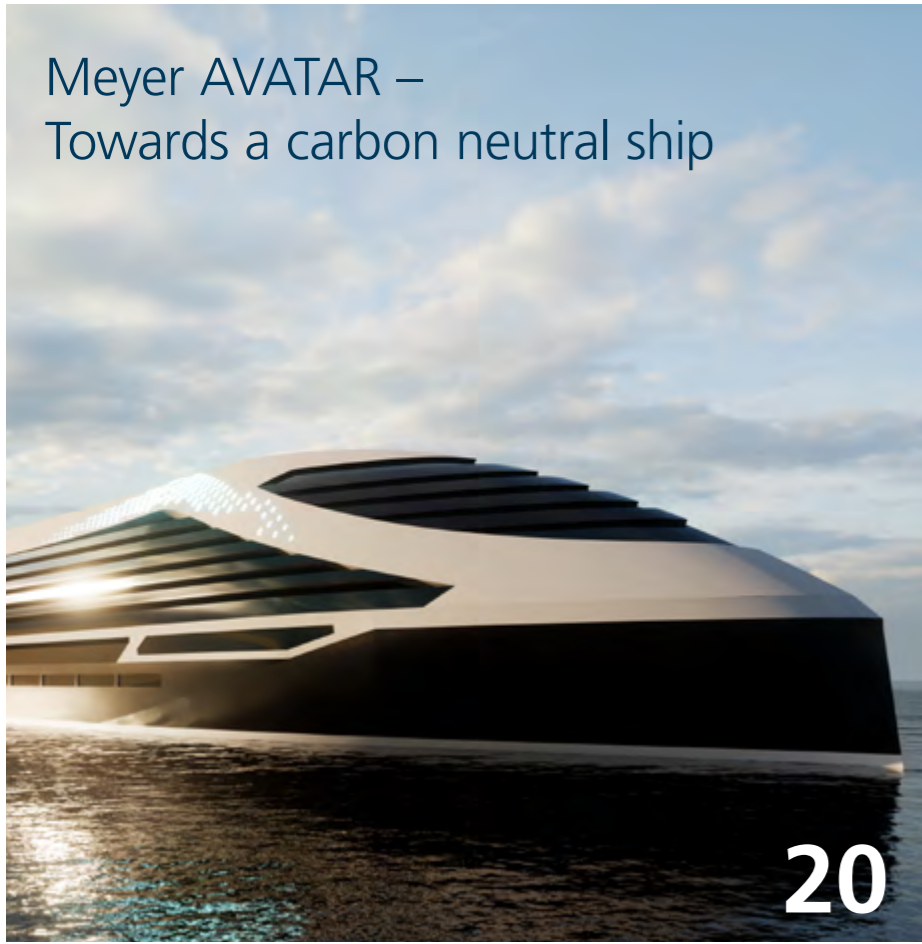




SUSTAINABLE SHIPBUILDING

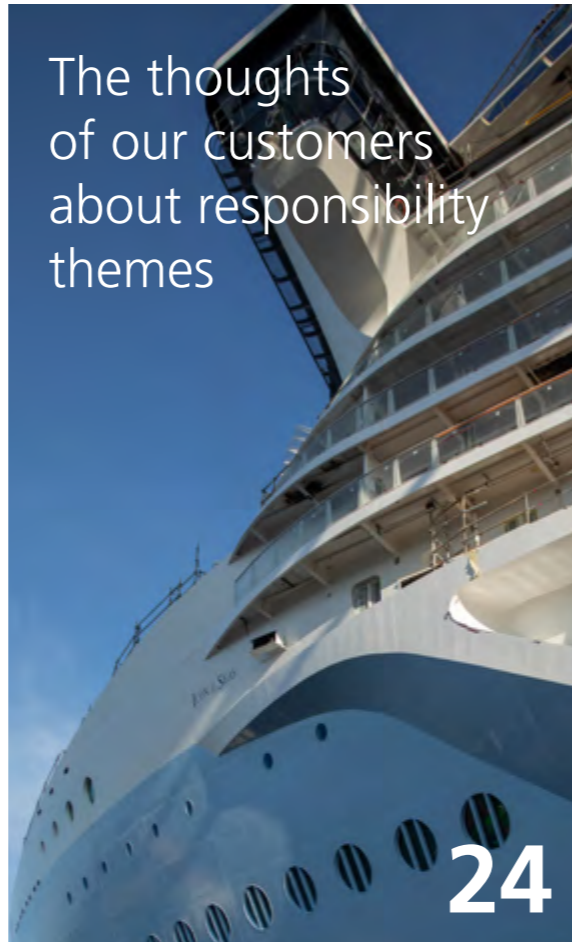
Sustainability Report

2023



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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 around 15 percent, and our order book extends all the way to 2026. 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 partner companies 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 ENGN Oy. Along with Meyer Turku Oy, Germany-based Meyer Werftin and Neptun Werftin constitute the Meyer Group, one of the world's leading cruise ship builders. 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 GROUP JA MEYER TURKU

A word from our Executive Vice President



Green transition is part of a larger sustainable development framework where environmental, social and governance aspects of corporate responsibility are not only our ethical duty towards the planet and the future generations but also a virtual necessity for the very future of our industry.

We are all aware of the enormous challenges.

On one hand, we have the matter-of-fact dependency on fossil fuels. On the other hand, we have the challenges related to the technological capabilities, infrastructure and investments required to become free of this dependency. Energy density, storage and scaling involve significant challenges that are to be overcome. But with industry-wide cooperation, we can succeed.

The evolving regulation has a significant impact on guiding our operations. The recent and planned upcoming regulatory changes encourage us to enact stricter corporate responsibility standards and reduce our carbon footprint. We have our eyes firmly fixed on the future. Our clients and the society at large expect increasingly sustainable solutions from us, and we are ready to meet this demand. Our future success depends on our ability to adjust and lead this transition proactively. By taking a positive and proactive approach to the green transition we can ensure our continued ability to operate and make a difference.

This report presents our key corporate responsibility plans and goals. The company has a clear and focused commitment and is proud to take steps every day to see them realised. We are also involved in a multitude of projects and programmes that strive for e.g. energy and material efficiency, cutting emissions, reducing waste or securing biodiversity. We are in close cooperation with different businesses and schools.

The Finnish maritime industry goes back a long way. Looking back at its history, the legacy is immense; there is so much to learn. In the 19th century, our ship-building forebears managed to solve the age-old mystery of how to make steel float. It marked the beginning of modern seafaring. Today, in 2024, our generation faces a challenge of equal magnitude: how to make the maritime industry environmentally sustainable.

Facing this challenge head on and committing to breaking the code of sustainable development provides the Finnish maritime industry a unique opportunity to stand out in the global market. We are globally known for our high-quality workmanship and our attentiveness to sustainability issues. By identifying the critical points and making the right decisions we have a great opportunity to benefit from our pioneering position at this crucial turning point. We must bear certain costs today because they are investments in a better tomorrow and an even better day after. By accepting this reality and building closer cooperation and closer partnerships, we can become a country that revolutionises the global maritime industry.

The importance of this does not escape any of us: our shared future is dependent on how we manage to embrace the green transition, capitalise on it 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 specialises in building highly demanding, innovative and environmentally friendly cruise ships, ferries and special vessels. Along with other Meyer shipyards operating in Germany, Meyer Turku Oy is one of the world's leading builders of cruise ships. In 2023, Meyer Turku Oy's share of the world's cruise ship building market was approximately 16%. The company's largest clients include Royal Caribbean Cruises Ltd, TUI Cruises GmbH, the Finnish Border Guard and Carnival Corporation.

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 ENGnD 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

During the financial period, the company's result was weighed down by the loss-making prototype Icon of the Seas, delivered

in November 2023, and Mein Schiff 7, scheduled for delivery in the summer 2024, for which the company made a loss provision for 2023. Contracts for these ships were negotiated years ago and primarily for a fixed price, causing them to show a loss when construction costs took on an upward trajectory.

Ship projects are typically financed by clients' advance payments, external bank financing, as well the company's own funds.

In July 2023, the company entered into a 927-million-euro financing agreement for the purpose of financing Mein Schiff 7 and Star of the Seas. The financing agreement is in force until 2025.

Key events during the financial period

After coming to a halt with the Covid-19 pandemic in 2020, the international cruise market turned a corner in 2021, and the positive development continued during the financial period. The attack on Ukraine that started in February 2022 had an impact on the availability of skilled labour and led to increased delivery time and costs for materials during the financial period. This had a significant impact on the operations and profitability of the company.

As a consequence of the war, energy prices in Europe have seen a pronounced increase, significantly affecting costs at the shipyard. The company has undertaken various measures to decrease energy consumption. Over the course of the year, the company also managed to negotiate partial compensation for the increased costs with its clients. This is a testament to the long-term commitment and partnership of our clients.

Production on the Icon 3 ship started during the financial

period. Icon of the Seas was delivered to the Royal Caribbean Group in November as scheduled. It has been received extremely well by the cruise-going public.

At the end of the financial period, the group's order book was valued at 4.6 billion euros (5.9 billion euros in 2022), and it included the following orders:

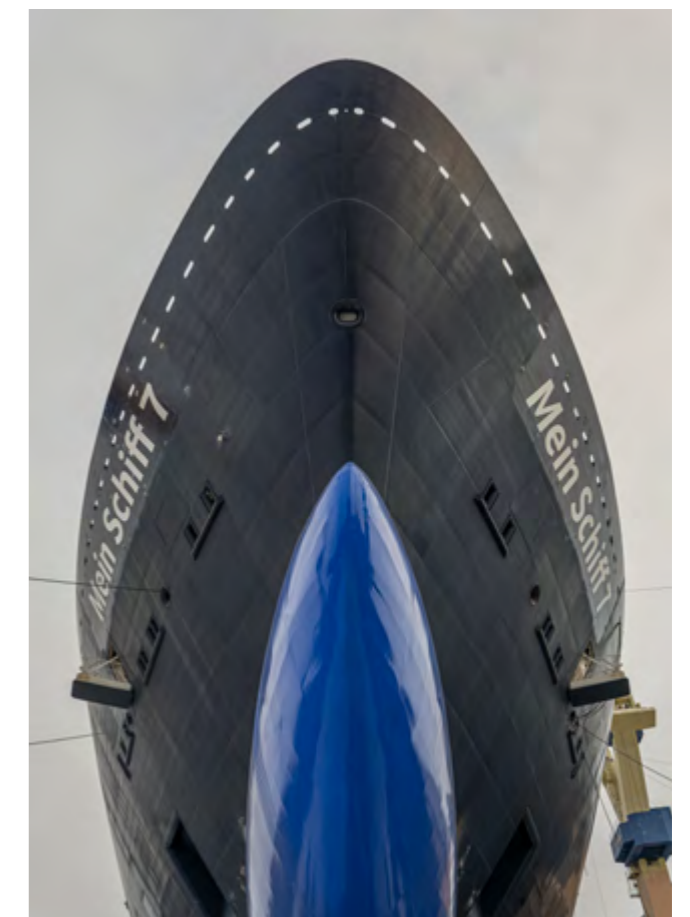
Client	Ship type	Gross tonnage	Delivery
TUI Cruises GmbH	Cruise ship	111 500	Summer 2024
Royal Caribbean Cruises Ltd.	Cruise ship	248 750	Summer 2025
Finnish Border Guard	Special-purpose vessel	5300	Fall 2025
Royal Caribbean Cruises Ltd.	Cruise ship	248 750	Summer 2026
Finnish Border Guard	Special-purpose vessel	5300	Fall 2026

To adapt to the changed market situation and to ensure the future of the shipyard in the long term, the company launched a large 'Meyer Transformation' change project in the spring of 2021. It focuses on improving processes and increasing efficiency of production to secure general long-term competitiveness and profitability for the company. This project includes several subprojects, each with their own schedule, several of which were completed in 2023. When the project as a whole was reviewed at the onset of 2024, some of the subprojects were partly redefined.

The company continued implementing its corporate responsibility strategy, defined in 2020, together with clients and other stakeholders. As stated in the strategy, the company aims to become carbon neutral by 2030 and design a carbon neutral concept ship by 2025. To support this strategy, the company applied for, and in early 2022 was approved to, Business Finland's funding programme for leading companies.

In 2021, the company implemented an SAP solution for project schedule management. It was extended to cover several other operations, such as planning, purchasing, logistics and finances. The project was underway during the financial period, and implementation is scheduled for summer 2024.

