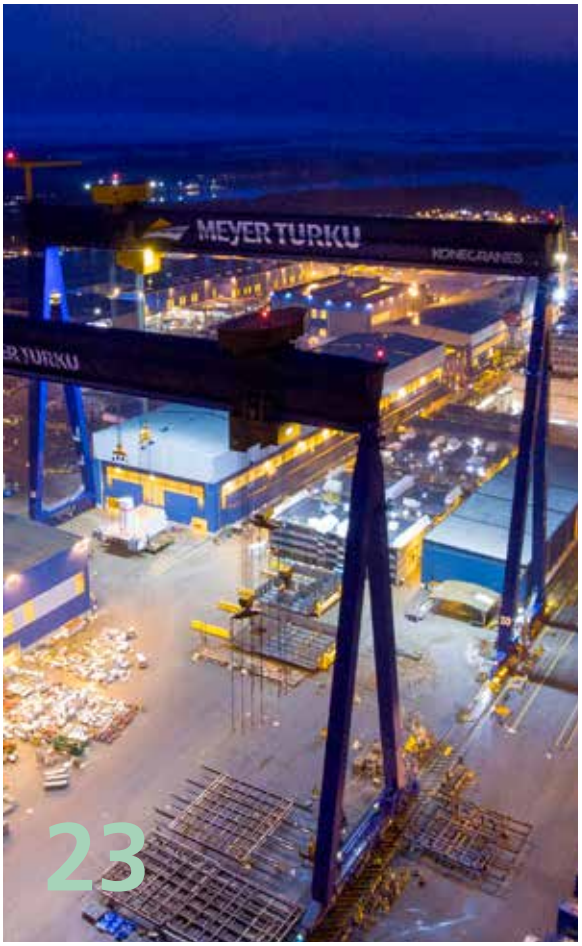
SUSTAINABLE SHIPBUILDING

Sustainability report

2021

MEYER TURKU
SHIPYARD 1737



Meyer Turku Oy builds the world's most modern and environmentally friendly cruise ships, ferries and special vessels. Our share of the world's cruise-ship building market is around 15 percent, and our order book reaches out all the way to 2026. Our largest clients include Royal Caribbean International, Carnival Cruise Lines, TUI Cruises, Costa Cruises, and Tallink-Silja.

Meyer Turku Oy operates at the Turku shipyard where ships have been built since 1737. Meyer Turku Oy's subsidiaries include the cabin module manufacturer Piikkio Works Oy in Piikkiö, ship communal area turnkey provider Shipbuilding Completion Oy and the Rauma-based shipbuilding and offshore industry design company ENG'nD Oy. Meyer Turku Oy, together with Germany-based Meyer Werft and Neptun Werft, are the Meyer Group, one of the world's largest leading cruise ship builders.

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MEYER TURKU

CORPORATE RESPONSIBILITY IN MEYER TURKU

Concrete steps towards green transition

Last year we published our first corporate responsibility strategy where creating a climate neutral cruise ship and shipyard were defined as our future goals. We also committed to working in an exemplary way and to steering our network to being at least as responsible as we are.

We have moved from one period of exceptional crises to the next. While the coronavirus pandemic was still raging, another world-wide crisis began. In addition to the human suffering, the coronavirus pandemic and the war in Ukraine both have a major impact on the operations and the value chains of the Meyer Turku shipyard. Despite these significant challenges, we have managed to keep the production and our processes going, and the shipyard's order books reach out all the way to 2026.

During the past year, we have also taken our corporate responsibility work further and taken even more concrete steps. We are involved in Business Finland's financing program, through which our NEcOLEAP project will take Finland's shipbuilding industry to a whole new level. Our ambitious goal is to create a climate-neutral cruise ship concept by 2025 and to ensure that Meyer Turku shipyard's own operations are climate neutral in 2030. Being admitted into Business Finland's TKI funding was not only significant for Meyer Turku but also vital, as only through innovative development work and continued renewing can we ensure the shipyard's competitiveness in the increasingly competitive marine industry.

We work constantly to integrate responsible thinking and ways of working more deeply into all levels of our organization. Practical examples of new improvements in both our own operations and in the cooperation with our clients include new applications for low-solvent, waterborne and solvent-free paints. Through this, we have been able to significantly reduce the shipyard's volatile organic compound (VOC) emissions.

World-class ships are built with world-class expertise. We maintain our employees' competence by providing them with regular training and coaching. We require uncompromising commitment to ethics and legal compliance from ourselves and from our partners.

Cooperation with our internal and external clients is the only path to success. We actively create opportunities for the current and future employees of Meyer Turku and our partner network to enable them to contribute to an even more sustainable future. ■

Tapani Pulli
Executive Vice President
Meyer Turku

About the company

Meyer Turku Oy specializes in building highly demanding, innovative and environmentally friendly cruise ships, ferries and special vessels. Meyer Turku is one of the world's leading builders of cruise ships together with the other Meyer shipyards operating in Germany.

Meyer Turku Oy's share of the world's cruise ship building market is about 15%. The largest clients of the company include Royal Caribbean Cruises Ltd, Carnival Corporation, Costa Crociere S.p.A, and TUI Cruises GmbH.

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

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

Financial situation and result

The international cruise markets came to a halt with the Covid-19 pandemic in 2020 but started recovering during 2021. However, restrictions for staff mobility and prolonged deliveries for some materials, as well increasing prices, still had an effect on the company's operations and result.

However, the company's outstanding orders stretch all the way to 2026, guaranteeing steady work for the company for years to come. Ship projects are typically financed by clients' advance payments, external bank financing, as well the company's own capital and funds.

During the financial year, the company negotiated bridge funding to cover funding needs for delivering the Icon 1 ship according to its new delivery schedule. The 270 million euros of additional funding is available until the end of 2022. In 2021, the company signed a new construction-time finance agreement with its financiers to cover the required financing for Carnival Celebration, due for delivery in 2022. This also includes an option for construction-time funding for the Icon 1. The Icon I's construction-time finance agreement will be finalized in accordance with the company's financing needs during the first half of the year.

Key events during the financial period

The world-wide coronavirus pandemic continued to impact the company's operations in 2021. A readiness group, founded earlier for responding to challenges posed by the pandemic, for creating preventative plans, and for securing the health of shipyard workers, continued its successful work during 2021. The group includes representatives from the company's top management, HR organization, production, HSE, occupational health and communications, and it has monitored the covid situation and worked actively throughout the year.

During this exceptional time, the company's intention has been to secure the continuity of operations according to client wishes. However, the covid situation has made it difficult to manage the company's production schedules and productivity.

Cruise shipping restarted gradually in spring 2021 while the number of cruise ship customers as well as the capacity of ships increased during the year. Towards the end of the year,

Order book
As of Dec 31, 2021

Client	Ship type	Ship name	Gross tonnage	Delivery
Carnival Corporation	Cruise ship	Carnival Celebration	180,000	Fall 2022
Royal Caribbean Cruises Ltd.	Cruise ship	Icon of the Seas	200,000	Fall 2023
TUI Cruises GmbH	Cruise ship	Mein Schiff 7	111,500	Spring 2024
Royal Caribbean Cruises Ltd.	Cruise ship	ICON II	200,000	Spring 2025
Royal Caribbean Cruises Ltd.	Cruise ship	ICON III	200,000	Spring 2026

64% of cruise ship capacity was used for cruise traffic. Despite the difficult pandemic situation, the clients of the company predict that the rest of the ships will resume operation in 2022.

The company completed the handover of the Costa Toscana vessel to Costa Crociere S.p.A in December 2021. The production of the Icon line of ships started in April, and the first vessel is to be delivered in fall 2023.

For the financial period, the pandemic continued to pose challenges for mobility of foreign work force. It was also partially noticeable in the availability of materials, as well as prices and prolonged deliveries. Considering the challenging circumstances, the company's operations continued well throughout the financial period. In the fall, the company also managed to negotiate with its clients to partly compensate for increased material prices, a sign of the long-term commitment of the clients.

To secure operations and prevent the spread of coronavirus infections, the company's Covid-19 team continued implementing the measures that were started the previous year. Movement of people was restricted at the shipyard and the company's own personnel as well as partner personnel were instructed to employ covid safety measures at the shipyard to prevent the spread of infections. Business travel was limited and remote work processes were continued. These strict and proactive covid measures also succeeded in preventing infections effectively in 2021.

To adapt to the changed market situation and to ensure the future of the shipyard in the long term, the company launched a large, proactive change project in the spring. Its focus is on improving processes and increasing efficiency of production to secure the general long-term competitiveness and profitability of the company. This wide-ranging multi-year program is based on a multifaceted structural approach and a dedicated management system. The company also implemented some layoffs during the financial period. These were agreed to during the co-operation negotiations in 2020. The layoffs brought some economic savings, and they were based on the lower-than-expected production numbers caused by order book schedule changes. The workload situation of our personnel during the financial period was generally good.

The company continued implementing its corporate responsibility strategy defined in 2020 together with clients and other stakeholders. As stated in the company's strategy, the company intends to become carbon neutral by 2030 and design a buildable carbon neutral concept ship by 2025.

The investment program started by the company in 2016 was completed during the financial period. The most important of these investments included the 1,000-ton gantry crane and a panel line for hull production. With this, major investments have been completed and the company continues its planned yearly investments to maintain the production capacity achieved. The group's investments during the financial period totalled 12.4 million euros (30.8 million euros in 2020).

The businesses of the company's 100%-owned subsidiaries, Piikkio Works Oy, Shipbuilding Completion Oy, and Technology Design and Engineering ENG'nD Oy, reflect the situation of the parent company.

