as part of sustainable business development and turn it into a decisive competitive advantage in the global market. ■

**Tapani Pulli**  
Executive Vice President  
Meyer Turku

# About the company

Meyer Turku Oy builds the world’s most modern cruise ships, ferries and special vessels. The company’s share of the global shipbuilding market is more than 10 percent, and its order book extends all the way to 2027. The company’s largest clients include Royal Caribbean International, the Finnish Border Guard, TUI Cruises and Carnival Cruise Line.

Meyer Turku Oy’s operations are concentrated in the Turku shipyard. The shipyard works in close partnership with the company’s three subsidiaries: cabin module manufacturer Piikkio Works Oy, ship communal area turnkey provider Shipbuilding Completion Oy, and shipbuilding and offshore industry design company Technology Design and Engineering ENG’nd Oy.

The company has one series of shares consisting of 9,200 shares. At the end of the financial year, the share capital of the company was 143,053,830.78 €.

## Financial situation and result

The company’s financial result turned positive in the 2024 financial period. The Mein Schiff 7 ship was delivered in June 2024. The ship was built under a fixed-price contract, made years earlier, and the increased construction costs caused the ship project to incur a loss.

In 2024, three Icon class ships and two offshore patrol vessels for the Finnish Border Guard were under construction at the shipyard. Compared to the prototype, Icon of the Seas, profitability has improved with Icon 2, Star of the Seas, and Icon 3, Legend of the Seas.

Ship projects are typically financed by clients’ advance payments, external bank financing, as well the company’s own funds. In November 2024, the company entered into a 1,000 million euro financing agreement for the purpose of financing the third ship in the Icon class. The financing agreement is in force until 2026.

## Key events during the financial period

After coming to a halt with the Covid-19 pandemic in 2020, the international cruise market has recovered to a great extent, and the current outlook is excellent. The prototype ship Icon of the Seas has been received extremely well by the cruise-going public.

The attack on Ukraine that started in February 2022 continued to have an impact on the availability of skilled labour as well as material costs during the financial period. This had an impact on the operations and profitability of the company during the financial period.

As a consequence of the war, energy prices in Europe have remained high, affecting costs for the shipyard. The company has undertaken various measures that have successfully reduced energy consumption and continued to improve the energy efficiency for both the shipyard and the ship product.

During the financial period, the company signed a letter of intent to construct a fourth Icon class ship as well as an option to deliver two more ships in the Icon class. Production on a fourth Icon class ship commenced during the financial period. At the end of the financial period, the group’s order book was valued at 5.8 billion euros (4.6 billion euros in 2023), and it included the following orders:

Client	Ship type	Gross tonnage	Delivery
Royal Caribbean Cruises Ltd.	Cruise ship	248 750	Summer 2025
Finnish Border Guard	Special-purpose vessel	5 300	Winter 2026
Royal Caribbean Cruises Ltd.	Cruise ship	248 750	Summer 2026
Finnish Border Guard	Special-purpose vessel	5 300	Fall 2026
Royal Caribbean Cruises Ltd.*	Cruise ship	248 750	Summer 2027

KPIs, parent company			
	2024	2023	2022
Revenue, M€	1 824,3	1 430,6	1 295,8
Operating result/loss, M€	120,8	-41,8	15,7
Operating result/loss, %	6,6	-2,9	1,2
Return on equity, %	44,3	-79,6	-10,8
Equity ratio, %	8,3*	8,3*	14,6*

\*Investment in the reserve for unrestricted equity by the parent company

KPIs, group			
	2024	2023	2022
Revenue, M€	1 826,9	1 432,5	1 295,5
Operating result/loss, M€	135,2	-38,0	20,3
Operating result/loss, %	7,4	-2,7	1,6
Return on equity, %	49,8	-69,9	-8,0
Equity ratio, %	9,3	9,5	15,3

\*Investment in the reserve for unrestricted equity by the parent company

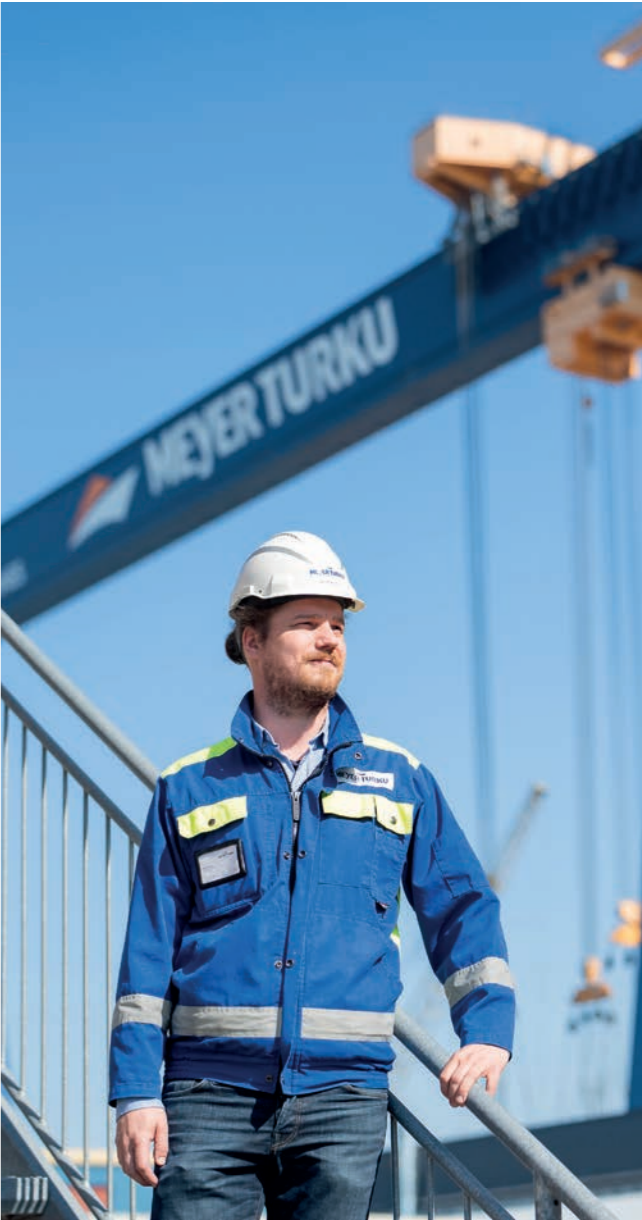
In the spring 2024, the company launched a new Operations Improvement development programme which replaced the change programme completed over the previous years. The new programme aims to continue the steadfast improvement of the shipyard’s cost efficiency. Targeting various processes, the programme focuses on remedies and improvements designed to achieve major cost savings by improving the operational efficiency of the shipyard.

A project management office (PMO) was set up to support the development programme. It is tasked with maintaining the development portfolio, conducting development projects and engaging in close cooperation with various organisations to ensure that all measures are impactful and generate desirable results in the company’s efforts to improve its competitive position.

Together with clients and other stakeholders, the company continued to implement its corporate responsibility strategy defined in 2021. As stated in the strategy, the company aims to achieve net-zero emissions for its own operations (Scope 1 & Scope 2) by 2030 and design a Net Zero ship concept during 2025. To support this strategy, the company was approved to Business Finland’s funding programme for leading companies in early 2022.

In November 2024, the company introduced the SAP ERP (Enterprise Resource Planning) system across all group companies. In addition to the scheduling functions deployed earlier, the same ERP system will incorporate several other functions, including design, procurement, logistics and finances. The centralised ERP system improves transparency of operations as well as monitoring of operational and economic efficiency. With the technical challenges involved in the deployment of the new system, the processing and payment of purchase invoices were slightly delayed in late 2024.

The group’s investments during the financial period totalled 17 million euros (9.8 million euros in 2023). Subsidiaries Piikkio Works Oy, Shipbuilding Completion Oy, and Technology Design and Engineering ENG’nd Oy, all fully owned by the parent company, have a similar situation in terms of their business operations. ■



# 02 CORPORATE RESPONSIBILITY AT MEYER TURKU

Turku has a 287-year history in shipbuilding. The shipbuilding industry involves both traditions worth preserving and fascinating challenges for tomorrow, with sustainability one of the most pressing ones. Corporate responsibility work goes back a long way at the Meyer Turku shipyard, and it will become an even stronger focus in the coming years. And as one of Meyer Turku's core values, the company is deeply committed to it. Corporate responsibility efforts at the Meyer Turku organisation are overseen by the ESG department, established in autumn 2024.

## Corporate responsibility strategy

Development of corporate responsibility at Meyer Turku and the related reporting is steered by the corporate responsibility strategy approved in 2021 by company management. The strategy sets four high-level goals which form a basis for a practical action plan and processes for their implementation and monitoring. The strategy is an all-encompassing guideline to Meyer Turku's operations, extending to, for instance, partner selections and the corporate responsibility efforts of the shipbuilding network.

Meyer Turku's vision for the shipyard is to build ships that will make future generations proud. The organisation's corporate responsibility strategy is built on four pillars:

1. Developing a Net Zero ship concept during 2025
2. Shipyard operations with net-zero emissions by 2030
3. Exemplary corporate responsibility both locally and internationally
4. Development and support of partner network's corporate responsibility work with concrete actions

Meyer Turku published its first sustainability report in 2017, the same year the company released the results of its first GHG calculations. In connection with its strategy work in 2021, the shipyard published its goal to become carbon neutral by 2030

for Scope 1 and 2 emissions. In 2024, Meyer Turku decided to rephrase the wording in its goal setting from carbon neutral to net zero. This is because the term 'carbon neutral' can in some cases refer to climate work that primarily relies on carbon offsetting. This would give a false impression of Meyer Turku's efforts, and this is why updating the existing terminology to 'net zero' was considered necessary.

Since the beginning of its climate journey, Meyer Turku has focused its efforts on actions and measures that underline tangible, immediate and permanent results. Meyer Turku continues on a tangible path forward. Only after tangible emissions reduction measures can the company turn to high-quality and verified climate units to neutralise the remaining emissions. The sources of these remaining emissions likely include, for instance, welding gases, which cannot be fully eliminated in steel construction.

In accordance with the newly rephrased goal setting, Meyer Turku strives to achieve a minimum of 90% reduction in GHG emissions for Scope 1 and Scope 2 by 2030, using 2019 GHG emissions as the baseline.

At the Meyer Turku Shipyard  
**WE BUILD SHIPS**  
in a way that will make future generations proud.



## Goals

The goals specified in the strategy are challenging, and much work remains to be done. The international maritime industry is a major emissions producer, and the entire industry still needs enormous leaps in both mindsets and practices to curb the current direction and transition to a sustainable future. Meyer Turku firmly believes that corporate responsibility in all areas of its operations and bold and open-minded research and development are prerequisites to its future competitive success and eventually for its entire existence.

“ We have worked hard to identify the tangible, impactful actions we can take to shape a better future – and also made meaningful choices along the way. Our significant reduction in Scope 1 and 2 emissions reflects these efforts. –Hanna Haaksi

**Mein Schiff 7** was delivered to TUI Cruises in 2024. It features several new innovations and tangible steps forward on the journey towards net-zero emissions. To cite some examples, the ship was installed with catalytic converters designed to meet the EURO VI nitrogen oxide emissions standard for road transport, and 220 m<sup>2</sup> of solar panelling was integrated into the glass roofing. Mein Schiff 7 also features a waste treatment facility (HydroThermal Carbonization, HTC) – a first of its kind in ship use – which converts organic waste to biocarbon in high temperature and pressure as well as a charging and storage facility for electric bikes and scooters with highly advanced fire safety. Mein Schiff 7 is also the first ship built at Meyer Turku with comprehensive methanol-ready capabilities.

### Net Zero ship concept and net-zero-emissions shipyard

Transition towards sustainable development is also underway in the shipbuilding industry where passengers and shipping companies demand new qualities for ships and society expects tangible problem solving. Naval engineers are constantly required to develop radical structural solutions, adopt new materials and utilise new calculation methods.

Meyer Turku's key goal is to reduce ship life cycle emissions and even design a net-zero-emissions cruise ship as well as proceed to build it in the future. For ship's hull and supporting structures, this constantly requires extremely light-weight solutions for both materials and production as well as reduced environmental impact in terms of, for instance, carbon footprint. Other challenges include issues with material availability, growing energy costs, increasing pressure to take immediate climate actions and the current global uncertainties. Facing challenging circumstances together with reliable partners steers the company towards solutions that unlock entirely new types of sustainability, product development and business opportunities.

The Turku shipyard is actively involved in national and international projects designed to develop sustainability in shipbuilding and the entire maritime industry. In addition to the net-zero-emissions goal, other environmental goals and measures set for the shipyard include keeping a clean environment at the shipyard and the surrounding areas, improving biodiversity and becoming a pioneer in circular economy.

2023 saw the shipyard launch several initiatives to meet these goals, and the work continued in 2024. The projects have three distinct focus areas: improving shipyard energy efficiency, advancing circular economy in shipyard operations and increasing waste management efficiency. In 2024, the shipyard also launched a subproject for improving biodiversity. Last year, the company saw results particularly in improving energy efficiency, essential to both corporate responsibility and cost-efficiency.

### Corporate responsibility work requires commitment from the entire network

As one of the goals in its corporate responsibility strategy, Meyer Turku pledges to set a good example in local industrial responsibility and push its partners and the entire shipbuilding network to being equally or more responsible in their operations. The company's values include engaging in active cooperation with the various operators at the shipyard area, as an integral part of the local community. The shipyard is located in the Perno-Pansio region in Turku. Meyer Turku is in constant dialogue with not only the Perno-Pansio region but also the City of Turku and the various operators in the entire economic region. Meyer Turku is also a member of the Finnish corporate responsibility network, FiBS ry.

Meyer Turku is also in tight cooperation with local universities and local development companies. The goal is to make Finland a leader of ship technology and science in the world, and close cooperation with universities is an important way to achieve this goal. High-quality engineering education is important to Meyer Turku, because smart and creative ship

design and production optimisation solutions devised by the employees bring the entire organisation closer to its climate goals now and in the future. Agreements with Aalto University, University of Turku and Åbo Akademi are a part of the company's enduring commitment to long-term cooperation combining top research, high-quality education and operators in marine technology. Cooperation includes, for example, material research and steel structures, hydrodynamics, ship safety, energy efficiency and research supporting sustainable development.

In Finland, Meyer Turku is seen as a leader in the maritime industry and shipbuilding in particular. Each new ship completed at the shipyard drives technological development and sustainability in the Finnish maritime industry. Being a propelling force between the client and the shipyard's wide network of suppliers in R&D and a platform for experimenting with new technologies is a number one priority in this role. Meyer Turku also expects its network to commit to responsible practices, and sustainability is now one of the prerequisites in the company's procurement decisions.

## Measures

To manage and coordinate work in accordance with Meyer Turku's corporate responsibility strategy, an ESG department (Environmental, Social & Governance) was established in August 2024, along with a separate governance model to support its

work across organisational borders.

The main responsibilities of the department are to:

1. Ensure successful reporting in accordance with the CSRD
2. Oversee corporate responsibility work at the company.

### EXECUTIVE MANAGEMENT TEAM

The Executive Management Team is the highest decision-making body in sustainability matters.



### ESG STEERING COMMITTEE

Led by the Head of ESG and consist of relevant Head of Departments

The ESG Steering Committee oversees implementation of strategy, and monitors the progress of sustainability targets and projects. The ESG Steering Committee is the preliminary decision-making body for sustainability-matters, which then proposes matters to the Executive Management Team.

### ESG WORKING GROUP

Led by the Head of ESG and consists of relevant experts across the organization

The ESG Working Group supports the ESG Steering Committee. The working group is a low threshold group discussing sustainability related issues, developments, progress, and ideas, particularly at an operational level. The working group can present new matters to the committee to discuss.



### ESG DEPARTMENT

The ESG department handles corporate-level sustainability matters and is responsible for the implementation and monitoring of company-level sustainability targets and reporting.

OUR MEASURES

1	We design a roadmap to achieve a net zero shipyard and drive the initiative forward in a goal-oriented manner.	2	We design a net zero ship concept together with our network.	3	We promote cleanliness and biodiversity at our shipyard and its surroundings.
4	We are industry pioneers in circular economy.	5	We make corporate responsibility a prerequisite for our procurements.	6	We ensure our network commits to responsible practices.
7	We are closely linked with the communities surrounding our shipyard.	8	We make corporate responsibility a part of our employees' day-to-day work.	9	We openly communicate about our corporate responsibility topics.

UN's Sustainability Development Goals provide guidance and inspiration for Meyer Turku's actions towards a more sustainable future. Meyer Turku is proud to be part of this global movement and commits to continuing its work to promote sustainable development in the maritime industry.

Energy Efficiency Agreement

Meyer Turku has joined the Energy Efficiency Agreement. Efficient use of energy is a responsible way of action and one of the key measures to fight climate change. It is a globally recognised imperative action and a 'first fuel' to meet the targets set for reducing energy use and greenhouse gas emissions. Efficient and sensible use of energy saves costs and increases operational efficiency.

In Finland, voluntary Energy Efficiency Agreements are an important means for reaching the efficiency improvement targets for energy consumption stated in the EU's Energy Efficiency Directive (EED). Energy Efficiency Agreements cover more than half of the binding national energy saving target set by the EED Article 7 for the implementation period 2014–2020. The agreement scheme also supports the implementation of the obligations set in other articles of the directive and, where appropriate, the implementation of the Energy Performance of Buildings Directive (EPBD).

Energy savings achieved through the agreement scheme help Finland reduce its GHG emissions. They also support the national targets on increasing the use of renewable energy. Efficient use of energy also improves Finland's security of supply and self-sufficiency on energy. At the same time, it creates green growth and opens markets for clean technology solutions.

Over 730 companies and their 7,154 locations as well as 136 municipalities and joint municipal authorities have

joined the Energy Efficiency Agreement scheme. Their combined energy use comprises nearly 60% of the total energy consumption in Finland. The nearly 19,000 energy efficiency improvement measures made by all the parties involved help achieve 10.3 TWh in total annual energy savings. This equals the annual energy consumption of over 515,000 electricity-heated one-family houses.

Turku's climate city commitment

Having signed the City of Turku's climate commitment, Meyer Turku is involved in supporting Turku's Climate City Contract. Meyer Turku therefore pledges to support the 'Carbon neutral Turku 2029' target, helping advance it in its operations. In its corporate responsibility strategy published in 2021, the shipyard set targets to develop a Net Zero ship concept during 2025 and achieve net-zero emissions for the shipyard's own operations in 2030.

"The Climate City Contract is a natural extension of our cooperation with the City of Turku in both sustainability and other areas. As a major local operator and employer, we feel that it is our honour and duty to be involved and encourage others to join in this important work," says **Tapani Pulli**, Executive Vice President of Meyer Turku.

Turku's Climate City Contract is part of EU's '100 climate-neutral and smart cities by 2030' mission, with Turku involved as a pioneering climate city. Each city that commits to the mission prepares their own climate contract, with their major stakeholders joining as co-signers.

The mission aims to support Turku and hundred other selected European cities in achieving carbon neutrality by 2030. The contract also helps reinforce Turku's existing climate work and provides new opportunities for operators in the region to participate in projects at the European level.