The group's investments during the financial period totalled 9.8 million euros (12.1 million euros in 2022). 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. ■



KPIs, parent company			
	2021	2022	2023
Revenue, M€	1 079,7	1 295,8	1 430,6
Operating result/loss, M€	4,4	15,7	-41,8
Operating result/loss, %	0,4	1,2	-2,9
Return on equity, %	-13,0	-10,8	-79,6
Equity ratio, %	18,2*	14,6*	8,3*

KPIs, group			
	2021	2022	2023
Revenue, M€	1 079,2	1 295,5	1 432,5
Operating result/loss, M€	10,8	20,3	-38,0
Operating result/loss, %	1,0	1,6	-2,7
Return on equity, %	-9,2	-8,0	-69,9
Equity ratio, %	18,6	15,3	9,5

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



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 Group's core values, the company is deeply committed to it. Nearly all practical corporate responsibility measures and projects at the Turku shipyard are conducted under the NECOLEAP research and development programme, one of the national green transition research and development projects funded by Business Finland.

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 e.g. partner selections and the sustainability efforts of our shipbuilding network.

Our vision at the Meyer Turku shipyard is to build environmentally friendly ships in a way that will make future genera-

tions proud. Our corporate responsibility strategy is built on four pillars:

1. Developing a carbon-neutral ship concept by 2025
2. Shipyard with carbon-neutral operations by 2030
3. Exemplary corporate responsibility both locally and internationally
4. Development and support of our partner network's sustainability work with concrete actions

At the Turku shipyard, we build

ECO-FRIENDLY SHIPS

in a way that will make future generations proud.



2025

Meyer will design a buildable carbon-neutral ship concept by 2025.



2030

Turku shipyard's goal is carbon neutrality by 2030.



By practicing active local industrial responsibility, we are setting a good example.



We push our network to being equally or more responsible than we are.

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. We at Meyer firmly believe that corporate responsibility in all areas and bold and open-minded research and development are prerequisites to our future competitive success – and for our entire existence. Emission calculations initiated in 2021 help us better identify the most significant emissions and other environmental burdens across a ship's life cycle and compare the environmental impact of different material selections.

“ We want to drive sustainable practices for the entire global shipbuilding industry.

This is not the first time that Meyer Turku has been at the forefront of environmental responsibility of the global shipbuilding industry. The first two LNG-powered passenger ships in the world were built at the Turku shipyard, and Meyer Turku ships are more energy-efficient than those of our competitors. Choice of fuel and decisions regarding the vessel's power station have a significant impact on the total emissions of the completed ship and its energy efficiency. This is why we constantly strive to find new and better solutions and alternative fuels, among others, to ensure that each ship we build is more energy-efficient and generates less emissions than ships that came before.

Delivered in 2023, Icon of the Seas is a pioneering ship in terms of fuel consumption and water and waste management for the client, Royal Caribbean. Now at the outfitting pier, Mein Schiff 7 for TUI Cruises is fitted with capabilities for running on green methanol in the future, enabling the ship to run on a nearly carbon-neutral basis.

Carbon neutral ship and shipyard

Transition towards sustainable development is also underway in the shipbuilding industry where passengers demand new qualities for new 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's life cycle emissions and eventually build a carbon neutral cruise ship. For ship's hull and supporting structures, this requires carbon neutral materials, carbon neutral production and extremely lightweight solutions. Other challenges include issues with material availability, growing energy costs and increasing pressure to take immediate climate action. When faced with challenging circumstances together with reliable partners, it forces us to find solutions that unlock entirely new types of sustainability, product development and business opportunities.

To reach these goals, 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 carbon neutrality, 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. Three subprojects were launched as part of the larger Sustainable Shipyard project: improving shipyard energy efficiency, advancing circular economy in shipyard operations and increasing waste management efficiency. 2024 will see the launch of a subproject designed to improve biodiversity.

We want Finland to be a leader of ship technology and science in the world. Our close cooperation with universities is one of the most important ways for us to achieve this goal. High-quality engineering education is important to us, because the smart and creative ship design and production optimisation solutions devised by our employees bring us closer to our climate goals now and in the future. Our agreements with Aalto University, University of Turku and Åbo Akademi are a part of our 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.

Corporate responsibility work requires commitment from our 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.

Our 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, and we hope to be a shipyard that local residents are proud to have as their neighbour. 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. We are also in tight cooperation with local universities and local development companies. We value long-term partnerships and believe in the power of cooperation both locally and globally. We are also a member of the Finnish corporate responsibility network, FiBS ry.

In Finland, Meyer Turku is seen as a leader in the maritime industry and shipbuilding in particular. Each new ship completed at our shipyard drives technological development and sustainability in the Finnish maritime industry. Our most important task is to be a propelling force between the client and our wide network of suppliers in research and development. We also must form a platform for experimenting with new technologies. We expect our network to commit to responsible practices, and sustainability is now one of the prerequisites in our procurement decisions.

OUR MEASURES

1	We draw a roadmap for shipyard carbon-neutrality and drive the initiative forward in a goal-oriented manner.	2	We design a carbon-neutral ship concept together with our network.	3	We further a clean environment and biodiversity at our shipyard and in its surroundings.
4	We are pioneers in circular economy for industry.	5	We make corporate responsibility a prerequisite for our procurements.	6	We expect our network to commit to responsible practices.
7	We are closely linked with the communities surrounding our shipyard.	8	We make corporate responsibility into our employees' day-to-day work.	9	We openly communicate about our corporate responsibility topics.

Our measures

An internal project named Sustainable Shipyard has been launched to monitor and steer the practical measures taken in accordance with the sustainability strategy, taking specifically charge of the entire shipyard's ESG journey. The project consists of several subprojects, with various departments taking the lead for each. The Sustainable Shipyard project and its progress are reported to management.

The strategy specifies nine priority themes that lay the framework for an action plan and schedule for the next few years as part of the Sustainable Shipyard programme:

1. Roadmap to carbon neutrality
2. Carbon neutral ship concept
3. Clean environment & biodiversity
4. Circular economy
5. Sustainable procurement
6. Committing our network to sustainability
7. Cooperation with local communities
8. Sustainability in employee's everyday life
9. Openly communicating about sustainability

Current concrete measures concern energy efficiency, circular economy, improving biodiversity, responding to regulatory changes and social responsibility. Supported by the Sustainable Shipyard project, more specific goals are set for each ESG aspect and clear actionable roadmaps are drawn. These projects are described in more detail later in this report in sections 3, 4, 5 and 6. The project is funded by the NECo-LEAP green transition research and development programme. As part of the Sustainable Shipyard project, we have identified sustainability factors material to the Meyer Turku shipyard.

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 we can provide most impact in our operations and in our cooperation with partners and clients.



Goal 6: clean water and sanitation

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 we can provide most impact in our operations and in our cooperation with partners and clients.



Goal 8: decent work and economic growth

We strive to create economic growth in the maritime industry while promoting human development and employment throughout our value chain. Our company is committed to supporting seafaring innovations and infrastructure development, which creates new employment opportunities and increases productivity.



Goal 9: industry, innovation and infrastructure

We invest in new technologies and solutions in the maritime industry, promoting sustainable infrastructure and digital transformation. We want to improve the efficiency of our operations by reducing environmental impact and improving operational efficiency.



Goal 13: climate action

Climate change is a defining challenge that brings everyone together. In the maritime industry, committing to reducing emissions is the most efficient way to make an impact. Together with our clients and partners, we develop energy efficient solutions, such as adopting renewable energy sources on ships and in our shipyard operations.



Goal 14: life below water

Protecting our seas and waterways is of utmost importance. We constantly develop our operations and our products in ways that help us reduce eutrophication in the seas and protect endangered species

UN's Sustainability Development Goals provide guidance and inspiration for our 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. Together we can build a more sustainable and responsible future that benefits all our stakeholders and the surrounding world.

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 alleviate 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.

"Joining the Energy Efficiency Agreement scheme is an important milestone in our shipyard's long-standing sustainability work. It helps us set tangible targets in the journey towards our 2030 carbon neutrality goal. Management and the entire company have a shared vision of what is required to ensure the continued vitality of our shipyard in the future," says Meyer Turku's sustainability specialist Hanna Haaksi, herself a fourth generation shipyard worker.

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 carbon neutral cruise ship concept by 2025 and to become a carbon neutral shipyard for its own operations by 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 100 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

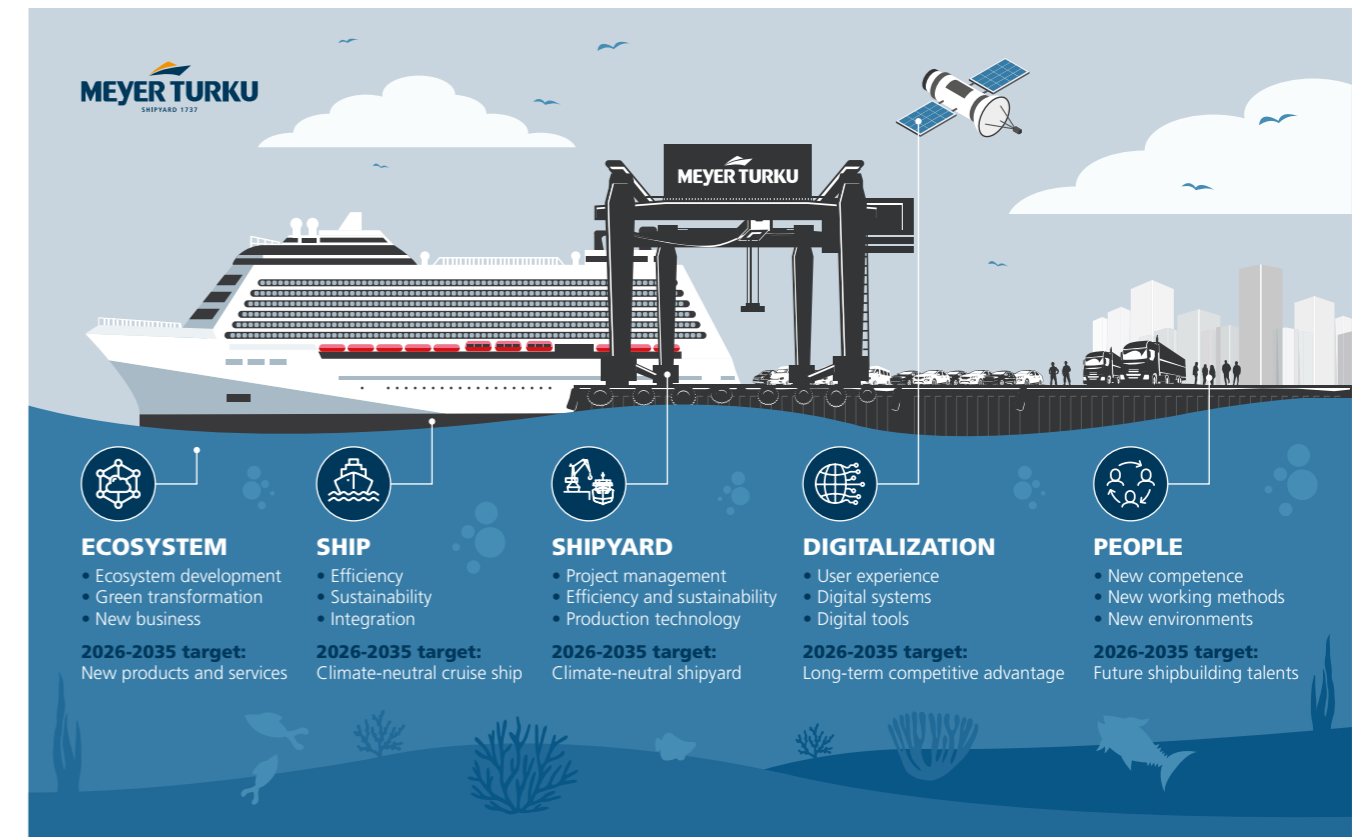
Under no circumstances do we accept unethical or illegal practices. In our Code of Conduct, we have specified the commonly accepted practices at Meyer Turku. Our Code of Conduct covers, for example, opposing corruption, conflicts of interest, fair competition and acquisitions, employee rights, occupational safety and protecting the environment. We require all our employees and managers to carefully consider their actions, follow our ethical principles, and act with integrity in all business activities.

Our expectations for our partners are described in our Code of Conduct for Suppliers. All our suppliers are required to commit to these principles in writing.

Meyer uses a reporting system that our personnel and anyone in our network can use to report any abuse they observe or suspect, anonymously if needed. The system also makes it possible to submit follow-up questions and exchange information anonymously.

The system helps make it easier for us to detect abuse, such as corruption and theft, and more quickly address any uncovered issues. An anonymous channel also lowers the threshold for reporting misconduct. The system is available in ten languages to ensure that language is not a barrier for reporting. A shared system improves the processing of any reported misconduct as the reports are always submitted directly to Meyer Turku's Compliance unit for further investigation. Any actions or consequences will be determined by company management.