Key financials, Meyer Turku Group 2021 (including subsidiaries)

Meyer Turku	2021	2020	2019
Revenue, M€	1,079.2	1,035.9	1,141.8
Profit for the period, M€	–17.0	7.8	–109.7
Profit for the period, %	–1.6	0.8	–9.6
Investments, M€	12.4	30.8	65.2
Personnel, avg.	1,806.0	2,359.0	2,386.0

Source: Meyer Turku Oy auditor's report 2021. PricewaterhouseCoopers Oy

We are guided by our corporate responsibility strategy

The development of corporate responsibility at Meyer Turku and the related reporting is guided by the corporate responsibility strategy approved in 2021 by the
Meyer Turku management. This strategy sets the high-level goals from which we derive a practical action plan along with its implementation and follow-up.

Our first action is to calculate the shipyard's carbon footprint and create a roadmap for our goal of carbon neutrality by 2030. This strategy is a guides the Meyer Turku's operations, including those of our partners and our shipbuilding network.

At the Turku shipyard, we build

ECO-FRIENDLY SHIPS

in a way that will make future generations proud.

* GHG Protocol parts 1&2, part 3 is being specified.

OUR MEASURES

1	We create a roadmap for shipyard climate-neutrality and drive the initiative forward in a goal-oriented manner.	2	We design a climate-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 integrate corporate responsibility into our employees' day-to-day work.	9	We openly communicate about our corporate responsibility topics.

Our corporate responsibility strategy is based on a shared vision

We specified our new corporate responsibility strategy and the related corporate responsibility goals together with a team of representatives from various organizations in our shipyard. The Meyer Turku management approved the corporate responsibility strategy in the fall 2021.

Our strategy considers the three pillars of corporate responsibility: social, economic and environmental responsibility. Our vision is to build eco-friendly ships in a way that will make future generations proud.

The strategy guides our development work where focal areas may shift if necessary as our corporate responsibility work progresses. The set corporate responsibility goals are either related to our essential functions or have relevance based on risk evaluations.

Our goal is to develop Meyer Turku's corporate responsibility work, goals and data collection in line with the new strategy during 2022. In practice, the shipyard is faced with a variety of development projects in order to achieve progress towards the goals of the strategy.

Themes in our reporting	**Our key actions and goals**
We design **World-class ships**	A ship's long life cycle causes the majority of its environmental impact. Meyer will design a buildable carbon-neutral ship concept by 2025.
We want to be a **World-class shipyard**	In terms of emissions from our own operations, Turku shipyard's goal is carbon neutrality by 2030. 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.
What we do requires **World-class expertise**	Designing and building ships and managing the enormous scope of the shipyard operations requires world-class expertise. We educate our professionals in our school and ensure knowledge transfer to the next generation. We also take care of our personnel's wellbeing.
We operate as **Part of society**	We are a setting a good example by practicing active local industrial responsibility, and we push our network to being equally or more responsible than we are. We work closely with the communities surrounding our shipyard.

Carbon-neutral shipyard by 2030

We will be developing our corporate responsibility across the board, but we want to place the primary focus on our own operations and the construction-time carbon footprint of our ships.

As declared in our new corporate responsibility strategy, the shipyard's goal is carbon neutrality by 2030. Meyer's marine engineers have pledged to develop a buildable carbon-neutral ship concept by 2025.

While the goals are extremely challenging, in the shipbuilding industry we have luckily become accustomed to overcoming difficult challenges. This way, we carry our share of the responsibility in battling climate change. We believe that this is also crucial for our future competitiveness.

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 the Meyer Turku ships are more energy-efficient than those of our competitors.

We also develop measures related to circular economy and protection of biodiversity and link them to the goals of our corporate responsibility strategy in the future.

Carbon-neutral ship concept

Our strategic goal is to develop a buildable carbon-neutral ship concept by 2025.

Calculations initiated in 2021 help us better identify the most significant sources of emissions and other environmental stressors for the entire length of a ship's life cycle and compare the environmental impact of selected materials. The most significant causes of environmental stress include use-phase fuel consumption, waste and wastewater generated, and materials used for shipbuilding.

Calculating the shipyard carbon footprint

To determine our baseline for emissions, we have calculated the greenhouse gas emissions of our own operations (Scope 1 and 2). Our calculations are based on the GHG protocol (Greenhouse Gas Protocol),
the internationally used emission calculation standard.

Based on the results, we identified our most significant sources of emissions, enabling us to devise a roadmap with intermediate goals for our journey to a carbon-neutral shipyard by 2030. In our shipyard operations, the most significant emission sources include fuel consumption and heating for the ship under construction.

We have also begun calculations of our shipyard value chain emissions (Scope 3) and we are constantly refining our calculations. The goal is to report on Scope 3 emissions in more detail in future sustainability reports. 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 the efforts of our partners.

The shipyard's carbon footprint is reported in more detail on page 29.

Setting an industrial example – for our entire network

In addition to the carbon neutrality goals, Meyer Turku pledges to set a good example of practicing local industrial responsibility and push its shipbuilding network to being equally or more responsible than the shipyard company.

We have an important and responsible role in society, as Finland Meyer Turku is first and foremost seen as a leader in the shipbuilding industry. Each new ship completed at our shipyard helps the Finnish maritime industry move forward in technological development and sustainability.

We participate in both Finnish and international projects designed to develop sustainability in the maritime and shipbuilding industries. We also work closely together with various parties in the Finnish maritime cluster as well as research and educational institutes.

Our most important duty is to be a propelling force between the client and our wide network of suppliers in research and development and a platform for experimenting with new technologies. We expect our network to commit to responsible practices, and we make corporate responsibility a prerequisite for our procurement decisions.

Active engagement

The shipyard is located in the Perno-Pansio region in Turku, and we want to actively engage the various operators in the region, as part of the local community. We hope the residents in the area can be proud of having a shipyard operating near their homes.

We also keep in tight contact and cooperate with the local operators in the Turku economic area, including the City of Turku and the regional development companies.

We are also a member of the Finnish corporate responsibility network, FiBS ry. ■

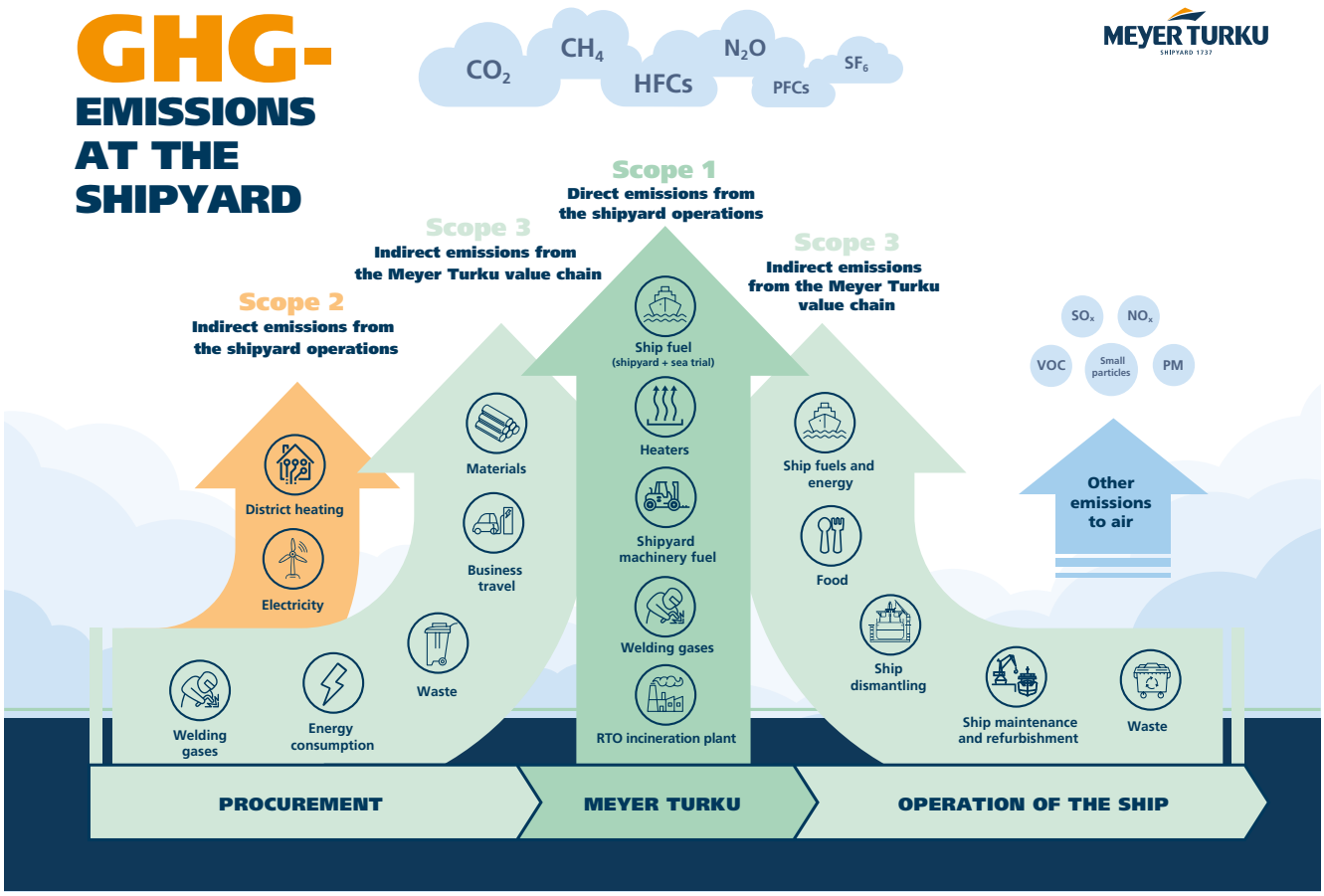
"In Finland, Meyer Turku is first and foremost seen as a leader in the shipbuilding industry."