Commitment to Code of Conduct

Under no circumstances does Meyer Turku accept unethical or illegal practices. In its Code of Conduct, Meyer Turku has specified the organisation's commonly accepted practices. The Code of Conduct covers, for example, opposing corruption, conflicts of interest, fair competition and acquisitions, employee rights, occupational safety and protecting the environment. Meyer Turku requires all its employees and managers to carefully consider their actions, follow the ethical principles and act with integrity in all business activities.

Expectations for partners are described in the company's Code of Conduct for Suppliers. All suppliers are required to commit to these principles in writing. Meyer employs a whistleblowing channel that its personnel and anyone in its

network can use to report any abuse they observe or suspect, anonymously if needed. The channel also makes it possible to submit follow-up questions and exchange information without compromising anonymity.

The method described above lowers the threshold for reporting misconduct and helps make it easier for the company to detect abuse, such as corruption and theft, and more quickly address any uncovered issues. The whistleblowing channel is available in both Finnish and English. A shared whistleblowing channel improves the processing of any reports as they are always submitted directly to Meyer Turku's Compliance unit for further investigation. Any actions or consequences will be determined by company management.

The ESG department is also tasked with supporting the implementation of the measures specified in Meyer Turku's corporate responsibility strategy across the organisation and coordinating cooperation and interaction between departments. The corporate responsibility strategy specifies nine priority themes that form the backbone for a practical annual action plan and schedule:

- 1. Roadmap to net-zero emissions
- 2. Net Zero ship concept
- 3. Clean environment and biodiversity
- 4. Circular economy
- 5. Sustainable procurement
- 6. Committing the network to sustainability
- 7. Cooperation with local communities
- 8. Sustainability in employee's everyday life
- 9. Openly communicating about sustainability

In 2024, the most significant projects and measures with tangible impact involved improving the energy efficiency of the shipyard and the ships under construction, developing waste management and circular economy, promoting biodiversity and meeting the EU's revised regulatory requirements.

Commitments

UN's Sustainability Development Goals

UN's Sustainability Development Goals provide a comprehensive framework for solving global challenges, including climate change, biodiversity loss, inequality and poverty. The maritime industry plays a major role in many of these challenges, and Meyer Turku has identified five goals where it can provide most impact in its operations and in its cooperation with partners and clients.



Goal 6: Clean water and sanitation

Meyer Turku is committed to sustainable use and management of water resources in the maritime industry. More than 80% of the world's wastewater is still discharged untreated into seas, lakes, and rivers, causing issues for both people and the environment. Together with its clients and partners, the company invests in developing on-board wastewater treatment and purification as well as protection of coastal waters.



Goal 8: Decent work and economic growth

Meyer Turku strives to create economic growth in the maritime industry while promoting human development and employment throughout its value chain. The company is committed to supporting seafaring innovations and infrastructure development, which creates new employment opportunities and increases productivity.



Goal 9: Industry, innovation and infrastructure

Meyer Turku promotes sustainable infrastructure and digital transformation by investing in new technologies and solutions in the maritime industry. The goal is to improve the efficiency of operations by reducing environmental impact and improving operational efficiency.



Goal 13: Climate action

Climate change is a defining challenge that brings everyone together, and commitment to reduced emissions is the most efficient way to make an impact for Meyer Turku and other companies in the maritime industry. Together with clients and partners, Meyer Turku develops energy efficient solutions, such as adopting renewable energy sources on board and in shipyard operations.



Goal 14: Life below water

Protecting the seas and waterways of the world is of utmost importance. Meyer Turku constantly develops its operations and its products in ways that help the company reduce chemical pollution and eutrophication in the seas and protect endangered species.

# Sustainability reporting

Each year, Meyer Turku prepares an voluntary sustainability report concerning its operations. It includes information and data on how the shipyard manages its social and economic impact and the environmental burden resulting from its operations as part of a comprehensive corporate responsibility strategy. The report describes the processes, projects and concrete development measures that drive sustainability work as part of Meyer Turku's and its partner network's operations and includes topics such as climate change, realisation of human rights, diversity and equality, as well as management of health, safety and other risk factors.

Meyer Turku has been publishing a sustainability report on a voluntary basis since 2017. In preparing for European Union's new Corporate Sustainability reporting Directive (CSRD), Meyer Turku will publish an CSRD-compliant integrated financial and sustainability report in 2026 based on 2025 data. Development work for new reporting and the ESRS standard (European Sustainability Reporting Standard) it follows began in 2023, and it applies to all levels of the organisation. Meyer Turku's ESG department oversees reporting preparations.

### Double materiality assessment

In 2024, Meyer Turku conducted its first double materiality assessment in accordance with the European Sustainability Reporting Standards. The purpose of the materiality assessment was to identify the most significant sustainability matters to specify reporting requirements and to develop internal corporate responsibility work. Meyer Turku's double materiality assessment process consisted of five main phases: a) value chain mapping, b) identification of impacts, risks and opportunities, c) assessment of impacts, risks and opportunities, d) engaging stakeholders and e) compilation and validation of results.

### Value chain mapping

The double materiality assessment started with the mapping of Meyer Turku's value chain. The purpose of the value chain mapping was to identify key stakeholders upstream and downstream in Meyer Turku's value chain as well as parts of the value chain which involve significant impacts, risks and opportunities. The value chain mapping was conducted as a workshop and involved several Meyer Turku experts across various business areas. The mapping process resulted in a visualisation of Meyer Turku's value chain and identification of stakeholders that are to be engaged during the double materiality assessment.

### Identification of impacts, risks and opportunities

The identification of impacts, risks and opportunities saw the compilation of a long list of potentially material impacts, risks and opportunities. No company-specific sustainability matters were identified during this phase. The identification process utilised several sources, such as impacts, risks and opportunities

identified during chain value mapping, internal company processes and related materials, experts on various business areas, as well as literature. In identifying risks and opportunities, focus was on sustainability-related risks and opportunities. Potential financial cause-effect relationships of the identified impacts were also assessed.

The identifying of impacts, risks and opportunities focused on those applicable to Meyer Turku's own business operations, its subsidiaries as well as its value chain and business relationships. The identification process considered impacts, risks and opportunities that materialise in the short, the medium and the long term. Both negative and positive as well as actual and potential impacts were identified.

### Assessment of impacts, risks and opportunities

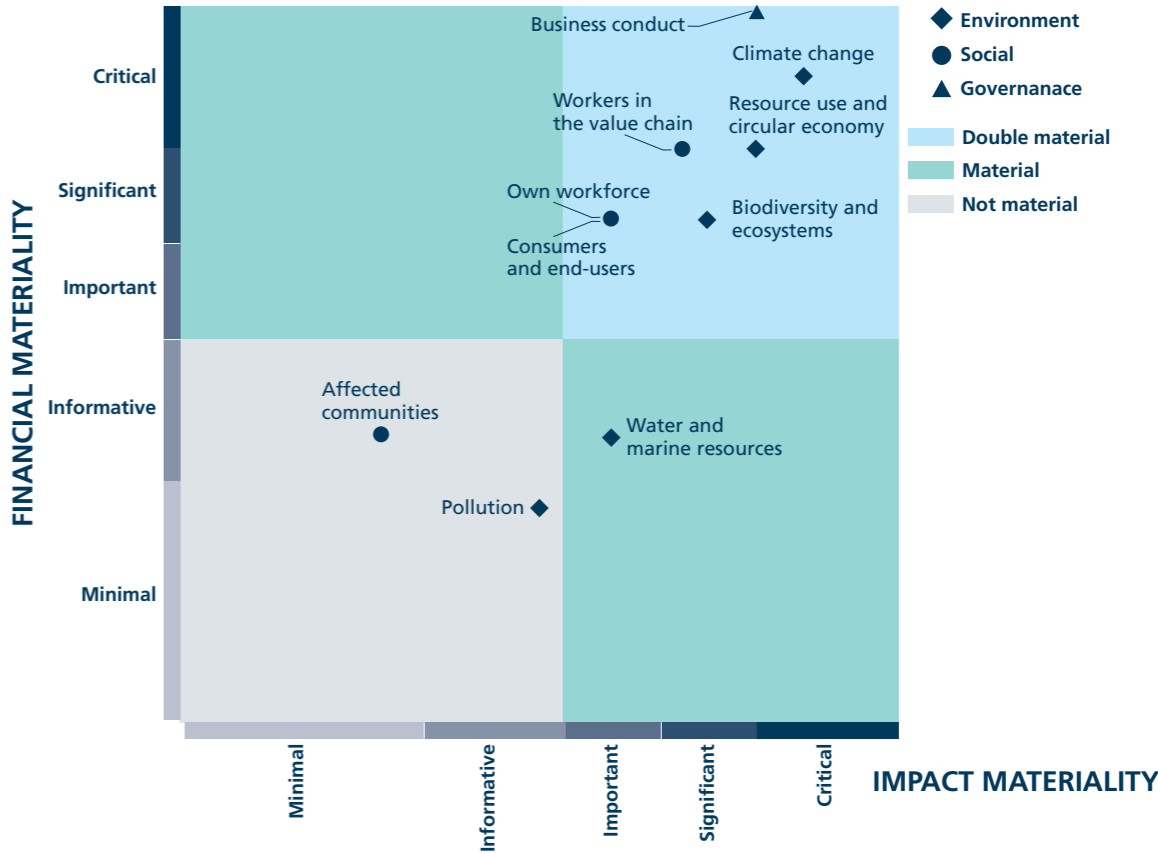
The listed impacts, risks and opportunities were given low, middle and high priority classifications based on materiality-related observations made during the identification process. After the priority classification, a preliminary materiality assessment was conducted for all impacts, risks and opportunities in the extensive list.

Any negative impacts were assessed based on their severity (and potential impacts for their likelihood). The severity was based on the scale, scope and irremediability of each impact. Any positive impacts were assessed based on their scale and scope (and potential impacts for their likelihood). Scale, scope, irremediability and likelihood were assessed with the help of qualitative thresholds. As a result of the assessment, each impact was designated a materiality score, which became the basis for assessing materiality in accordance with set thresholds.

Risks and opportunities were assessed based on their financial impacts and the likelihood of their occurrence. Financial impact and likelihood of occurrence were assessed with the help of quantitative thresholds used in Meyer Turku's risk management process. As a result of the assessment, each risk and opportunity was designated a materiality score, which became the basis for assessing the materiality of risks and opportunities in accordance with set thresholds.

### Engaging stakeholders

The purpose of engaging shareholders was to gain an understanding of the views of Meyer Turku's key stakeholders on the most significant impacts, risks and opportunities as well as on the preliminary results of the materiality assessment. Shareholder engagement took place with interviews that discussed the preliminary materiality assessment results relevant to each stakeholder together with their representatives. Two reporters, one client, one energy supplier, one investor, the City of Turku and elected representatives of the employees were engaged during the materiality assessment.



### Compilation and validation of results

After engaging shareholders, the necessary changes were implemented in the double materiality assessment and final materiality was determined with respect to impacts, risks, opportunities and related sustainability matters. Impacts, risks and opportunities identified as material were reviewed together with subsidiary representatives to identify any significant differences. A sustainability topic was deemed material if it was material from the perspective of impact materiality, financial materiality or both.

### Reporting themes

In this report, the goals stated in the corporate responsibility strategy and measures to achieve them are grouped into four sections:

1. We design world-class ships
  - a. The majority of a ship's environmental impact is generated during its long life cycle.
  - b. Meyer Turku's goal is to design a buildable Net Zero ship concept during 2025.
2. We operate a world-class shipyard
  - a. The Turku shipyard aims to reach net-zero emissions for its own operations by 2030.
  - b. Those working at the shipyard are subjected to safety-related risks. This is why risk management and safety at the shipyard are of utmost importance to us.
3. Our operations require a world-class personnel
  - a. We work together with universities and schools nationwide while educating new professionals in our own school to ensure knowledge transfer to the next generation.

- b. We take care of our personnel's well-being and develop managerial work.
4. We operate as part of society
    - a. We set a good example by practicing active local industrial responsibility and push our network to being equally or more responsible than we are.
    - b. We are closely involved with the communities surrounding our shipyard.

### Calculation of emissions

Each year, Meyer Turku calculates the greenhouse gas emissions generated by its own operations (Scope 1 and 2). Calculations are based on the internationally accepted emissions accounting standard, the GHG Protocol (Greenhouse Gas Protocol). Based on the results, the most significant emission sources related to the shipyard and shipbuilding were identified, enabling the company to reliably measure and monitor its journey towards a net-zero-emissions shipyard.

In the shipyard's operations, the most significant current emission sources include fuel consumption and heating for ships under construction. Emissions in the shipyard value chain (Scope 3) have also been estimated, both upstream and downstream in the shipyard value chain. Carbon footprint calculations will keep evolving and increasing in accuracy with new reports and new data. The shipyard and ship construction-time emissions make for a complex, interconnected system, and efforts from partners are also needed to fully understand and reduce them.

Meyer Turku shipyard's total carbon footprint and emission sources are reported in more detail on page 36.

## GHG protocol standardises emission calculations

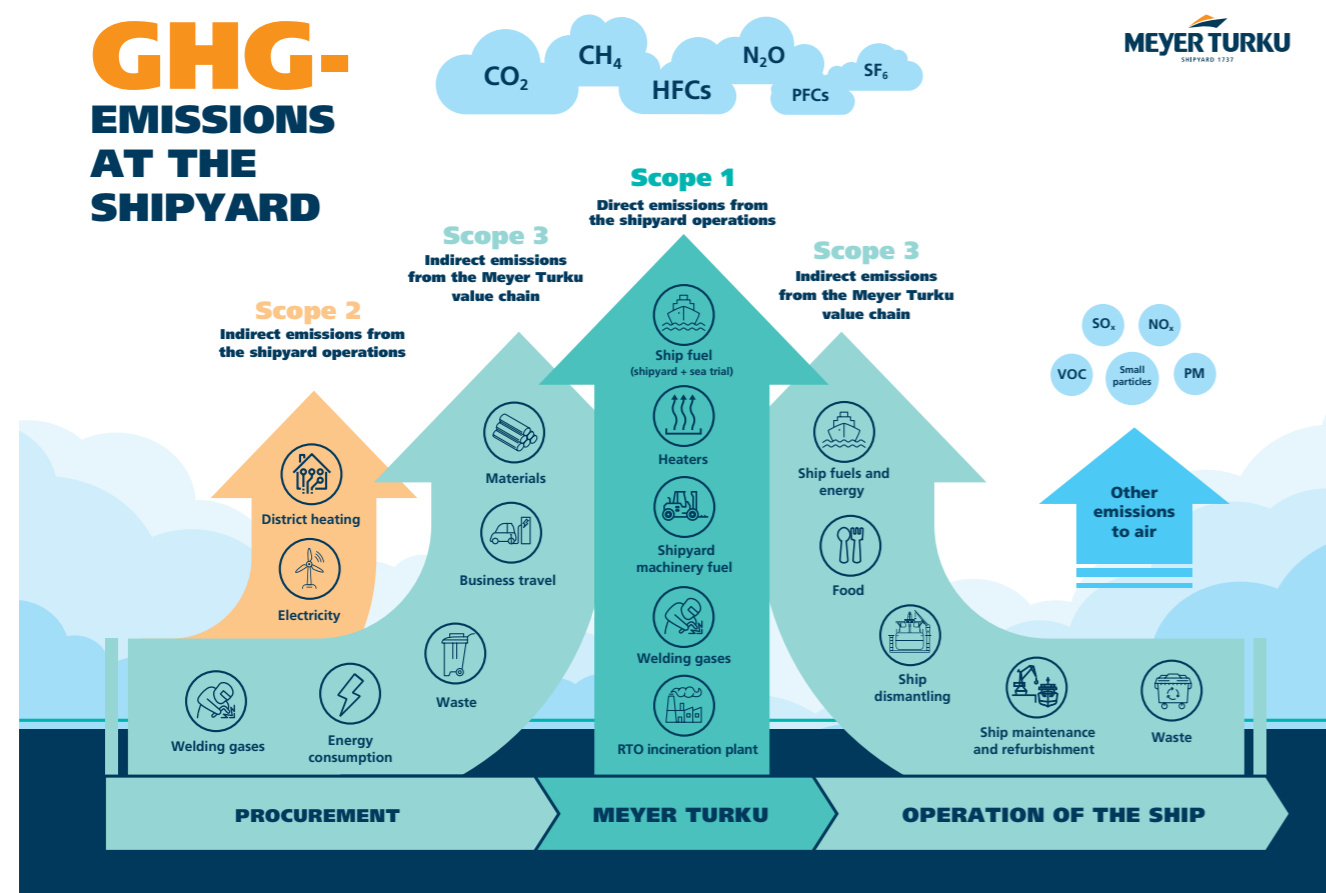
The calculation of greenhouse gas emissions takes into account both direct and indirect greenhouse gas emissions caused by a company's operations.

- **Direct emissions:** Emissions generated at the tip of the company's smokestack – or exhaust pipe. These include greenhouse gas emissions from ship trials and dock tests or the fuels powering the company's vehicles or machinery.
- **Indirect emissions:** All emissions that are a consequence of a company's operations. These include emissions from the production of electric or thermal energy purchased by the company and any emissions from procurement, purchased services and transport.

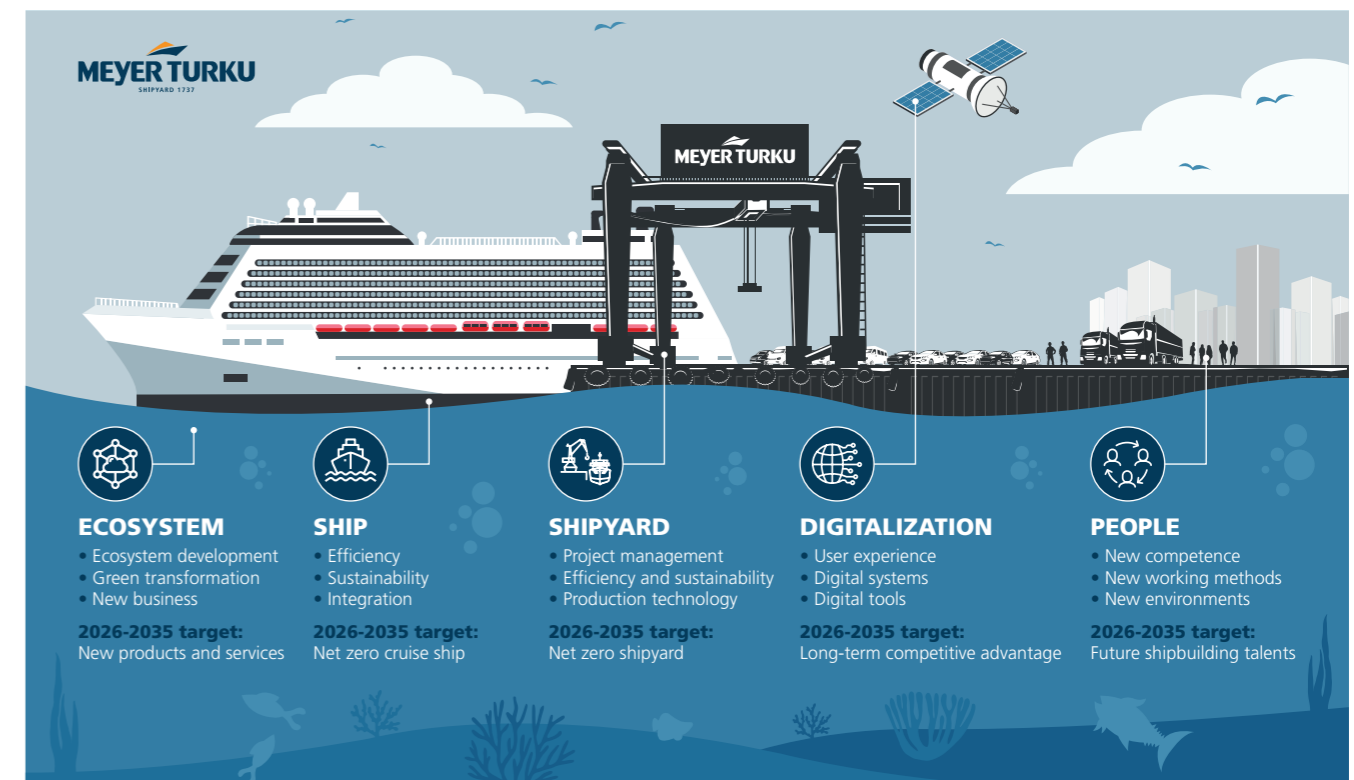
In the GHG protocol, emissions are classified into three scopes:

- **Scope 1:** All direct greenhouse gas emissions by a company, such as fuel emissions from company vehicles and from ships under construction.
- **Scope 2:** Greenhouse gas emissions from the production of purchased electricity, steam or heat.
- **Scope 3:** All other indirect greenhouse gas emissions, such as emissions from material procurement and emissions from the end-use of sold products. Scope 3 is divided into 15 categories, including procurement, business travel and waste.