The NEcOLEAP green transition project



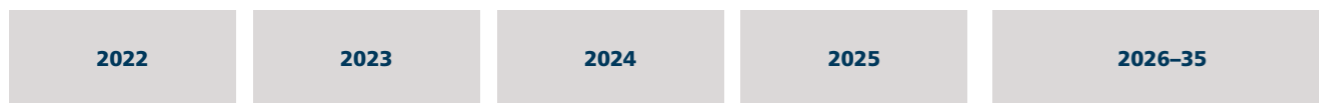
In February 2022, Meyer Turku secured involvement in a Business Finland funding programme for leading companies ('Veturit'). It is designed to challenge companies to increase their research, development and innovation investments in Finland. NEcOLEAP is a green transition research and development programme that brings together a diverse group of professionals from universities and research institutes to developed 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 our 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 carbon neutral ship concept by 2025
4. Achieving carbon neutral 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.

Meyer Turku's NEcOLEAP research and development programme is about developing a carbon neutral cruise ship and carbon neutral 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 our clients' strategic sustainability goals, adopting and developing an even wider range of sustainable technologies and solutions. Through a wide variety NEcOLEAP projects and themes we can improve the energy efficiency of our product and our shipyard, along with automation, robotics and cybersecurity. Some of the ongoing projects are featured in different sections of this report.



World class research and development ensures success in the future

Public research initiatives

Name	Description	Started	Type
CaNelis	Carbon-neutral lightweight ship structures	2022	Co-Innovation
NavisSpace	Future Passenger Spaces	2022	Co-Innovation
Indecs	Integration of design and operation of cruise-ship energy solutions	2022	Co-Research
Necom	Lighter solutions and HVAC energy efficiency	2022	Co-Research
VTC	Virtual Training Certifications	2022	Co-Innovation
CASEMATE	Computationally Aided Systems Engineering for marine advanced technology and environment	2022	ZEM/ Co-Innovation
Silent Engine	The project aims for a quieter and vibration-free engine.	2022	ZEM/ Co-Innovation
SusFlow	LCA (Life Cycle Assessment) calculations and evaluations	2023	Co-Innovation
Necoverse	Industrial Metaverse solutions for ship and shipyard	2023	Co-Innovation
Emotional impact of media in public spaces	The emotional impact of media in public spaces	2023	Co-research
Virtual Sea Trial	Develop a unified, distributed test environment for virtual sea trials and commissioning for the whole shipbuilding ecosystem	2023	Co-Innovation

Partners

The NEcOLEAP ecosystem enjoyed a particularly successful 2023. With a total of 110 partners now on board, the development effort involves large corporations, small and mid-sized businesses and research institutes. And with active participation in both virtual and live events, numerous new projects have emerged and wide networking between the ecosystems has been enabled.

A carbon neutral cruise ship order for Turku would bring about 12,000 man-years to the shipyard and its partner

network, an equivalent of about 9,500 jobs in the ecosystem. It would also add an estimated one billion euros to Meyer'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 Meyer 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.



Sustainability reporting

Each year, Meyer Turku prepares a 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 sustainability 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.

The report is prepared as part of the Sustainable Shipyard project, and its contributors include sustainability specialists from all essential shipyard departments. Once those in charge of the various aspects have reviewed the factual content, the company's Executive Vice President in charge of ESG reviews and approves the complete report before publication.

Themes in our reporting

In this report, the goals stated in our 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 carbon-neutral ship concept by 2025.

2. We operate a world-class shipyard
 - a. In terms of emissions from our own operations, Turku shipyard's goal is carbon neutrality 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

GHG protocol standardises emission calculations

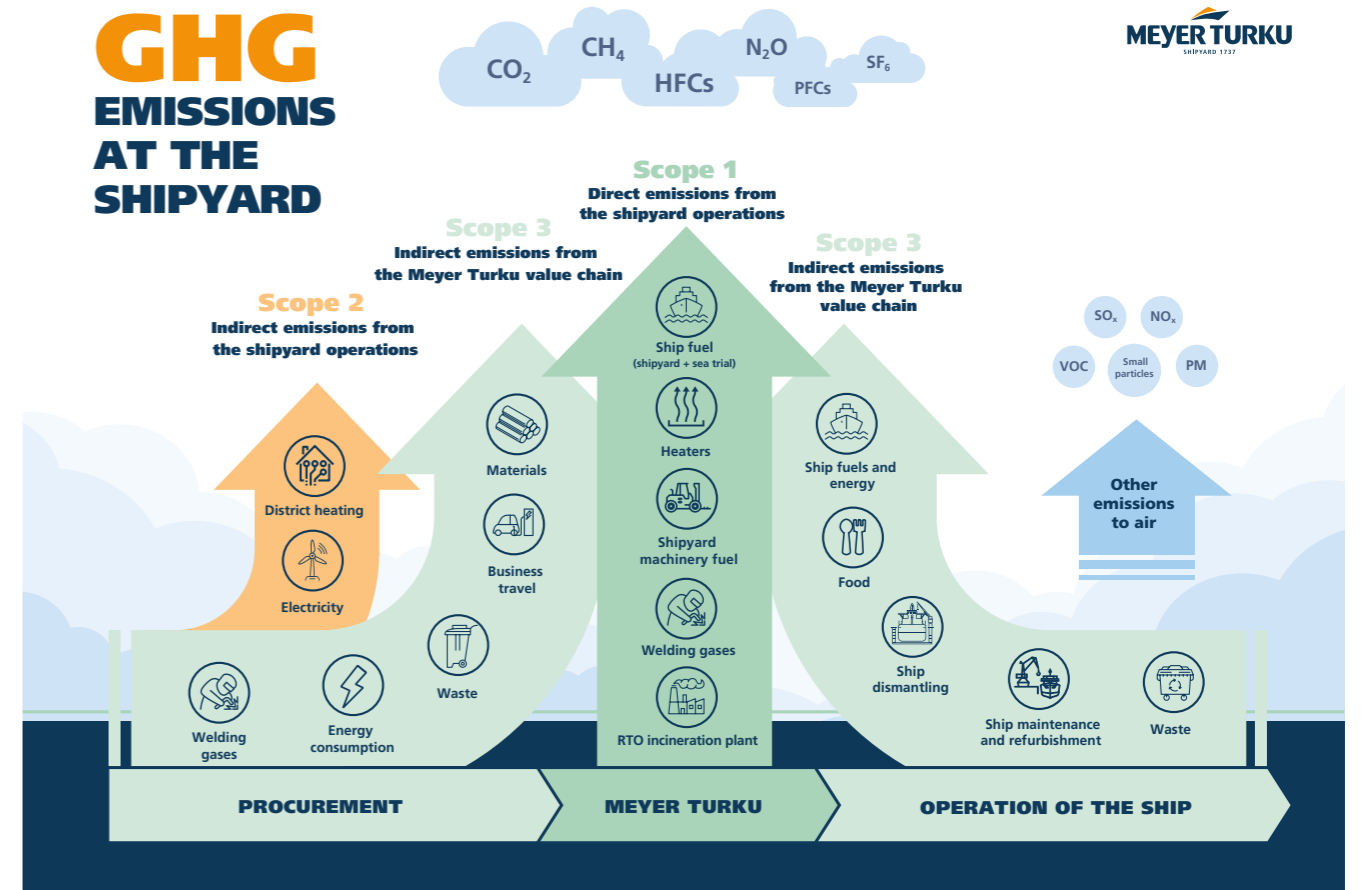
The calculation of greenhouse gas emissions takes into account both direct and indirect carbon dioxide emissions caused by a company's operations.

- Direct emissions refer to emissions generated at the tip of the company's smokestack – or exhaust pipe. These include carbon dioxide emissions from the fuels powering the property's oil heating or the company's vehicles or machinery.
- Indirect emissions, on the other hand, refer to 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** includes all direct greenhouse gas emissions by a company, such as fuel emissions from company vehicles and ships under construction.
- **Scope 2** includes greenhouse gas emissions from purchased electricity, steam or heat production.
- **Scope 3** includes 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.

Our goal for shipyard carbon neutrality encompasses Scope 1 and 2 emissions. The carbon neutral ship concept is focused on the so-called downstream emissions in Scope 3, meaning ship's use-phase emissions in particular.



Protocol). Based on the results, we have been able to identify the most significant emission sources related to the shipyard and shipbuilding, enabling us to reliably measure and monitor our journey towards a carbon neutral shipyard.

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

Shipyard's carbon footprint and emission sources are reported in more detail on page 32.

Due diligence directive for companies

Going forward, corporate sustainability reporting will be determined by EU's Corporate Sustainability Reporting Directive (CSRD). Mandatory reporting in accordance with the directive will enter into force gradually. Meyer Turku's report in 2026, based on 2025 data, will be the first report produced in accordance with the new CSRD directive. 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.

With the regulatory changes, material topics for Meyer Turku's operations will also be redefined. Facilitated by an external expert party, the process is currently underway and enjoys full commitment from the top management. Meyer Turku's key external stakeholders will be brought on board as the work progresses ■

03 WORLD-CLASS SHIPS



Designing and building energy-efficient low-emission ships has long been at the heart of Meyer Turku's operations. Energy efficiency and adoption of low-emission energy sources provides an important competitive advantage as cruise lines consider these increasingly important qualities in their next generation ships. It also affects our 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 CO₂/GT-nm*) which includes gradually increasing reduction requirements.

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 us, strict international regulations are exclusively a positive thing. Ships engineered and built at our shipyard are pioneers in our industry, often exceeding the prevailing requirements for energy efficiency and ship emissions.

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

Towards a carbon neutral ship



Securing energy-efficiency and emission reductions for future ships is one of the most important aspects of Meyer Turku's NEcOLEAP research and development project, due to culminate in a carbon neutral ship concept by the end of 2025. The carbon neutral cruise ship concept is produced in extensive cooperation with companies, universities and research institutes. The technology solutions with world-scale innovation and sustainability developed in the NEcOLEAP research and development project are related to energy and resource-efficiency in shipbuilding, automation, robotics and cybersecurity. Once the concept is completed, Meyer is prepared to go ahead with the planning and production of a carbon neutral ship. The project focuses on identifying new, more sustainable materials and solutions for cabins and other areas, optimising hull and steel structures to reduce fuel consumption, and designing more efficient waste management systems.

Fuel consumed over a ship's life cycle is a major contributor to its overall emissions. A carbon neutral 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 that we also help reduce construction-time and material emissions by selecting sustainable and low-emission alternatives as well as developing the practices at our shipyard.

There is enormous potential for reduced emissions throughout a ship's life cycle. Emission reductions are achieved in close collaboration with our 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 carbon neutral export commodity also helps increase Finland's carbon handprint*, extending the positive climate impact to a global level.

Meyer AVATAR

2023 saw the launch of Meyer AVATAR, a management programme for a future product's research, development and innovation projects(RDI). The programme 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 climate neutral ships requires new approaches, cooperation across the entire organisation and the engagement of a wide ecosystem.

By integrating advanced technologies to the ship design process we can support the timely implementation of climate neutral solutions to projects. Helping transfer new knowledge quickly and fostering interaction between various parties, this process is designed to generate roadmaps towards a climate neutral 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 climate neutral technology and ship concepts and a library of sustainable materials.

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 targets are imposed on each new ship class at the design stage, as demonstrated by Icon of the Seas, completed in 2023. Meyer is also increasing its capabilities to join the global, research-driven Science-Based Targets (SBTi) initiative.

Materiality assessment

To identify the essential sustainability aspects related to ship life cycle, we conducted a sustainability materiality assessment for ship newbuilding. The materiality assessment guides our strategic actions when addressing the key environmental concerns throughout ship life cycle.