Turku University of Applied Sciences and Meyer Turku to deepen cooperation

Signed and verified in spring 2021, the agreement made our cooperation with the Turku University of Applied Science official. While we have long history of cooperation on many fronts, the new agreement made the nature of the cooperation more specific. The agreement includes cooperation related to Turku University of Applied Sciences students and studies, competence development of both parties' personnel, and R&D. We plan to bring together Meyer Turku's shipbuilding experts and Turku University of Applied Sciences research scientists from corresponding fields.

– We are looking for future professionals among the students while seeking shared research projects, says Production Manager **Mika Heiskanen** at Meyer Turku. In our experience, increasing this kind of dialogue has immediate benefits, and any contacts made can lead to long-term projects and development programs.

For the students at the Turku University of Applied Sciences, the deepening cooperation means increased summer job opportunities at our shipyard. ■



GHG protocol standardizes emission calculations

When calculating greenhouse gas emissions, both direct and indirect carbon dioxide emissions caused by a company's operations are considered.

- 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 class includes all direct greenhouse gas emissions by a company, such as fuel emissions from company vehicles.
Scope 2 class includes greenhouse gas emissions from purchased electricity, steam or heat production.
Scope 3 class includes all other indirect greenhouse gas emissions, such as emissions from material procurement and emissions from the end-use of products sold. The Scope 3 class has 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. ■

100-million-euro development program for a carbon neutral cruise ship

Applying in 2021 selected in 2022, Meyer Turku secured involvement in a Business Finland funding program designed to challenge companies to increase their research, development and innovation investments in Finland. Meyer's NEcOLEAP program develops carbon-neutral and sustainable technological solutions for cruise ships with a wide partner network.

The project brings future professionals together

The NEcOLEAP green transition project brings together representatives of universities and research institutes to develop technology solutions that are innovative and sustainable on a global scale. One of the primary goals of the program is to accelerate the adaptation of our shipyard's business to green transition and respond to the demands of climate change together with our ecosystem partners.

The NEcOLEAP program researches and develops carbon-neutral and sustainable solutions for cruise ships and their construction together with the Finnish shipbuilding ecosystem. The research and development stages have four focus areas: the cruise ship itself, shipyard operations, i.e. shipbuilding, implementation of smart technologies, and the open-minded professionals of the future, says Meyer Turku's Program Manager **Ilkka Rytkölä**.

Goals of the NEcOLEAP program:

- Reinforcing and expanding innovative research and development in our shipbuilding ecosystem
- Utilizing smart technology throughout a ship's lifecycle
- Adapting the business for green transition and responding to the requirements related to climate change
- Developing a climate-neutral cruise ship concept by 2025
- Climate-neutral shipyard by 2030

Building a carbon-neutral cruise ship requires wide-ranging cooperation between businesses, universities and research institutes. In the NEcOLEAP program, we study opportunities to implement even more sustainable technologies, allowing us to, among other things, develop ship and shipbuilding

Concept art with a future carbon-neutral cruise ship

energy efficiency, resource efficiency, automation, robotics and cybersecurity. This also enables us to respond to our clients' strategic sustainability goals.

Significant impact across our cooperation network

While Meyer Turku already has an existing high-quality partner network, it is now possible to expand the cooperation network and include entirely new development areas where focus is not only on environmental energy solutions but also on the opportunities of circular economy and resource efficiency of materials.

A carbon neutral cruise ship order for Turku would bring about 12,000 man-years to the shipyard, an equivalent of about 9,500 jobs. It would also add about one billion euros to Meyer's revenue, making a direct impact on Finland's export.

NEcOLEAP's estimated cost is about 100 million euros, with Business Finland funding Meyer with 20 million euros and Meyer Turku providing 30 million. In addition, Business Finland has allocated 50 million euros for the businesses, research institutes and universities in the ecosystem. Several parties have already expressed interest in joining the program, and in addition to large businesses a significant number of small and mid-sized business and start-ups are expected to participate. ■

The UN Agenda 2030 strives for sustainable development in terms of economy, human well-being and the environment. We have identified five key goals where we can provide most impact in our operations and in the cooperation with our partners and clients.

01

WORLD-CLASS SHIPS

Energy-efficient and low-emission cruise ships

Designing and building energy-efficient low-emission ships is at the heart of Meyer Turku's operations, and this is important to us for many reasons. First, we want to contribute to the fight against climate change. Furthermore, building energy-efficient ships and introducing low-emission energy sources to our ships provides us a competitive edge because our clients, primarily cruise lines, particularly look for these qualities in new ships.

Shipping is not subject to the Paris Agreement, but the EU and several ports have already set limits for sulphur oxide emissions for marine traffic. The International Maritime Organization (IMO), responsible for regulating shipping, has also specified gradually tightening energy-efficiency requirements for ships. Starting in 2023, ship performance level is monitored annually with the operational carbon intensity rating (CO_2/GT-nm)* which includes gradually increasing reduction requirements. It aims to reduce carbon intensity of shipping by 40% by 2030 (compared to 2008) and requires reducing the greenhouse gas emissions of international marine traffic by 50% by 2050. This will be followed by efforts to gradually eliminate carbon dioxide emissions entirely.

For us, strict international regulations are exclusively a positive thing. The ships engineered and built at the shipyard are pioneers in the 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 in one year.

Ongoing development together

Our most important research and development themes include corporate responsibility, low emissions, operational efficiency, reliability of operation, safety, and digital transformation. Every time we begin planning for a new ship class, we set ambitious emission and energy goals for it. We started building our first Icon class ship in spring 2020. The goal for ships in the Icon class is to be 30% better in energy efficiency than comparable ship concepts.

However, we would not be able to reach our ambitious goals alone. This is why we constantly engage in shared development with our clients, equipment manufacturers and supply network as well as research institutes, universities and universities of applied sciences. In 2021, we participated in the NOVUM research initiative that studied the opportunities provided by 3D printing in the manufacturing of lighter and more environmentally friendly components. The initiative was an important first step for adoption of large-scale 3D printing in the maritime industry, and the initiative is set to continue with particular focus on biomaterials and their fire safety.

We are also involved in the Clean Propulsion Technologies research consortium led by University of Vaasa. It is designed

"For us, strict international regulations are exclusively a positive thing."

A sustainable ship throughout its lifecycle

Wanting to actively contribute to the reduction of ships' environmental impact, we are involved in the fall 2020-launched Sustainable Shipbuilding Concepts (SusCon) research project coordinated by the University of Turku.

We have several goals for the project, including the creation of an innovation platform, the so-called virtual concept ship, which can be used to illustrate new solutions related to waste management, energy efficiency, alternative fuels and sustainably produced materials, among others. The concept ship can be used even before the actual ship order is placed because the virtual environment makes it possible to easily view solutions designed for the ship, including their space reservations, and other requirements, simplifying any changes required. The virtual concept ship is currently being deployed.

For a cruise ship's sustainability considerations, the entire value chain needs to be reviewed. Another goal in the project involved studying the shipyard's carbon footprint and conducting life cycle assessment for ships. Calculations initiated in 2021 help us better identify the most significant sources of emissions and other environmental stressors for the entire length of a ship's life cycle and compare the environmental impact of selected materials. The most significant causes of environmental stress include use-phase fuel consumption, waste and wastewater, and materials used for shipbuilding, steel in particular. ■

to develop new solutions for low-emission shipping and respond to the requirements of increasingly stringent emission legislation. Over the course of the project, cruise ship's water production optimization was identified as a significant research area deserving particular focus.

Energy-efficient ships, alternative fuels

We have improved the energy-efficiency of our ships by increasingly utilizing waste heat streams, optimizing the operations of various systems and implementing alternative fuels. We also place heavy focus on monitoring the operational energy efficiency of our ships and on the continuous development throughout our ships' operational life cycle.

Heavy fuel oil, the primary fuel in shipping, is in the process of being replaced by alternative fuels, including liquefied natural gas (LNG) which contains zero sulphur and produces considerably less nitrogen oxides and particle emissions.

We have already adopted liquefied natural gas in several ships. The Costa Smeralda, handed over from our shipyard in 2019, was one of the first LNG-powered cruise ships in the world, and an increasing number of the ships in our order books are LNG-powered.

We research and develop ways to use bioliquids and gases for ship fuels, and we are involved in projects together with refineries designed to investigate opportunities to utilize biofuels in ships in the near future. We also research alternative energy production technologies, including hydrogen-powered fuel cells.

"We have already adopted liquefied natural gas in several ships."

Sustainable materials throughout ship life cycle

Ships' sustainability is an all-encompassing matter, and sustainability also plays a major role in material selections for ships. Materials sustainability and lifespan along with safe disman-

Virtual technology reduces stress to the environment

Oy Naval Interior Team Ltd. (or NIT), our partner and a turnkey provider of ship communal areas, has an important role to play in our shared development of ship sustainability. The company is also involved in the Sustainable Shipbuilding Concepts research project. In the project, NIT has developed the utilization of virtual reality (VR) technology in designing a ship as part of their more comprehensive GreeNIT business concept.

– With VR technology, we can significantly streamline and accelerate ship design, says NIT's development manager **Juhani Määttänen**. For example, we have notably reduced the carbon footprint of staircase

structures by making design work more efficient, optimizing structures and improving the installation method. These naturally also reduce material and installation costs.

Virtual reality also contributes to reducing stress to the environment in another way. Physical structural models are essential when designing a ship's spaces, providing the foundation for the final decisions on material and detail design. Structural models can be exceptionally large, and they end up as waste. Emissions are caused by building and transporting the structural models but also by the travel of people coming to see them. With the VR concept, this stress can be significantly reduced.