The net-zero-emissions shipyard is a goal set within Scope 1 and Scope 2 emissions. The Net Zero ship concept, on the other hand, is focused on the so-called downstream emissions in Scope 3, meaning ship's use-phase emissions in particular.



## The NEcOLEAP green transition project



In February 2022, Meyer Turku was selected to join Business Finland's Veturi funding program, challenging companies to increase their research, development, and innovation investments in Finland. NEcOLEAP is a green transition research and development programme that brings together a diverse group of professionals from universities and research institutes to develop innovative and globally sustainable technology solutions. The current roadmap for the programme extends to 2035. Its key targets include accelerating the adaptation of Meyer Turku shipyard's business to the green transition and consequently meeting the critical change requirements brought on by climate change together with its ecosystem partners.

The four objectives of the NEcOLEAP programme are:

1. Reinforcing and expanding innovative research and development within the shipbuilding ecosystem and securing future competence
2. Utilising smart technologies throughout a ship's life cycle
3. Developing a Net Zero ship concept during 2025
4. Enabling a net-zero-emissions shipyard by 2030.

**”** The ambitious targets of the 160 million-euro development programme aim to contribute to the green transition of the entire international shipbuilding industry.

The NEcOLEAP research and development programme is about developing a net-zero-emissions cruise ship and shipyard with the help of a wide partner ecosystem. In 2023, the programme saw rapid growth with the launch of a number of research projects. They not only bring new technological innovations but also strive to meet clients' strategic sustainability goals, adopting and developing an even wider range of sustainable technologies and solutions. During 2024, the number of projects continued to grow. Through the wide variety of NEcOLEAP projects and themes, Meyer Turku can improve the energy efficiency, automation, robotics and cybersecurity of the ship product and shipyard. Some of the ongoing projects are featured in different sections of this report.

The NEcOLEAP Shipyard and People clusters have a total of 21 ongoing projects. They study how to, among other things, improve or optimise energy efficiency of the buildings and operations at the shipyard, use of steel in shipbuilding, shipyard logistics and inventory management, air quality in part assembly and section assembly halls, biodiversity at the shipyard and shipyard's social responsibility. The NEcOLEAP development programme will run through the end of 2025. Several projects have already made major progress and achieved promising results.

Project areas

NEcOLEAP is divided into four different project areas or clusters: ship, shipyard, digitalisation and people. There are various projects under each cluster related to their theme.

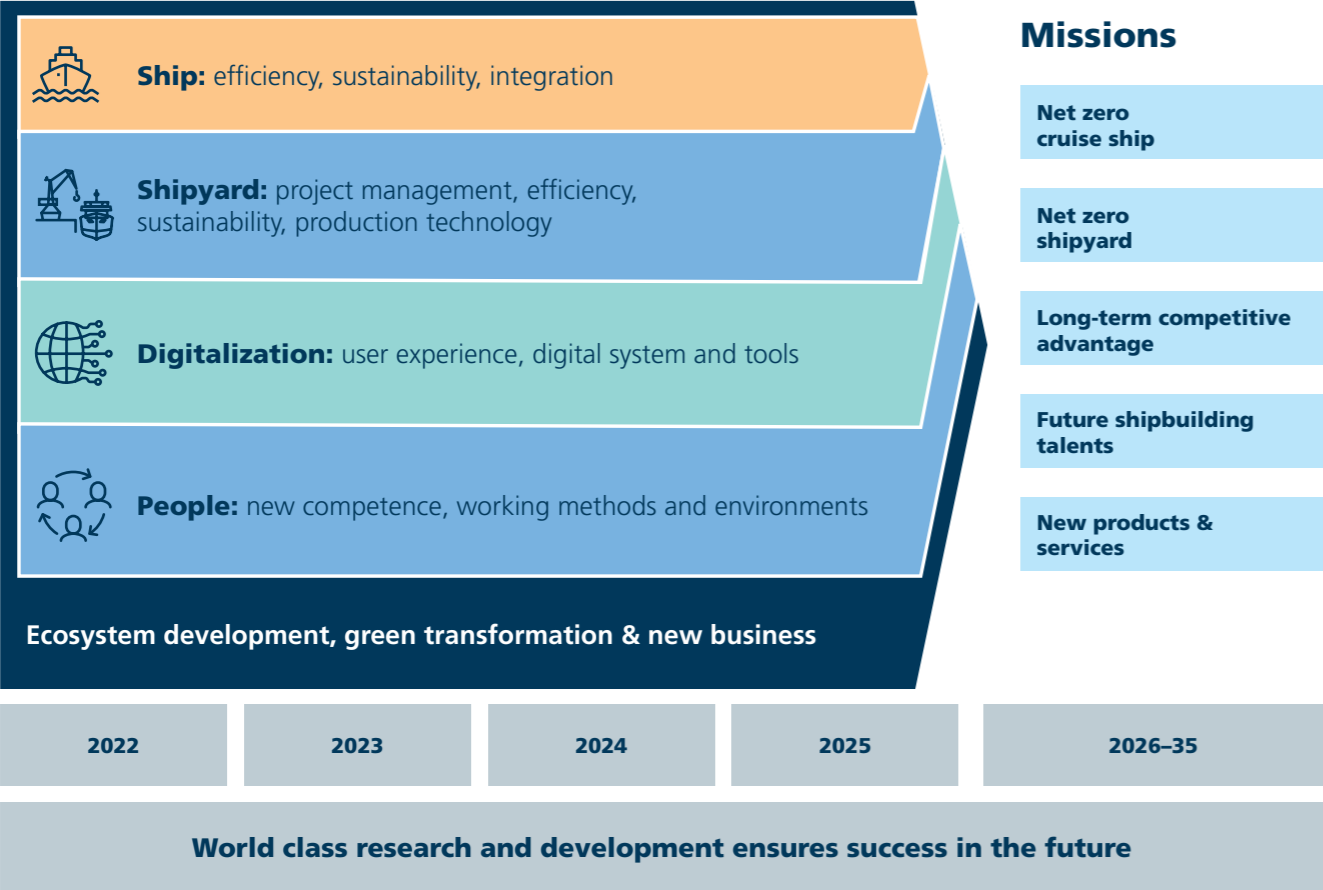
- 1. **Ship:** Projects designed to improve the ship, with focus on efficiency, sustainability and integration, such as the shared SusFlow innovation project. SusFlow has studied the collection and utilisation of sustainability data, including LCA (Life Cycle Assessment) calculations and assessments. The goal has been to improve information flow to gain a more accurate and realistic picture of the impact of sustainable development.
- 2. **Shipyard:** Projects focused on project management, efficiency and sustainability as well as shipyard-related production technology, such as the internal Sustainable Shipyard: Circular Economy project. The purpose of this project is to create a circular economy programme at Meyer Turku, which involves improving waste management and logistics, increasing recycling rates and reducing waste in general.
- 3. **Digitalisation:** Projects focused on tools that concern user experience, digital systems and digitalisation of shipbuilding, such as the Necoverse project. It aims to develop and utilise new education, planning and operating environments as well as study industrial metaverse solutions for ships and the shipyard.
- 4. **People:** Projects focused on new competences, work methods and work environments, such as the shipyard's internal PM Game project. It has studied various simulation games as a learning tool in ship project management. The main objectives of the project include increasing competence and scaling a new education model for the purpose of overseeing ship projects.

Partners

By the end of 2024, a total of 316 partners had already joined the NEcOLEAP ecosystem development effort, including not only large corporations but also small and mid-sized businesses and research institutes. And with active participation in both virtual and in-person events, numerous new projects have emerged and wide networking between the ecosystems has been enabled.

A net-zero-emissions cruise ship order for Turku would enable about 12,000 man-years for the shipyard and its partner

network, an equivalent of about 9,500 jobs in the ecosystem. It would add an estimated one billion euros to Meyer Turku's revenue, making a direct impact on Finland's export. The estimated cost for the entire NEcOLEAP programme is about 160 million euros, with Business Finland funding the shipyard with 20 million euros and Meyer Turku providing 40 million. In addition, Business Finland has allocated 50 million euros to support the businesses, research institutes and universities in the ecosystem. ■



# 03 WORLD-CLASS SHIPS



Designing and building energy-efficient low-emission ships has long been at the heart of Meyer Turku's operations. This approach provides the Turku shipyard an important competitive advantage as cruise lines consider these qualities increasingly important in their next generation ships. It also affects the organisation's ability to significantly contribute to the fight against climate change.

Although international shipping is not subject to the Paris Agreement, the European Union and several ports have already set clear emission limits for marine traffic, with regard to sulphur oxide emissions, for instance. The International Maritime Organization (IMO), responsible for regulating shipping, has also set gradually tightening energy-efficiency requirements for ships. Starting in 2023, ship performance level is monitored annually with the operational carbon intensity rating (Carbon Intensity Indicator CO<sub>2</sub>/GT-nm\*) which includes gradually increasing reduction requirements.

Meyer Turku exceeds the compliance requirements set in both the IMO Energy Efficiency Existing Ship Index (EEXI) and the Energy Efficiency Design Index (EEDI) and also has an active role in the discussion regarding the Carbon Intensity Indicator (CII) regulations for cruise ships. The goal is to reduce

the emission intensity of international marine traffic by 40% by 2030 and ensure the adoption of emission-free technologies, fuels and/or energy sources and increase their share of the energy used in international shipping to 5% or more by 2030. Furthermore, the goal is to reduce the total GHG emissions of international marine traffic by 20% from the 2008 level and by a minimum of 70% by 2040. By 2050, total emissions should reach net zero.

For Meyer Turku, strict international regulations are exclusively a positive thing. Ships engineered and built at the shipyard are industry pioneers, often exceeding the prevailing requirements for energy efficiency and ship emissions. Meyer participates in IMO's regulatory work in a significant capacity, giving the organisation excellent ability to adapt to any new requirements.

\*GT-nm = Gross Tonnes-nautical mile, i.e. ships' gross tonnage and nautical miles travelled during one year.

# Towards net-zero emissions



As a pioneer, Meyer Turku has set ambitious goals for developing a net-zero-emissions product. The Net Zero ship concept will be finished in 2025. Once the concept is completed, Meyer is prepared to go ahead with the planning and production of a net-zero-emissions ship.

Fuel consumed over a ship's life cycle is a major contributor to its overall emissions. A net-zero-emissions cruise ship will reduce these emissions because it is capable of using future low-carbon fuels. And being energy-efficient, it also consumes less fuel. With the future introduction of low-emission fuels, construction-time carbon footprint will play an increasingly large role in terms of a cruise ship's climate impact. This is why it is essential to help reduce construction-time and material emissions by selecting sustainable and low-emission alternatives as well as developing the practices at the shipyard.

There is enormous potential for reduced emissions throughout a ship's life cycle. Emission reductions are achieved in close collaboration with the company's wide network and clientele. Opportunities are evaluated from construction-time emissions to ship operations and product recyclability at the end of life. Ships and the shipbuilding industry are significant exports for the Turku region and the entire Finland. A net-zero-emissions export commodity also helps increase Finland's carbon handprint\*, extending the positive climate impact to a global level.

The innovative technology solutions discovered in the NECOLEAP research and development project are integral to energy- and resource-efficiency, automation and optimised operations in shipbuilding. In addition, a wide variety of more sustainable material options have been uncovered, and they are increasingly available to use in ships commissioned by

clients. Areas essential to the Net Zero ship concept, such as cabins and the hull, are optimised first. This provides the ship concept with an optimal starting point, and other improvements align consistently with the larger whole.

## Meyer AVATAR

In 2023, the Meyer AVATAR program was launched, combining the results of the future product's numerous research, development, and innovation projects. AVATAR includes both internal projects and those carried out together with partners. Through the AVATAR project, future technologies can be implemented in the near future with the next ship concepts, and Meyer is going full steam ahead in building a direct path from RDI results to ship applications. Developing design competence for a net-zero-emissions ship requires new approaches, cooperation across the entire organisation and the engagement of a wide ecosystem.

By integrating advanced technologies to the ship design process, it is possible to facilitate the timely implementation of net-zero-emissions solutions to projects. Helping transfer new knowledge quickly and fostering interaction between various-parties, this process is also designed to generate roadmaps towards a net-zero-emissions product, with each path updated as progress is made. The work focuses particularly on sustainable and scalable technologies and technologies available in the near future. With the new process, Meyer is already accumulating a portfolio of technology and ship concepts and a library of sustainable materials, all contributing towards the goal of net-zero emissions.

In terms of practical solutions, the focus is on space and energy efficiency. Dimensioning systems and spaces to actual needs and the ability to generate, store and consume energy exactly

when it is needed are important in the future. By better understanding how a ship is used, systems can be dimensioned and optimised towards the journey to 2030. Generally speaking, data-driven design plays an increasingly large role. Major progress can be made in the green transition by optimising current operating models, while radical shifts in thinking can lead to significant savings. This is where Meyer relies in cooperation with universities and the entire ecosystem.

Meyer also engages in active dialogue with clients regarding next generation solutions and strives to guide its RDI activities to meet their changing needs. Ambitious emissions and energy efficiency targets are imposed on each new ship class at the design stage, as demonstrated by Icon of the Seas, completed in 2023.

## Ship's materiality assessment

To identify the essential sustainability aspects related to ship life cycle, Meyer Turku conducted a sustainability materiality assessment for ships under construction for the first time in 2022. This materiality assessment is currently being updated and adopted on an even wider spectrum. As part of the 2025 materiality assessment, a survey was sent to more than a thousand employees. The results of this survey are currently being analysed. The materiality assessment guides Meyer Turku's strategic actions in addressing the key environmental concerns throughout ship life cycle. Results of the materiality assessment can be used to steer research and development work and to time it better.

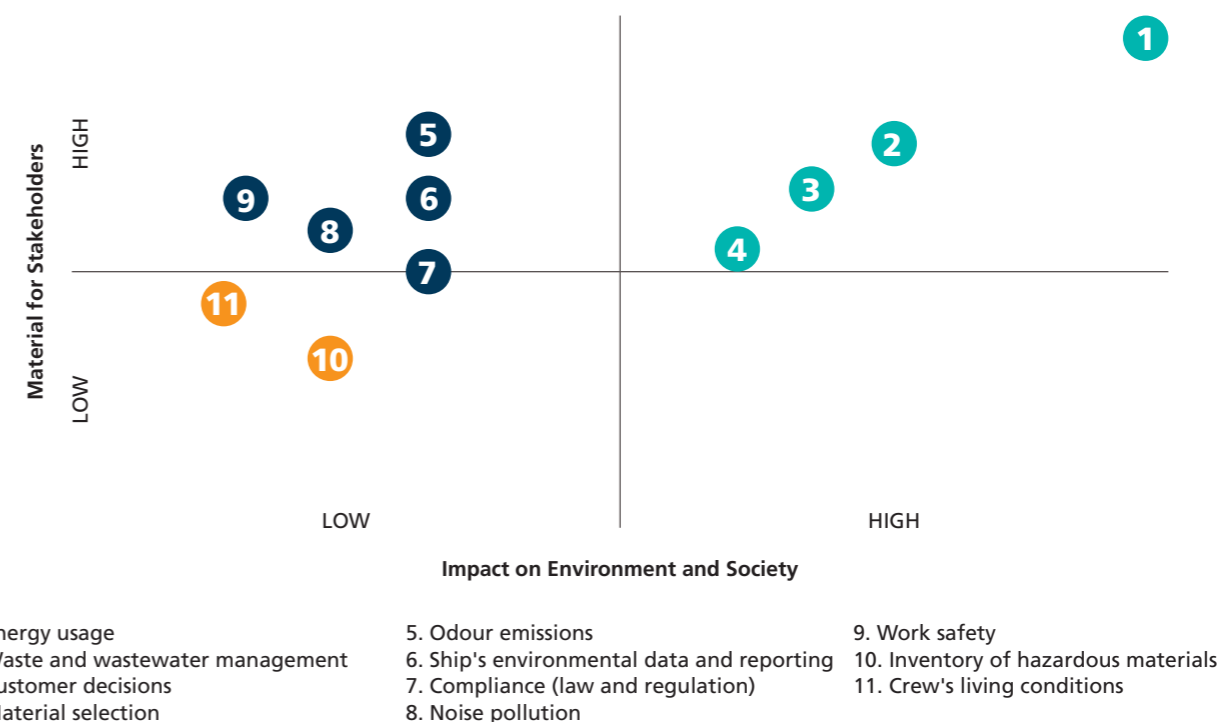
The original materiality assessment in 2022 had two perspectives: environmental impact of emissions and choices and their significance to stakeholders. Expert surveys, interviews and workshops were used to conduct the assessment. The purpose of the assessment was to secure opinions from as many professionals as possible across various fields to ensure

that all material topics were covered by experts and that nothing essential was excluded. The survey was sent out to twenty Meyer Turku employees and one client representative, all working in procurement, energy efficiency, noise, hotel, occupational safety and sales. Respondents were asked to assess the most important sustainability topics of their field. Furthermore, a small group was interviewed on topics previously known to be significant, such as energy efficiency.

In the materiality assessment, energy consumption, waste and wastewater management, client decision-making and material selection were identified as the most important sustainability aspects. While the topics identified as most significant spread out across different points in a ship's life cycle, they should be taken into account as early as possible, even though some of the impacts take a while to manifest.

In terms of energy consumption, selection of fuel and engine, hydrodynamics and opportunities for route optimisation were identified as the most significant topics. For waste and wastewater management, air and water emissions were identified as the most important topics. And for material selection, the use of steel on cruise ships was identified as the primary topic.