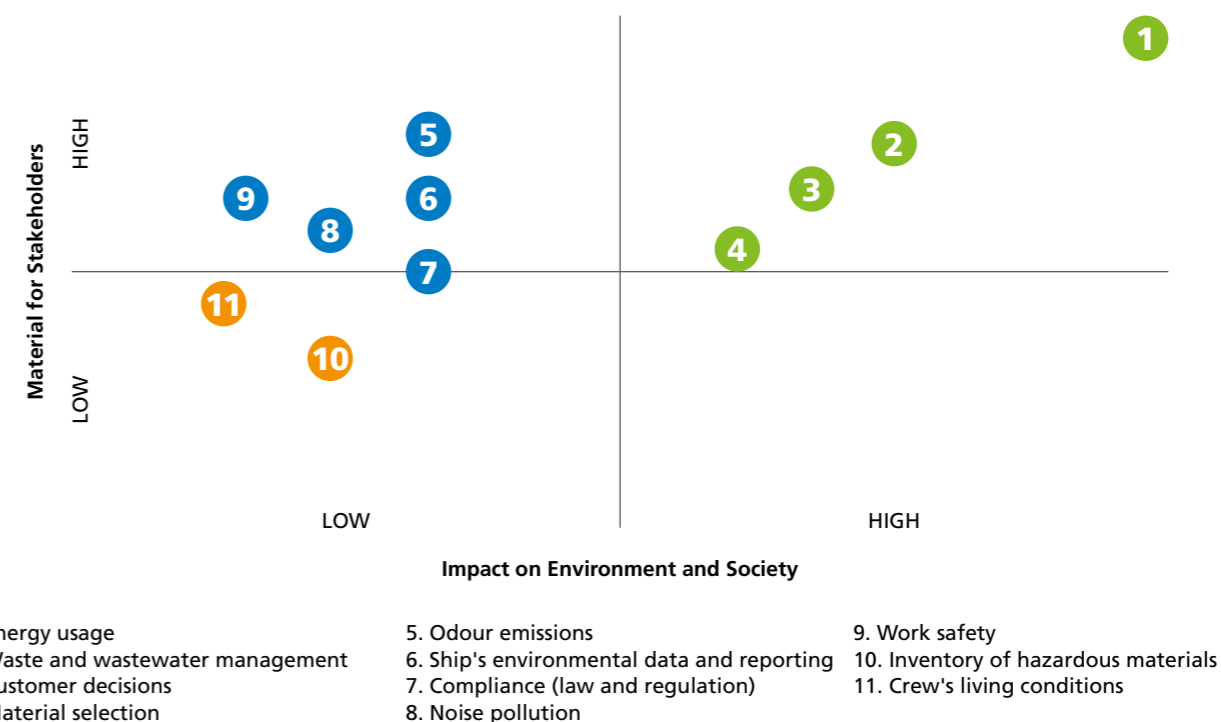
Two perspectives were taken to make the assessment: environmental impact of emissions and selections and their significance to our stakeholders. Expert surveys, interviews and workshops were used to conduct the assessment. The purpose of the assessment was to collect opinions from as many professionals as possible across various fields to ensure that all 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 our clients and suppliers enables us 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)

Our measures

We constantly engage in measures to improve the energy efficiency of our ships and reach our ambitious goal of a carbon neutral ship concept. Our latest measures include more efficient utilisation of waste heat, optimising various systems and adoption of alternative fuels. We have also invested in monitoring operational efficiency and continuous development throughout our ships' life cycle. Meyer Energy Management System (MEMS) is an energy management tool that enables seamless monitoring of ship operations and helps us and our clients ensure that the ship functions as expected. In addition to energy efficiency monitoring, this tool optimises and controls the production of on-board freshwater production, among other things.

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 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 process of future vessels. Energy efficiency systems are constantly evolving, and Meyer Turku has to keep up with the progress to ensure our shipyard and our clients continue to be pioneers in the travel industry.

Fuel and production of electricity

Choice of fuel and decisions regarding the vessel's power station have a significant impact on the total emissions of the completed ship and its energy efficiency. This is why we constantly strive to find new and better solutions and alternative fuels, among others, to ensure that each ship we build is more energy-efficient and generates less emissions than ships that came before.

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. Nitrogen oxide emissions are reduced by about 80% when compared to reference fuel without catalytic converters. LNG reduces ship's CO₂ emissions by 25% and total GHG emissions (CO₂ 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.

We are constantly looking for new alternative fuels and developing technology that makes it possible to adopt them. Together with refineries, we are looking into potential near-future marine applications for various biofuels, such as bioliquids and gases. In addition to bio-based fuels, we are also researching alternative energy production technologies, such as hydro-

gen-powered fuel cells. Because propeller efficiency also plays a major role in a ship's total energy consumption during its operation, we are in close cooperation with marine propeller manufacturers to ensure best possible propellers for each ship.

Hydrodynamics

Improvements in hydrodynamics are important for energy efficiency because it helps 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 where the ship is speed-tested with various transmissions.

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 a holistic concept and a major focus in ships' material selection. Both sustainability and lifespan of materials, as well as safe dismantling at end-of-life, should be considered early on in the design phase – which in turns guides material selection. The amount and range of various materials used in building a ship is immense: for instance, the Icon of the Seas, completed in 2023, required approximately 50,000 tonnes of steel, 6,000 km of electrical cabling, 5,000 km of piping, 9,000 m² of windows, 600,000 litres of paint and 200,000 m² of carpets.

Shipbuilding Completion Oy, our subsidiary, provides turnkey deliveries for cruise ship communal areas, including space planning and management and installation of selected materials. The company is constantly engaged in development work to improve the traceability and sustainability of procured

materials. In addition to sustainability, 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 ours, designs and manufactures all cabin and bathroom modules installed in the ships at the shipyard. Our objective is always to make the cabins as light as possible. We use the best available technical solutions 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 it 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.

Our clients are increasingly interested in waste management solutions that enable recycling and help reduce a ship's environmental impact. We can impact a ship's waste management with our work and offer various solutions for our client,

but they are 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) systems, can reduce ships' emissions and waste and improve their energy efficiency. Pyrolysis systems produce gases that can be directed to a ship's energy systems, helping reduce the air emissions generated by 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. ■





CASE: Icon of the Seas

The thoughts of our customers and our customers' customers about responsibility themes

Delivered from the Meyer Turku shipyard in November 2023, **Icon of the Seas** is the latest example of Royal Caribbean Group's commitment to sustainable ship design. Icon uses the most modern solutions possible to optimize energy efficiency, water and waste handling. The achieved results are impressive: for example, the ship's energy efficiency is 24 percent more energy efficient than required standards for ships in design today.

According to Royal Caribbean's **Senior Vice President Newbuild Mika Heiskanen**, the awareness and interest of the company's end customers, i.e. cruise passengers, in sustainability themes is the biggest in Europe, but it is also growing rapidly in the United States, which is Royal Caribbean's largest market.

"Our mission is to deliver great vacations, responsibly and aim to design the most efficient ships possible. This brings us ever closer to Destination Net Zero, our vision of net zero emissions by 2050. Destination Net Zero provides us with a clear road map guiding all our activities.

We have long been accelerating innovation with experts and partners across many sectors in order to sustain our planet. For example, more than 20 years ago, we started supporting the University of Miami Rosenstiel School's Ocean-Scope program, where our ships collect vital ocean data around the world. In 2016, we also began cooperation with WWF, including our support of Shellbank, an first-of-its kind DNA matching program that is helping protect endangered Hawksbill Sea Turtles.

Innovations accelerate the green transition

We consider a successful green transition a prerequisite for the future of the entire cruise industry. As the newest member of our fleet, Icon, is an excellent example of a ship built in good cooperation with a responsible long-term partner shipyard.

In the maritime industry, there are currently a lot of innovations that aim to improve the environmental properties of ships. However, because the scales are so large, verification of practical implementations is sometimes only possible during the actual use of the ships.

Real utilization of the innovations may require further development while the ships are already in operation. This has happened, for example, with Icon's waste incineration system and the fuel cells planned for the ship: at the handover stage of the ship, the system suppliers' technology had not yet reached final readiness. Fortunately, there is much ambition in shipping companies, shipyards, educational institutions and our other partners, so things are solved in cooperation. The value of the green transition for industry is increasingly understood, mistakes are learned from and development work is very active.

As we aim for a net zero ship in 2035 we will rely on critical multidisciplinary cooperation, along with direct leaps to make our vision a reality. ■

CASE: Meyer RE

MEYER RE – Towards a more and more circular solution



The **Managing Director of MEYER RE, Bertram Koch** discusses the future regulatory changes and competitive advantages from the Meyer RE perspective.

"MEYER RE is for us a new business area where we get to capitalize on the combination of our know-how about the ships we have built and our availability of a highly skilled workforce to create a new service. As part of the MEYER Group, Meyer RE has access to quality materials and competencies, so the level of service is very high. We are looking to serve our customers better through one point of contact offering both newbuild and refurbishing.

Sailing fleet and newbuilds

MEYER RE is also an important initiative towards a more sustainable shipbuilding industry: A ship has a life span of

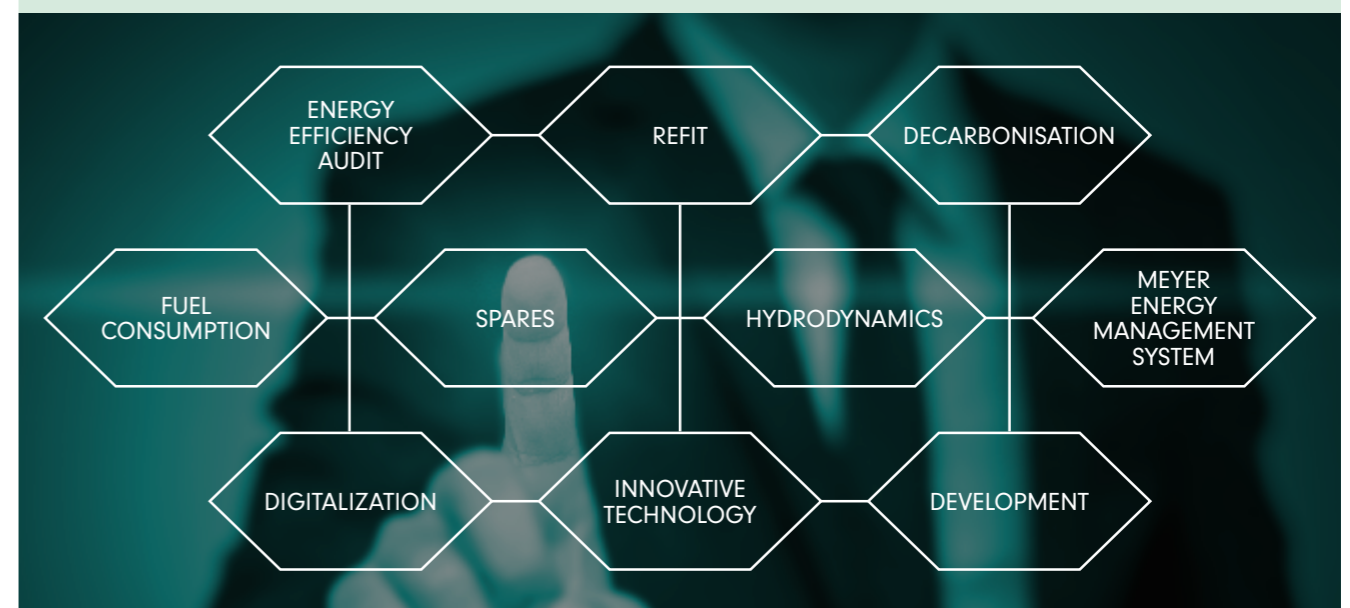
at least 25 years, during which several updates will be done. They must align with the operational area of the original ship and moreover, they must follow changes in regulations concerning e.g., emissions. Most of the time also existing vessels need to be updated to maintain their license to operate – why not upgrade the ships at the same time? We're able to understand how tech works and how you could add value into an existing re-fit ship through add-ins.

Through MEYER RE, we reach both existing customers updating their ships and new customers that look for updating. By serving them well, we show both customer groups that we are qualified partners to also order new ships from.

Learning by doing

Our business approach is all about solving our customers' problems and at the same time about developing the maritime industry as a whole: optimizing the existing fleet, looking for more and more circular solutions, refitting and efficient operations.

In this process, we are very much at the winning side: When refurbishing a ship, we, for instance, gain understanding in how much waste materials you can take out from a ship and how to best replace it with modern technologies and materials. At the same time, this helps us to improve our process of developing and building new ships." ■



04 WORLD-CLASS SHIPYARD

Sustainability work at the shipyard is governed by our 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 us 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 us deepen our understanding of the impact of different operational approaches on our overall corporate responsibility. In addition to people safety, it is important to control and minimise the impact of our 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 our principles, anyone working at the shipyard has the right to refrain from hazardous work and to abort such work.