– I believe that VR technology is going to be used more in the future, and we continue to develop it actively. We

want to be a pioneer in bringing sustainability to everything we do, starting from the design stage. Going more efficient means going greener while creating both economical and sustainable added value, Määttänen says. ■

tling at end-of-life must be considered early on at the design stage, guiding the selection of materials used.

The amount and range of various materials used in building a ship is immense. For example, the Mein Schiff ships built at our shipyard required approximately 2,000 km of electric cables, 180 km of piping, 8,500 m^2 of windows, 335,000 litres of paint and 30,000 m^2 of carpets, among all other materials.

Shipbuilding Completion, our subsidiary, provides turnkey deliveries for cruise ship communal areas, including space planning and management and installation of selected materials. The company is constantly developing the traceability and sustainability of procured materials.

In addition to sustainability, lightness is an essential criteria in selecting shipbuilding materials because a ship's weight affects fuel consumption. Piikkio Works, also our subsidiary, designs and manufactures all cabin and bathroom modules installed in the ships at the shipyard. The objective is to always make the cabins as light as possible, and the best available technical solutions for energy and water conservation are used, among others.

Documentation of the materials used in building a ship involves the IHM document (Inventory of Hazardous Materials). The EU Ship Recycling Regulation stipulates that all ships over 500 GT sailing under the EU flag are required to have an up-to-date and certified IHM that includes all equipment and materials with fixed installation.

The IHM document describes where and to what extent the ship contains specified hazardous materials that pose work safety or environmental risks when a ship is modified or dismantled. Certified IHM reports have been prepared for all ships completed at the shipyard since 2009. ■

Expanding to mega yachts

Meyer Group expands its portfolio to superyachts. We launched a new luxury mega yacht concept at the Monaco Yacht Show in autumn 2021. Our first model, the luxuriously equipped ONE 50, contains a spa, a movie theatre, an entertainment zone and more. Spanning 150 metres and six decks, the yacht can accommodate 44 guests.

In mega yachts, we see significant potential for using low-emission technologies that are not yet viable in cruise ships. The ONE 50 is powered by fuel cells
and batteries.

All three of Meyer's shipyards, Turku, Papenburg and Rostock, are capable of building mega yachts. ■


MEYER TURKU
KONECRANES
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02

WORLD-CLASS SHIPYARD

World-class shipyard

In terms of safety, a shipyard is an extremely demanding location. All risk factors related to metal and construction industry must be taken into account at the shipyard, along with the fact that work is also performed in ships at height and above water where, for example, a ship fire can cause major personal and material damage.

In addition to people safety, it is important to control and minimize the impact of our shipyard operations to the environment and the nearby maritime area. We have refined our safety and environment-related goals each year and will continue to do so in the future.

Preventing safety risks

Management and prevention of health and safety risks and accidents are of utmost importance to us. We prevent risks through a careful risk management process, with continuous follow-up by management. We maintain highly stringent safety regulations at the shipyard and take compliance to the regulations very seriously. Violations can lead to a ban from the shipyard area.

The exceptional circumstances due to coronavirus pandemic and the related measures have been a key part of safety and risk management at the shipyard. Our stringent safety policies and quick responses to changing situations have effectively helped prevent the spread of the virus at the shipyard.

Early in the pandemic, we set up a steering group to make prevention plans and secure the health of the personnel working at the shipyard. The group has included personnel from senior management, project management, HR, production, HSE, occupational health, procurement and communications. The steering group has been carefully monitoring the coronavirus pandemic situation and the recommendations by authorities and drawn even more stringent requirements where necessary.

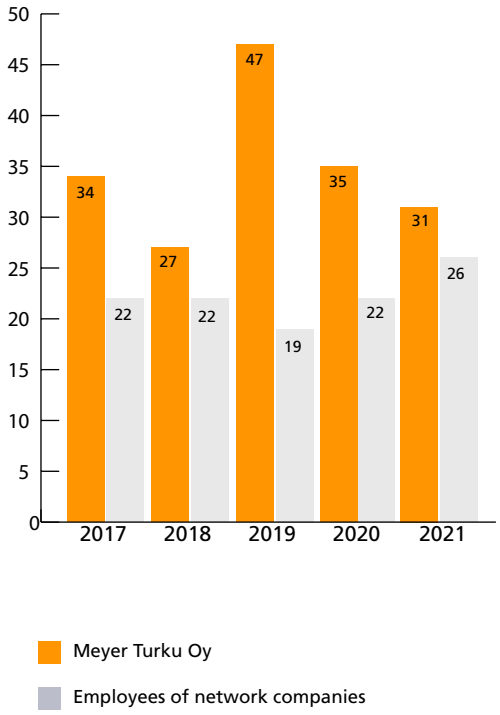
Continuous communications with our own personnel, managers and network companies have also played an important role. We have regularly held webinars on the coronavirus situation and the prevailing guidelines at the shipyard. In addition, the shipyard has constantly provided guidance and enforced any restrictions and practices in place. The shipyard maintains an occupational health coronavirus hotline which provides instructions for the personnel of Meyer Turku and our network about contracting the coronavirus, exposure, testing and travel. Stringent and predictive coronavirus measures have made it possible to keep the shipyard operational with no interruptions.

Special Covid-19 measures

To secure the operations of the shipyard and prevent the spread of coronavirus infections, several measures have been taken in accordance with prevailing conditions. Movement at the shipyard area was restricted, and both our personnel and that of our network is constantly educated on coronavirus safety at the workplace to help prevent the spread of infections. Additionally, we significantly limited business travel and recommended remote work for all our office workers.

In 2021, the shipyard saw two large waves of coronavirus infections. In the spring 2021, the recommended long quarantine periods combined with the large amount of infections and exposures caused major absences at the shipyard. An area of the ship under construction was also temporarily closed off to contain a spike in the spread of the virus within the area. A testing station was set up next to the shipyard gates where you could go for a quick coronavirus test, and we started with vaccinations at the occupational health centre as soon as vaccines became available in the spring 2021.

Accidents at the shipyard (qty)



In the autumn, during the second spike of the epidemic, the City of Turku helped us with testing and vaccinations. A coronavirus prevention bus was parked at the shipyard gates where we conducted health inspections and provided vaccinations for the personnel in our network together with the city. With active cooperation, we have reached a high vaccination rate with our personnel and that of our network.

The stringent instructions and practices are designed to ensure healthy and safe working conditions at the shipyard. And they have been a success because we did not have to shut down operations at any point during the coronavirus pandemic, and we have managed to deliver all our ship orders on schedule.

Occupational safety considered at each stage

While the coronavirus pandemic has required significant attention in the last couple of years, we have continued our work to help prevent other safety risks and prepare for potential accident scenarios. We carefully consider the safety of our personnel and the risks they face at each stage of shipbuilding, and a safety plan is prepared for every ship before beginning production.

The shipyard's permit office plays a major part in shipyard safety and infection prevention. Everyone working within the shipyard area, both our personnel and that of our network companies, are required to undergo a training on security and environmental risks before given access to the shipyard. In 2021, coronavirus safety was incorporated in the training to ensure that everyone is familiar with the shipyard practices, including safe distances, limited contacts between shipyard functions, and mask requirements. We provide HSE (Health, Safety, Environment) online onboarding in 18 languages to minimize the risk of misunderstandings with our safety instructions.

In 2021, the shipyard (the personnel of Meyer Turku Oy and its network companies) saw a total of 57 (57 in 2020) accidents that led to absences while the accident rate was 6.4 (6.5) for every one million working hours, substantially below the general average in construction and in industry. At the Piikkio Works cabin module manufacturer, the accident rate was 29.6 (24.1).

We take all accidents and near-misses seriously. We investigate the reasons behind every incident and determine corrective measures. Due to our systematic safety work, the accident rate has decreased at the shipyard, and to continue this positive development we constantly conduct safety training and carefully monitor safety and provide safety reminders at the shipyard. In the summer 2021, we restarted regional manager training at the shipyard. The upgraded training content also goes into more detail about HSE.

We encourage everyone working at the shipyard to report any safety observations and provide feedback on what could be improved. We use the MeyerEYE system which enables quick reporting of any safety-related observations, including pictures, quickly and locally at the site with a personal mobile device. Anyone working at the shipyard area can report their observations, and in 2021 nearly 1,000 safety observations were reported through the system. Safety is also monitored with safety walks, with a total of 300 walks conducted.

Fire safety under tight control

Fire safety is one of the most important considerations for risk management and safety at the shipyard. Extinguishing a fire that breaks out onboard a ship is in many ways more chal-

Dedicated Covid HSE plan for our network companies

In the spring 2021, we implemented new clarifications for our network companies' health and safety plans, designed to complement the network's own preventive measures in curtailing infections.

We required each network company to prepare their own Covid HSE plan for the purpose of clarifying and emphasizing their responsibility for the health and safety of their personnel. Special attention was paid to, for example, travels to Finland and Turku, shared accommodation and transport, and general safety policies, such as hand hygiene and safe distances. Among the goals is to make reporting coronavirus cases to Meyer Turku faster and more systematic and increase the vaccination rate of the personnel working at the shipyard.

We have audited the Covid HSE plans for our 140 largest network companies, and an audited plan is now a prerequisite for the network companies to bring new employees to the shipyard area. ■

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

lenging than at any regular property, and the greatest risk in a ship fire involves evacuation of personnel from the ship under construction.