Close cooperation with clients and suppliers enables the company to develop and implement new energy and waste management solutions. In connection with every ship ordered, Meyer Turku and the client enter into a binding shipbuilding contract, which includes client-specific technical specifications. For their part, the client uses the contract and its attachments as tools for guiding the delivery of the ship, including its sustainability and construction-time target levels. The technical specifications stated in the contract are the most important single factor that enables, or restricts, Meyer Turku's ability to make a direct impact on the ship's sustainability. ■



Most important sustainability topics of ship production, according to the Meyer Turku materiality assessment.

\*Carbon handprint is a term developed together with VTT Technical Research Centre of Finland, LUT University and Finnish companies to describe the positive climate impact of a product or service. (vttresearch.com)

# Measures

Meyer Turku constantly engages in measures to improve the energy efficiency of its ships and to reach the ambitious goal of a Net Zero ship concept with net-zero emissions. The latest measures include more efficient utilisation of waste heat, optimising various systems and adoption of alternative fuels. Meyer Turku has also invested in monitoring operational efficiency and continuous development throughout a ships' life cycle.

Meyer Energy Management System (MEMS) is an energy management tool that enables seamless monitoring of ship operations and helps both Meyer and its clients ensure that the ship functions as planned and expected. In addition to energy efficiency monitoring, this tool optimises and controls the production of on-board freshwater production, among other things. To ensure energy efficiency, Meyer Turku's energy efficiency experts use data produced by MEMS to analyse ships' overall performance – down to the smallest systems. By engaging in constant dialogue with the client regarding the ship's operative functions, the company can support the development of energy-efficient operations and help solve future problems.

Decisions and selections concerning on-board electricity production are essential to sustainability. In particular, this pertains to fuel selection and the dimensioning of methane emissions and the primary engine; the systems should be dimensioned in such a way that they are able to function at a level optimal to minimising emissions for most of the operating time.

Operative data has an especially important role in measuring the efficiency of changes and improvements designed to optimise energy efficiency and, consequently, guiding future development. The data can be used to optimise systems and improve the planning of future vessels. As parts in ships' energy systems keep evolving, opportunities to improve energy efficiency are constantly changing. Meyer Turku has to keep up with the progress to ensure its shipyard and clients continue to be pioneers in the travel industry.

## Fuel and production of electricity

Choice of fuel and decisions regarding a vessel's power station have a significant impact on the total emissions of the completed ship and its energy efficiency. Meyer Turku is constantly seeking better solutions and developing new technologies to enable the adoption of alternative fuels, for instance.

When comparing the environmental impact of current fuels, liquefied natural gas (LNG) stands out due to its many exceptional qualities. LNG contains no sulphur and produces considerably less nitrogen oxides and particle emissions than heavy fuel oil when burned. Nitrogen oxide emissions are reduced by about 80% when compared to reference fuel without catalytic

converters. LNG reduces ship's CO<sub>2</sub> emissions by 25% and total GHG emissions (CO<sub>2</sub> equivalent) by 10–15% compared to marine gas oil (MGO). Advancements in main engine technology have reduced methane slip that occurs during engine combustion events.

Together with multiple actors, Meyer Turku is looking into potential near-future marine applications for various biofuels, such as bioliquids and gases. In addition to bio-based fuels, the company is also researching alternative energy production technologies, such as hydrogen-powered fuel cells. Propulsion power is a vessel's single largest energy consumer, and Meyer Turku and its partners continuously look to develop methods which can reduce the propulsion power needed. This includes, among others, new propulsion solutions, hull shape optimisation and various coatings and antifouling solutions.

## Hydrodynamics

Improvements in hydrodynamics are important for energy efficiency because they help reduce the pressure resistance and friction between the water and the ship. A well-optimised hull shape can improve a ship's energy efficiency by several percentage points. Therefore, hull shape has a major impact on emissions and on the client's annual operating costs. While it is not the only hydrodynamic parameter that effects energy consumption, it has the single largest impact compared to other parameters such as length, draught, width and weight. A ship's total frictional resistance can be reduced with new technologies that reduce the friction between the water and the ship's surface, such as an air lubrication system. Even larger gains can be made by ensuring the keel is kept properly clean.

Ship's resistance can be reduced with a carefully designed uniform hull shape, including hull appendages, or by selecting, for instance, a POD-type azimuth thruster system that reduces the hydrodynamic resistance of the propeller shaft. Meyer Turku employs Computational Fluid Dynamics (CFD) to calculate the frictional and pressure resistance of its ships. The CFD calculations are iterated multiple times during the calculation process based on results generated. The calculation cycle is then repeated with optimised parameters until minimal resistance is achieved. The total hydrodynamic impact of the ship's various qualities is verified during sea trials.

The calculation and simulation methods available are constantly evolving. Compared to tests conducted with models, various simulation methods are typically more accurate and of higher quality because they can account for the actual size of the ship under construction.

## Material selection

Ship sustainability is about holistic project management as well as understanding factors that affect a vessel's sustainability, which is a particular focus in ships' material selection. Factors impacting the sustainability of materials, the impact of selected materials on the life cycle updates of a ship, and safe dismantling at end-of-life should be considered early on in the design phase. In an optimal situation, all phases of a ship's life cycle guide material selection. The amount of materials used in building a ship is immense: for instance, the Star of the Seas, under construction in 2024, requires approximately 50,000 tonnes of steel, 6,000 km of electrical cabling, 5,000 km of piping, 9,000 m<sup>2</sup> of windows, 600,000 litres of paint and 200,000 m<sup>2</sup> of carpeting.

A turnkey solution provider for the shipyard, Shipbuilding Completion Oy, a Meyer Turku subsidiary, provides turnkey deliveries for cruise ship communal areas. This includes space planning and construction based on the designs and material specifications made by the client's architect as well as procurement and installation of selected materials. The company constantly works to improve the traceability and sustainability of procured materials.

In addition to wear-resistance and fire safety, lightness is an essential criteria in selecting shipbuilding materials due to the direct correlation between a ship's weight and its fuel consumption. Piikkio Works Oy, another subsidiary of Meyer Turku, designs and manufactures all cabin and bathroom modules installed in the ships at the shipyard. Cabin module weight is optimised, and the best available technical solutions are used for energy and water conservation, among others.

## Waste management

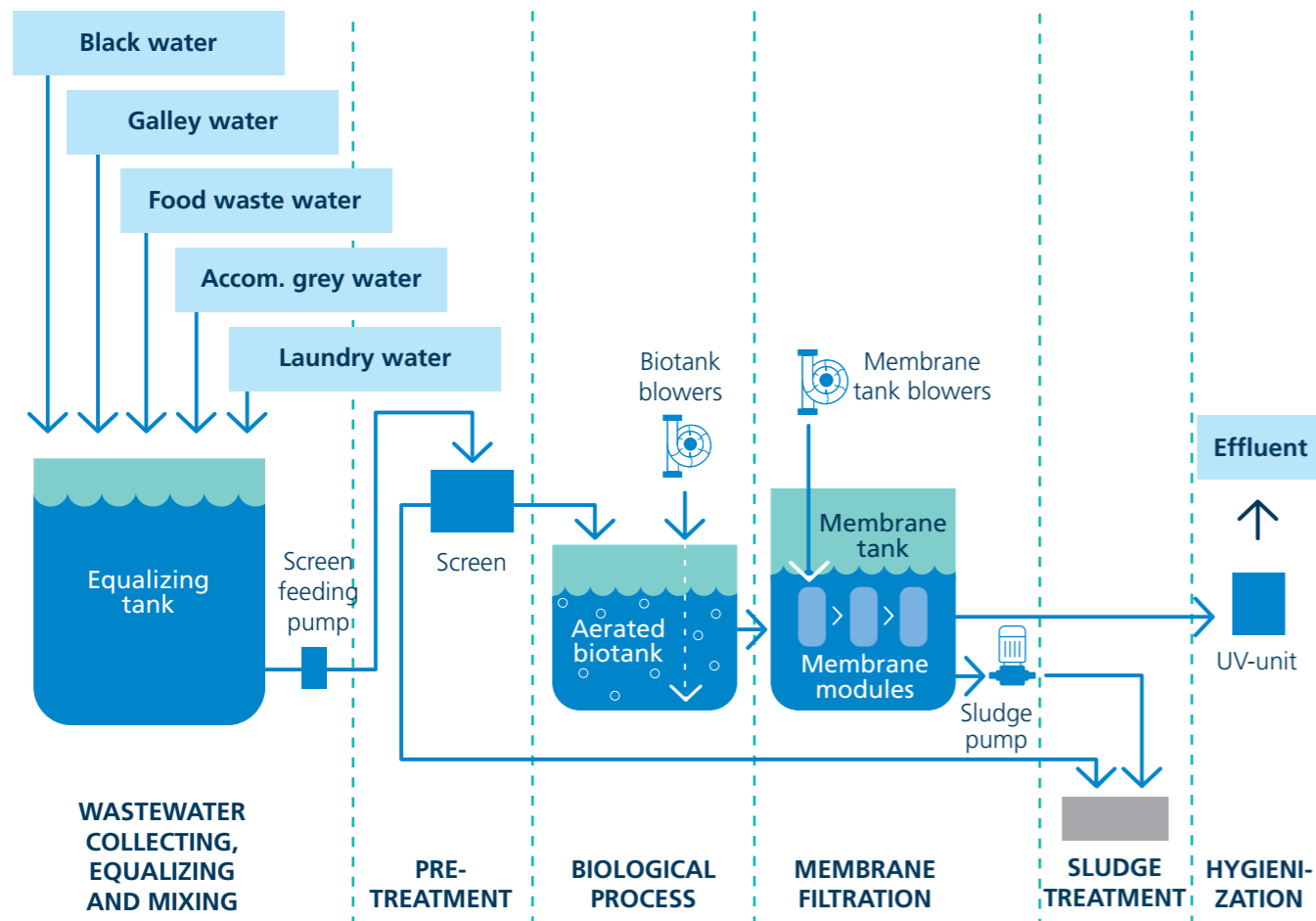
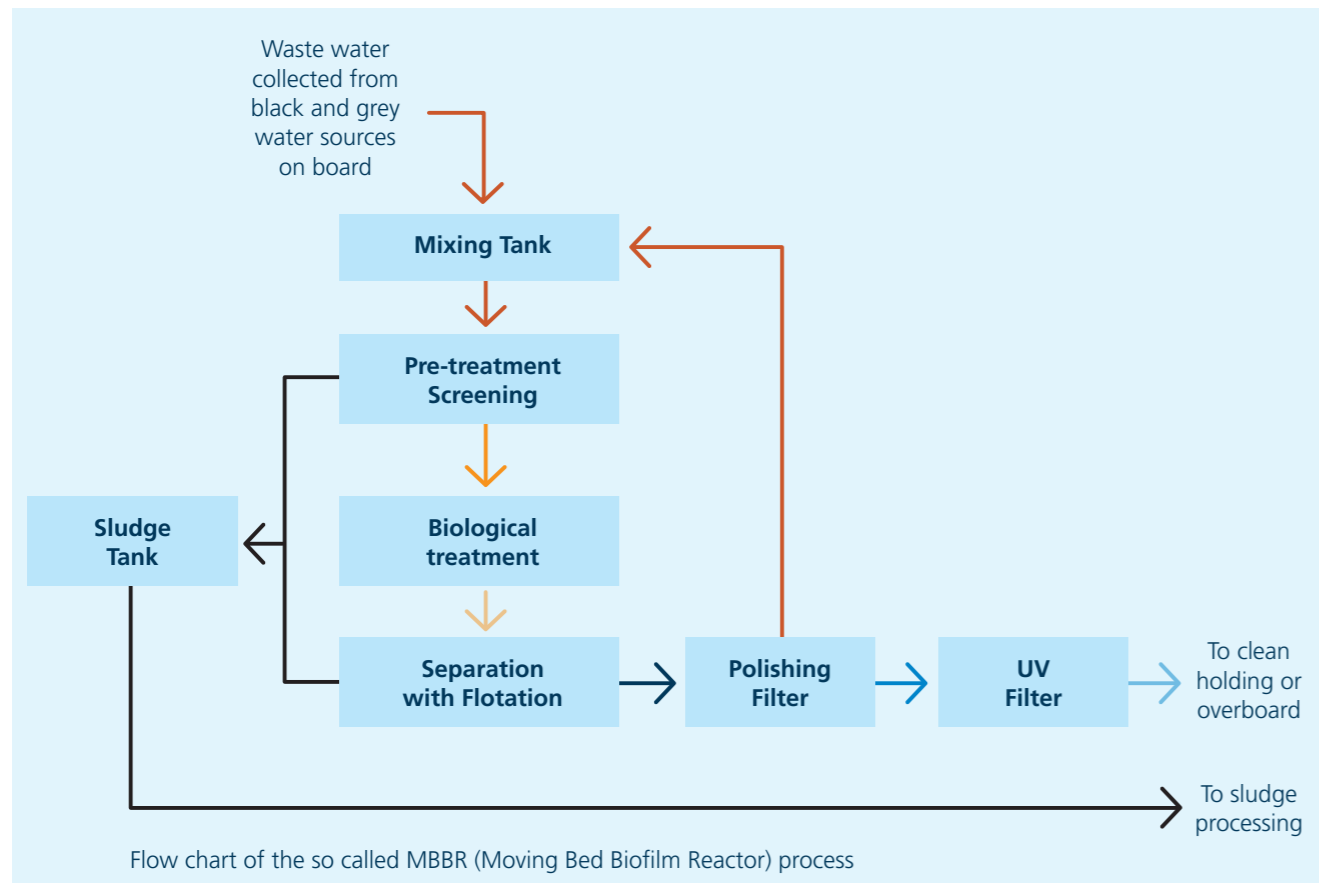
Cruise ships typically require efficient ways for processing waste and wastewater generated on board, because equipping a vessel with major storages for unprocessed water and waste is not possible or viable. Waste management costs at the port can also be significant. Meyer Turku has researched new and advanced waste management systems able to convert waste into a commodity that can potentially improve the environment and provide economic gain.

Meyer Turku's clients are increasingly interested in waste management solutions that enable recycling and help reduce a ship's environmental impact. While the shipyard can impact a ship's waste management with its efforts and Meyer Turku can offer various solutions for its client, the client is ultimately responsible for the decisions regarding waste management. Ship waste management solutions used by Meyer Turku include waste recycling, compression and pelletisation, storage for on-shore processing and burning waste in an on-board incinerator or using pyrolysis.

New type of waste processing systems, such as pyrolysis and hydrothermal carbonisation (HTC), can reduce ships' emissions and waste and even improve their energy efficiency. Gas produced by the pyrolysis system is burned in a boiler, which is a part of the waste management system, generating steam to the ship's steam system. This means that gas originating from the pyrolysis system actually produces energy for the ship. Biocarbon generated in pyrolysis can also be sold for other applications, such as steel manufacture or soil treatment. HTC is another alternative system for the production of biocarbon.

Cruise ships also generate lots of waste water, which mainly comprises of black water, grey water and galley water. Sewage treatment can be carried out in the cruise ships' own cleaning systems, which have to be certified and fulfil IMO requirements for treated wastewater. As an alternative for the treatment, wastewater can be collected into sludge tanks and then discharged to sewers at port. ■





## CASE:

## NEcOLEAP Sustainable Stateroom

The NEcOLEAP Sustainable Stateroom project won the Interior Innovation of the Year award at the Cruise Ship Interiors expo in London on December 5, 2024. This award is a remarkable acknowledgement of Meyer's development work. It emphasises the significance of sustainability as part of the shipbuilding industry on a global level.

The Sustainable Stateroom project aimed to create a next-generation cabin concept with an innovative design utilising alternative materials and smart features to improve energy efficiency and enhance the overall cruise ship guest experience. The objective was not to create a single cabin prototype but to produce a wide variety of solutions and options that advance sustainability and help support emissions reductions, used either individually or in combination with each other. ■



From left to right: Liina Vahala, Eija Uusitalo, Jenni Jokiniemi, Mirja Rasi-Mäki, Kimmo Hiukka, Sarita Manikas, Lise-Mari Hautala, Reetta Lindberg and Liina Blom.



## CASE:

## Net Zero ship concept

Meyer Group presented its latest net zero cruise ship concepts at the Seatrade Cruise Global in Miami, showcasing the outcomes of its ongoing research and development into low-emission maritime solutions.

A central focus was the Avatar cruise ship concept, developed as part of Meyer Turku's NEcOLEAP research project, which aims to develop a net zero emissions cruise ship by the end of 2025, and achieve the capabilities needed for its delivery by 2030.

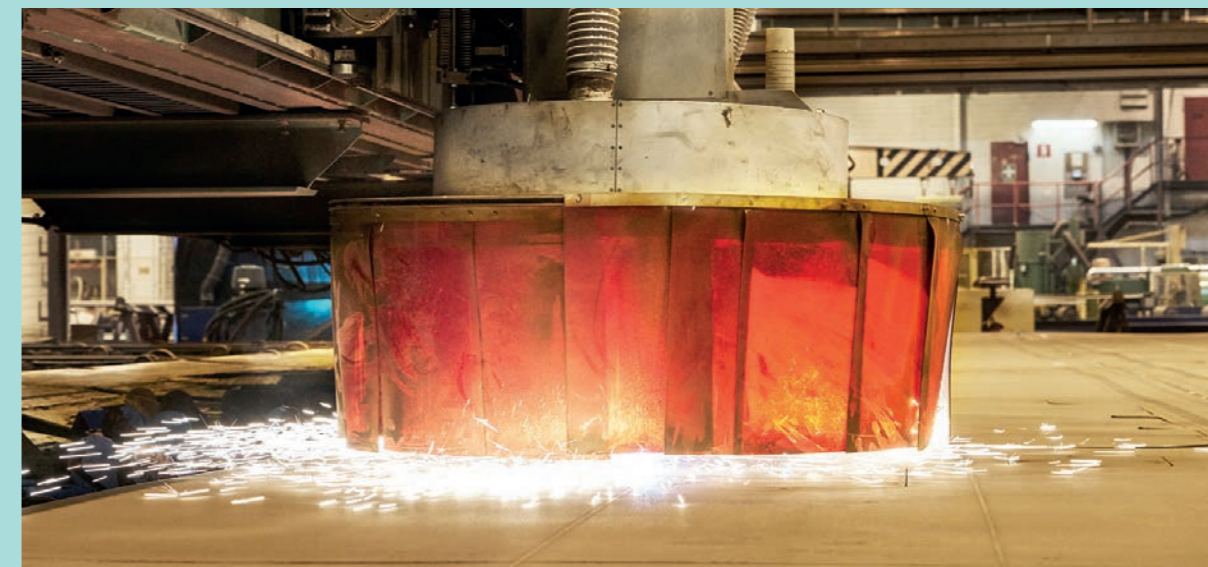
The Avatar concept includes:

- Automated galley logistics, which are designed to improve operational efficiency and reduce energy consumption.
- The use of alternative and recyclable materials throughout the ship's structure and outfitting.
- Redesigned staterooms to optimize space and functionality.
- Targeted energy efficiency improvements across key ship systems.

The design approach has followed circular economy principles, emphasizing sustainable material selection and design for recyclability. These measures aim to reduce both the environmental footprint during the ship's operational life and the material impact at end-of-life.