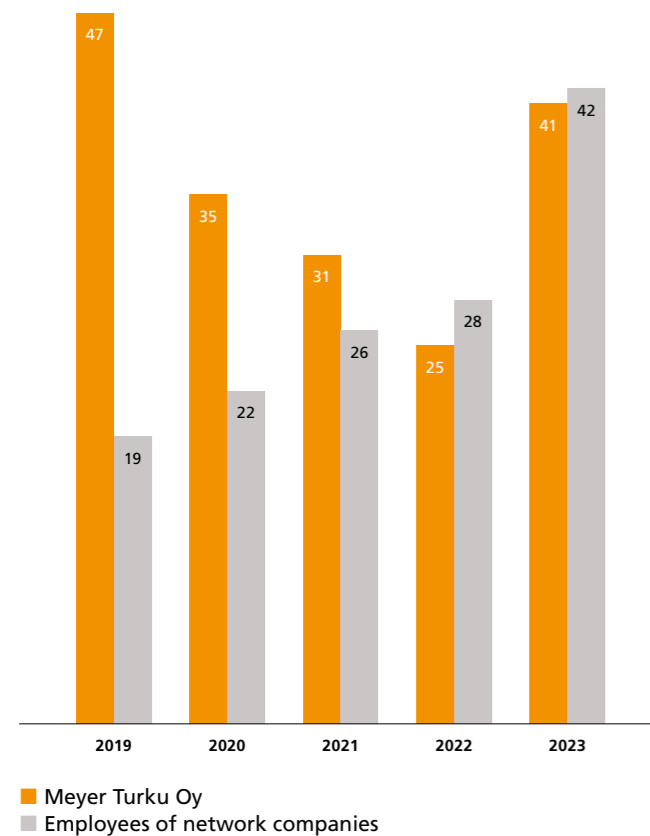
Approximately 7,000 shipbuilders representing 70 nationalities work at the shipyard each day on ships under construction in which, for example, a fire can cause major personal and material damage. In fact, ship fire has been identified as the number one risk at the shipyard. Therefore, fire safety and prevention is continuously upgraded with new technology, such as thermal cameras that improve fire detection. Other risks identified as high include internal traffic, lifting goods and people, and working at height.

Everyone working within the shipyard area, both our personnel and that of our network companies, are required to undergo training on security and environmental risks before given access to the shipyard. We provide HSE (Health, Safety,

Environment) online onboarding in 19 languages to minimise the risk of misunderstandings with our safety instructions. What's more, our 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 2023, the shipyard (including the personnel of Meyer Turku Oy and its network companies), saw a total of 83 accidents that led to absences (the number was 53 in 2022). The accident rate was 8.9 (6.2) for every one million working hours, still substantially below the general average in construction and the industrial sector. Piikkio Works cabin module manufacturer's accident rate also increased slightly from the previous year, settling at 13.5 (12.2).

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 oppor-

tunities, 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, company-level risk management. The combination creates an operating model which establishes transparent and comprehensive reporting of existing risks. 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, we systematically identify risk, hazard and stress factors for each department in the shipyard working environment. 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 2,000 identified risks, of which 198 were updated in 2023. Risk assessment summaries prepared for the departments are used in department-specific onboarding. We require our partners 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 a 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 and by defining remedies 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. Determined encouragement to use the app has produced results and the number of reported observations is growing. Compared to 2022, the number of observations received through the system increased by 30%.

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

Number of accidents					
	2019	2020	2021	2022	2023
Meyer Turku Oy	47	35	31	25	41
Network companies operating at the shipyard	19	22	26	28	42

Accident rate, LTIR*					
	2019	2020	2021	2022	2023
Meyer Turku Oy	13,0	10,5	10,5	8,1	12,5
Network companies operating at the shipyard	3,5	4,0	4,4	5,1	7,0
Accident rate, total	7,2	6,5	6,4	6,2	8,9

*LTIR (lost time injury rate) = accidents causing a minimum of 1-day absence / million working hours

Traffic safety

Internal shipyard traffic has been identified as a major occupational safety risk. To improve the respective level of safety, a steering group for internal traffic has been established. Last year, the shipyard's steering group made a decision to arrange internal traffic training for all vehicle operators as a new safety measure. The goal of the training, mandatory to all machine operators, was to improve the safety of internal traffic and to improve awareness on e.g. internal traffic guidelines. The training is a prerequisite for extending the validity of an operator's forklift license. The two-hour classroom training took place in the spring. Each class saw participants engage in constructive dialogue. The training was met with a positive reaction. The discussions evoked a number of ideas on improving shipyard traffic safety. 484 persons completed the training by the end of May.

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 which takes 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 is essential for 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 continued focus at all levels.

Fire safety level (technology and structures) which corresponds to shipyard operations, readiness and regular upkeep also ensures 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 unique shipyard-specific

characteristics, substantial prevention of fire hazards is possible. Successful fire safety work is largely the result of an actively committed executive team in regard to the shipyard's fire department's work and ability to operate. One good example is the new first response unit acquired for the shipyard last year. This first aid team simultaneously works as a contract partner for the wellbeing services county of Southwest Finland.

Fires are still easier to prevent than put out

Compared to previous years, we had no initial fires caused by flame cutting. This is encouraging for preventive fire safety which uncompromisingly complies with hot work risk levels and their impact on hazardous hot work in ships currently 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 a 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 work methods. Alternative work methods are measures that best improve hot work safety. However, unlearning some old familiar habits is one of the challenges in their implementation.

In February 2023, we experienced a fire that required the ship to be evacuated. In addition to the evacuation, we performed a headcount and alerted Turku region's joint emergency services of a major vehicle fire at the shipyard. The event initiated once the shipyard's fire department had received a fire alarm from the fire alarm system of the ship, then under construction. The shipyard's firemen put the fire out quickly, and the damages were very minor. First units from the Rescue Department of Southwest Finland were at the shipyard in approximately nine minutes from sounding the alarm. The rescue department was tasked with securing the location together with the shipyard's fire department. At the ship, work continued as usual a little less than an hour after the alarm, excluding a small restricted area where a fire cause investigation was conducted with the rescue department.

The fire highlighted three highly important key factors in the fire safety of the shipyard. The most important one is the construction-stage fire alarm system, which is always fully

completed by ship launch. It efficiently covers ship interiors, and it is the first system to respond to any smoke formation. The nifty mobile 'fire stations' that firemen have at their disposal are another important safety investment on the ships. The stations are furnished with full firefighting equipment. With the help of these fire stations, response times are significantly shorter and enable safer smoke diving and first-aid extinguishing. The annual evacuation drills at the shipyard are a third critical safety measure, helping clear out a ship under construction in a controlled, safe way in approximately ten minutes. All these measures help with the rescue operation, speeding it up considerably and preventing the fire from becoming dangerous.

Fire alarm response time

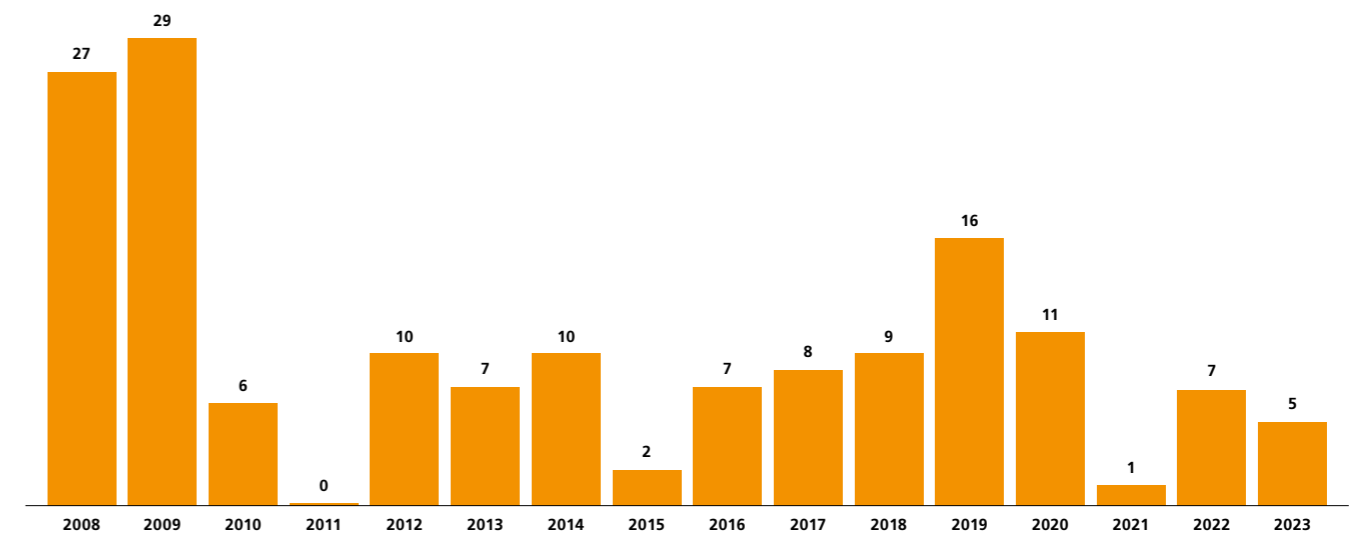
Fire usually progresses in four stages called the ignition stage, the growth stage, the fully developed stage and the decay stage. In the ignition stage, fire advances relatively quickly for five to ten minutes. In this stage, employees and the fire department can easily put out the initial fire with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

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. In terms of work shifts, this means that firemen are to be 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 sound alarms erroneously at the welding spot.

In 2023, the emergency response time stood at exactly two minutes. Almost 700 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.



Number of initial fires



Shipyard environmental impact

Meyer Turku has set an ambitious goal of reaching carbon neutrality at its shipyard by 2030. Other environmental goals and measures set for the shipyard include keeping a clean environment at the shipyard and the surrounding areas, promoting rich biodiversity and becoming a pioneer in circular economy. 2023 saw the shipyard launch several initiatives to meet these goals. Three subprojects were launched as part of the larger Sustainable Shipyard project: improving shipyard energy efficiency, advancing circular economy in shipyard operations and increasing waste management efficiency. 2024 will also see the launch of a biodiversity subproject.

The shipyard emits noise, emissions to air and water and possibly to ground in conjunction with accidents. Emissions to air are caused by shot blasting, painting, 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 are taken again in 2024, as per the monitoring plan. Shipyard VOC emissions are generated from paints and thinners. In 2023, the shipyard made an agreement on recycling thinners, reducing the total amount of thinners used at the shipyard.

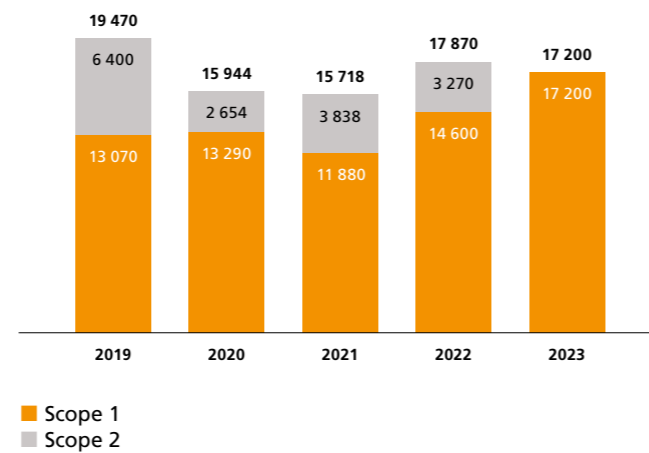
Shipyard carbon dioxide emissions result from transports, heating the ship and the facilities, and fuel consumption of the ship under construction. Shipyard logistics rely on forklifts and reach stackers which run on combustion engines, and ships are heated with fuel oil-powered heaters. In order to reach carbon neutrality by 2030, the shipyard has initiated projects which aim to reduce the use of fuel oils and discover alternative fuels and heating and transport solutions.

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 has only a minor straining impact on the maritime area. Separate sediment samples are another tool for studying our 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 2023, shipyard operations did not trigger any external reports of environmental harm.

When changes are made to shipyard operations, the resulting environmental impact is always assessed. The goal is to avoid increasing our adverse environmental impact. An

CO2 emissions (Scope 1 and 2), tCO₂



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.

Energy consumption

Energy efficiency has been identified as one of the most important environmental actions taken at the shipyard. With energy-efficient operations, it is possible to fight climate change effectively, and energy efficiency also improves profitability. Meyer Turku joined the Energy Efficiency Agreement (EEA) for Industries at the beginning of 2023 and, in accordance with the agreement, aims to reduce energy consumption by -7,5% (-9,588 MWh) by the end of 2025. Meyer's operations are very energy-intensive, making the set goal quite ambitious. In fact, there is a determined effort to reach and measure the goal with cooperation between Meyer personnel and select partners. By the end of 2023, we had reached 6,095 MWh which amounts to about 64% of the EEA goal.

We have taken the following energy-saving measures (ESM):

- In 2018–2022, a total of 20 ESMs were taken with a total impact of 2,057 MWh/a
- In 2023 (Jan 1 - Nov 22), a total of 9 ESMs were taken with a total impact of 4,038 MWh/a
- From January 1, 2018 to November 22, 2023, a total of 29 ESMs were taken with a total impact of 6,095 MWh/a.

Emissions

In Meyer Turku's corporate responsibility strategy, the shipyard aims for carbon neutrality by 2030 for its own emissions. Progress towards this goal and the impact of the measures

are monitored by calculating the greenhouse gas emissions generated by the shipyard's own operations (Scope 1 and 2) annually in accordance with the GHG protocol. Our next objective is to further define Scope 3 emissions and to report them in the future in accordance with the ESRS standard.