In addition to evacuation, locating the scene of the fire and fire fighter access to the scene in cramped, labyrinthine spaces is highly demanding. This is why the shipyard has its own fire department, on call 24/7 every day of the year. We constantly maintain and develop the fire fighting and rescue skills of our fire department. In late 2021, new recruitments reinforced the shipyard's fire department.

Major material damages are also a risk in a ship fire. The cost of a ship fire is about 300,000 to 400,000 euros a minute, with the final cost in the tens of millions in a worst-case scenario.

In 2021, one initial fire in a heating device onboard the ship under construction required the use of an extinguisher. The fire was quickly extinguished, causing minimal damage. There were zero major fires requiring ship evacuation. In December, a welding robot caught fire in the shipyard's welding workshop. The shipyard personnel and fire department quickly extinguished the fire.

Compared to past years, the amount of onboard fires and initial fires reduced significantly. The major reasons behind this positive development include the hot work pass training developed specifically for the shipyard and mandatory for everyone involved in hot work, along with a strictly determined permit system for hot work.

The shipyard and the ship under construction in particular are highly unusual work environments, and we felt that traditional hot work training does not sufficiently take our unique requirements into account. This is why we developed and implemented the shipyard's own hot work pass training in 2020. A total of 3,500 of our personnel underwent the training by early 2022, and all persons involved in hot work are required to complete it by spring 2022.

The shipyard also maintains an online hot work permit system, and we have determined specific risk levels for each area, helping us guide and restrict hot work at the shipyard. A nearly completed ship is assigned the highest risk level, with any hot work primarily prohibited and a hot work permit only granted in special circumstances. The shipyard fire department is present to oversee hot work.

Litter and packaging materials are the most common causes for fires spreading. The tidiness of our various worksites plays an essential role in fire prevention – while also presenting one of the challenges at our shipyard. We also improve fire safety with new manufacturing techniques and working methods, meaning that we bring large ready-made pieces assembled elsewhere to the ship.

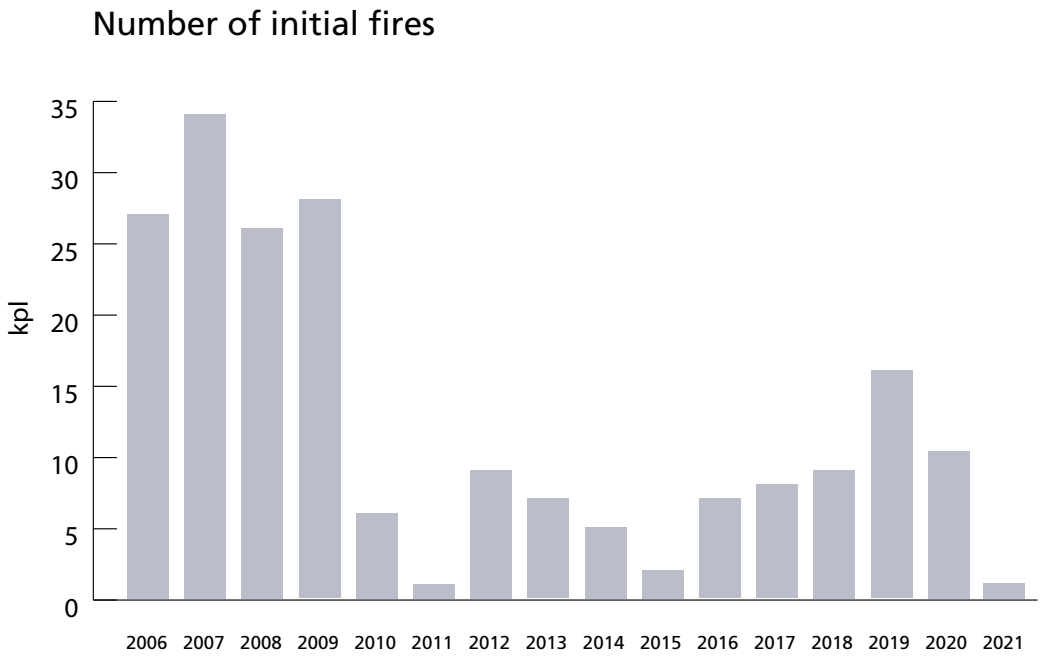
Traffic safety at the shipyard

Safety related to shipyard logistics requires special attention. Much like a small town, our shipyard is bustling with thousands of workers and heavy traffic, including cars, trucks, cranes, forklifts and even trains.

The cruise ships built at the shipyard are tall structures where working and moving around requires special alertness and skill. Everyone moving around at the shipyard is required to understand the risks involved in lifting and follow marked routes.

To improve security, we have developed operator training for shipyard bridge cranes and forklifts and identified the issues and high-risk areas in our shipyard traffic. Traffic in the most hazardous spots has been restricted and the markings for designated routes were upgraded in spring 2021. For example, safety at the fitting-out berth was improved by removing unnecessary visibility obstructions and widening the walkways and vehicle passages. And by relocating our bicycle parking we reduced the safety risks for bicyclists.

Additionally, area lighting has been improved and everyone at the shipyard is required to wear high-visibility clothing or reflective vests on commutes from parking area to place of work.



The HSE Day all about boosting your buddies

In October, we held our annual HSE Day (Health, Safety, Environment) designed for everyone working at the shipyard. The purpose of the event is to promote and remind the personnel about the themes important for health, safety, wellbeing and the environment at our shipyard. The day included various demos and presentations along with fun competitions.

The event also had an award granted to everyone who had reported positive observations with the MeyerEYE tool, such as well-managed aspects of the shipyard or exemplary colleagues. And extra giveaways in the form of bicycle LED lamps and safety vests were handed out, ensuring safety after nightfall. ■

Number of accidents

	2021	2020	2019	2018
Meyer Turku Oy	31	35	47	27
Network companies operating at the shipyard	26	22	19	22

Accident rate, LTIR*

	2021	2020	2019	2018
Meyer Turku Oy	10.5	10.5	13.0	8.4
Network companies operating at the shipyard	4.4	4.0	3.5	6.7
Accident rate, total	6.4	6.5	7.2	7.6

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

SUSTAINABLE SHIPBUILDING

Energy consumption with the emissions and waste generated are significant environmental aspects in shipbuilding. At the shipyard and at the cabin factory, energy is consumed in production, in powering equipment, and in heating the properties and the ship. Significant amount of waste is generated due to the enormous amounts of material required in shipbuilding.

Low-emission and resource-efficient production

In our new corporate responsibility strategy, the shipyard aims for carbon neutrality by 2030 for our own emissions. We determined our 2021 baseline by calculating the greenhouse gas emissions of our own operations (Scope 1 and 2). Emission calculations are based on the GHG protocol (Greenhouse Gas Protocol).

Based on the results, we identified our most significant sources of emissions, enabling us to devise a roadmap with intermediate goals for our journey to a carbon-neutral shipyard by 2030. 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.

We have also begun calculations of our shipyard value chain emissions (Scope 3) and we are constantly refining our calculations. The goal is to report on Scope 3 emissions in more detail in future sustainability reports.

Scope 2 emissions at the shipyard have decreased significantly since 2017 when we transitioned to emission-free hydroelectricity for all our purchased electricity. Furthermore, the shift in the fuel mix of the district heating supplied to the shipyard and the consequent reduction in specific emissions have made a clear positive impact on the shipyard's emissions.

Since 2018, the use of LNG (Liquefied Natural Gas), is reflected in our Scope 1 emissions. The majority of the ships manufactured at our shipyard are currently LNG-powered, and LNG is consumed when the ship is at the dock with engines running and during test drives at the sea. The shipyard's direct emission sources also include machinery fuel consumption and the fuel oil-powered portable heaters.

In our investments, we consider energy-efficient solutions, and we have conducted several projects that save energy and increase energy efficiency, including upgrading our heat recovery systems and utilizing waste heat in heating our spaces. The shipyard also has its own 4,000 m^2 solar power plant that currently produces about 1% of the total electricity needed 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.

Minimizing waste

As part of our new corporate responsibility strategy, our goal is to be a pioneer in circular economy. The shipyard has long been working towards efficient use of materials and waste

recovery. Going forward, the circular economy goal both informs and harmonizes our operations at the shipyard and brings various circular economy projects and measures under a single goal.

Significant amount of waste is generated at the shipyard and the cabin factory, increasingly so as the size of the ships built has increased. Steel is one of the most important materials in shipbuilding, and the shipyard uses it in massive quantities. This naturally makes metal the most significant waste component, with over 20,000 tons generated at the shipyard each year.

We strive to use materials efficiently in our operations, and we actively work with our partners to find ways to reduce waste and increase the opportunities for waste recovery. In 2021, 95% of the shipyard waste and 57% of the cabin factory waste was recovered or converted to energy. Of the shipyard waste, only land and rock materials, slags and concrete end up at a landfill.

Driven by the new goals set by EU for its member states to improve recycling, the new Finnish Waste Act entered into force in the summer 2021. The new legislation steers towards more precise sorting of waste and recovery of materials to minimize the amount of waste that ends up incinerated.