To further improve in-service efficiency, Meyer Group's digital unit ALFRED Maritime introduced a new AI-based energy management system. Developed in collaboration with internal energy efficiency teams, the system will enable ship operators to monitor real-time performance data and adjust operations accordingly. This data-driven approach supports reductions in fuel consumption and emissions, contributing directly to operational sustainability goals.

The development of these concepts reflects cross-functional collaboration across Meyer Group's shipyards, digital teams, and infrastructure units. Several components included in the Avatar design have been developed as modular solutions, allowing for adaptation and reuse across future builds. This approach increases scalability, making it possible to deploy sustainability improvements across a broader range of vessels and accelerating the group's transition towards net zero emissions. ■



## CASE:

## Steel Material Lifecycle Improvement

With increasing costs and the significant carbon footprint of steel materials, Meyer Turku's hull production and IT departments were faced with a common challenge: how to ensure efficient use of steel and timely delivery to shipbuilding? The Steel Material Lifecycle Improvement (SMLC) production development project was initiated to answer the question.

The NEcOLEAP-supported SMLC research project set out to increase the efficiency of production processes. The SMLC team started exploring how new technologies and improved use of data could be utilized in operational activities to support decision-making.

By combining data from several key systems in different production phases, such as basic and detail design, work planning, nesting, coordination and production-planning systems, the actual material needs could be better anticipated. The project also made the nesting process more efficient, which reduces material waste and improves overall production flow.

In addition, it was discovered during the piloting phase that the recycling of residual steel sheets has greater potential than expected. As a result, their recycling became more systematic and residual material is stored more efficiently for later use.

Together these measures led to significant cost savings and a reduced amount of material waste. Simultaneously, the carbon footprint of production lowered while data utilization capabilities increased. The annual reduction in steel to be ordered is equivalent to the yearly carbon footprint of 9 400 cars.\* ■



\*Calculated with an annual driving distance of 13,500 km with emissions of 150 g/km.

# 04 WORLD-CLASS SHIPYARD

Sustainability work at the shipyard is governed by the ESG-framework (Environmental, Social & Governance). It outlines a systematic approach for the company's environmental and corporate social responsibility as well as for risk assessment related to governance and for targeting development work to the correct focus areas. The framework helps identify and prevent local risks at the shipyard and also find new improvement opportunities in shipbuilding on a global scale. The framework is a practical tool which helps Meyer Turku deepen its understanding of the impact of different operational approaches on the company's overall corporate responsibility. In addition to people safety, it is important for Meyer Turku to control and minimise the impact of its shipyard operations to the environment, the neighbourhood and the nearby maritime area.

## Safety at the shipyard

In terms of occupational safety, a shipyard is an extremely demanding location. Meyer Turku shipyard employs a certified occupational health and safety management system (ISO45001:2018) which is audited by an external, accredited expert organisation every nine months. The management system covers all Meyer Turku Oy's functions and the operations of its network companies at the shipyard. According to the shipyard's principles, anyone working at the shipyard has the right to refrain from hazardous work and to abort such work.

Approximately 7,000 shipbuilders representing up to 80 nationalities work at the shipyard every day. Because a single ship fire can potentially cause major personnel and material damage to a ship under construction, the shipyard allocates significant resources for fire safety and fire prevention. In fact, ship fire has been identified as the number one safety risk at the shipyard. Safety improvement efforts are continuously made by adopting new technology, such as thermal cameras which help detect fires faster. Ship waste management was improved throughout 2024 because ineffective waste management correlates directly with on-board fire load. Other risks identified as high include internal traffic, lifting goods and people, and working at height.

Everyone working within the shipyard area, both company personnel and that of its network companies, are required to undergo training on security and environmental risks before given access to the shipyard. Meyer Turku provides HSE (Health, Safety, Environment) online onboarding in 19 languages to minimise the risk of misunderstandings with the safety instructions. What's more, employees are required to complete an occupational safety card course and, based on risk, other training as necessitated by their duties, such as hot work passes, crane and aerial lift training, training for electrical work safety card, EA training, and forklift training. In addition, all managerial training includes a separate HSE module which teaches occupational safety responsibilities as well as environmental and fire safety issues and shipyard waste management principles most relevant to managerial work.

In 2024, the shipyard (including the personnel of Meyer Turku Oy and its network companies) saw a total of 60 accidents that led to absences (the number was 83 in 2023). This is a decrease of approximately 28% from the previous year in the number of accidents leading to absences. The accident rate was 5.4 (8.9) for every one million working hours, substantially below the general average in construction and the industrial sector. The Piikkio Works cabin module manufacturer saw a total of 10 accidents that led to absences, causing the accident rate to increase from the previous year to 24.3 (12.2).

## Occupational safety risks at the shipyard



Unguarded machinery



Fire



Tripping / slipping



Unsafe electrical equipment and connections



Danger of getting crushed



Excessive strain



Overloaded vehicles and forklifts



Unsafe working at height



Falling objects



Confined spaces



Unsafe lifting operations



Stuck by foreign body



Handling of chemicals



Internal traffic



Unsafe loading bays



Open shafts and edges



Unsafe working platforms

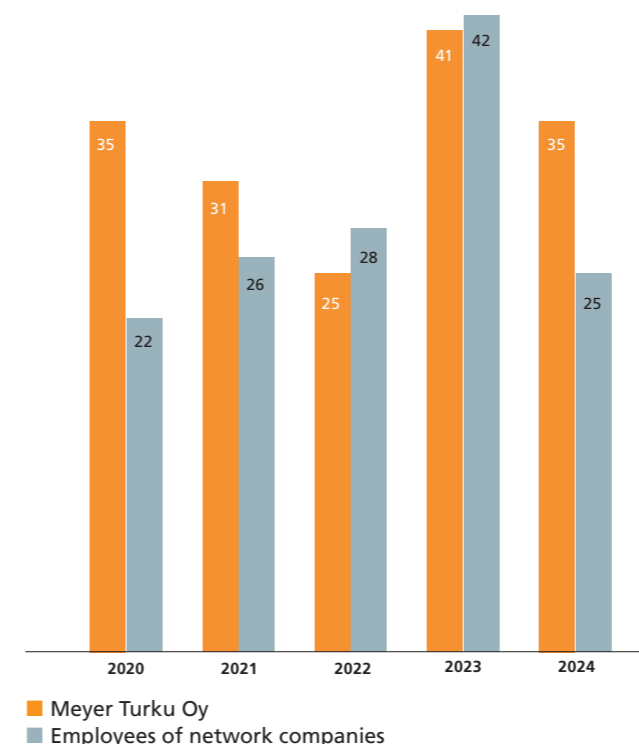


Poorly supported structures



Unfinished scaffolding

Accidents at the shipyard (qty)



### Occupational safety and health cooperation at the shipyard

The occupational health manager represents the employer in the occupational safety and health organisation and in any occupational safety and health cooperation. They also communicate with occupational safety and health authorities and insurance companies where necessary. To promote occupational safety, occupational safety representatives and department-specific ombudsmen participate in occupational safety and health cooperation as experts selected within the line organisation.

The shipyard does not have a dedicated occupational safety and health committee; statutory occupational safety and health cooperation takes place in staff meetings of the main departments and in division meetings where employees can directly influence matters related to occupational safety and health. Other statutory occupational safety and health committee tasks, such as the approval of an action plan and a management report presented by occupational health care, are tasked to the HSE steering group. This group naturally includes representatives from various personnel groups as well. Network companies have the opportunity to influence safety-related matters in production meetings with shipyard contact persons.

### Risk assessment

In terms of risk management, the company strives to identify, assess and minimise risks, capitalise on new opportunities, allocate resources efficiently, improve continuously, support decision-making, build stakeholder trust and develop its company culture. Meyer Turku employs a systematic risk management process with a continuous operating model which identifies, assesses and manages qualitative, time-related and cost-related risks of various HSE aspects. The shipyard's risk management process is based on the SFS-ISO 31000: 2018 standard.

Meyer Turku's risk management is split into separate processes for project risk management and all-encompassing, corporate-level risk management. The combination creates an operating model which establishes transparent and comprehensive reporting of existing risks and an efficient escalation path. It also enables timely resource allocation for risk reduction. The risk management process is based on a harmonised risk assessment matrix which makes it easy to compare various risks.

With machinery, equipment, and transport and lifting devices constantly updated, shipyard operations are in perpetual transition. Therefore, risk assessment at the shipyard should also be updated regularly. With risk assessment, department-specific risk, hazard and stress factors in the shipyard working environment are systematically identified. With the help of checklists, every shipyard worker has the opportunity to make an impact and improve the shipyard's safety by reporting hazardous situations and risks they observe in their work. Once the dangers have been identified, their potential and actual impact on employee health and safety is carefully evaluated together with employee representatives, department management and occupational health nurses, and risk-reducing measures are implemented.

The shipyard maintains a risk register with about 1,900 identified risks, of which 327 were updated in 2024. Risk assessment summaries prepared for the departments are used in department-specific onboarding. Partners are required to employ statutory risk assessment and occupational safety and health action programmes that are reviewed and assessed in safety meetings attended by the shipyard HSE department representatives and suppliers, as well as in inspections conducted by occupational safety authorities.

The shipyard uses the **Meyer EYE** app that helps both shipyard and partner network employees make an impact on shipyard safety. Reporting safety observations should be easy, quick and readily available. At the shipyard, reports can be submitted with e.g. a phone, a tablet or a computer browser. Serious deviations, such as accidents, are investigated by involving both line organisation representatives and occupational safety and health experts where necessary. At the same time, remedies are determined to avoid similar deviations in the future.

In addition to HSE observations, the app can be used to report safety walks and monitor any resulting tasks as well as view the information, safety data sheets and risk assessments of chemicals in use at the shipyard. Occupational safety risk assessments are also currently entered directly into the system. The number of HSE observations remained at a level similar to the previous year, at about 3,000 per year.

	2023		2024	
	Employees	Non-employees	Employees	Non-employees
Percentage of own workers who are covered by health and safety management system based on legal requirements and (or) recognized standards or guidelines	100 %	100 %	100 %	100 %
Number of fatalities in own workforce as result of work-related injuries and work-related ill health	0	0	0	0
Number of fatalities as result of work-related injuries and work-related ill health of other workers working on undertaking's sites	0	0	0	0
Number of recordable work-related Lost time accidents for own workforce	41	0	35	0
Rate of recordable work-related Lost time accidents for own workforce (per 1 M worked hours)	12,5	0	10,6	0
Number of recordable work-related medical treatment accidents for own workforce	38	0	44	0
Number of recordable work-related First aid accidents for own workforce	61	0	50	0
Number of all recordable work-related accidents for own workforce	140	0	129	0
Rate of all recordable work-related accidents for own workforce (per 1 M worked hours)	42,5	0	39,1	0
Number of cases of recordable work-related ill health of own workforce according to Finnish Occupational Accidents and Diseases Act 459/2015	0	0	0	0
Number of days lost to work-related injuries and fatalities from work-related accidents, work-related ill health and fatalities from ill health	405	0	596	0

- Definitions:**
- Non-employees = Freelancers and other employees who are not directly managed by Meyer Turku Oy
  - Lost time accident = A reported occupational accident at the shipyard area causing a minimum absence of one work shift
  - Medical treatment accident = A reported occupational accident at the shipyard area requiring medical treatment but not causing a minimum absence of one work shift
  - First aid accident = A reported occupational accident at the shipyard area not requiring medical treatment and not causing a minimum absence of one work shift
  - Number of days lost = Work days covered by the statutory workers' compensation insurance (not including commuting accidents)



Fire safety

Fire safety work has the important goal of protecting shipyard employees and visitors, property, the environment and normal functions in hazardous situations. Potential fire is a pure risk that may, at its worst, endanger the existence of the entire company. All companies are unique, meaning that fire hazards always require company-specific assessments that take local operations, special characteristics and the operating environment into consideration. When an accident happens, or is expected to happen, the shipyard's fire department is prepared to immediately protect and rescue people, shipyard assets and the environment, to limit damages and to mitigate the consequences.

Everyone working at a Meyer Turku shipyard are at the heart of preventive fire safety. Litter and packaging materials continue to be the most common culprits for fires. Therefore, keeping a clean worksite remains one of the key measures in preventive fire safety and a focus at all levels.

A fire safety level (technology and structures) corresponding to the shipyard's operations, readiness and their regular upkeep also ensure a good starting point for fire prevention. Working methods and practices also play a major role in the company's risk management. By focusing on improving attitudes and practices as well as providing training for shipyard-specific unique characteristics, substantial prevention of fire hazards is possible. Active commitment to the shipyard fire department's development work and its prerequisites for operation by a committed executive team has played an essential role in successful fire safety work. The shipyard's fire department boasts professional-level firefighting equipment for managing challenging accident situations. The shipyard's fire department also serves as a first response unit for the wellbeing services county of Southwest Finland.

Fires are still easier to prevent than put out

There have been no initial fires caused by flame cutting since 2022. This is encouraging for preventive fire safety which uncompromisingly complies with hot work risk levels and their impact on hazardous hot work in ships under construction. Daily assessment of hot work risk levels means that the most hazardous hot works may only be conducted with a hot work permit and under the expert supervision of the fire department.

Onboard risk levels continue to dictate the permit requirements for hot work, and the goal is to increasingly replace the most hazardous hot work with alternative fire-safe work methods. Alternative work methods are measures that best improve hot work safety. However, unlearning old familiar habits is one of the challenges in the adoption of the new methods.

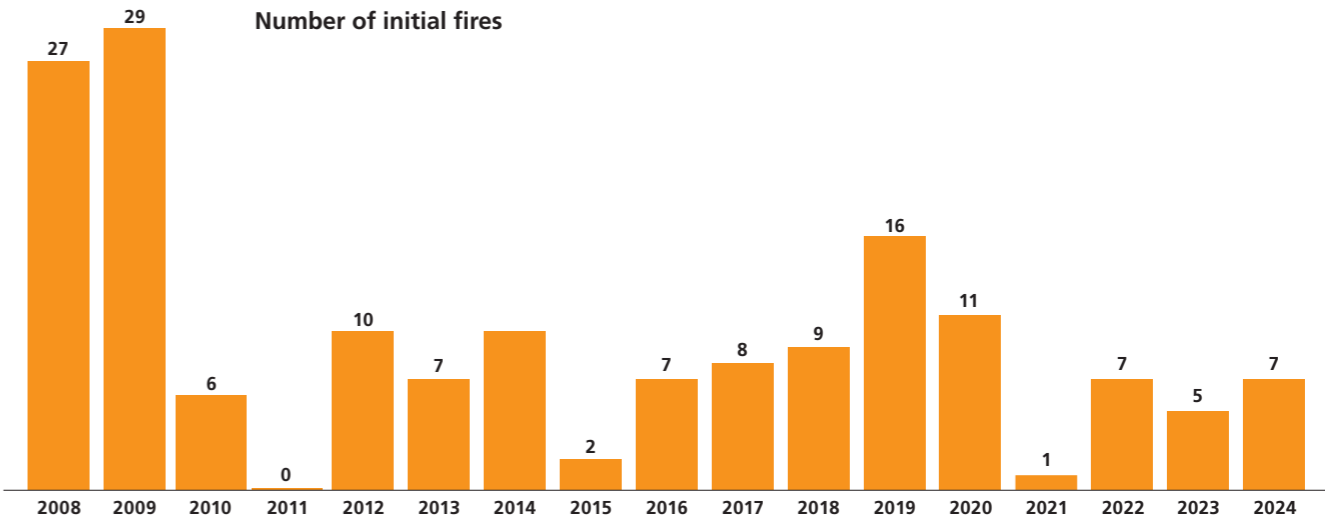
Fire alarm response time

Fires typically progresses in four stages called the ignition stage, the growth stage, the fully developed stage and the decay stage. In the ignition stage, fire advances relatively quickly for five to ten minutes. In this stage, employees and the fire department can easily put out the initial fire with a first-aid extinguisher before the fire turns serious.

The development of a fire naturally depends on the materials that are burning – in the last 50 years, the materials used in shipbuilding have changed considerably. As a consequence, a fire is capable of developing from the ignition stage to the fully developed stage extremely fast, currently taking only three minutes on average. For this reason, it is of utmost importance that first-aid extinguishing can be started without delay.

Since 2021, the shipyard's fire department has been monitoring emergency response times as a standard procedure. The target for fires and accidents on a ship under construction was set at two minutes. A two-minute emergency response time requires a quick response to all fire and accident alarms on the ship, with the first fireman at the scene in less than two minutes. This requires careful work shift planning, with firemen efficiently placed around the ship. The goal is quite challenging as hot work is performed on a ship hundreds of times each day, and a construction stage fire alarm system may react even to small amounts of welding fumes and erroneously sound alarms for firemen at the welding spot.

In 2024, the emergency response time stood at 1 minute 45 seconds. Almost 500 fires and accidents were triggered by alarms, most of them false. The shipyard's fire department was able to achieve the target set in 2021, even though the shipyard was building the largest cruise ship in the world.



# Shipyard environmental impact

Meyer Turku has set an ambitious goal of reaching net-zero emissions for the shipyard's own operations by 2030. Other environmental goals and measures set for the shipyard include ensuring high environmental quality at the shipyard area, supporting its biodiversity and improving the state of its surrounding environment. The shipyard is also committed to promoting circular economy in its operations. In 2024, the shipyard had several ongoing projects to help achieve its environmental goals. The separate ongoing projects aimed to advance both circular economy and waste management, improve shipyard energy efficiency and increase biodiversity at the shipyard. The shipyard also had several ongoing projects related to resource efficiency.

The shipyard emits noise and emissions to air and water, and potentially to ground in conjunction with accidents. When changes are made to shipyard operations, the resulting environmental impact is always assessed. The goal is to avoid increasing adverse environmental impact. An environmental risk assessment is conducted at the shipyard at least every five years, and the assessment is always updated in connection with any material changes to operations. Based on the assessment, environmental risk at the shipyard is mainly negligible or low. Two environmental risks have been assessed as moderate, both related to waste management and littering.

## Emissions calculations

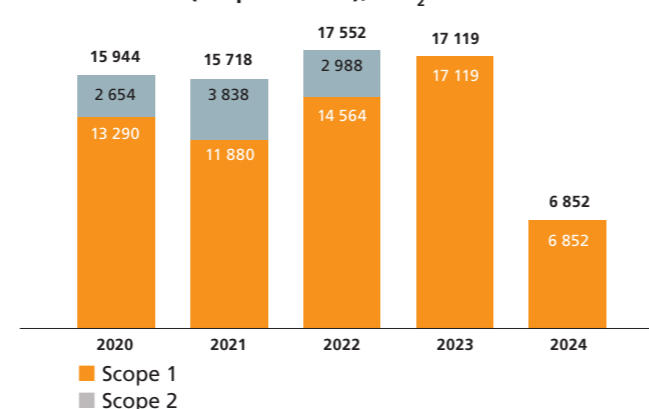
In accordance with Meyer Turku's corporate responsibility strategy, the goal is to reach net zero for the shipyard's own emissions by 2030. Progress towards this goal and the impact of the measures are monitored by calculating the greenhouse gas emissions generated by the shipyard's operations annually in accordance with the GHG protocol. Meyer Turku shipyard's emissions calculations comply with the regulations of the environmental permit (ESAVI/22480/2018).