One of Meyer Turku's goals is to improve knowledge and understanding of sustainability and emissions together with its network. In order to increase competence and awareness within their network, Meyer Turku and the Turku University of Applied Sciences have launched a coaching module for carbon footprint calculations. Meyer Turku shipyard's emissions calculations comply with the regulations of the environmental permit (ESAVI/22480/2018).

With the new Meyer Energy Management System (MEMS) we are able to assess the amount of emitted methane more accurately. As a result, we have redefined our methane emissions calculations. Installed on board, MEMS enables a more accurate real-time monitoring of the ship's operations for both Meyer Turku and the client.

In 2023, Meyer Turku made the decision to use green district heating only. The district heating used at the shipyard is produced at Turku Energia's Kakola heat pump plant. In the spring 2023, we piloted renewable diesel in portable heating boilers, used for heating ships. After the successful pilot, fuel used in all heating boilers was replaced with renewable diesel.

Hydrotreated Vegetable Oil (HVO) is a fuel made from renewable waste and residue raw materials. HVO reduces emissions by up to 90% compared to the life cycle emissions of a regular fuel. In our calculation method, biocoal neutralises Scope 1 net emissions for HVO. For the fuel itself, its already somewhat low emissions from production are included in Scope 3, category 3; Fuel and energy related emissions. These changes allowed us to reduce Scope 1 & 2 emissions by 4% compared to 2022 and by 50% compared to 2017.

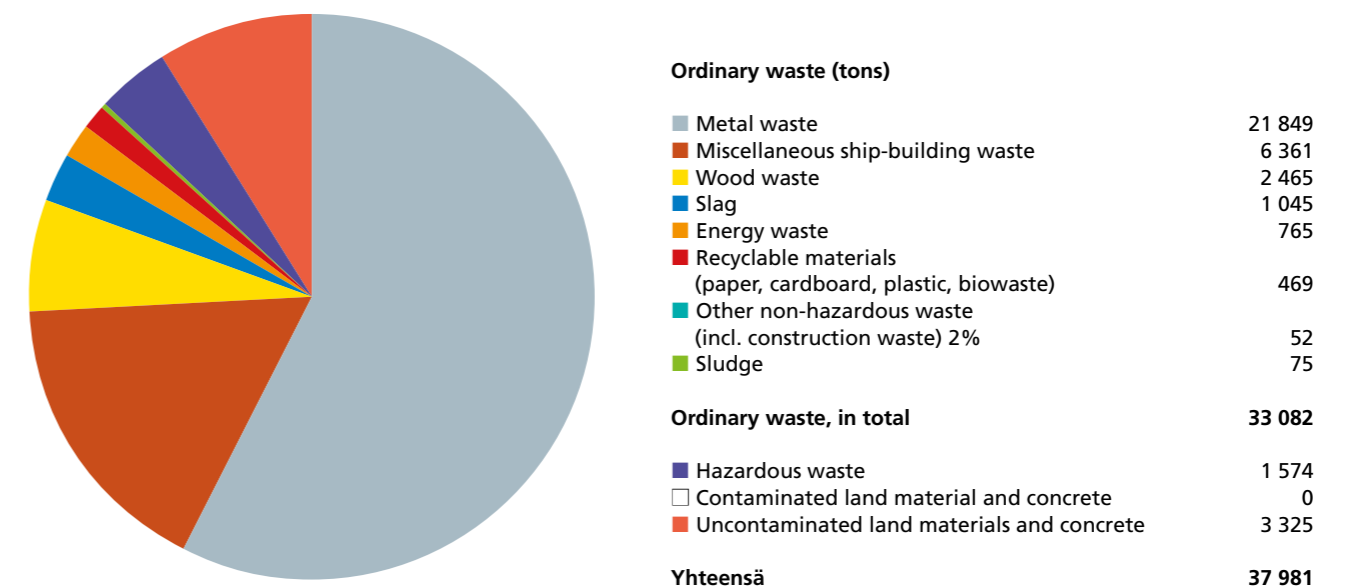
In our shipyard operations, the most significant emission sources include fuel consumption for the ship under

construction and heating for the ship and the properties at the shipyard. 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 our VOC emissions at the RTO facility (Regenerative Thermal Oxidizer) has helped significantly reduce VOC emissions in the pre-processing. In accordance with the shipyard's environmental permit, usage is monitored annually and particulate and VO emissions are measured every 5 years. The pre-processing line includes the inspection of particulate filters from shot blasting and the RTO facility. In 2023, the RTO facility had a degree of purification of 96.7% and the average concentration of VOC gases stood below the threshold set in the environmental permit.

Waste management and circular economy at the shipyard

During 2023, the Turku shipyard started a circular economy project in conjunction with the Sustainable Shipyard project, with the objective of advancing Meyer Turku's goal to be an industry pioneer in circular economy. A circular economy project at a shipyard requires major effort; the most important circular economy principles are taken into account and, based on them, a comprehensive circular economy programme is created. As part of this programme, we are making plans for immediate, concrete actions to improve waste management for both the shipyard and ships under construction. Shipyard operations generate a lot of waste; in 2023, the biggest individual waste components were metal waste, miscellaneous shipbuilding waste and energy and wood waste.

Amount of waste 2023



The Turku shipyard circular economy project is divided into three sections:

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 on circular economy's impact on business operations and to implement it as a principle part of Meyer's shipbuilding by discovering new industrial symbioses for boosting waste recycling.

Circular economy includes utilising existing materials and products as much as possible with reuse, repair and recycling, thus extending their lifecycle. With the help of circular economy, the amount of waste and procured resources can be reduced as the resources are used more efficiently. Preventing waste, reusing materials and ecological planning bring financial savings to the company and directly reduce greenhouse gas emissions. Circular economy also reduces environmental strain, improves the reliability of access to raw materials and boosts competitive advantage.

The shipyard's circular economy programme is drawn up in cooperation with the University of Turku and aims to research industrial symbioses in circular economy and plan concrete actions for reducing 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.

During the project, we will take a close look at the current waste management situation and then study various options for improving the situation. We will also create a waste management plan. We also aim to prevent total waste from increasing in the future, even if our capacity grows. As part of the project, we will also run a pilot programme in cooperation with the waste management service provider. The purpose of the programme is to enhance the shipyard's recycling rate by increasing source separation and, consequently, improve both internal and external waste logistics by sorting waste already at the shipyard and by transporting it in larger loads for further processing. This decreases the number of waste transports and related emissions.

Organising waste management for a ship under construction has turned out to be quite challenging. In accordance with amendments to waste legislation, we must increase source separation. However, due to space restrictions on board, we have yet to find appropriate solutions. Waste adds to the ship's fire load, which is why it must be collected safely and transported off the ship as quickly as possible. What's more, poor waste management adds to the clutter at the worksite and may cause accidents. The goal of improving on-board waste management is to make on-board waste collection and transporting waste off the ship more efficient and to increase source separation.

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.

Clean nature

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, we cannot do anything significant to reduce its usage.

Waste water 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 the 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 is monitored in accordance with the monitoring plan based on the environmental permit. In 2023, the rain water system was upgraded with a new oil separator at the loading dock. What's more, waste water resulting from washing machinery was discharged to the sewer instead of the rain water system. When construction work takes place at the shipyard, the quality of rain water 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 or the leak risks resulting from operations in the area.

Biodiversity

The Turku shipyard is located at Raisionlahti 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, the shipyard as well as its immediate vicinity is home to oak groves, rocky meadows and coastal grassland. In addition to the natural habitat typical to the area, the Raisionlahti 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 Koivuluoto 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 Raisionlahti bay and the adjacent bayfront is another significant natural site. As a valuable waterfowl habitat, it is a

protected area and part of the Natura 2000 network. Ruissalo island is also 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 the country.

The shipyard builds the largest cruise ships in the world, and as most of the work is conducted by the seafront, risk management and preventing particulate and chemical emissions are an important part of our daily operations. Caused by shot blasting, particulate emissions are alleviated with exhaust air filtering. The shipyard's fire department has been given detailed instructions for preventing random chemical emissions. This ensures that no significant emissions end up in the sea with rain water. What's more, we regularly monitor the effect of our operations on noise levels, the soil and rain water.

By the sea, the wind also poses a significant risk factor for occasional littering, as it can drive loose plastics and other litter off the area. For this reason, shipyard seafronts are cleaned constantly. What's more, we annually conduct a more extensive operation on Raisionlahti bayfronts and remove shipyard and other litter from the coastal grassland. Prevention, however,

plays the most prominent role, and we strive to avoid littering of the surrounding environment and the maritime area by covering ships under construction with tarp, by using nets and other barriers in the dock area and by replacing open waste bins with lidded bins.

In 2023, we restored the critically endangered (CR) rocky meadow near the main gate's parking area. During the land restoration, we removed alien species, such as lupins and common leaf trees, in order to create better conditions for junipers and other rare and endangered species to thrive. We will continue to maintain the rocky meadow in the future, too. In addition, we transferred five bees' nests to the shipyard in early summer 2023. Bees are important pollinators whose impact extends far beyond the gates of the shipyard. During 2023, Meyer Turku also made efforts towards starting a project under the more wide-reaching NECOLEAP green transition project. Commencing in 2024, this project is directly focused on improving biodiversity at the shipyard. ■





CASE: HSE Day
HSE Day

During the shipyard's annual HSE day, the staff gets to take part in various events and activities that bring attention to the most important aspects related to well-being and safety at the workplace. Information regarding the HSE day is sent to the staff and our network companies well in advance. After the event, participants are requested to provide feedback to help document any areas of improvement and development ideas.

In 2023, the programme included, among others, presentations on health and safety, training and information on environmental responsibility, and practical safety drills, such as extinguishing fires and servicing protective equipment. The shipyard's fire department showcased its latest equipment, and the City of Turku provided information on exercise opportunities and activities around the city. Fortum explained their waste management practices and described the principles for sorting and recycling waste. At the shipyard's health centre, participants had the opportunity to measure their hand grip strength and explore various equipment that help reduce the strain of manual labour. ■



Environmental figures

Energy, electricity and water consumption

Meyer Turku Oy					
	2019	2020	2021	2022	2023
District heating, MWh	46 684	37 380	48 272	41 075	44 995
Electricity, MWh	69 723	67 043	73 067	76 293	78 173
– of which produced in our own solar power plant		417	515	510	452
Water consumption, m ³	211 704	144 500	172 000	223 960	216 250

Piikkio Works Oy					
	2019	2020	2021	2022	2023
Electricity, MWh	1 144	1 135	985	1042	846
Light fuel oil, kg	23 829	32 808	5 091	31 360	23 654
Liquefied gas, m ³ *	145 000	121 548	142 158	107 182	92 149
Water consumption, m ³	1 817	1 852	1 716	1 613	829

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

Technology Design and Engineering ENGN Oy					
	2019	2020	2021	2022	2023
District heating, MWh	68	63	66	62	71
Electricity, MWh	42	42	35	38	39
Water consumption, m ³			67	56	65

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 CO₂

	2019	2020	2021	2022	2023
Scope 1	13 070	13 290	11 880	14 600	17 200
Scope 2	6 400	2 654	3 838	3 270	0
Total	19 470	15 944	15 718	17 870	17 200
Emission intensity (kg CO ₂ eq/h)*	4,5	4,1	4,0	2,1	1,8

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

Other airborne emissions (tons)

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

Waste by component (tons)

Meyer Turku Oy					
	2019	2020	2021	2022	2023
Metal waste	19 381	14 676	21 459	19 993	21 849
Miscellaneous ship-building waste	4 508	5 880	4 197	5 156	6 361
Wood waste	2 086	2 409	1 774	2 267	2 465
Slag	1 834	1 697	778	798	1 045
Energy waste	630	493	401	419	765
Recyclable materials (paper, cardboard, plastic, biowaste)	391	295	257	286	469
Other non-hazardous waste (incl. construction waste)				491	52
Sludge	752	197	44	64	75
Ordinary waste, in total	29 121	25 767	28 910	29 474	33 082
Hazardous waste	292	316	212	295	1 574
Contaminated land materials and concrete	12 104	1 039	399	251	0
Uncontaminated land materials and concrete	149 298	2 223	94	106	3 325
Total	161 694	3 577	29 615	30 126	37 981

Piikkio Works Oy					
	2019	2020	2021	2022	2023
Energy waste component	104	122	76	142	50
Metal waste	177	103	68	108	93
Cardboard and paper	87	92	55	102	53
Construction waste	68	25	18	14	12
Miscellaneous wood	3	2	0	0	0
Paint waste	–	0	0	0	0
Combustible waste	–	0	0	0	0
Plastic waste					15
Other (total)	5	3	4	3	0
Total	444	347	221	369	223

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

Waste recycling and disposal (tons)

Meyer Turku Oy					
	2019	2020	2021	2022	2023
Recycling	18 846	14 210	21 177	20 131	22 009
Recovery (including energy recovery)	157 268	9 084	6 532	8 675	13 772
Reuse	868	691	486	140	366
Incineration disposal and physicochemical treatment (hazardous waste)	292	337	205	243	1 462
Composting and decomposition	9	22	–	185	340
Disposal at landfill	13 992	4 880	1 215	752	31

Piikkio Works Oy					
	2019	2020	2021	2022	2023
Recycling	264	195	123	210	161
Recovery (incl. use for energy)	107	124	76	142	50
Landfill disposal	68	25	18	14	12
Other	5	3	4	3	0
Incineration	–	0	–	–	0
Total	444	347	221	369	223

CASE: Logistics project

Lower emissions with upgraded inventory management

In 2023, the shipyard started to implement a new inventory management system for factory logistics. The shipyard's workflow was missing a system which could be used to reliably manage parts manufacturing, part assembly and section assembly, and workloads of logistics resources. What's more, there was not enough data available to support decision-making and development work. About 50% of the working hours in factory logistics were spent on looking for various parts, resulting in wasted resources and unnecessary emissions from transport equipment.