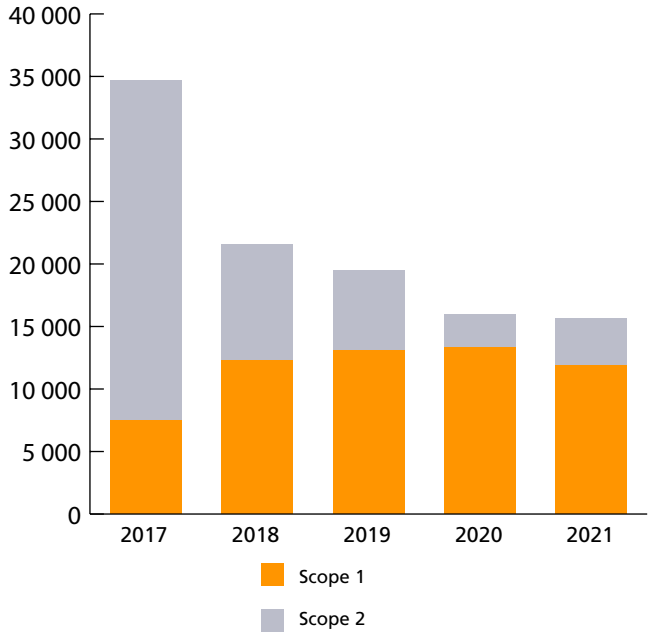
The shipyard had a prior obligation for separate collection, and we have endeavoured to properly sort the waste generated at the production bays and fitting-out wharfs. In terms of space utilization, a ship under construction is particularly challenging for separate collection because the waste generated in shipbuilding, including various packaging materials, essentially needs to be removed from the ship as efficiently as possible to minimize fire load. However, we already collect metals, cables, large pieces of wood and hazardous waste separately onboard. We are currently looking for ways to arrange for separate collection of other recyclable materials, such as packaging, in a way that does not compromise our fire safety.

We contribute to clean environment in the shipyard vicinity

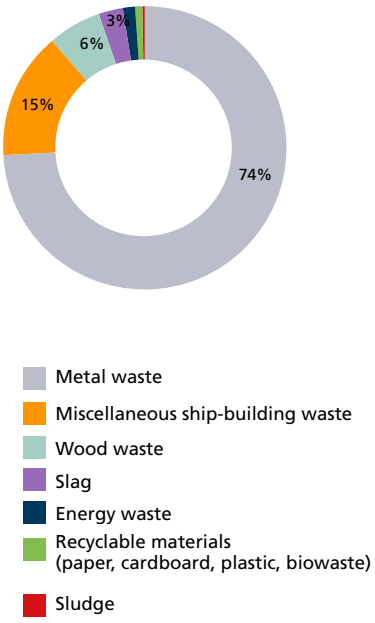
The Turku shipyard is located on the Baltic Sea coastline, right on the inner edge of the archipelago. Because the shipyard operates on a windy coastline and a lot of the operations take place outdoors, the wind whisking away plastic packaging materials has been a challenge for us. We strive to prevent littering of the surrounding environment and the maritime area by covering the ships under construction with tarp and by using nets and other barriers in the dock area. Instructions and continuous reduction of packaging materials also play an important role. We regularly conduct coastline clean-up operations, both from the land and from the sea.

The shipyard operations are governed by environmental permit, and our new permit entered into force in the summer 2020. The new environmental permit obligates us to improve our littering management, actively monitor the use of instruments designed to reduce stress to the environment,

Shipyard emissions (CO_2 tons)



Waste by traction 2021



and improve the storage of chemicals and management of chemical leaks.

In the environmental permit renewal process, the authorities drew attention to the potential impact of the shipyard run-off waters, i.e. the rain and thaw waters running on the ground and building surfaces, on the immediate maritime area. The shipyard was obligated to investigate whether its operations cause a risk of oily run-offs ending up in the environment. Certain risk areas were identified in the review, and we have since increased focus in our management of oily run-off waters. An oil separator will be installed in the run-off water system on the Roisionlahti side, and we are also working to improve run-off water management and train our personnel for potential accident and mechanical failure scenarios to prevent oily run-off water from ending up in the sea.

We updated the shipyard environmental risk assessment in early 2021. The assessments identified a total of 37 environmental risks, none of which was a high or critical level risk. Littering of the environment and the challenges in sorting hazardous waste were identified as medium environmental risks. We have implemented corrective measures for both, including guidance, inspections and technical solutions, and the development work is part of our ongoing operations.

Our certified management systems (Meyer Turku and Piikkio Works):

- ISO 14001 Environmental management system
- ISO 9001 Quality system
- ISO 45001 Occupational safety system

Dredging a deeper shipping lane and reusing the sediments for foundations

To ensure we can deliver our new larger ship projects safely to clients, we will be doing sediment dredging work on the sea bottom in the shipping lane and shipyard area. In spring 2021, we were granted the environmental permit for dredging, as required in the Water Act, together with Port of Turku, the owner of the shipping lane.

We will no longer dump dredged materials in the sea. The roughly 50,000 m^3 of dredged material will be placed and stabilized at the Lauttaranta pre-construction area in Turku's Hirvensalo region. The dredging materials will be transported to the area with barges. The Lauttaranta dredging material dumping area is owned by the City of Turku.

Dredging work will start in fall 2022 once the bird nesting period has ended and when material reception area structures are ready at Lauttaranta. The dredging project should be finished by November/December 2022.

The adverse effects of dredging are minimal. The dredging area's water will be temporarily murky for a short period but this will not have significant or long-term effects for quality of water or the water area itself. The project will not cause significant harm to the water environment, organisms, protection zones, water use, or habitation. ■

Environmental figures

The following graphs show usage of energy, electricity and water as well as amount of waste for the Meyer Turku shipyard and Piikkio Works.

Meyer Turku's energy, electricity and water consumption

	2021	2020	2019
District heating MWh	48,272	37,380	46,684
Electricity MWh	73,067	67,043	69,723
of which produced in our own solar power plant	515	417	
Water consumption m^3	172,000	144,500	211,704

Piikkio Works, energy, electricity and water consumption

	2021	2020	2019
Electricity, MWh	985	1,135	1,144
Water consumption, m^3	1,716	1,852	1,817
Light fuel oil, kg	5,091	32,808	23,829
Liquefied gas, l	142,158	121,548	145,000

Meyer Turku, waste by category (tons)

	2021	2020	2019
Metal waste	21,459	14,676	19,381
Miscellaneous ship-building waste	4,197	5,880	4,508
Wood waste	1,774	2,409	2,086
Slag	778	1,697	1,834
Energy waste	401	493	630
Recyclable materials (paper, cardboard, plastic, biowaste)	257	295	391
Sludge	44	197	752
Ordinary waste, in total	**28,910**	**25,767**	**29,121**
Hazardous waste	212	316	292
Contaminated land materials and concrete	399	1,039	12,104
Uncontaminated land materials and concrete	94	2,223	149,298
Total	**29,615**	**29,028**	**190,524**

The amount of contaminated land materials and concrete grew significantly in 2019 due to investments in excavation work. Uncontaminated land materials and concrete were mainly generated from excavations at the shipyard.

Piikkio Works, waste by component (tons)

	2021	2020	2019
Energy waste component	76	122	104
Metal waste	68	103	177
Cardboard and paper	55	92	87
Construction waste	18	25	68
Miscellaneous wood	0	2	3
Paint waste	0	0	-
Combustible waste	0	0	-
Other (total)	4	3	5
Total	**145**	**225**	**340**

Meyer Turku, waste recycling and disposal (tons)

	2021	2020	2019
Recycling	21,177	14,210	18,846
Recovery (including energy recovery)	6,532	9,084	157,268
Reuse	486	691	868
Incineration	205	337	292
Composting	-	22	9
To landfill	1,215	4,880	13,992

Recovery includes rock excavation (149,000 tons) used for earthworks.

Meyer Turku, waste recycling and disposal (tons)

	2021	2020	2019
Recycling	122	128	264
Recovery (incl. use for energy)	76	124	107
To landfill	18	25	68
Other	4	3	5
Incineration	-	0	-
Total	220	280	444

Shipyard carbon dioxide emissions (Scope 1 and 2), tons of CO_2

	2021	2020	2019	2018	2017
Scope 1	11,880	13,290	13,070	12,290	7,502
Scope 2	3,838	2,654	6,400	9,337	27,180
Total	15,718	15,944	19,470	21,627	34,682
Emission intensity (kg of CO_2eq/h)*	4.0	4.1	4.5	6.5	8.7

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

Other airborne emissions (tons)

	2021	2020
Particulate matter (PM)	2.4	2.6
Nitrogen oxides (NOx)	167.7	185.0
Sulphur oxides (SOx/SO_2)	2.8	3.1
Other volatile organic compounds (VOC)	87.2	158.6

03

WORLD-CLASS EXPERTISE

Top professionals of shipbuilding

Modern cruise ships are like smart cities sailing across the seas, and cruise ship production has evolved into a demanding field of the technology industry. Building cruise ships requires not only highly professional metal industry workers but also expertise in design, project management, technology and product development. This is why it is important for us to maintain our employees' high level of expertise and ensure our personnel's wellbeing.

The secret behind Meyer Turku's exceptional performance is a highly professional and thriving staff 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. Furthermore, the shipyard's own school helps us continuously develop the required competences.

Towards the future through major changes

The Covid-19 pandemic in the spring 2020 brought rapid changes to the shipyard's operations. Most of Meyer Turku's and its subsidiaries' personnel begun working remotely. On the other hand, part of our work has continued under special arrangements at the shipyard as, for example, production work cannot be conducted remotely.

In these special circumstances, we started organizing webinars for the entire staff to go through current issues. They proved a highly popular meeting channel between staff and management, and we have decided to keep organizing them regularly. Separate webinars between department heads also promote transfer of information and encounters between middle management and company management.

We want to follow up on and support our personnel's wellbeing during exceptional times as well. We used a survey to find out how remote work affected ways of working and occupational health. The attitudes regarding remote work are quite positive – a peaceful working environment and the flexibility of work are especially considered positives. On the other hand, being away from one's team and feeling detached, as well as the lack of daily coffee room conversations, were mentioned as some of the biggest adverse effects.

Even though work ergonomics at home offices are a common challenge,
nearly all respondents are hoping to be able to at least partly work remotely in the future, too. We will accommodate this by developing a suitable working model for post-pandemic times.