Due to the decision to switch to district heating with Guarantee of Origin, no Scope 2 emissions have been generated by Meyer Turku's operations since 2023. The district heating used at the shipyard is produced at Turku Energia's Kakola heat pump plant. Furthermore, some of the electricity used by the shipyard is produced with the solar power plant on the roof of the shipyard's steel production facilities.

In 2024, Meyer Turku reduced its Scope 1 emissions significantly, up to 60% from 2023. Compared to 2017, the shipyard's Scope 1 and 2 emission intensity (kgCO<sub>2</sub>eq/h) is down 90%. A major contributing factor was the size of the ship under construction and, consequently, its fuel consumption in the commissioning and sea trial stages. And because Mein Schiff 7 was the seventh ship in the series, only one sea trial was needed. The continuing adoption of biofuel for heaters that started in 2023 also made a big impact, reducing fossil emissions by approximately 3,500 tCO<sub>2</sub>e. The use of biofuel doubled from 2023. Due to the refinements made to, for instance, calculation method and sources of information for 2024 emissions calculations, the figures reported earlier for 2022 and 2023 have likewise been updated in this report. With the refinements, Scope 1 and Scope 2 emissions for 2022 reduced by a total of approx. 320 tCO<sub>2</sub>e and Scope 1 emissions for 2023 by approx. 80 tCO<sub>2</sub>e.

In shipyard operations, the most significant direct Scope 1 emission sources include fuel consumption and welding gases of the ship under construction. The use of solvents generates volatile organic compounds, i.e. VOC emissions, which form tropospheric ozone hazardous to humans, flora and fauna. The majority of the shipyard's VOC emissions are generated while pre-processing steel sheets. The thermal treatment of VOC emissions at the RTO facility (Regenerative Thermal Oxidizer) has helped significantly reduce VOC emissions in the pre-processing stage, as the oxidation process converts VOCs into less harmful substances like carbon dioxide and water. In accordance with the shipyard's environmental permit, in-house control is conducted annually and particulate and VOC emissions are measured every five years. The pre-processing line includes the inspection of particulate filters from shot blasting and the RTO facility. According to measurements made in 2025, the RTO facility had a degree of purification of 98.4% and the average concentration of VOC gases stood below the threshold set in the environmental permit.

CO<sub>2</sub> emissions (Scope 1 and 2), tCO<sub>2</sub>



\*Emissions intensity in relation to hours worked at the shipyard, including network.

## Emissions to air and greenhouse gas emissions

Emissions to air are caused at the shipyard by shot blasting, painting, use of thinners, heating and transport. In accordance with a monitoring plan as stipulated in the environmental permit, the shipyard conducts air emissions measurements which study the particulate matter concentration in the exhaust air resulting from shot blasting and the concentration of volatile organic compounds (VOC) in the exhaust air of painting facilities.

Air emissions measurements were taken in 2024 in accordance with the monitoring plan. Based on the measurements, the processing of air emissions meets the level required in the environmental permit. In 2024, the shipyard started to transport its thinner waste outside the shipyard for cleaning. Once cleaned, thinners are returned to the shipyard for reuse, helping reduce the amount of thinners procured. Opportunities for further improvements in the recycling of thinner will be examined in 2025.

Greenhouse gas emissions at the shipyard are generated by transport, welding, steel preproduction line and fuel consumption of the ship under construction. Shipyard logistics rely on forklifts and reach stackers which run on combustion engines. Ships are heated with heaters powered by HVO biofuel (Hydrotreated Vegetable Oil), electricity and district heat.

To reach net zero by 2030, the shipyard has launched projects which aim to reduce the use of fuel. The goal is to discover alternative fuels and heating and transport solutions. In 2024, the construction of a district heating tower was completed at the shipyard. It enables the use of district heat rather than HVO for heating the ship under construction. Switching to a new type of heating helped optimise energy use, resulting in reduced heating costs. During 2024, the shipyard piloted the use of electric forklifts as alternatives to regular internal combustion forklifts.

## Water and noise emissions

Shipyard water emissions result from waste water discharge to sewers and rain water directed to the sea and the ditches surrounding the shipyard. The shipyard does not employ any processes which produce significant quantities of process waste water. Waste water discharged to sewers comes mostly from staff rooms. The quality of rain water discharge into the environment has been investigated in accordance with the monitoring plan based on the environmental permit. According to the investigations, rain water only has a minor straining impact on the maritime area. Separate sediment samples are another tool for studying the straining impact on the sea.

The shipyard emits noise due to both logistics and machinery. The shipyard employs noise modelling, verified with noise level measurements in 2022. According to the results, the noise level caused by shipyard operations remains below the thresholds set in the environmental permit. In 2024, shipyard operations did not trigger any external reports of environmental harm.

## Energy consumption and energy efficiency

Energy use management is an integral part of the company's corporate responsibility work because shipyard operations are highly energy-intensive. A major part of the energy is consumed by the maintenance of large production facilities, electricity and heating needs of the shipbuilding process as well as welding and steel processing. Meyer Turku has invested in increased measuring accuracy and consumption data analysis, helping identify consumption clusters and target energy-saving measures more effectively. In 2024, special attention was given to the use of district heat in ship heating, which reduced both fuel usage and greenhouse gas emissions.

Energy efficiency is one of the key environmental measures at the shipyard. It plays a significant role in combating climate change. Improving energy efficiency not only reduces greenhouse gas emissions but also bolsters the company's competitive edge. Additionally, sustainable energy use supports Meyer Turku's goal of net-zero emissions (Scope 1 and 2) by 2030.

Meyer Turku joined the Energy Efficiency Agreement (EEA) for Industries at the beginning of 2023 and committed to savings of 7.5% (–9,588 MWh) in energy use by the end of 2025. To reach this goal, determined development efforts were launched with Turku shipyard's own personnel and selected partners. While a two-year timeframe was an ambitious objective, the purposeful efforts helped the shipyard reach – and even exceed – the 7.5% goal during 2024. In 2024, key measures included increased measuring accuracy for district heat consumption. This led to optimising the use of ventilation units, repairing units with faulty operations and adjusting the units' heat recovery systems. These and other energy efficiency measures had an estimated combined impact of 4,895 MWh/a, lifting the total impact to 10,990 MWh, approximately 114% of the EEA goal.

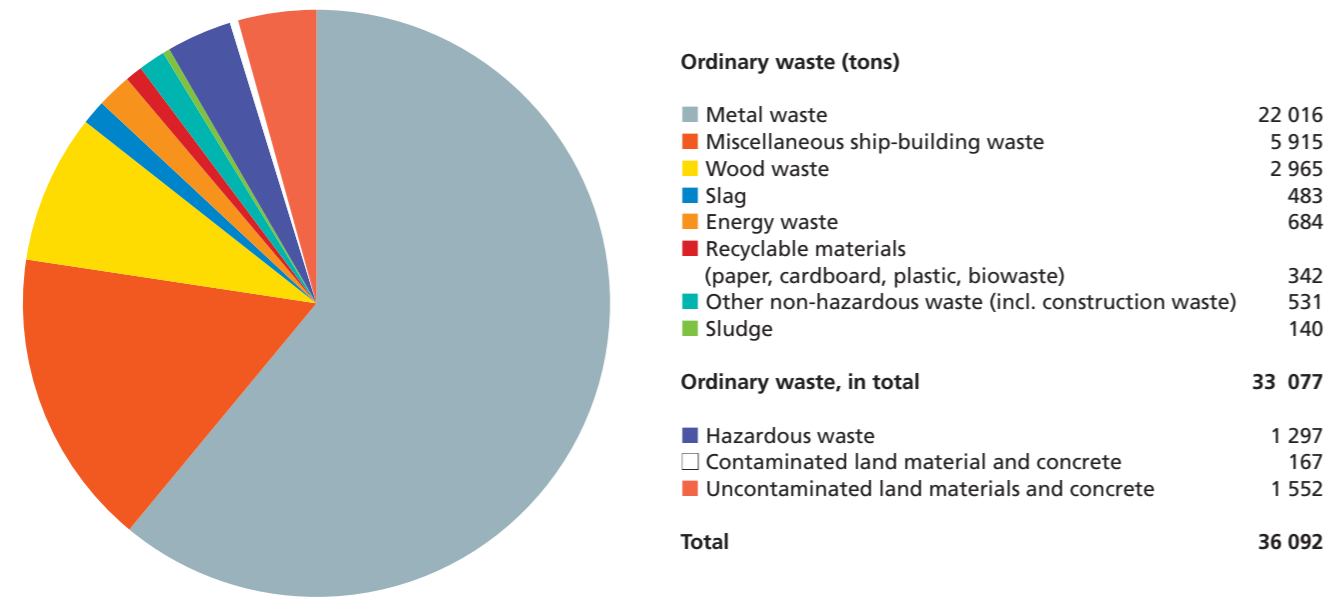
The company has taken the following energy-saving measures (ESM):

- In 2018–2023, a total of 29 ESMs were taken with a total impact of 6,095 MWh/a
- In 2024, a total of 10 ESMs were taken with a total impact of 4,895 MWh/a
- In 2018–2024, a total of 39 ESMs were taken with a total impact of 10,990 MWh/a

Even though the target set in the Efficiency Agreement has already been exceeded, efforts to improve energy efficiency continue. Energy efficiency is a key part of Meyer Turku's corporate responsibility strategy, and increasingly stringent regulations further enhance its importance. Meyer Turku wants to be a pioneer in marine industry energy efficiency and promote both environmentally and financially sustainable business.

**Featured highlight:**  
Scope 1 and Scope 2  
emission intensity (kgCO<sub>2</sub>eq/h)  
–90 % since 2017

Amount of waste 2024



Waste management and circular economy at the shipyard

In 2024, an ongoing circular economy project at the Turku shipyard aimed to promote circular economy measures in the shipyard’s operations. A shipyard circular economy project is a large undertaking where key circular economy principles are taken into account and, based on them, a comprehensive circular economy programme is created for the shipyard’s production. As part of this programme, plans are being made for immediate, concrete actions to improve waste management for both the shipyard and ships under construction. Shipyard operations generate a lot of waste; in 2024, the biggest individual waste components were metal waste, miscellaneous shipbuilding waste and energy and wood waste.

The Turku shipyard circular economy project is divided into three work packages:

- 1. Creating a circular economy programme
- 2. Improving waste management at the shipyard
- 3. Improving on-board waste management

The two latter subprojects aim to make tangible changes in shipyard waste management. The purpose of the circular economy programme is to increase knowledge of circular economy’s impact on business operations and to implement it as a principle part of Turku shipyard’s production, particularly by advancing smart and efficient use of procured resources, reducing the amount of generated waste and actively seeking recycling solutions for generated waste.

The shipyard’s circular economy programme was devised in cooperation with the University of Turku by conducting research on industrial symbioses and planning concrete actions for reducing the amount of waste and procured materials. The improvement of shipyard waste management focuses on managing waste in the entire shipyard, excluding on-board waste management. The purpose of these improvement measures is to make waste management more efficient, reduce total waste and increase the recycling rate.

In 2024, pilot projects were carried out to improve waste management in the shipyard area, testing new ways to organise waste management for selected areas, formulating new waste management instructions and testing new types of waste bins to increase source separation. Preparations were also made for a 2025 waste sorting station pilot designed to test on-site sorting of mixed construction waste and wood waste generated at the shipyard to reduce the number of waste transports.

Organising waste management for a ship under construction has turned out to be quite challenging. In cramped spaces, source separation becomes a challenge and moving waste off board is a laborious process due to the lifting required. A number of waste management pilots were carried out at the ship under construction during 2024. In the pilots, new type of waste bins were tested, as well as new ways to organise waste management for selected areas and to move waste off board. New waste management instructions were also created for the ship under construction.

By upgrading and developing waste management principles, it is possible to reduce waste and its adverse effects, increase recycling, improve work and fire safety on board, and enhance working conditions.

Water consumption and waste water

Approximately 220,000 m3 of water is used at the shipyard each year, mainly in staff rooms. In shipbuilding, water is only used to test the sealing of the hull and the tanks, i.e. in a pressure test. In addition, water is used to clean machinery and equipment and to fill the tanks where necessary. All water used at the shipyard comes from the water supply network of the city of Turku. Due to how water is used at the shipyard, there are no measures of significance available to reduce its usage.

Waste water from the shipyard is discharged to sewers of the city of Turku. Water used in testing the sealing of the hull and the tanks is directed into to the sea. Water used in a

pressure test does not become contaminated and therefore does not present a risk of environmental pollution. However, if discharged to sewers, it would put an unnecessary strain on the sewage system and the waste water treatment plant. Waste water discharged to a sewer originates mainly from staff rooms. Its quality corresponds to municipal waste water.

At the shipyard, rain and melt water is directed into the surrounding ditches and the sea. The quality of rain water runoff is monitored in accordance with the monitoring plan based on the environmental permit. When construction work takes place at the shipyard, the quality of rain water runoff in the construction area is always assessed based on the operations conducted in the area. The decision on whether to build an oil separator on new areas under construction will be based on the quality of rain water runoff or the leak risks resulting from operations in the area.

Biodiversity

The Turku shipyard is located at Raisio-lahti in the Perno area, west of the centre of Turku. The shipyard area covers 1.24 square kilometres, most of which is paved production areas and logistics routes. However, on the perimeters of the shipyard, you can find leaf trees typical to the area. In addition, both the shipyard and its immediate vicinity are home to oak groves, rocky meadows and coastal grassland. In addition to the natural habitat typical to the area, the Raisio-lahti bayfront north of the shipyard is also home to critically endangered (CR) small rocky meadows which are classified as traditional biotopes, as well as coastal meadows. East of the shipyard, you can find the protected Ankkurikylä hardwood forest, while the southside boasts the valuable Koivu-luoto and Verkkoluoto areas where nature has remained fairly wild for a long time. These areas are also home to endangered biotopes, such as critically endangered (CR) meadows, endangered (EN) black alder flood-meadows and vulnerable (VU) groves.

In close proximity to the shipyard, the end of Raisio-lahti bay and the adjacent bayfront is another significant natural site. As a valuable waterfowl habitat, it is a protected area. Ruissalo island is a Natura 2000 protected area, with one of

the highest biodiversity values in Finland. The island is located close to the Turku shipyard and is home to, among others, an oak forest which is the most extensive and, in terms of nature conservation, the most valuable in Finland.

During 2024, a project called ‘Biodiversity’ under the NEcOLEAP green transition project was launched to study and promote biodiversity in the shipyard area. The purpose of the project is to gain an understanding of the local ecosystem’s current state of biodiversity. This is carried out by compiling information from prior ecological surveys conducted in various projects and filling out the blanks for any information that was previously not available. Additionally, the project sets out to study and identify the most significant impacts on biodiversity by the shipyard’s local operations. The project is coordinated in close cooperation with Åbo Akademi research scientists, and the related pilot projects involve educational institutions, such as Turku University of Applied Sciences.

The project will include both research-based and functional aspects. The project will help assess and analyse the shipyard’s impact on the marine environment through, for instance, its rain water runoff and the spread of sediments that find their way into the sea. The purpose of the project is to create a foundation and conditions for continuing efforts to foster and promote biodiversity at the Meyer Turku shipyard. The project will run through the end of 2025, by which time the studies and the pilot projects will be completed.

In the summer of 2023, a rocky meadow located next to the shipyard’s main gate was cleared out. During 2024, an extended maintenance plan was devised for the meadow, one that also takes the nearby mixed coppice into account. During spring and summer 2025, nature management measures will be taken to, among other things, remove invasive species and improve the growing conditions for the young oak trees in the area. A maintenance plan was also implemented for the oak grove located north-east of the shipyard. Measures will be taken during the spring, and the oak trees in the area will get a better chance to thrive. ■



# Environmental figures

## Energy, electricity and water consumption

Meyer Turku Oy					
	2020	2021	2022	2023	2024
District heating, MWh	37 380	48 272	41 075	44 995	41 606
Electricity, MWh	67 043	73 067	76 293	78 173	71 713
– of which produced in our own solar power plant	417	515	510	452	434
Water consumption, m³	144 500	172 000	223 960	216 250	194 000

Piikkio Works Oy					
	2020	2021	2022	2023	2024
Electricity, MWh	1 135	985	1042	846	1 032
Light fuel oil, kg	32 808	5 091	31 360	23 654	50 463
Liquefied gas, m³*	121 548	142 158	107 182	92 149	130 814
Vedenkulutus, m³	1 852	1 716	1 613	829	1 607

\*Liquified gas previously reported in litres but the numbers were in fact in cubic metres (m³)

Technology Design and Engineering ENGnD Oy					
	2020	2021	2022	2023	2024
District heating, MWh	63	66	62	71	66
Electricity, MWh	42	35	38	39	29
Water consumption, m³	n/a	67	56	65	67

The company is a tenant at the property, KPIs calculated based on floor space (m²) used

## Shipyard’s carbon dioxide emissions (Scope 1\* and 2), tons of CO<sub>2</sub>

	2020	2021	2022	2023	2024
Scope 1	13 290	11 880	14 600	17 200	6852
Scope 2	2 654	3 838	3 270	0	0
Total	15 944	15 718	17 870	17 200	6 852
Emission intensity (kg CO <sub>2</sub> eq/h)*	4,1	4,0	2,1	1,8	0,58

\*Emission intensity in relation to hours worked, incl. working hours of partner network at the shipyard

## Other airborne emissions (tons)

	2020	2021	2022	2023	2024
Particulate matter (PM)	2,6	2,4	3,0	4,6	3
Nitrogen oxides (NO <sub>x</sub> )	185,0	167,7	218	339	154
Sulphur oxides (SO <sub>x</sub> /SO <sub>2</sub> )	3,1	2,8	3,87	6,12	3
Other volatile organic compounds (VOC)	158,6	87,2	130,5	153,5	125

## Waste by component (tons)

Meyer Turku Oy					
	2020	2021	2022	2023	2024
Metal waste	14 676	21 459	19 993	21 849	22 016
Miscellaneous ship-building waste	5 880	4 197	5 156	6 361	5 915
Wood waste	2 409	1 774	2 267	2 465	2 965
Slag	1 697	778	798	1 045	483
Energy waste	493	401	419	765	684
Recyclable materials (paper, cardboard, plastic, biowaste)	295	257	286	469	342
Other non-hazardous waste (incl. construction waste)			491	52	531
Sludge	197	44	64	75	140
Ordinary waste, in total	25 767	28 910	29 474	33 082	33 077
Hazardous waste	316	212	295	1 574	1 297
Contaminated land materials and concrete	1 039	399	251	0	167
Uncontaminated land materials and concrete	2 223	94	106	3 325	1 552
Total	3 577	29 615	30 126	37 981	36 092

Piikkio Works Oy					
	2020	2021	2022	2023	2024
Energy waste component	122	76	142	50	62
Metal waste	103	68	108	93	202
Cardboard and paper	92	55	102	53	88
Construction waste	25	18	14	12	15
Miscellaneous wood	2	0	0	0	0
Paint waste	0	0	0	0	0
Combustible waste	0	0	0	0	0
Plastic waste				15	48
Other (total)	3	4	3	0	14
Total	347	221	369	223	429

Technology Design and Engineering ENGnD Oy				
	2021	2022	2023	2024
Energy waste component	0,03	0,09	0,12	0,13
Cardboard	0,02	0,02	0,06	0,08
Confidential documents	0,2	0,2	0,06	0,05
Combustible waste	0,79	0,78	0,92	0,83
Total	1,04	1,085	1,16	1,09

Waste recycling and disposal (tons)

Meyer Turku Oy					
	2020	2021	2022	2023	2024
Recycling	14 210	21 177	20 131	22 009	23 128
Recovery (including energy recovery)	9 084	6 532	8 675	13 772	11 729
Reuse	691	486	140	366	0
Incineration disposal and physicochemical treatment (hazardous waste)	337	205	243	1 462	290
Composting and decomposition	22	-	185	340	281
Disposal at landfill	4 880	1 215	752	31	665

Piikkio Works Oy					
	2020	2021	2022	2023	2024
Recycling	195	123	210	161	352
Recovery (incl. use for energy)	124	76	142	50	62
Landfill disposal	25	18	14	12	15
Other	3	4	3	0	0
Incineration	0	-	-	0	0
Total	347	221	369	223	429

CASE:  
Implementing 5S+Safety at the Central Warehouse

5S+Safety is a method for organizing and maintaining efficient, clean, and safe work environments through five steps: Sort, Set in Order, Shine, Standardize, and Sustain. During 2024, a new 5S+Safety project was launched at the Meyer Turku Central Warehouse to explore how this method could be better implemented by shifting ownership from management to the workers themselves.