The new inventory management system will cover up to 90% of the parts needed in part assembly, saving time by enabling efficient management of logistics resources and work queues. It is also possible to monitor and optimise the location, size and content of interior and outdoor warehouses, which makes responding to production needs efficient by means of e.g. pre-picking. Trucks and terminal tractors will be equipped with tablets and readers for pallet management and transfer, reducing time spent on searching for parts and minimising unnecessary driving.

The new data source created by the inventory management system is key for reducing logistics expenses, directly enabling decreased consumption of fuel, among others, and thus reducing total emissions. ■

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. This is why it is important to maintain our employees' high level of competence and ensure their well-being at work. The secret behind Meyer Turku's exceptional performance is a highly professional and thriving personnel that we support in all possible ways both at work and in their free time. The shipyard's health care centre helps us maintain our work capacity, ensuring our 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 supports the continuous development of our 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.

Management training develops organisational culture

High-quality, consistent and constantly developing managerial work is an important success factor for us. Manager coaching, which started in 2021, continues to this day. The coaching is based on the management principles specified in Meyer's strategy. Manager coaching was tied to an overall solution where we develop management competence and tools and seek to unify our manager culture to better 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, we continue to develop a participatory leadership style that makes use of coaching, providing and receiving feedback as well as 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 coaching days, 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.

Vocational continuing and supplementary education at the Shipbuilding School

The shipyard's own Shipbuilding School ensures that we always have knowledgeable and well-trained personnel. Our own school organises e.g. qualification trainings, systems training and language courses. In addition, our school trains the personnel of our subsidiaries and contractors. Some trainings are demand-based, while some are available year-round. In 2023, almost 3,000 people took part in short-term trainings organised by the Shipbuilding School, 1,000+ of which were employees of our network companies.



The school has a significant role in continuously improving and upholding the quality of work at the shipyard. One example is the International Welding Specialist (IWS®) training provided by the school in 2023. Specifically designed for the shipyard environment, the practical IWS training took 34 days.

Anyone who completes the training successfully is qualified to work as an international welding specialist at the company and as a supervisor in welder qualification tests. Nine Meyer employees and seven employees from our network companies participated in the training.



Responsibility for personnel health and well-being

We find it particularly important to take good care of our personnel's work capacity in all its aspects and to proactively identify elements that may impose a threat or a strain to shipyard workers. By preventing possible issues and managing total risks, we can support the continual well-being of our employees as well as any rehabilitation efforts where necessary. The shipyard's own occupational health care, managers and early support model are key in this.

The early treatment and rehabilitation group model, developed by our 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 our employee falls ill or hurts themselves in an accident, we always strive 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, we look 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. Our goal is to secure good work capacity and a long, uninterrupted working career for every employee.

'Better work ability' rehabilitation group for 55+ year-olds

In 2023, we 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 Meyer employees whose work capacity is classified as high risk. Those in this group have been identified to have various straining factors, such as musculoskeletal issues, stress or exhaustion. In 2023, the group consisted of 12 people. The multi-professional, goal-oriented rehabilitation programme lasts one year and includes functional activities for the well-being of the mind and body as well as ways to improve one's own work practices. The final results on its overall impact will be available in 2024.

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

Together with its sister shipyards, Meyer Turku is one of the world's leading cruise ship builders. We are known for the most progressive marine technology in the world. Building high-class cruise ships and planning and implementing new construction projects requires remarkable professional skill and the highest level of know-how in every unit and function of our organisation.

The shipyard offers a wide variety of job opportunities and constantly looks for new experts via different career paths. Our 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, we actively engage in national-level cooperation with various schools and student communities to showcase our job opportunities, specifically to students of technology in upper secondary education and universities/polytechnics. Each year, we hire approximately 100 summer employees for a wide variety of duties, offering

internship opportunities for technology students. In addition, we commission dozens of theses every year. Upon graduating, a majority of such thesis students become permanently employed with us.

The cruise ships we build 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 very 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 organisation, safety, IT, information security and communications. ■

CASE: Equality and non-discrimination plan

Towards a fair and equal shipyard

The fair and equal treatment of Meyer Turku's personnel is a highly important matter we take into account in our everyday work. It is also detailed in the company's business practices and the Code of Conduct. In 2023, the company's equality and non-discrimination plan was updated for 2023–2025. The plan aims to improve personnel's equality, diversity and fair treatment.

The update was implemented in workgroups which included occupational safety representatives for workers and office workers, the safety manager, elected representatives for workers and office workers as well as senior office workers, representatives from the HR organisation and an occupational health physician. The workgroup convened three times during the autumn. In the first meeting, the workgroup reviewed the existing equality and non-discrimination plan and pointed out needs for updates and improvement. For the second meeting, workgroup members prepared separate evaluation forms which were used to select the final update and improvement measures. The plan was completed at the end of November after a round of reviews and comments.

The purpose of the plan is to improve the work community with active measures. Its main goal is to secure a work climate, for every shipyard worker, where people appreciate one another and where personnel is treated equally regardless of their duties or position. The measures aim to minimise the probability of unfair treatment. One goal for the update was to identify improvement areas and measures specific to the Turku shipyard.

Current situation in statistics

Another goal for the workgroup was to assess the current situation at the shipyard in terms of non-discrimination and equality. At the end of 2022, the shipyard employed 1,893 people of which 892 had a worker role and 1,001 an office worker role. 93% of the employees were men, 7% women. Of the office workers, 76% were men and 24% women. For senior office workers, the respective numbers were 77% and 23%. Age distribution at the Meyer Turku shipyard was quite uniform in almost all age groups for both workers and office workers. For workers, 60+ year-olds represented the largest group, while employees aged 30 to 34 were the largest group for office workers. In 2022, average personnel age was 44 years.

Salary comparison

Women's and men's salaries were reviewed by combining similar duties into groups and comparing the average salaries between women and men. The relative shares of the average salaries for different groups were 95–101% for workers (in 2019, the respective number was 94–100%). In other words, the situation is very similar to 2019. For office workers, the relative shares of average salaries for different groups were between 90% and 107%. This is substantial improvement from 2019, when the relative shares were between 84% and 101%.

Improvement measures

After a joint discussion, the workgroup picked the following measures for the upcoming year:

- Working conditions:** Improved implementation of the improper conduct prevention model and distribution of materials to personnel, removal of nude calendars (both female and male) from shipyard facilities, implementation of the 'Työkuntoon' on-site rehabilitation programme, ergonomics guidance project, review of inclusion (which factors impact the experience of inclusion and how these experiences potentially differ from each other, depending on the position and other background factors of the interviewee).
- Recruitment:** Looking into possibilities to organise anonymous recruitment, continuing suitability assessments for new managers, distributing guidelines related to internal transfers.
- Personnel development:** Conducting appraisal interviews and following up on them, starting manager onboarding and implementing training for new managers.
- Wages:** Manager training in regards to salary structures.

The HSE steering group is tasked with implementing measures for equality and non-discrimination and following up on the situation. ■



CASE: Regional development training

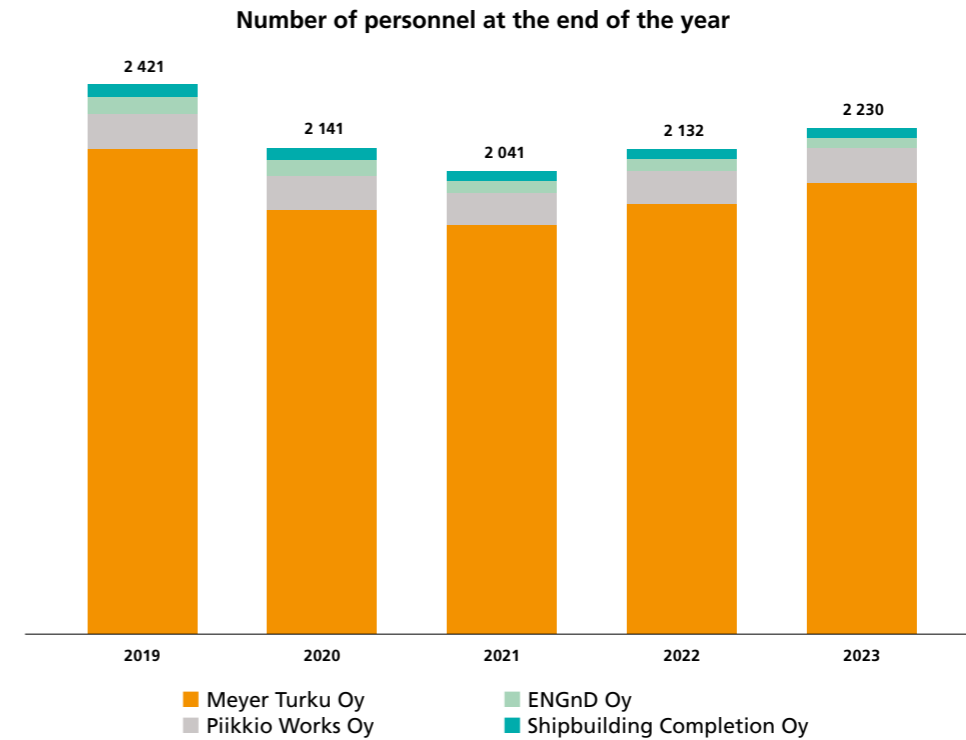
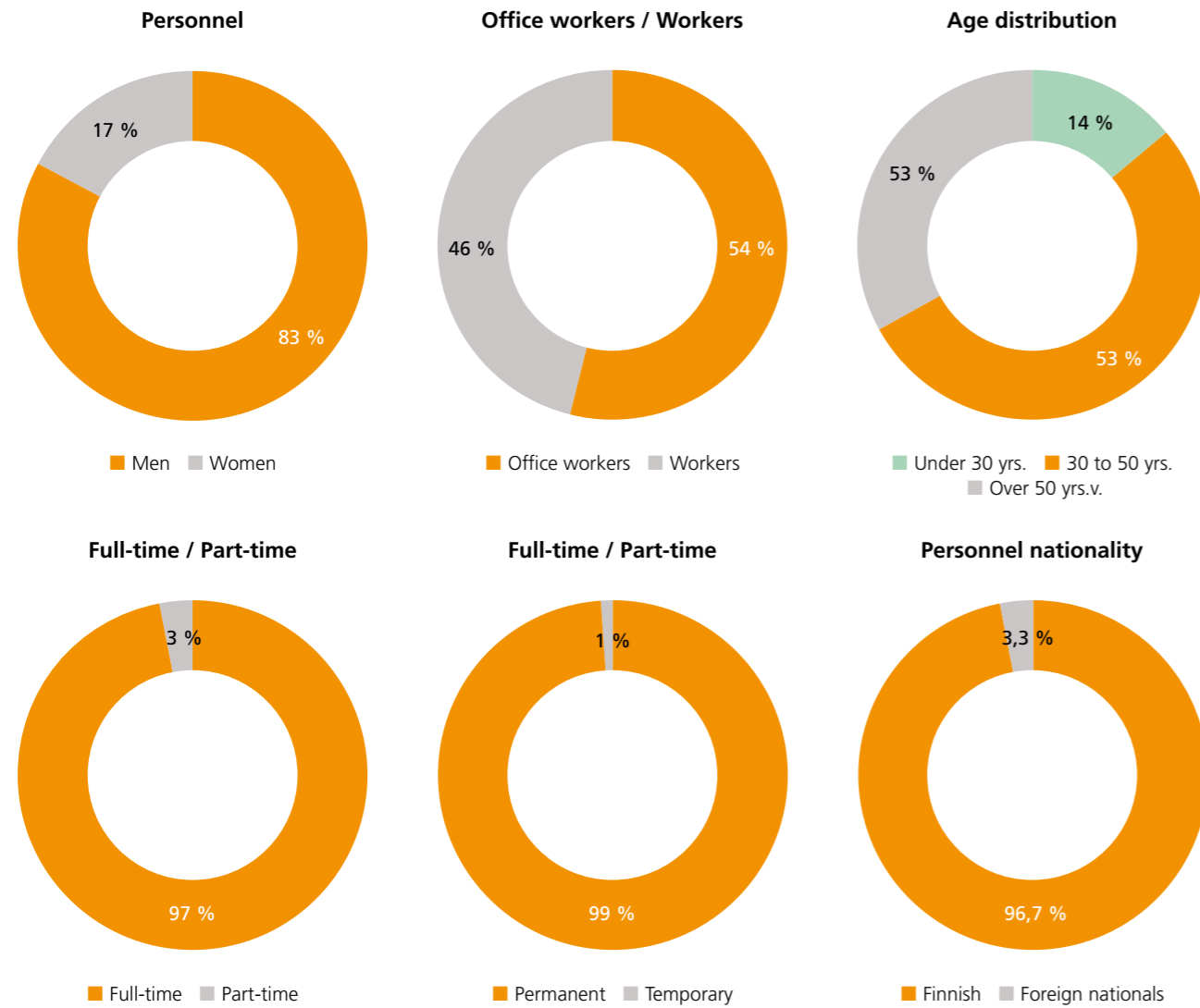
Game-based learning enables practical training

A new training module for regional development was taken into use at the Shipbuilding School. The module was created using an innovative game-based learning method. This module is used for training Meyer personnel. The learning project is a part of a larger NECOLEAP research and development programme which aims to secure the competitiveness of the Finnish shipbuilding industry also in the future. The project was organised in cooperation with LessonLab Oy and the University of Turku.