Following the reorganization due to the Covid-19 pandemic, we have started to turn our gaze towards the future. Due to the larger-than-before ships in our order books and the their never-before-seen features, we will need more new skills and competences. We have started to recruit new people and, when opportunities allow, re-hired previously laid off personnel.

Experience-based learning in management coaching

Unified and good leadership is important to us, and we want to ensure that all our current and future managers continue to learn and develop on the job. This is why we have defined the leadership principles for Meyer Turku. These are our guidelines for manager work, management culture and competence development for managers.

The development of competences was taken to a new level in 2021, when we started with the systematic coaching of managers. Manager coaching was tied to an overall solution where we develop the competence of management as well as tools, and seek to unify our manager culture in order to respond to future needs and goals.

The purpose of management coaching is to develop the managers' ability to lead their teams and individuals according to the Meyer Turku's management principles. Through various coaching, we continue to develop a participatory leadership style that makes use of coaching, the giving and receiving of feedback, as well as change management in your own team. Also, the intention is to create common method for managing and performing a cultural change for the company, as well as for working together and networking across internal departmental boundaries.

Manager coaching is performed in small groups of 12 participants. Training is primarily based on experience-based learning. In addition to intensive training days, an important role is given to practicing already-learned issues with participation from one's team as part of everyday work. The members of Meyer Turku's management team will also participate in the trainings to spar others and discuss their own experiences.

Based on feedback received, manager training has been a success, and coaching will continue regularly with new smaller groups.

Coaching for improving work capacity

Staff wellbeing is our top priority. To support well-being and work capacity we launched pre-emptive coaching in the fall 2021 for reducing work-based physical and mental stress and for maintaining work capacity.

Coaching in small groups were planned together with occupational health and HR. Practical implementation was handled by the shipyard's occupational health psychologist and physiotherapist.

Interactive meetings are aimed at pre-emptively identifying as well as discussing stress-factors related to work, as well as offering methods for controlling them. The main themes of well-being at work have included management skills, stress management, better sleep – especially for those working in shifts – and for example, the lifting ergonomics of the shipyard's fire rescue personnel.

Clearly themed coaching is intended to lower the thresh-

Happy participants of the Meyer Turku manager coaching.

old of participation, as everyone is able to choose a group that best suits their needs. More coaching themes can also be added in the future based on personnel needs. The coaching is open to all of our staff, and the content can also be customized to meet the needs of specific departments.

Online learning

The shipyard operates its own Shipbuilding School that helps us ensure that we always have knowledgeable and well-trained personnel designing and building our ships. We also train the staff of our subsidiary and network companies.

Most of the trainings at the Shipbuilding School are online-based. Thanks to this, it is possible to take part in the training regardless of time or location, in the manner best suited to your schedule. In addition to traditional professional training, the training of new managers, for example, has moved to the web. This has been seen as a positive development.

In 2021, the number of staff participants (from Meyer Turku and subsidiaries) in the Shipbuilding School training decreased compared to the previous year while participation from network companies grew significantly. Even under special circumstances, over 3,600 people participated in short-term training. 40% of them were personnel from our network companies. In 2021, no recruitment training was conducted due to cooperation negotiations and Covid-19. ■

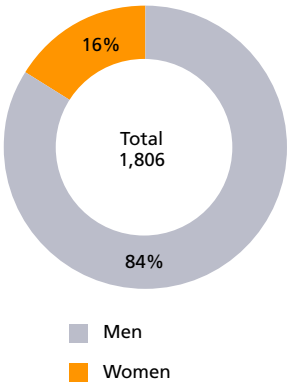
Support for large changes

We have been preparing for steady growth in the shipyard's operations for several years. In order to adapt to the rapid changes brought by the covid situation and the reorganization of our order books, we had to stop our growth program in 2020 and launch cooperation negotiations for all employees. For all employees made redundant, we offered opportunities for receiving personal guidance, support, and training.

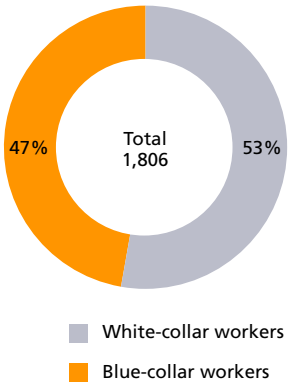
Our goal was to promote the re-employment of our former employees as well as to reduce the length of their unemployment periods. This program of change support was started in two parts: in the fall of 2020 and at the turn of 2020/2021. This support program continued until fall of 2021. Based on feedback received, the help the support program provided for making work applications, receiving hidden work and preparing for work interviews was considered extremely useful.

In addition to personal support, in spring 2021 we offered special training in cooperation with the Centre for Economic Development, Transport and the Environment, regarding marine industry project and design expertise. This is intended to support people's future employment in marine sector companies. ■

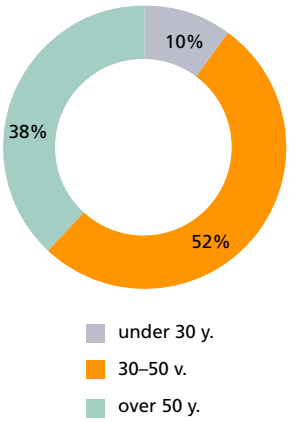
Personnel



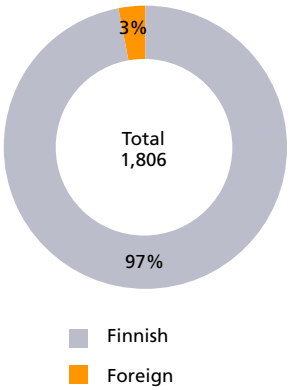
Office workers / Workers



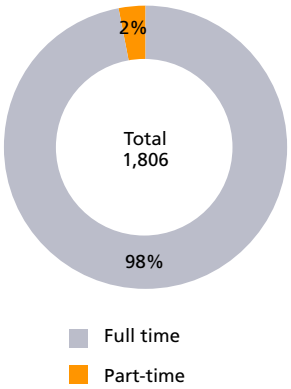
Age distribution



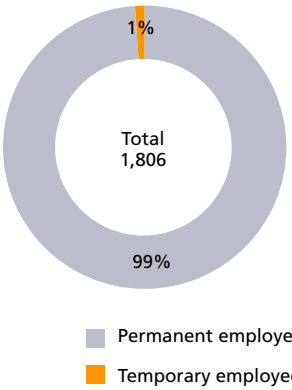
Personnel nationality



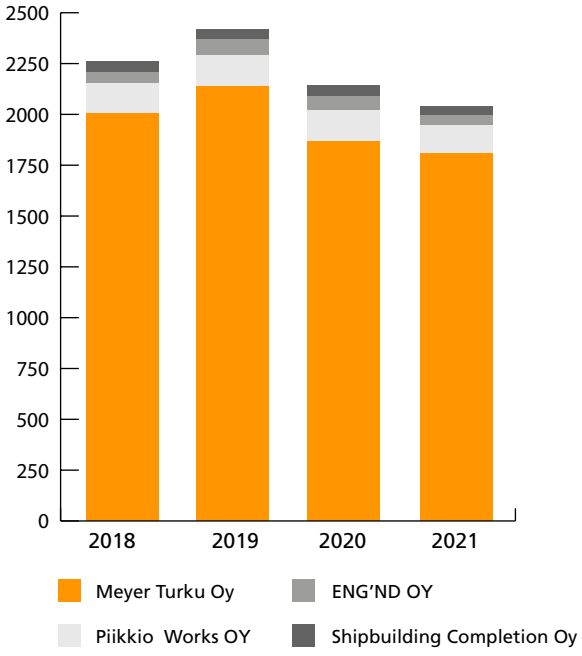
Full-time / Part-time



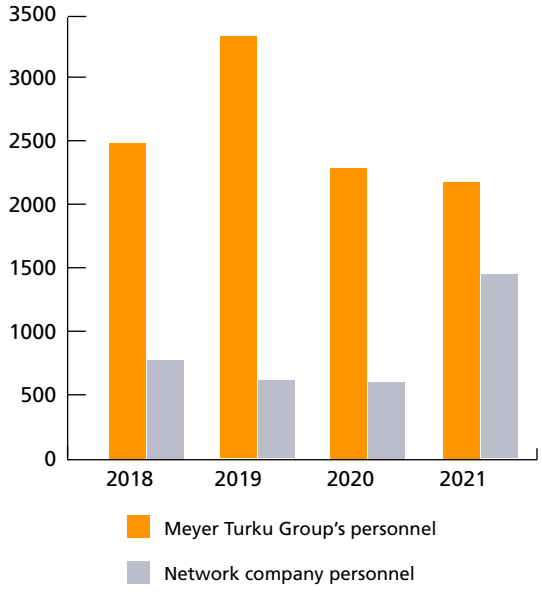
Permanent / Temporary



Number of personnel at the end of the year



Short-term training, number of participants



Number of personnel at the end of the year	2021	2020	2019	2018
Meyer Turku Oy	1,806	1,869	2,139	2,007
Piikkio Works Oy	139	150	153	145
Technology Design and Engineering Eng'nD Oy	52	73	76	58
Shipbuilding Completion Oy	44	49	53	50
Total	**2,041**	**2,141**	**2,421**	**2,260**
On average, within the year:	2,086	2,067	2,387	2,205
New recruitments	144	115	287	297
Starting turnover	8.4%	5.3%	4.7%	7.7%

Training

Short training, number of participants

	2021	2020	2019	2018
Meyer Turku Group's personnel	2,175	2,286	3,320	2,481
Network company personnel	1,448	600	613	772
Participants total	3,623	2,886	3,933	3,253

Recruitment trainings, number of trainees

	2021	2020	2019	2018
Meyer Turku Group's personnel	0	15	44	56
Network company personnel	0	0	35	0
Trainees, total	0	15	79	56

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

City of Turku: Photo piece 'Kasvot kadussa' (Faces in the Street) by Jaska Poikonen and Linda Svarfvar. Photo by Alina Kauppi.