While similar initiatives have been introduced in the past, previous efforts ultimately failed and were forgotten due to inadequate employee engagement and resistance to change. A common misconception was that the sole purpose of 5S+Safety is to superficially tidy up and get organized, an exercise driven by management without real involvement from those doing the work. This project set out to test whether a worker-led approach could lead to more lasting and meaningful results.

One of the main goals of the project was to build a self-sustaining workplace culture around 5S+Safety in which employees themselves take the lead in organizing their spaces, making decisions together, and holding each other accountable. At the same time, the project supports strategic planning for the warehouse by clarifying the state of material flows and preparing for possible shifts in operating models towards the future Central Warehouse 2.0.

Early outcomes have been positive. Teams that took ownership of their work areas have shown stronger engagement and greater consistency in maintaining 5S+Safety practices. Workspaces are better organized, process visibility and operational safety have improved, and there is growing potential to extend the approach to other parts of the organization.

This project contributes to the development of sustainable intralogistics by focusing on three pillars:

1. Waste minimization through reducing unnecessary materials and inefficient practices
2. Resource optimization by making better use of available workforce and tools
3. Cost minimization by lowering operational waste and improving overall financial performance

By improving how resources are used and fostering active employee participation, the project supports environmental, economic, and social sustainability goals, helping build a more resilient and responsible logistics system at the Meyer Turku shipyard. The overall operational efficiency has increased by 15% creating 150 000 EUR annual savings potential. ■

CASE:  
Meyer Turku Logistics Center Pilot

The shipyard’s material distribution process directly affects production efficiency and waste generation. In 2024, a pilot project developed and tested a new, centralized logistics center where outfitting materials were pre-picked, consolidated, and delivered just-in-time before assembly work began. The study aimed to minimize disruptions to production, remove obstacles in material handling, and eliminate unnecessary waste, supporting higher throughput and more sustainable operations.

The project was based on the hypothesis that streamlining material distribution would improve section outfitting throughput by 15–20% and reduce material waste by 20%. Consolidating hotel and machinery outfitting materials would also increase lifting capacity, helping to create a more cost-effective and environmentally sustainable production process.

Before the project, the shipyard faced reduced productivity and increased waste due to:

- Early or misplaced material deliveries, causing damage, loss, and extra coordination work.
- Frequent material shortages delaying outfitting work and causing idle time.
- Oversized deliveries, leading to unnecessary material waste.
- Inefficient lifting practices and accumulation of excess waste, increasing congestion and fire risks.

Key actions focused on pre-picking materials, improving material flow, and optimizing delivery timing. Achievements of the new, centralized logistics center so far include:

- 100% pre-picking of SOaaS materials.
- Materials pre-picked one week before need, with a 24-minute average delivery time.
- Material delivery reliability improved from 5% to 92%.
- Pallet consolidation reduced the number of pallets delivered by 30%.

These improvements have resulted in a smoother, more efficient outfitting process across the shipyard. Waiting times and bottlenecks have been minimized, raising production throughput by an estimated 15–20%. Improved material and traffic flow management has boosted the speed, safety, and quality of logistics services. By eliminating non-value-added activities and optimizing resource use, the shipyard is advancing both production efficiency and its environmental goals. Specific impacts include:

- Average production delay reduction of 2.8 days.
- 120,000–330,000 working hours saved annually in section outfitting.
- Section delays linked to material shortages reduced from 75% to 10%.
- Material waste reduced by approximately 20%, supported by enhanced reuse and recycling practices.
- Estimated annual cost savings potential of €2.1 million.

By reducing material waste, minimizing transport energy use through better load optimization, and exploring greener transport technologies, this project has provided strong support for Meyer Turku’s green transition. Integrated logistics across departments further reduce resource use and environmental impact while increasing safety and production quality. ■

# 05 WORLD-CLASS PERSONNEL

Building cruise ships requires not only highly professional metal industry workers but also top expertise in design, project management, technology and product development. It is important for Meyer Turku to maintain its employees' high level of expertise and ensure its personnel's well-being and ability to cope.

The secret behind Meyer Turku's exceptional performance is a highly professional and thriving personnel that is supported in several ways both at work and in their free time. The shipyard's health care centre helps maintain the company's work capacity, ensuring employees stay healthy and maintain their ability to work until retirement. The well-being at work programme, Messis, supports shipyard workers' well-being with the help of various activity groups and events, and the shipyard's own Shipbuilding School and managerial training and coaching, conducted in accordance with the company's management model, support the continuous development of competence.

## Trainings and competence development

Ensuring high-level competence in all shipyard functions requires systematic development of the organisation's and its personnel's capabilities. In addition to training and education, developing competence involves all other activities that develop the versatility of employees and their chances of coping with work-related challenges now and in the future. One objective of annual appraisal interviews is to determine the needs for improving competence.

High-quality, consistent and constantly developing managerial work is an important success factor for Meyer Turku. Manager coaching, which started already in 2021, continues to this day. The coaching is based on the management principles specified in Meyer Turku's strategy. Another manager coaching module was launched at the shipyard in 2024 to complement the first one and to further develop managerial competence and readiness. Manager coaching is part of a larger whole, which focuses on developing management tools and skills and unify management culture throughout the organisation to help Meyer Turku more efficiently respond to future needs. The purpose of manager coaching is to develop all managers' ability to lead both their teams and individuals according to Meyer Turku's management principles.

Through various coaching efforts, Meyer Turku continues to develop a participatory leadership style that makes use

of coaching, providing and receiving feedback, and in-team change management. Also, the intention is to create a common method for managing and performing a cultural change for the company, as well as for working together and networking across departmental boundaries. Manager coaching is performed in small groups of 12 people. The coaching is based on experience-based learning. In addition to intensive days of coaching, it is important to practice what has already been learned with the manager's own team, as part of standard managerial work. Well-being at work is influenced by many different factors, such as sense of community and good working atmosphere as well as equal and fair managerial work. Management coaching correlates directly with personnel well-being and coping at work.

The shipyard's own Shipbuilding School ensures that the company always has knowledgeable and well-trained personnel. The shipyard's own school organises e.g. qualification trainings, systems training and language courses. In addition, the school trains the personnel of Meyer Turku's subsidiaries and contractors. Some trainings are demand-based, while some are available year-round. In 2024, almost 2,300 people took part in short-term trainings organised by the Shipbuilding School, totalling 11,000+ hours of lessons.

# Responsibility for personnel health and well-being

Meyer Turku finds it particularly important to take good care of its personnel's work capacity in all its aspects. Meyer proactively identifies elements that may impose a threat or a strain to shipyard workers. By preventing possible issues and managing total risks, Meyer Turku can support the continuous well-being of its employees. The timely treatment of illnesses and rehabilitation is also key, leaning on the shipyard's own occupational health care, managers and early support model.

The early treatment and rehabilitation group model, developed by occupational health care services for treatment of most common musculoskeletal disorders, is the latest tool for preventing health issues and providing rehabilitation. The groups are divided into themes, such as back, shoulders and knees, and any treatment or rehabilitation is performed under the guidance of physiotherapists and doctors. The feedback has been phenomenal, and the groups will be used in the future, too. The group model has also been used for weight management, as overweight is an underlying cause of many disorders that hinder work capacity. Basic mental health skills have also been the target of improvement of a separate group, which focuses on learning about the matter early and using personal insight rather than crisis management.

If an employee falls ill or hurts themselves in an accident, Meyer always strives to optimise the examinations and the treatment efficiently so that the person can recover quickly and return to work. Illness or injury can seriously reduce work capacity and render an employee unable to return to, say, physically challenging duties. In these scenarios, Meyer Turku looks for various options together with the employee, their manager and occupational health care to help them return to work through special arrangements or reorientation, for instance.

Maintaining work capacity and avoiding premature retirement on disability pension have a significant impact on not only the personal and financial well-being of an employee but also the economy at large. The goal is to secure good work capacity and a long, uninterrupted working career for every employee.

**'Better work ability' local rehabilitation group**  
In 2023, the shipyard launched a risk-based 'Better work ability' local rehabilitation group in cooperation with Varma Mutual Pension Insurance Company. The target group consists of 55+ year-old shipyard employees whose work capacity is classified as high risk. Those in the target group have been identified to have various straining factors, such as musculo-skeletal issues, stress or exhaustion. The multi-professional, goal-oriented rehabilitation programme continued to 2024 and included functional activities for the well-being of the

mind and body as well as ways to improve one's own work practices. The group consisted of 12 people. A similar local rehabilitation group, formed to support office workers in particular, is planned to be activated at the start of 2025. This rehabilitation will be called Tukea työssäjaksumiseen ('Support for coping at work') and it will comprise of elements similar to those of prior local rehabilitation efforts.

**Well-being at work programme 'Messis'**  
The Turku shipyard employs its own well-being at work programme called Messis, which aims to improve the well-being of the shipyard's personnel. Activities for the programme are drawn up by a steering group which convenes once a month. The steering group members represent various shipyard functions and are all eager to improve the well-being of everyone at the shipyard. The Messis programme supports well-being at the shipyard by organising, for instance, regular group exercise and opportunities to try out various sports and cultural events, in addition to keeping a gym at the shipyard.



# Many ways to Meyer

The shipyard offers a wide variety of job opportunities, and Meyer Turku constantly looks for new experts via different career paths. The Shipbuilding School organises training for career changers in ship design and recruitment training for e.g. ship's sheet metal welders and pipe or machine fitters. In addition, Meyer Turku actively engages in national-level cooperation with various schools and student communities to showcase job opportunities and enhance their appeal, specifically to students of technology in upper secondary education and universities/polytechnics. Each year, Meyer Turku hires approximately 100 summer employees for a wide variety of duties in the organisation, offering internship opportunities for technology students. In addition, Meyer Turku commissions dozens of theses every year. Upon graduating, a majority of such thesis students become permanently employed with the company.

The cruise ships built by Meyer Turku are floating cities with the highest level of innovation and technology. Designing and building them requires cooperation by professionals from several different fields. So, the shipyard may employ people with vastly different work and study histories, and the spectrum of jobs at the shipyard is quite extensive. Roughly speaking, traditional shipyard jobs are related to design, project management, procurement, logistics and production. In addition to professionals from these sectors, the shipyard also offers several different support and expert positions in sustainability, safety, IT, information security and communications. ■

## Personnel

Number of personnel at the end of the year					
	2020	2021	2022	2023	2024
Meyer Turku Oy	1 869	1 806	1 893	1 990	2055
Piikkio Works Oy	150	139	147	152	146
Technology Design and Engineering ENGnD Oy	73	52	50	46	51
Shipbuilding Completion Oy	49	44	42	42	42
<b>Total</b>	<b>2 141</b>	<b>2 041</b>	<b>2 132</b>	<b>2 230</b>	<b>2 294</b>
On average, within the year	2 067	2 086	2 133	2 214	2307
New recruitments	115	144	257	226	253
Starting turnover	5,3 %	8,4 %	7,7%	6,1%	7,1 %

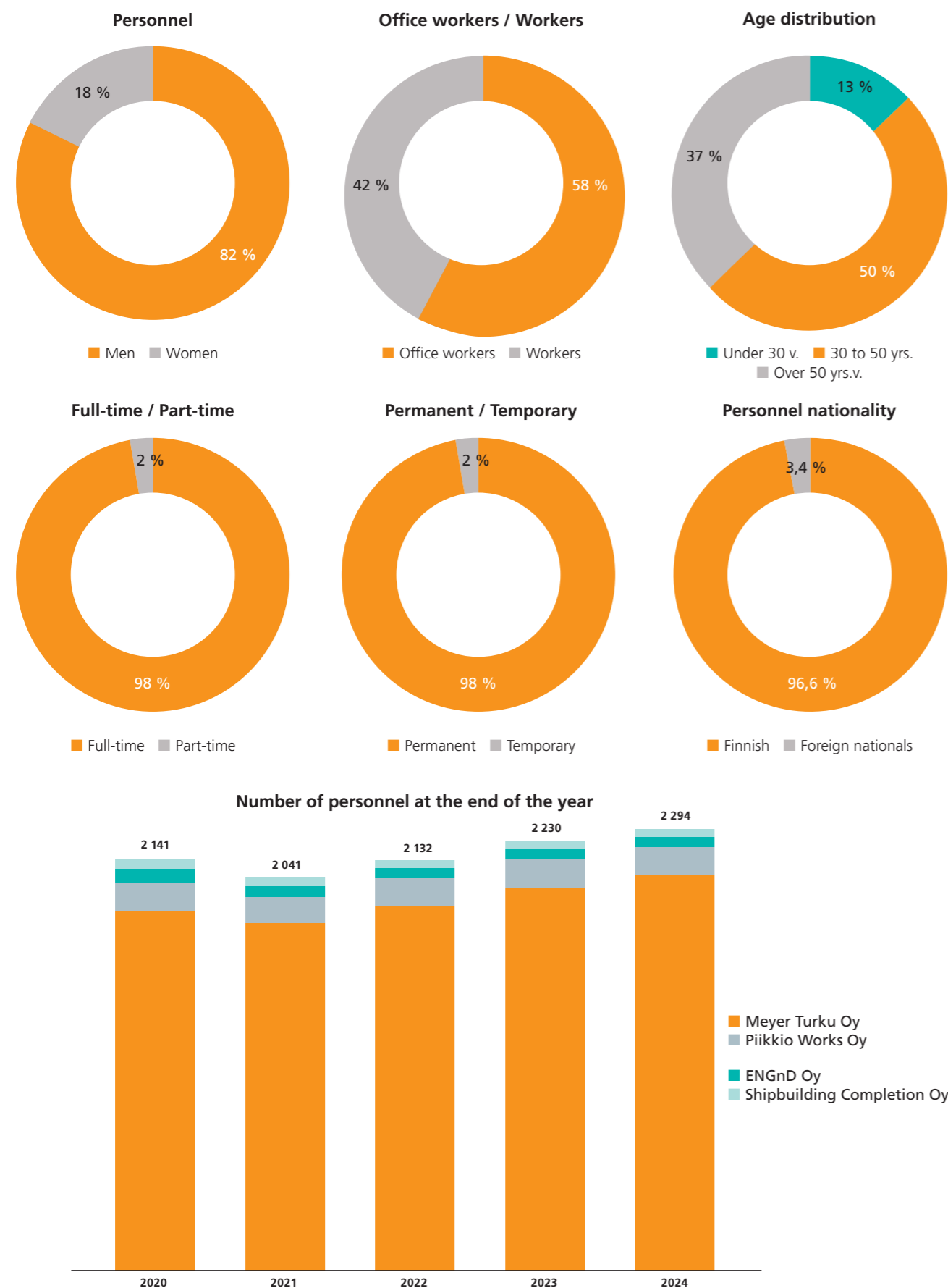
## Training and education

Short training, number of participants					
	2020	2021	2022	2023	2024
Meyer Turku Group's personnel	2 286	2 175	3 844	1 784	1657
Network company personnel	600	1 448	1 471	1 039	516
<b>Participants total</b>	<b>2 886</b>	<b>3 623</b>	<b>5 315</b>	<b>2 823</b>	<b>2173</b>

Recruitment trainings, number of trainees					
	2020	2021	2022	2023	2023
Meyer Turku Group's personnel	15	0	25	41	56
Network company personnel	0	0	0	0	0
<b>Trainees total</b>	<b>15</b>	<b>0</b>	<b>25</b>	<b>41</b>	<b>56</b>

\*In 2021, no recruitment training was conducted due to cooperation negotiations and Covid-19.

# Key figures



## CASE:

## Sustainability Theme of the Month

Sustainability Theme of the Month is a shipyard-wide communications programme focusing on one sustainability theme each month. The programme aims to communicate sustainability matters in a clear and accessible way that resonates with the entire personnel. Another goal is to make the personnel think about how their work relates to the theme at hand and how sustainability perspectives can be taken into account in their daily work. Awareness has been increased by offering concrete tips on, for example, which energy saving measures to take.

Each theme comes with a separate PowerPoint presentation, published on the Sustainability Theme of the Month intranet pages. The materials have been prepared so that going through them takes less than five minutes, allowing managers to use them in weekly team meetings, for instance. With the communications programme, the shipyard wants to bring sustainability themes closer to the employees' everyday life and increase awareness on themes related to shipyard operations.

Programme content is produced via the NEcOLEAP research and development programme's Sustainable People project in cooperation with various departments, such as the HSE, HR, infra and communications teams. In addition to monthly communications, programme leaders organise various efforts, such as a shipyard area cleaning day involving the entire personnel.

The Sustainability Theme of the Month programme is continuously developed. The Meyer Connect mobile app is a new step forward, offering even more versatile possibilities for sharing content. In the future, programme materials are shared as short intra news, allowing any Meyer employee to explore the topic independently. This improves the reach of communications. Going forward, the materials can also make use of the various functions in the Meyer Connect app, such as posting comments for news, improving the interaction further. ■



## CASE:

## Summer employees

Meyer Turku is committed to sustainability and supporting young people in improving their competences. Therefore, the company considers summer jobs an important part of its operation. Summer jobs are not offered simply for employment's sake: they also present an opportunity for young professionals to develop their vocational skills and build a foundation for future career paths. For Meyer Turku, summer jobs and other internship opportunities are key in ensuring that competence levels continue to remain high in the future.

Meyer Turku hires up to 100 summer employees each year. After the summer, some summer employees continue at Meyer Turku, either working on their theses or in a permanent employment relationship. While summer jobs are targeted to students of technology in particular, Meyer Turku has jobs available for students in other fields, too. Meyer Turku summer employment provides practical work experience to students, complementing their studies and giving them an opportunity to apply what they have learned in a work environment. In a best-case scenario, a summer job lays a path for young students for writing a thesis and finding a permanent employment relationship after graduation. Meyer Turku always pays a salary to its summer employees.

Their positive experiences from working at the shipyard and building a sense of community are essential to the company. During the summer, Meyer Turku organises several events to summer employees, such as a mutual onboarding event, shipyard orienteering and an end-of-the-summer party. These events present a great opportunity for summer employees to get acquainted with each other and share mutual experiences. This ensures that summer employees get to not only boost their professional development and take on challenges but also have fun experiences during the summer.