The training module aims to highlight risks and improve management skills in regional development projects, while promoting knowledge transfer and the sharing of best practices. The project was started by interviewing regional managers and work supervisors, identifying challenges related to regional development management and identifying best management practices. The interview results were used in developing the learning game, during which the actual training module was planned and built.

The first regional manager training took place in December 2023, with a total of 13 trainees participating. The Meyer learning game is a simplified model of duties related to actual regional development. In the game, learners were tasked with managing a regional development project and ensuring that the developed region can be delivered to the client within the provided schedules and cost framework. In the simulation, trainees had to make decisions typical to regional development while being simultaneously challenged with managing a complex matrix of tasks under time constraints. The new game-based training was positively received by all participants. ■

Key figures



Personnel

Number of personnel at the end of the year

	2019	2020	2021	2022	2023
Meyer Turku Oy	2 139	1 869	1 806	1 893	1 990
Piikkio Works Oy	153	150	139	147	152
Technology Design and Engineering ENGnD Oy	76	73	52	50	46
Shipbuilding Completion Oy	53	49	44	42	42
Total	2 421	2 141	2 041	2 132	2 230
On average, within the year	2 387	2 067	2 086	2 133	2 214
New recruitments	287	115	144	257	226
Starting turnover	4,7 %	5,3 %	8,4 %	7,7%	6,1%

Training and education

Short training, number of participants

	2019	2020	2021	2022	2023
Meyer Turku Group's personnel	3 320	2 286	2 175	3 844	1 784
Network company personnel	613	600	1 448	1 471	1 039
Participants total	3 933	2 886	3 623	5 315	2 823

Recruitment trainings, number of trainees

	2019	2020	2021	2022	2023
Meyer Turku Group's personnel	44	15	0	25	41
Network company personnel	35	0	0	0	0
Trainees, total	79	15	0	25	41

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

06 PART OF SOCIETY

As a leader in the international maritime industry and shipbuilding, Meyer Turku plays a vitally important and responsible role in our society. We are tightly involved in running development projects designed to improve corporate responsibility and sustainable development in shipbuilding and the entire maritime industry. We work actively with the entire Finnish maritime cluster as well as research institutes and universities. Our close cooperation with schools and universities ensures that we reach future shipbuilders.

We don't build our ships alone. 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, extending across Finland and even abroad through partner companies. Up to 80% of our ships' value consists of work conducted by our 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 municipa-

lities 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 our network companies, we directly employ around 4,100 people and indirectly over 4,500 people. The actual impact is even 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. Our operations are steered by dependable quality, close cooperation, innovative thinking and flexibility that lead to long-term partnerships.

Contractor network

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 our efforts to manage the 15 million individual pieces needed to build our cruise ships. Our cooperation would not be possible without mutual trust and solid core values that constantly enable setting new standards for technology, design and quality.

Our network includes, for example, design companies, device, material and system providers, turnkey solution providers as well as subcontracting and service providers. We use our network 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.

Supporting our network's corporate responsibility efforts

We aim to set a good example in sustainability and corporate responsibility for our partner network and to push our 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. We train each network employee for job safety at the shipyard, and we closely monitor our suppliers' ways of working and their performance. Ethical conduct and sustainable practices by our suppliers are of utmost importance to us. Shipyard contracts always require the

commitment to our Code of Conduct for Suppliers.

In our supplier selection process, we pay 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. We require each network company to draw their own plan for work safety and occupational health and we monitor 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. Our conduct is based on open and fair interaction, and corporate responsibility is one of our most important values. Only by understanding the challenges our partners face can we manage our schedules, processes and other sources of uncertainty with required precision. This is why all activities between the shipyard's departments and our suppliers are tightly coordinated.

Global Supply Chain Management is a (global) support function for Meyer Group's procurement department. It supports purchasers at Group level, providing network related information, conducting risk management and steering the development of the partner network.

Supplier sustainability questionnaire

To make sustainability possible for the shipbuilding industry, it is extremely important to understand and analyse the environmental impact of each material stream and individual work stage. Conducting a sustainability questionnaire for the companies in our supplier network was an important first step in our efforts to piece together the big picture. The questionnaire was designed to identify planned and implemented sustainability measures by Meyer Group's suppliers, in order to gain a better understanding of our shared road towards a more sustainable future. Every response played a major role

in the overall collection of data, enabling us to identify and implement development measures in our network and support their sustainability work.

Delivered to 714 contractors, the questionnaire received 223 responses, a response rate of 31%. According to the results, 43% of the respondents had a separate sustainability strategy, 21% of respondents regularly produce a sustainability report, and 48% had an existing written Code of Conduct. 42% of companies reported that they had incorporated greenhouse gas emissions as part of their company's strategy or operations, while 14% had the ability to provide an estimate of the greenhouse gases of their supplied materials, work commissioned from them, or their systems.

In terms of greenhouse gas emissions, the results were also highly positive; 44% of the companies had reduction measures in place while 27% had set targets for reducing greenhouse gas emissions. Their reduction measures included investments into energy and material efficiency, replacing vehicles that run on fossil fuels, and extending the life cycle of their products.

General Supplier Requirements

Meyer 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. As part of supplier management by the Global Supply Chain Management team, Meyer Group's General Supplier Requirements (GSR) were published in spring 2023. GSR is a guideline and recommendation to our network companies regarding what they should take into consideration in their operations. The guidelines summarises our company's baseline expectations for suppliers regarding their management systems and operations, from the perspective of cooperation and constructive business partnership.

As part of the Global Supply Chain Management team's operations, we assess our suppliers in terms of GSR compliance, work together to reach our goals where necessary and support our network in planning and implementation of development measures. These new supplier requirements have mostly been received well by the network. Suppliers feel that they have benefited from the GSR and have been able to

leverage it in improving their own operations. GSR is one of our tools that helps us deepen the cooperation and partnership with the suppliers in our network.

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 our 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 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 our cooperation, we value interaction and provide opportunities for students in several fields to add to their competence and develop professionally. Today's luxury 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. Our cooperation extends to universities, universities of applied sciences, vocational schools as well as general upper secondary schools and secondary schools.

In addition to our cooperation with the personnel in these places of education, we are also in active direct contact with guilds and student associations in our 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. We provide student groups with opportunities, such as shipyard visits, go to schools to talk about our company and the jobs available at the shipyard, and visit student expos and other student events.

In addition to universities, we strive to reach students and teachers in upper secondary education. By better showcasing job opportunities in the maritime industry, we ensure that new professionals will continue to find their way to our industry in the future. In cooperation with JA's Yrityskylä learning module, we provide 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.

Shipbuilding school creating jobs for the future

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 2023, a total of 41 recruitment trainees graduated from the school.

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 practical training, all 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, we can provide extended on-the-job learning together with local vocational schools. In 2023, nearly 20 students at the shipyard were involved in extended on-the-job learning. Shipyard offers jobs for new employees that perform well in the school and in training. ■



CASE: Åbo Akademi University

Åbo Akademi University and Meyer Turku to deepen green transition cooperation

The long-standing cooperation between Åbo Akademi and Meyer Turku has been further strengthened with a five-year partnership agreement. This strategic partnership with Åbo Akademi enables agile, interdisciplinary interaction and innovation between Åbo Akademi experts from various disciplines and Meyer's top professionals. The agreement is part of Meyer Turku's long-term plan to advance academic cooperation with Finnish universities on a national level in an effort to drive development of new innovations and technological solutions for the benefit of the entire maritime industry and its sustainable development.

Meyer Turku's ambitious green transition research and development programme NEcOLEAP, funded by Business Finland, plays a key role in this cooperation. Åbo Akademi participates in the program through their Faculty of Natural Sciences and Technology. "To support the ambitious goals in the agreement, we will initially focus on appointing the professorship in sustainability that Meyer finances with a particular focus on process technology, energy technology and industrial engineering and management. This is a very significant and highly valued collaboration for us," says Kim Wikström, professor of industrial engineering and management at Åbo Akademi.



Green Transition Lab is a new shared workspace for researchers from the university and shipyard experts

Going forward, an important form of practical cooperation will be the Green Transition Lab, a shared workspace for Åbo Akademi and Meyer Turku which supports direct interaction between researchers and maritime cluster experts. The space is designed to create an open innovation environment for cooperation between businesses and universities and to establish a platform that helps bring the maritime industry closer to climate neutrality. The presence of researchers at the shipyard will also be increased within the framework of joint projects.

"We are very satisfied with this agreement, which will bring our company's and Åbo Akademi University's scientific expertise even closer together. Technical fields naturally play a key role in shipbuilding, but our common goal, a more sustainable maritime industry, requires top experts also from many other disciplines. Turku as a thriving study and working region offers a strong framework for this. The now signed agreement ensures that we will also expand the interaction between the Academy and the business world," says Tim Meyer, CEO of Meyer Turku. ■

CASE: Turku University of Applied Sciences

Improving security of supply in the maritime industry network

Meyer Turku participates in expert capacity in a project launched at the Turku University of Applied Sciences. The project aims to support the security of supply in the maritime industry network. The TOIVAR project is designed to secure the competitive position of the Southwest Finland maritime cluster by improving the disruption management of marine industry companies operating in the region, to improve their resilience and, consequently, to improve the reliability and stability of the entire supply chain.

"Sprawling networks, long supply chains and interdependency are typical to the industry. Any disruptions have wide-ranging consequences, which means that developing security of supply is particularly important," says Sakari Kajander, Senior Advisor and Project Manager at the Turku University of Applied Sciences.

The project aims to improve security of supply and risk management skills in the entire maritime industry network by promoting and supporting its ability to adapt to a variety of changes in various business environments. The purpose of this project is to increase understanding of how disruption preparedness in different stages of the supply chain can improve security of supply across the network, and bring increased focus to the role of resilience and ability to recover quickly in different types of supply chains.

In practice, the project involves close cooperation with small and mid-sized businesses in the region. Opportunities to manage disruptions and increase resilience are identified together with the companies in the network, not only on company-specific basis but also through shared measures employed together with partner companies. The companies also have the opportunity to assess their own risk management with the help of an online self-assessment tool. Furthermore, webinars targeted to all maritime industry companies operating in the region will be held around this theme.

A need for such development project has also been identified at the Meyer Turku shipyard. It participates in the project together with the Regional Council of Southwest Finland, Turku Chamber of Commerce, Business Turku and Turku University of Applied Sciences. "The TOIVAR project is particularly important to us, because our network includes many small and mid-sized companies from the region. In the current global situation, the supply network's ability to quickly react to fast-changing situations and predict potential disruptions is highly important. With this project, we want to help support the readiness and resilience of our own network," says Pirjo-Liisa Aaltonen, Head of Department, Procurement Development at Meyer Turku.

The TOIVAR project will conclude in October 2024. The project is funded by the Regional Council of Southwest Finland and their Regional Support for Sustainable Growth and Vitality (AKKE). The project supports the implementation of the regional strategy of Southwest Finland by developing blue economy which is strategically significant to the region. ■

Report description

This 2023 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 our Shipbuilding School and for any occupational accidents at the shipyard extends to Meyer Turku's networking companies' personnel as well.

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

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