04

A PART OF SOCIETY

Part of society

We have an important and responsible role in society, as Finland Meyer Turku is first and foremost seen as a leader in the shipbuilding industry. Each new ship completed at our shipyard helps the Finnish maritime industry move forward in technological development and sustainability.

We participate in both Finnish and international projects designed to develop sustainability in the maritime and shipbuilding industries. We also work closely together with various parties in the Finnish maritime cluster as well as research and educational institutes.

The scope of our shipbuilding projects is immense. A single ship's delivery value can be up to one percent of all of Finland's annual exports, and the impact of our operations on the overall economy and employment is significant.

We don't build our ships alone. Around 80% of the value of a ship is from the work of network companies, and 20% from the work of the shipyard itself. Together with our network companies, we directly and indirectly employed around 9,500 employees in 2020. When accounting for the employment of foreign companies and the network's own suppliers, the actual impact is even more significant.

A professional, wide network is of vital importance to us

While in the past shipyards built ships almost entirely on their own, now it is becoming more typical for shipyards to assemble ships from advanced components and modules, often involving the cooperative effort of multiple operators. The role of the shipyard is primarily to manage and coordinate this overall effort.

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

Network operations constantly monitored

Throughout the year, around 2,000 companies work at the shipyard. Some only work for a few days at a time while others work throughout the year. We train all network employees to ensure safe work at the shipyard, and we closely monitor our providers' ways of working and their performance.

It is very important for us to know that all our suppliers work in ways that are both ethical and sustainable. All our agreements include suppliers committing to upholding our Code of Conduct for Suppliers.

In our selection process for suppliers, we pay attention to not only price, quality and reliability of supply, but also to the supplier taking care of their obligations regarding society, work safety and the environment. We require all our network companies to draft their own plans for work safety and occupational health, and we incorporated Covid-19 safety into this plan in the spring of 2021.

We monitor all companies working at the shipyard regarding their fulfilment of, for example, the Act on the Contractor's Obligations and Liability when Work is Contracted Out and the Occupational Health Care Act. This also includes companies that do not have a direct contractual relationship with Meyer Turku.

The shipyard contains its own workgroup for network monitoring. Its key goals are fighting grey economy and grey workforce and monitoring that suppliers live up to their requirements in society, such as their obligations regarding taxes and social payments, as well as monitoring work and rest times.

Safety cooperation with relevant authorities

The shipyard's operations are subject to authorization, and the shipyard cooperates constantly with authorities that inspect and monitor its operations, including those from the Finnish Safety and Chemicals Agency (Tukes), Regional State Administrative Agency for Southern Finland (Avi) and the Occupational Safety and Health Division at Regional State Administrative Agency of Southwestern Finland.

"The role of the shipyard is primarily to manage and coordinate the overall effort."

We work closely together with the Regional State Administrative agency to perform the occupational health checks for companies in our network. Cooperation has positive effects not only on the occupational health of the shipyard but also the monitoring actions of authorities.

There are both Finnish and foreign companies working at the shipyard, and the cooperation allows for efficiently monitoring the operations of companies regardless of nationality. We help set up the inspections for selected companies in our network and also support the work of authorities in following up on any deviations from the rules detected.

In addition to workplace checks, the inspections will go through pre-emptive actions such as risk evaluations and onboarding. The shipyard uses an online occupational safety training program that is mandatory to all who work at the shipyard. Additionally, all network companies must organize their own onboarding and briefing for employees.

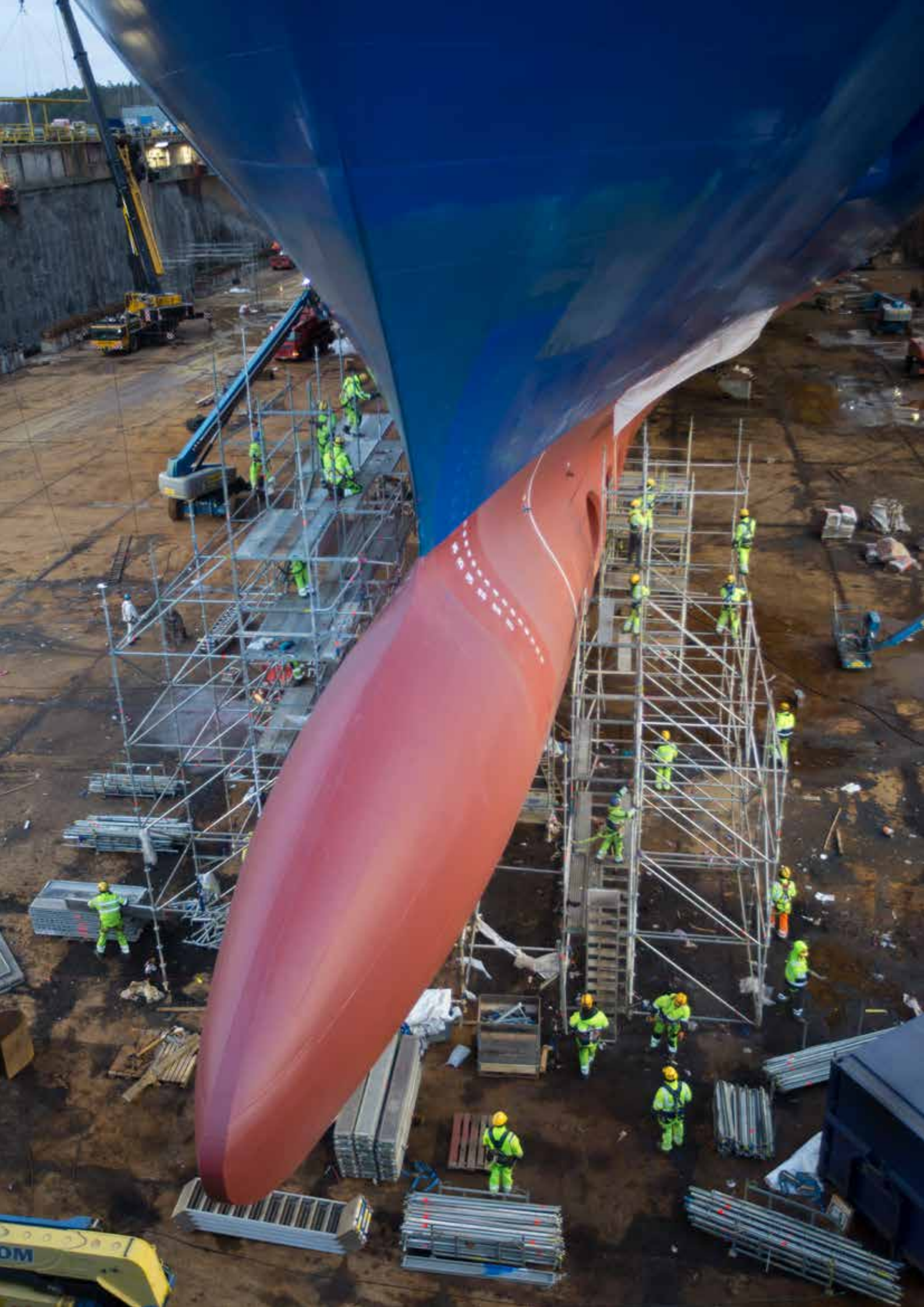
The Meyer shipyards have a joint supplier chain management that improves the tracking of our suppliers. Thanks to shared supplier management we can set similar requirements to all network companies. Information on deviations, such as compliance negligence, are available to all our shipyards. ■

Cooperation with universities to ensure best expertise

We want Finland to be the 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, as the smart and creative solutions our employees invent in designing our ships and optimizing our production are key to making sure we also maintain our competitive edge in the future.

Our agreement with Aalto University and University of Turku are part of our enduring commitment to a long-term cooperation combining top research, high-quality education and operators in marine technology. Cooperation includes, for example, material research and steel structures, hydrodynamics, ship safety, energy efficiency and research supporting sustainable development. In practice, the cooperation happens most of all in Master's and PhD research projects.

We support developing the University of Turku Master's of Engineering training with a donated professorship program. The donated professorship is for the Department of Mechanical and Materials Engineering where the University launched a new Master's of Engineering training program in 2020. ■



Responsible operations

Under no circumstances do we accept unethical or non-legal 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 honestly 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.

A system for preventing abuse

We use a reporting system that both our staff and others, including those in our network, can use to report any abuse they notice or suspect, anonymously if needed. The system also makes it possible to exchange information and submit additional questions anonymously.

The system helps us detect abuse, such as corruption and theft, and more quickly tackle any issues that may be uncovered. An anonymous channel also lowers the threshold for making reports,

"We do not condone unethical or non-legal activities under any circumstances."

and the system is offered in ten languages to ensure that lack of language skills does not prevent reporting.

A shared system makes it easier to improve the processing of reports as they are always submitted directly to the Compliance
department that will investigate the issues. Any actions or consequences will be up to company management. ■

Report description

This 2021 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 ENG'ND OY).

In terms of training and occupational safety, the report extends beyond Meyer Turku Group. Reporting for any training provided in our Shipbuilding School and for any occupational accidents at the shipyard extends to Meyer Turku's networking companies' personnel as well.

GRI CONTENT TABLE

The framework for the report is based on GRI standards. The report matches the core level requirements in the GRI.

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MEYER TURKU
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