Meyer Turku considers hiring summer employees an important factor in securing the availability of future professionals. The company is committed to offering young people the opportunity to develop, learn and grow in a responsible work environment where they can feel valued and be a part of the work community. Meyer Turku has received excellent feedback from its summer workers. Versatility of assignments in interesting projects, the welcoming work community and the opportunity to learn new things were considered particularly praiseworthy. ■



## CASE:

## Mentoring programme Mentor Excellence

The mentoring programme Mentor Excellence was launched in 2024 as a response to requests from the personnel and the needs of the organisation. The programme aims to create new kinds of networking opportunities and collaboration channels for the various functions and members of the personnel at the shipyard. The programme was designed specifically to support employees' professional development by providing opportunities to adopt new insights and advance their careers.

Mentoring is a collaborative relationship with the main purpose of promoting learning and competence growth as well as supporting the actor's professional development. The programme is based on interaction, with the mentoring content comprising of dialogue between the actor and the mentor and the mutual sharing of experiences. The actor's questions, interests and career goals determine how the programme moves forward, making it a highly personal process where the needs of the participant are taken into account.

A pilot version of the Mentor Excellence programme was launched in 2024, with a total of eleven mentoring pairs working together from April to December. During the pilot, the focus was on developing the structure and the operating model of the programme to make it as efficient as possible and provide a meaningful experience for the participants. The pilot particularly focused on how to support working pair collaboration within the programme and how to optimally match the pairs so that the actor's goals and the mentor's expertise would complement each other.

Careful matching of pairs was a central element in the programme. The collaboration of each pair was based on individual needs and goals, which determined the content of the mentoring process. This ensured that the programme produced added value for the participants and gave them the opportunity to develop themselves and expand their skills. Mentor Excellence 2024 was an extremely popular and successful endeavour, exceeding the participants' expectations. Feedback received during the programme's pilot phase was positive, and the participants felt the programme played a significant part in their professional growth.

Mentor Excellence has proved to be a valuable tool in developing the organisation and its personnel, and it will in fact continue in 2025 with twelve mentoring pairs. ■



# 06 PART OF SOCIETY

Meyer Turku wants to be a leader in the international maritime industry and shipbuilding. The organisation is closely involved in running development projects designed to improve corporate responsibility and sustainable development in shipbuilding and the entire maritime industry. Meyer Turku works actively with the entire Finnish maritime cluster as well as academic research institutes and universities. Close cooperation with schools and universities ensures that the company is also able to reach future shipbuilders and help make them a part of its network.

In Southwest Finland, Meyer Turku shipyard is the largest company in terms of turnover, the fourth largest employer in the private sector and the second largest employer of the industrial sector. The economic impact of the shipyard and its partner network are widely felt outside Southwest Finland, too, extending across Finland and even abroad through partner companies. Up to 80% of Meyer Turku's ships' value consists of work conducted by its suppliers, the majority of which are Finnish businesses. The largest economic impact is felt in Southwest Finland where 96% of the shipyard and its network personnel live. Impact on tax revenue is biggest in

the municipalities of Southwest Finland, Turku in particular. Of the companies in the shipyard's network, 42% are located in Southwest Finland, with 39% of the value of supply directed there.

Together with its network companies, Meyer Turku directly employs around 4,100 people and indirectly over 4,500 people. The actual impact is much more significant when accounting for the employment impact on foreign companies and network's own suppliers as well as the indirect impact of shipyard's personnel boosting e.g. local retail and services. All in all, the 1,845 companies in the Finnish maritime cluster employ an estimated 45,000 people.

## Supplier network responsibility

Shipbuilding at Meyer Turku is supported by a strong and wide-reaching network of local and international suppliers, with each partnership carefully selected to meet exact quality and value standards. Outsourcing accounts for nearly 80% of each cruise ship built at the shipyard. Reliability of the sometimes-long supply chains, efficiency and good risk resilience are crucial in the organisation's efforts to manage the 15 million individual pieces needed to build cruise ships. Cooperation with the supplier network would not be possible without mutual trust and solid core values that constantly enable setting new standards for technology, design and quality.

Meyer Turku's network includes, for example, design companies, device, material and system providers, turnkey solution providers as well as subcontracting and service providers. The network is used to acquire not only devices and materials for the ship, but also most of the design and outfitting work, the latter typically in the form of turnkey solutions.

Meyer Turku aims to set a good example in sustainability and corporate responsibility for its partner network and to push its partners and the entire shipbuilding network to being equally or more responsible in their operations. Thousands of companies work at the shipyard every year, some just for a few days, others on a constant basis. Meyer Turku trains each network employee for job safety at the shipyard and closely monitors its suppliers' ways of working and their performance. Ethical conduct and sustainable practices by suppliers is extremely important to Meyer Turku. All yard contracts always require a written commitment to Meyer's Code of Conduct for Suppliers. To increase competence and awareness within their network, Meyer Turku and the Turku University of Applied Sciences have implemented a coaching module for carbon footprint calculations.

In the supplier selection process, Meyer pays attention to not only price, quality and reliability of supply but also to the supplier's obligations regarding society, work safety and protection of the environment. Meyer Turku requires each network company to draw their own plan for work safety and occupational health and monitors all companies working at the shipyard for compliance with the Act on the Contractor's Obligations and Liability when Work is Contracted Out, collective labour agreements and the Occupational Health Care Act – including companies that do not have a direct contractual relationship with Meyer Turku. Furthermore, a dedicated workgroup for monitoring the network operates at the shipyard. Its key goals include fighting grey economy and grey workforce and monitoring supplier compliance with social obligations, including taxes and social contributions, as well as observance of working time regulations.

Meyer Turku bears responsibility for sustainable and responsible operations of its network and commits to delivering safe and high-quality products by honouring ethical and environmentally oriented business practices. Meyer applies General Supplier Requirements (GSR) which provide a guideline and recommendation to its network companies regarding what they should take into consideration in their operations. The guidelines summarise the company's baseline expectations for suppliers regarding their management systems and operations, highlighting the perspective of cooperation and constructive business partnership.

Meyer Turku's procurement services employ a number of supplier managers whose task, as part of the supplier network's risk management and development, is to look at all suppliers in the network and assess whether they fulfil the General Supplier Requirements. Where necessary, they take action and help the suppliers achieve set goals as well as plan and implement development work.

## Cooperation with authorities

Each year, Meyer Turku cooperates actively with various authorities, including the Regional State Administrative Agency, the Centre for Economic Development, Transport and the Environment, Finnish Customs, Police of Finland, Rescue Department of Southwest Finland, Finnish Border Guard and the Finnish Defence Forces, to ensure all required permits are in place and safety and risk factors are minimised.

All operations at the shipyard are governed by an environmental permit. The environmental permit is issued by the Regional State Administrative Agency, provided that operations are compliant with the Environmental Protection Act and the Waste Act. The requirements stipulated in the Nature Conservation Act are also considered in the processing of the environmental permit application. The environmental permit is reviewed and renewed whenever the scope of shipyard operations changes substantially. The environmental permit was

last renewed in 2020. The Centre for Economic Development, Transport and the Environment inspects compliance with the terms of the environmental permit every three years with inspections conducted at the shipyard. The inspection was last conducted in summer 2022.

Shipyard's safety capabilities are monitored together with the region's rescue department. Each ship project involves a minimum of one major drill, while smaller tailored drills are conducted with local regional units to ensure that rescue workers from the rescue department remain familiar with the shipyard. The regional rescue services department of Southwest Finland also trains shipyard's fire fighters for duties such as first response and high-angle rescue.

Finnish Customs regularly monitors ships delivering large blocks to the shipyard, ensuring that no illicit goods are brought along. The police are involved in investigating accidents reported to the regional emergency response centre. Where necessary, they also provide executive assistance to the Regional State Administrative Agency to help inspect network companies. The Finnish Safety and Chemicals Agency (Tukes) inspects the shipyard at regular intervals every three years. The latest inspection was conducted in spring 2024.

## Partnering with schools and students

Meyer Turku engages in multifaceted cooperation with various schools, universities and student organisations, striving to match shipbuilding competence needs with the fields of study and the activities at the core of these places of learning. In the cooperation, Meyer Turku values interaction and provides opportunities for students in several fields to add to their competence and to develop professionally. Today's cruise ships incorporate not only steel but also world-class technology and everything in between – meaning that a shipyard needs experts from a wide variety of fields. The shipyard's cooperation extends to universities, universities of applied sciences, vocational schools as well as general upper secondary schools and secondary schools.

In addition to the cooperation with the personnel in these places of education, Meyer Turku is also in active direct contact with guilds and student associations in the industry's essential fields of technology. Multifaceted cooperation with guilds and student associations enables direct contact with students and creates cooperation opportunities that better benefit all parties involved. Meyer Turku provides student groups with opportunities, such as shipyard visits, frequents schools to talk about the company and the jobs available at the shipyard, and actively visits student expos and other student events.

In addition to universities, Meyer Turku strives to reach students, teachers and study counsellors in upper secondary

education. By better showcasing job opportunities in the maritime industry, Meyer Turku wants to ensure that new professionals will continue to find their way to the industry in the future. In cooperation with JA's Yrityskylä learning module, Meyer Turku provides sixth and ninth-graders with positive experiences regarding working life, economy and the society. In Meyer's miniature shipyard built at the Yrityskylä,

primary pupils get to explore various shipyard duties, while the game arena allows secondary pupils to compete in company management in the international market. Organised for the first time in 2024, the Koulut goes Tekno event provided a great chance to present opportunities to upper secondary school students to learn about job and career opportunities available in tech industry companies in Southwest Finland.

## Shipbuilding School

The in-house Shipbuilding School is one of the few remaining schools in Finland that are run by a company. It has had a key role for 60 years and counting. The school trains new employees to be recruited into production, organises retraining for career changers where existing competence is adopted to meet new demands, and engages in close cooperation with schools and universities and the entire maritime industry network. Together with Meyer Turku's managers, the Shipbuilding School is also in charge of maintenance and management of the shipyard personnel's competence in accordance with the future needs of the company.

In fact, the Shipbuilding School provides training for a significant part of new employees starting at the Meyer Turku shipyard. The Shipbuilding School also offers degree programmes, enabling students to graduate as ship's sheet metal welders, a ship's pipe or machine fitters or ship designers. In 2024, a total of 76 recruitment trainees graduated from the school.

The Shipbuilding School's recruitment training is comprised of theory, studying of basic work stages and on-the-job learning, all compressed to a tight six-month study plan. After the course, everyone who successfully complete it are offered a job. For instance, ship's sheet metal welder training first involves three months of studies at the workshop while learning theory. This is followed by three more months of full-time practical training with an experienced work partner.

The school also provides metalworks students in vocational education with on-the-job learning at the shipyard. Through the Shipbuilding School, the company can provide extended on-the-job learning together with local vocational schools. ■



## CASE:

## Green Transition Lab



The Green Transition Lab (GT Lab) is a research and development workspace established by Meyer Turku and Åbo Akademi. It brings universities and the maritime industry together in hopes of advancing the green transition in shipbuilding and improving research on new technologies. The Meyer Turku shipyard aims to reach net zero emissions by 2030. Achieving this goal requires significant changes in the entire maritime industry – simple implementation of new technologies and innovations is not enough. Practices must also be renewed on a large scale. GT Lab's main goal is to act as an umbrella for various transition projects and operations and to provide a framework which supports and guides developments in the industry towards a more sustainable future.

Succeeding in the green transition requires, among others, ensuring profitability, integrating various systems, developing material and production efficiency, creating new methods and materials and revamping training policies. Such a huge change calls for new types of approaches that can account for the interdependencies between thousands of actors, as well as technology developments and integrations. GT Lab was established in 2023 to respond to this precise need. It was officially launched in February 2024.

"The Green Transition Lab aims to build a long-term interdisciplinary research collaboration with academia and the industry. The focus in shipbuilding is naturally on technological research and development, but creating a more sustainable maritime industry also requires cooperation with top experts from other disciplines. GT Lab provides support to this endeavour and strengthens Meyer Turku's and its entire network's commitment to sustainable shipbuilding," says **Marjo Keiramo**, Director, NEcOLEAP and GT Lab.

GT Lab is an open innovation platform for researchers, experts and companies to together develop solutions for the green transition in the maritime industry. Key operating principles include:

- **Change in ecosystem and cooperation** – Reaching net-zero emissions requires cooperation on a wide scale and coordination of several initiatives. Increasingly stringent regulations, travellers' expectations and competition are forcing the industry to become more sustainable.
- **Long-term strategy** – The transformation in the industry must be made in a sustainable, competitive and socially responsible way.
- **Combining research and practice** – GT Lab not only focuses on theoretical research but also on the practical implementation of innovations.
- **International research cooperation** – GT Lab is an open innovation platform where different research institutes and operators can collaborate. The GT Lab operations are a part of Meyer Turku's and Åbo Akademi's partnership agreement, and the Lab's cooperation network also includes Aalto University, the University of Turku and the Royal Caribbean Group.

Even though GT Lab primarily focuses on research and product development related to cruise ships, its long-term goal is to also participate in green transition research projects for other maritime industry products. GT Lab provides a working model that can also be applied to other industries aiming for more sustainable operations. ■



## CASE:

## Koulut goes Tekno

Meyer Turku organised the Koulut goes Tekno event together with local technology companies on the national Technology Tuesday on November 19th. During the day, the shipyard welcomed about 250 ninth-graders who got to know the shipyard's operations and professions as well as opportunities in the industry. A total of 13 technology companies from Southwest Finland took part in the 2024 event, providing ninth-graders the opportunity to visit them. Together with the participating companies, Meyer Turku gave 700+ ninth-graders the chance to discover technology companies from Southwest Finland.

Influencing future professionals starts from comprehensive school. The technology industry employs almost 340,000 people in Finland. It is the biggest export industry and the foremost form of livelihood in the country. Despite this, young people may not be as aware of occupations in the technology industry as they are of other professions. As career choices start becoming relevant in upper comprehensive school and decisions on future studies, and consequently on career choices, are made at a relatively young age, teenagers need information on working life to help them make educated decisions. Meyer Turku wants to do its part and help young people plan their future. It is also important that upper comprehensive school teachers and study counsellors familiarise themselves with industry occupations. The 2024 event was a pilot for the concept. The goal is to make the event a regular part of the national Technology Tuesday for upper comprehensive school students in Southwest Finland. ■

## CASE:

## City of Turku awards recognition for multiculturalism to Meyer Turku

Since 2006, the City of Turku has annually given an award to a new Turku resident and for a multiculturalism action. Starting from last year, the latter recognition has carried the name 'Multiculturalism and Anti-Racism Action Award.' The city's Multicultural Council declared that the award is to be given to an association or a company that has significantly improved employment opportunities for immigrants. Based on suggestions from citizens, the 2024 award was presented to Meyer Turku.

The shipyard offers integration counselling as part of its onboarding where necessary. Together with International House Turku, employees have been offered counselling and advisory services also at Meyer Turku's own facilities. Meyer Turku has shown initiative and, together with local immigrant services and a company coordinator, developed models for recruiting immigrants who would be suitable for the industry.

We are pleased of the recognition our everyday work has received. We are building the world's most advanced cruise ships, and for us, hiring is based on expertise. We are constantly in need of more professionals and experts. In cooperation with the city of Turku and International House Turku, we have been able to pave the way for industry newcomers to become shipbuilders in Turku," says **Anna Hakala**, Meyer Turku Head of Communications. ■

## Report description

This 2024 sustainability report by Meyer Turku Group concerns its parent company Meyer Turku Oy and all its subsidiaries (Piikkio Works Oy, Shipbuilding Completion Oy and Technology Design and Engineering ENGnD Oy). In terms of training and occupational safety, the report extends beyond Meyer Turku Group. The reporting for any training provided at Meyer Turku Shipbuilding School and for any occupational accidents at the shipyard extends to Meyer Turku's networking companies' personnel as well.

### GRI CONTENT TABLE

The framework for the report is based on upgraded GRI standard (2021)

102 - General disclosures		
The organisation and its reporting practices		
2-1	Organisational details	1
2-2	Entities included in the sustainability reporting	7
2-3	Reporting period, frequency and contact point	2; 7 (s. 2, 14, 58)
2-4	Restatements of information	2; 4 (s. 9, 36, 40)
2-5	Report's external assurance	Not assured
Activities and workers		
2-6	Activities, value chain and other business relationships	1; 6
2-7	Employees	5
2-8	Workers who are not employees	5; 6
Strategy, policies and practices		
2-22	Statement on sustainable development strategy	2
2-23	Policy commitments	2
2-24	Embedding policy commitments	2
2-25	Processes to remediate negative impacts	2; 4; 5
2-26	Mechanisms for seeking advice and raising concerns	5
2-27	Compliance with laws and regulations	6
2-28	Membership associations	1
3 - Material topics		
3-1	Process to determine material topics	2
3-2	List of material topics	2
200 - Economic impact		
Economic performance		
201-2	Financial implications and other risks and opportunities for the organisation due to climate change	1; 2
201-4	Government grants	1
Indirect economic impact		
203-2	Significant indirect economic impact and scope	1; 2
Anti-corruption		
3-3	Management of material topics	6
205-1	Operations assessed for risks related to corruption	6
300 - Environmental impact		
Materials		
3-3	Management of material topics	3
Energy		
3-3	Management of material topics	4
302-1	Energy consumption within the organisation	4
302-4	Reduction of energy consumption	4
302-5	Reductions in energy requirements of ships	3

Water and emissions to water		
303-2	Impact management of water emissions	3
303-5	Water consumption	4
Biodiversity		
3-3	Operational sites located in protected areas and areas of high biodiversity value outside protected areas	4
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	4
304-2	Significant impacts of operations, products, and services on biodiversity	4
304-3	Habitats protected or restored	4
Emissions		
3-3	Management of material topics	4
305-1	Direct GHG emissions (Scope 1)	4
305-2	Indirect GHG emissions (Scope 2)	4
305-4	GHG emission intensity	4
305-5	Reduction of GHG emissions	4
305-7	Other significant air emissions	4
Waste		
3-3	Management of material topics	4
306-1	Waste generation and significant waste-related impacts	3; 4
306-2	Management of waste-related impacts	3; 4
306-3	Waste generated by type	4
306-4	Waste diverted from disposal	4
306-5	Waste directed to disposal	4
400 - Social impact		
Employment		
3-3	Management of material topics	6
401-1	New employee hires and employee turnover	5
Occupational health and safety		
3-3	Management of material topics	4; 5
403-1	Occupational health and safety management systems and their scope	4; 5
403-2	Risk identification, assessment, and incident investigation	4; 5
403-3	Occupational health services	5
403-4	Worker participation, consultation, and communication on occupational health and safety	4; 5
403-5	Worker training on occupational health and safety	4; 5
403-6	Promotion of worker health	5
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	4; 5
403-9	Work-related injuries and fatalities	4
Meyer	Fire safety in the yard and ship fires	4
Training and education		
3-3	Management of material topics	5
404-2	Programmes for upgrading employee skills and transition assistance programmes	5
Meyer	Training organised by the Meyer Turku Shipbuilding School	5
Diversity and equal opportunity		
405-1	Diversity of employees	5
Supplier social assessment		
414-1	New suppliers that were screened using social criteria	6

